Draft Environmental Impact Report for Implementation of the 1995 Bay/Delta Water Quality Control Plan

Volume 3 - Appendices

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STATE WATER RESOURCES CONTROL BOARD

C-032318

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Volume 3

Technical Appendices

Appendix 1 Persons Contacted.

This section contains the list of parties contacted throughout the proceeding. The SWRCB maintains two separate Bay/Delta mailing lists. In this appendix, the shorter active party list and the longer interested party list are combined. Duplicate and internal distribution addresses have been eliminated. In addition to parties identified in this appendix, a postcard mailing was sent to all appropriative water right holders in the Central Valley advising that a Notice of Preparation had been prepared and was available upon request. Persons expressing interest as a result of this mailing were added to Bay/Delta mailing list.

Appendix 2 Fishery Model Calculations.

Appendix two contains DWRSIM model output and spreadsheet calculations for: (1) the striped bass model, (2) the Sacramento River fall run, late fall run, and winter run salmon smolt survival model, (3) the San Joaquin river fall run salmon smolt survival model, (3) the AFRP recommended flows versus DWRSIM calculated flow comparisons and, (4) reservoir habitat index calculations. The striped bass and salmon models are described on pages IV-12 to IV-14 in Volume 1 of the draft EIR. The AFRP comparisons are described on pages VI-46 through VI-55. The reservoir index methodology is described on pages VI-57 through VI-59.

Appendix 3 Water Right Calculations for Flow Alternatives 3 and 4.

Appendix three contains the information used in the water right calculations for Flow Alternatives 3 and 4. The general methodology for the calculations is described on pages IV-14 through IV-23 of the draft EIR.

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MARTINEZ CA 94553-1229

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PO BOX H20
CONCORD CA 94524-

WALTER B. BISHOP
CONTRA COSTA WATER DISTRICT
P O BOX H2O
CONCORD CA 94524-

THOMAS J. LINVILLE
CONTRA COSTA WATER DISTRICT
P.O. BOX H20
CONCORD CA 94524-

DENNIS PISILA
CONTRA COSTA WATER DISTRICT
P.O. BOX H20
CONCORD CA 94524-

K. T. SHUM
CONTRA COSTA WATER DISTRICT
1331 CONCORD AVENUE
CONCORD CA 94524-

CORDUA IRRIGATION DISTRICT
P.O. BOX 1111
MARYSVILLE CA 95901-

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COUNSEL NAVAL AVIATIN DEPOT
CODE 770, PO BOX 357058
SAN DIEGO CA 92135-7058

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COUNTY OF ORANGE/EMA
P.O. BOX 4048
SANTA ANA CA 92702-4048

MICHELE LAVERTY
COUNTY OF STANISLAUS-CEO
1100 H STREET
MODESTO CA 95353-0858

DAVID DAILEY
CTC RISK MGMT
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WOODSIDE CA 94025-6526

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DAVIDS ENGINEERING
1105 KENNEDY PLACE, SUITE 5
DAVIS CA 95616-

SANDRA DUNN
DE CUIR & SOMACH
400 CAPITOL MALL #1900
SACRAMENTO CA 95814-4407

STUART L. SOMACH, ESQ
DECUIR & SOMACH
400 CAPITAL MALL #1900
SACRAMENTO CA 95814-

DEEP VIOLET FARMS, INC
6343 BROPHY ROAD
MARYSVILLE CA 95901-

DELTA PROTECTION COMMISSION
P.O. BOX 530
WALNUT GROVE CA 95690-

JOHN L. WINTHER
DELTA WETLANDS
3697 MT. DIABLO BLVD. #320
LAFAYETTE CA 94549-

JOHN SULLIVAN
DEPARTMEN OF FISH & GAME
1416 NINTH STREET
MESSENGER CA 00000-

BILL LOUDERMILK
DEPARTMENT OF FISH & GAME
1234 EAST SHAW AVENUE
FRESNO CA 93710-

LARRY PUCKETT
DEPARTMENT OF FISH & GAME
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SACRAMENTO CA 95821-6340

SERVICES DIV. ENVIRONMENTAL
DEPARTMENT OF FISH AND GAME
1416 NINTH STREET
MESSENGER A-43 CA 00000-

GEORGE D. NOKES
DEPARTMENT OF FISH AND GAME
1234 E. SHAW AVENUE
MESSENGER A-43 CA 00000-

KATHLEEN GNEKOW
DEPARTMENT OF JUSTICE
1515 K STREET
MESSENGER D-8 CA 00000-

DAVID ANDERSON
DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET
MESSENGER CA 00000-

LARRY GAGE
DEPARTMENT OF WATER RESOURCES
3310 EL CAMINO AVE STE 200
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208 FAIRGROUNDS DR
QUINCY CA 95971-

G T ORLOB
DEPT OF CIVIL& ENVIORMENTAL ENGI.
UNIV OF CALIFORNIA
DAVIS CA 95616-

JOHN TURNER
DEPT OF FISH & GAME ENV SERV DIV
1416 NINTH ST RM 1341
MESSENGER A-43 CA 00000-

CARL DE WING
DEPT OF FOOD & AG ROOM 100
1220 N STREET
MESSENGER CA 00000-

MAURICE ROOS
DEPT OF WATER RESOURCES
1416 NINTH ST.
MESSENGER CA 00000-

MIKE FORD
DEPT OF WTR RES A-36
1416 NINTH ST ROOM 215-17
SACRAMENTO CA 00000-

MIKE FORD
DEPT OF WTR RES A-36
1416 NINTH ST ROOM 215-17
SACRAMENTO CA 00000-

MARK HOLDERMAN
DEPT OF WTR RES, DIV OF PLANNING
1416 9TH ST RM 204-3
MESSENGER CA 00000-

WARD TABOR
DEPT WATER RESOURCES--OCC
1416 NINTH ST. RM. 118
MESSENGER A-36 CA 00000-

DICK DANIEL
DEPT. OF FISH & GAME
1416 9TH STREET
MESSENGER A-43 CA 00000-

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CITY HALL RM. 206
SAN FRANCISCO CA 94102-

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DEPUTY SECRETARY OF INTERIOR
1849 C ST NW #5110 ATTN: S WONG
WASHINGTON DC 20240-

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DESMOND & DESMOND
925 L. STREET, #220
SACRAMENTO CA 95814-

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2151 BERKELEY WAY - ROOM 506
BERKELEY CA 94704-1011

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1201 CALIFORNIA STREET
SAN FRANCISCO CA 94109-

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DIRECTOR, DISTRICT 2
P.O. BOX 846
SAN ANDREAS CA 95249-

ED HUNTLEY A-36
DIVISION OF OPERATIONS & MAINT
1416 NINTH STREET, RM 605-1
MESSENGER 00000-

KATHLIN JOHNSON A-36
DIVISION OF PLANNING
1416 NINTH STREET, RM 215-7
MESSENGER 00000-

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DOWNEY BRAND SEYMOUR ROHWER
555 CAPITOL MALL SUITE 1050
SACRAMENTO CA 95814-

SUSHIL ARORA
DWR
1416 NINTH ST RM 215-11
MESSENGER CA 00000-

GEORGE BARNES
DWR
1416 NINTH ST RM 215-7
MESSENGER A-36 CA 00000-

FRANCIS CHUNG
DWR
1416 NINTH ST RM 215-18
MESSENGER A-36 CA 00000-

CHIEF COUNSEL
DWR
1416 9TH STREET
MESSENGER A-36 CA 00000-

BARBARA CROSS
DWR
1416 9TH ST RM 252-4
MESSENGER CA 00000-

CATHY CROTHERS A-36
DWR
1416 NINTH STREET, ROOM 118
MESSENGER CA 00000-

GORDON ENAS
DWR
1416 NINTH ST RM 547
MESSENGER CA 00000-

ANITA GARCIA-FANTE
DWR
1416 NINTH ST. ROOM 1104-1
MESSENGER A-36 CA 00000-

ED HUNTLEY
DWR
1416 9TH ST. RM 215-37
MESSENGER A-36 CA 00000-

TARIQ KADIR
DWR
1416 NINTH ST RM 215-10
MESSENGER A-36 CA 00000-

KATHY KELLY
DWR
1416 NINTH STREET , RM 1121-3
MESSENGER 00000-

MICHAEL WOFFORD
DWR
1416 NINTH ST RM 604-2
MESSENGER A-36 CA 00000-

MAUREEN SERGENT
DWR A-36
1416 9TH ST RM 604-16
SACRAMENTO CA 95814-

DWIGHT RUSSELL A-36
DWR BAY-DELTA COORDINATION UNIT
1416 NINTH STREET, RM. 204-2
MESSENGER 00000-

STEPHEN A. FORD
DWR CENTRAL DIST
3251 S STREET
MESSENGER A-36 CA 00000-

LEO WINTERNITZ
DWR CENTRAL DISTRICT
3251 S STREET
MESSENGER CA 00000-

RANDY BROWN A-36
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3251 S STREET
MESSENGER 00000-

RALPH FINCH
DWR PLANNING
1416 NINTH ST RM 215-12
MESSENGER A-36 CA 00000-

PETER RABBOW
DWR,INTEGRATED FLOOD
P.O. BOX 942836
SACRAMENTO CA 94236-

JAY PUNIA
DWR-DIVISION OF PLANNING
1416 NINTH STREET ROOM 252-32
MESSENGER A-36 CA 00000-

PAUL DABBS
DWR-PLANNING
1416 NINTH RM 215-9
MESSENGER A-36 CA 00000-

NADELL A. GAYOU A-36
DWR/LOCAL ASSISTANCE
1020 NINTH STREET
MESSENGER CA 00000-

DAVID SANDINO A-36
DWR/OCC
1416 NINTH STREET, RM 215-37
MESSENGER 00000-

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8451 99 W ROAD
GERBER CA 96035-

EL DORADO COUNTY WATER AGENCY
330 FAIR LANE
PLACERVILLE CA 95667-

MERV DE HAAS
EL DORADO COUNTY WATER AGENCY
330 FAIR LN
PLACERVILLE CA 95667-

ANNE J SCHNEIDER
ELLISON & SCHNEIDER
2015 H STREET
SACRAMENTO CA 95814-3109

ANNE J SCHNEIDER
ELLISON & SCHNEIDER
2015 H STREET
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CAROLYN YALE
EPA-OFFICE FED. ACTIVITY
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SAN FRANCISCO CA 94105-

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SONORA CA 95370-

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MENDOTA CA 93640-

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FLANAGAN, MASON, ROBBINS, ET AL
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MERCED CA 95344-0067

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PASADENA CA 91103-

JOHN LIST
FLOW SCIENCE INC.
599 N. FAIR OAKS AVENUE
PASADENA CA 91103-

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FOSTER WHEELER ENVIRON CORP
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SACRAMENTO CA 95833-

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1521 I STREET
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FRIANT WTR. USERS AUTHORITY
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G FRED LEE & ASSOC
27298 E EL MACERO DR.
EL MACERO CA 95618-1005

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GAYLORD CONTAINER CORP.
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JOHN LANDGARD
GEOCON
6970 FLANDERS DR
SAN DIEGO CA 92121-2974

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GEORGETOWN CA 95634-

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248 GIANNINI HALL UC BERKELEY
BERKELEY CA 94720-

Appendix 1

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GOODWIN-LENZ CO., A CA CORP.
2362 PHEASANT RUN CIRCLE
STOCKTON CA 95207-5210

GORDON COLOGNE
GORDON COLOGNE & ASSOC.
925 L ST, STE 350
SACRAMENTO CA 95814-

DON MARCIOCHI
GRASSLAND WATER DISTRICT
22759 S. MERCEY SPRINGS ROAD
LOS BANOS CA 93635-

RENEE SANKUS
GRATTAN GERSICK KARP MILLER
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SACRAMENTO CA 95814-

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GRIFFITH, MASUDA & GODWIN
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TURLOCK CA 95381-0510

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GRIFFITH, MASUDA & GODWIN
PO BOX 510
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439 CENTER ST.
YUBA CITY CA 95991-

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HANSON, BRIDGETT
333 MARKET ST, 23RD FLR
SAN FRANCISCO CA 94105-

PETER STANDISH-LEE
HDR ENGINEERING, INC.
6240 BARCELONA CT.
LOOMIS CA 95650-

KARNA E. HARRIGFELD
HERUM,CRABTREE, ET AL
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STOCKTON CA 95207-

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FREMONT CA 94538-2334

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ENCINO CA 91426-0205

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CORCORAN CA 90051-

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5751 BUENA VISTA ROAD
IONE CA 95640-

JAMES IRRIGATION DISTRICT
PO BOX 757
SAN JOAQUIN CA 93660-

PHILLIP L DUNN
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SACRAMENTO CA 95818-1914

LIBRARY ICS 1
JONES & STOKES ASSOC, INC.
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P.O. BOX 11172
BAKERSFIELD CA 93389-1172

KNOCH, INC.
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FALL RIVER MILLS CA 96028-

DAVID SCRIVEN
KRIEGER & STEWART
3602 UNIVERSITY AVE #200
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KRONICK, MOSKOVITZ, ET AL
400 CAPITOL MALL 27TH FLOOR
SACRAMENTO CA 95814-

DUANE GEORGESON
L.A. DEPT. OF WATER & POWER
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LA GRANGE CA 95329-

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LADWP-REGULATORY AFFAIRS
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LYLE N. HOAG, CIVIL ENGINEER
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FAIR OAKS CA 95628-

SCOTT LUFF
LYNN FOUNDATION
8071 MINERAL ROAD
VIOLA CA 96088-

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M CUBED
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MARKO ENTERPRISES
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RIO VISTA CA 94571-

VIRGINIA CAHILL
MCDONOUGH, HOLLAND & ALLEN
555 CAPITOL MALL 9TH FLOOR
SACRAMENTO CA 95814

MCM PROPERTIES, A CALIF. CORP.
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KNIGHTS CA 95695-

JULIE MENACK
MENACK & ASSOCIATES
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Appendix 1

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TED SELB
MERCED IRRIGATION DISTRICT
PO BOX 2288
MERCED CA 95344-

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METRO WATER DIST OF S CA
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LOS ANGELES CA 90054-

JAMES F ROBERTS
METRO WATER DIST OF S CALIF
PO BOX 54153
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MARCIA TORBIN
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CURTIS ALLING
MICHAEL BRANDMAN ASSOC.
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MINASIAN, ET AL
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OROVILLE CA 95965-

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MODESTO ID
PO BOX 4060
MODESTO CA 95350-

SCOTT STEFFEN
MODESTO IRRIGATION DISTRICT
P.O. BOX 4060
MODESTO CA 95352-

TOM VANNOY
MOHAWK VALLEY RANCH, INC.
P.O. BOX 800
BLAIRSDEN CA 96103-

MARC SAZAKI
MS#40
1516 9TH ST.
MESSENGER F-1 CA 00000-

AL MCNABNEY
MT DIABLO AUDUBON SOCIETY
1161 LEISURE LANE, #7
WALNUT CREEK CA 94595-

DAVID R. CONTRERAS
MT. VIEW SANITARY DISTRICT
PO BOX 2757
MARTINEZ CA 94553-

MUNICIPAL WATER DISTRICT OF
P.O. BOX 20895
SANTA ANA CA 92728-0895

MARC VAN CAMP
MURRAY BURNS & KIENLEN
1616 - 29TH ST., SUITE 300
SACRAMENTO CA 95816-

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MORAGA CA 94556-

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SAN FRANCISCO CA 94104-

GREG THOMAS
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SAN FRANCISCO CA 94104-

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GRASS VALLEY CA 95945-1019

TERRY MAYFIELD
NEVADA IRRIGATION DISTRICT
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GRASS VALLEY CA 95945-

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NO CALIF CO SUPERV ASSN
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PALO CEDRO CA 96073-

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KATY HOPKINS
NOR CAL WATER ASSOCIATION
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HARI MODI
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ROSEVILLE CA 95678-

Appendix 1

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NORTHERN CALIFORNIA MARINE
30 JACK LONDON VLG, STE 204
OAKLAND CA 94607-

BARRETT KEHL,GAN,MGR/SE
OAKDALE IRRIGATION DIST
1205 EAST F ST
OAKDALE CA 95361-4198

MIKE LUCAS
ORIGINAL SIXTEEN TO ONE MINE INC.
P.O. BOX 1621
ALLEGHANY CA 95910-

RICHARD H. MOSS
PACIFIC GAS & ELECTRIC
P.O. BOX 7442/B30A
SAN FRANCISCO CA 94120-7442

LUCIANO MEIORIN
PARSONS ENG. SCIENCE, INC.
9404 GENESEE AVE., SUITE 140
LA JOLLA CA 92037-

JOSEPH R. RAY
PG&E COMPANY
245 MARKET STREET, RM. 1117C-N110
SAN FRANCISCO CA 94105-

GERALD MERAL
PLANNING & CONSERV LEAGU
926 J STREET STE 612
SACRAMENTO CA 95814-

MIKE HARDESTY
RECLAMATION DIST 2068
7178 YOLANO RD
DIXON CA 95620-9621

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RMI, INC.
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VANCOUVER WA 98686-

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PACIFIC MARINE TECHNOLOGY
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DUVALL WA 98019-7601

RALF CARTER
PE
2447 STOCKBRIDGE DR
OAKLAND CA 94611-2110

PHIL WILLIAMS
PHIL WILLIAMS & ASSOC.
PIER 35, THE EMBARCADERO
SAN FRANCISCO CA 94133-

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C-032340

Appendix 2

This Appendix contains DWRSIM Model Data and Spreadsheet Calculations for:

Adult Striped Bass Population.....A2-3 through A2-10

San Joaquin River Fall Run Salmon Smolt Survival Models.....A2-11 through A2-34

Sacramento River Fall Run, Late Fall Run, and Winter Run
Smolt Survival Models.....A2-35 through A2-66

AFRP Working Paper Recommended Flow vs Model Flow
Comparisons.....A2-67 through A2-134

Reservoir Habitat Index Score Calculations.....A2-135 through A2-206

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DWRSIM Study 467	Alternative 1 (Apr- Jul Exp + 3100	MODEL INPUT					YOY ASM Ouptut			E1/E2 ASM Output			
Year	Apr - Jul Div	Apr -Jul Out	Aug-Mar Exp	Aug-Mar Out	stocking		YOY	Losses	Adults	E1	E2	<int calc>	Adults
1922	10,251	27,140	9,876	14,275	0		47	37,741,902	1,320,719	904	5.9035	-651655	1,320,719
1923	10,292	12,213	9,413	4,927	0		27	20,918,293	1,073,714	632	5.8884	-342292	1,073,714
1924	5,594	5,374	6,051	11,771	0		21	4,615,736	882,976	602	5.3349	239634	882,976
1925	10,541	12,103	8,225	8,621	0		18	8,721,807	723,288	615	5.6853	-4857	723,288
1926	10,810	7,131	9,114	29,580	0		15	7,542,854	894,475	422	5.6963	-12226	894,475
1927	10,208	23,663	9,872	21,832	0		28	20,068,813	803,218	860	5.8579	-289672	803,218
1928	10,288	11,506	9,444	6,120	0		14	10,698,642	558,530	612	5.8860	-173464	558,530
1929	8,420	3,395	7,562	8,789	0	Adult Adjusted YOY Regressi	7	2,590,180	558,530	297	5.5831	32746	664,922
1930	10,469	5,362	7,568	4,627	0	**arint** -2007.2578	8	3,178,326	558,530	344	5.6088	26649	618,683
1931	7,521	4,727	7,320	7,743	0	**ardiv** -0.052673	10	3,706,576	558,530	457	5.5525	55645	575,957
1932	7,870	7,076	7,020	4,615	0	**arout** 778.34015	13	4,380,684	558,530	575	5.5253	86070	601,374
1933	7,404	4,718	7,218	5,116	0		11	3,751,040	558,530	462	5.5525	63460	650,718
1934	7,553	4,444	7,025	9,585	0	Adult Factor (FSM)	10	3,097,200	558,530	434	5.4966	84310	680,206
1935	10,553	18,504	9,656	21,341	0	**araff** 2.40E+07	17	11,606,873	558,530	758	5.8280	-181557	708,314
1936	10,213	12,921	9,435	15,455	0		19	12,829,670	717,604	655	5.8292	-161085	721,383
1937	10,069	13,685	9,093	56,490	0		20	6,774,109	719,307	682	5.5333	117233	725,415
1938	9,578	52,758	9,369	11,745	0	Loss Regression	32	22,228,553	679,397	1164	5.8412	-295152	677,131
1939	9,873	3,549	8,160	26,272	0	**lrint** 4.482	6	2,224,261	624,159	236	5.5705	26941	617,276
1940	10,334	24,693	10,079	48,023	0	**lrexp** 0.0001525	23	12,345,636	647,236	867	5.7340	-61998	643,393
1941	9,977	38,547	9,138	44,662	0	**lrout** -5.94E-06	26	10,641,568	619,762	1037	5.6104	78571	618,382
1942	10,297	30,587	9,590	37,022	0		23	12,391,041	610,370	942	5.7247	-52373	609,445
1943	9,504	18,595	9,380	9,891	0	Adult Regression	21	14,990,613	634,112	815	5.8539	-212494	634,268
1944	10,272	5,956	8,873	14,190	0	**aint** 677276.27	11	5,948,496	667,619	390	5.7511	-38694	667,722
1945	10,176	9,145	9,771	22,839	0	**ayoy** 20494.532	15	10,070,490	670,413	540	5.6366	-130943	670,447
1946	10,187	9,728	10,001	7,576	0	**aloss** -0.0428601	14	13,127,594	629,362	560	5.9624	-269263	629,360
1947	10,313	5,542	8,388	5,612	0		9	4,830,929	612,160	363	5.7279	-21821	612,158
1948	10,792	16,681	10,655	9,411	0	Stocking factor (FSM)	18	19,903,813	612,804	711	6.0511	-490473	612,794
1949	10,241	5,603	9,172	10,561	0	**stff** 7.28	9	5,676,301	571,690	371	5.8182	-66461	571,688
1950	10,501	9,897	10,051	41,214	0		13	7,629,110	579,445	549	5.7701	-61514	579,442
1951	10,158	9,407	10,164	38,676	0	**Weighting** 0.032	12	7,535,971	529,346	550	5.8024	-79583	529,348
1952	10,082	48,016	9,364	28,563	0	**Factors** 0.058	23	12,873,781	518,974	1105	5.7405	-72265	518,976
1953	10,326	15,265	9,963	20,140	0	-5 0.132	16	12,546,840	573,773	705	5.8820	-200320	573,775
1954	10,335	16,451	10,287	8,884	0	-4 0.250	18	17,966,933	608,180	730	5.9982	-400317	608,181
1955	10,129	6,039	9,446	50,972	0	-3 0.200	10	4,190,994	615,487	402	5.6200	26436	615,487
1956	10,482	22,220	10,453	14,819	0		20	19,654,300	602,999	824	5.9883	-428547	602,998
1957	10,150	9,900	10,095	45,618	0	Stocking	12	6,926,542	531,116	568	5.7506	-44808	531,116
1958	10,183	51,655	9,639	18,581	0	**1930-1935** 0	25	17,489,122	549,470	1125	5.8418	-233638	549,470
1959	9,966	5,517	8,760	8,401	0	**1936 on** 0	8	4,827,279	531,381	380	5.7681	-38163	531,381
1960	9,603	6,373	9,298	9,472	0		10	6,822,856	535,376	448	5.8438	-92085	535,376
1961	9,872	5,244	9,097	13,618	0		8	5,079,987	551,589	368	5.7886	-48333	551,589
1962	10,141	8,259	10,660	21,202	0		12	11,512,951	581,469	507	5.9820	-247508	581,469
1963	10,297	35,384	10,278	9,995	0		24	23,719,144	602,315	991	5.9902	-519415	602,315
1964	10,125	5,992	10,068	32,240	0		10	6,791,401	624,660	400	5.8260	-83302	624,660
1965	9,822	21,883	10,299	15,190	0		21	18,912,333	593,948	853	5.9626	-388154	593,948
1966	10,011	6,014	9,663	28,053	0		8	5,097,879	498,697	407	5.7892	-48737	498,697
1967	10,582	44,640	9,154	21,757	0		21	11,896,251	492,546	1054	5.7490	-75300	492,546
1968	9,921	6,079	9,210	47,698	0		8	3,362,390	494,353	415	5.6033	27654	494,353
1969	9,336	43,853	9,206	54,534	0		24	8,651,154	521,790	1114	5.5622	115034	521,790
1970	9,885	7,999	9,769	26,258	0		12	7,844,541	577,509	510	5.8160	-90623	577,509
1971	10,482	16,508	10,400	11,312	0		19	18,618,891	632,501	723	6.0010	-417302	632,501
1972	9,972	6,057	10,090	35,357	0		11	7,355,029	682,148	411	5.8109	-82230	682,148
1973	10,049	13,658	10,234	53,466	0		19	10,066,451	685,628	682	5.7253	-43127	685,628
1974	10,410	29,961	10,246	26,555	0		22	17,051,789	585,623	929	5.8870	-277479	585,623
1975	10,482	20,356	10,347	9,532	0		18	18,009,290	552,214	794	6.0035	-405763	552,214
1976	9,296	3,306	5,249	4,728	0		6	1,046,825	591,356	242	5.2545	74547	591,356
1977	6,925	5,445	6,209	26,170	0		12	2,346,394	573,161	536	5.2735	155561	573,161
1978	9,042	24,271	9,211	17,202	0		19	11,626,126	503,224	930	5.7846	-107037	503,224
1979	10,295	7,773	9,233	43,944	0		11	4,558,312	549,133	479	5.6291	24069	549,133
1980	9,122	14,326	9,174	13,355	0		20	12,594,195	655,957	747	5.8018	-132417	655,957
1981	10,318	5,940	9,468	50,740	0		11	4,438,803	672,336	387	5.6247	25628	672,336
1982	10,113	56,744	9,584	88,912	0		31	8,173,489	667,428	1160	5.4156	293070	667,428
1983	10,141	72,516	7,744	56,658	0		33	6,987,056	653,999	1242	5.3266	375573	653,999
1984	10,280	8,463	9,705	13,378	0		13	10,248,996	651,262	508	5.8827	-164091	651,262
1985	10,327	5,465	9,636	52,742	0		10	4,550,103	722,790	358	5.6383	19438	722,790
1986	10,232	13,655	8,531	9,845	0		22	11,812,074	822,036	672	5.7246	-49870	822,036
1987	9,016	3,448	8,233	6,032	0		8	4,266,355	774,242	271	5.7018	-9124	774,242
1988	8,085	4,613	7,079	9,159	0		12	3,855,805	707,607	419	5.5072	80496	707,607
1989	10,851	6,890	9,114	7,193	0		11	7,616,150	681,430	409	5.8294	-95229	681,430
1990	9,490	3,334	5,605	7,305	0		6	1,250,904	667,957	235	5.2935	76797	667,957
1991	9,142	3,848	5,588	9,137	0		8	1,584,978	680,444	302	5.2799	102566	680,444
1992	9,435	3,346	7,516	23,510	0		7	2,014,982	674,848	239	5.4888	47654	674,848
1993	10,297	23,117	9,506	9,217	0		23	17,521,117	677,405	947	5.8771	-274453	677,405
1994	9,841	3,412			0		6	195,159	708,733	224	4.4820	123469	708,733
Avg	9,806	15,739	9,032	23,429					618,710				621,196

A2-3

DWRSIM Study 468	Alternative 2 MODEL INPUT (Apr - Jul Exp 3100 cfs					Variables		YOY ASM Ouptut			E1/E2 ASM Output			
Year	Apr - Jul Div	Apr - Jul Out	Aug - Mar Exp	Aug - Ma Ou	stocking			YOY	Losses	Adults	E1	E2	<int calc>	Adults
1922	11,898	26,078	8,814	16,313	0			42	22,472,869	1,320,719	803	5.729	-104385	1,320,719
1923	11,292	12,765	8,177	5,807	0			25	12,587,805	1,073,714	594	5.695	-18341	1,073,714
1924	4,415	5,917	6,221	11,529	0			25	5,689,565	882,976	696	5.362	262451	882,976
1925	9,640	11,718	8,213	9,765	0			19	9,058,644	723,288	652	5.677	2621	723,288
1926	10,176	11,115	8,676	28,897	0			22	9,365,533	894,475	606	5.634	44746	894,475
1927	11,580	22,801	9,163	22,903	0			25	13,901,046	803,218	775	5.744	-81600	803,218
1928	10,847	14,394	8,904	6,625	0			15	9,455,415	558,530	658	5.801	-98624	558,530
1929	5,698	5,812	6,172	9,078	0	Adult Adjusted YOY Regression		14	3,315,223	558,530	623	5.369	188941	717,217
1930	9,518	8,266	6,155	4,899	0	arint	-2007.25782	12	3,028,662	558,530	540	5.392	149365	687,061
1931	5,668	6,177	6,174	8,374	0	ardiv	-0.052672953	15	3,468,436	558,530	645	5.374	176457	651,545
1932	9,086	8,870	6,007	5,215	0	arout	778.3401477	13	3,108,992	558,530	587	5.367	170572	682,330
1933	5,555	6,708	5,550	6,601	0			15	3,003,841	558,530	679	5.289	245980	737,968
1934	7,555	6,646	6,825	9,139	0	Adult Factor (FSM)		13	3,814,700	558,530	570	5.469	139071	766,548
1935	10,456	21,594	9,296	19,979	0	araff	2.40E+07	19	11,206,009	558,530	816	5.781	-139105	782,985
1936	10,985	12,672	8,821	16,185	0			19	10,320,148	781,616	608	5.731	-51177	806,978
1937	10,285	14,412	8,719	56,006	0			22	6,490,807	775,706	688	5.479	168964	803,956
1938	12,106	48,832	8,606	12,653	0	Loss Regression		29	15,341,977	720,456	1004	5.719	-58491	732,121
1939	9,670	7,631	7,901	24,915	0	lrint	4.482	14	4,756,567	671,142	505	5.539	77788	670,313
1940	11,190	25,310	9,547	48,095	0	lrexp	0.00015252	23	10,517,492	696,129	831	5.652	29047	695,717
1941	11,936	35,901	8,963	45,385	0	lrout	-0.00000594	26	9,751,997	697,379	909	5.579	108346	697,340
1942	12,098	28,326	9,144	38,076	0			23	10,314,637	694,023	821	5.650	30673	693,218
1943	11,249	16,813	8,893	10,855	0	Adult Regression		20	11,648,685	702,781	689	5.774	-97417	702,918
1944	9,752	7,695	8,829	13,747	0	aint	677276.2745	15	8,177,011	718,326	504	5.747	-50361	718,438
1945	10,588	9,551	9,254	23,403	0	ayoy	20494.53208	15	8,780,559	716,986	533	5.754	-59527	716,942
1946	10,466	9,461	9,586	8,426	0	aloss	-0.042860071	15	11,638,614	683,926	536	5.894	-194396	683,909
1947	9,834	7,951	7,246	6,279	0			14	4,805,414	654,136	511	5.550	71700	654,124
1948	11,393	16,292	9,906	9,841	0	Stocking factor (FSM)		18	15,104,772	645,125	671	5.934	-287416	645,119
1949	10,075	8,938	8,868	9,961	0	stff	7.28	13	7,970,080	612,221	537	5.775	-67609	612,220
1950	10,835	11,508	10,053	40,643	0			15	8,846,237	629,236	583	5.774	-73977	629,236
1951	10,985	11,932	9,896	37,796	0	Weighting	0.032	14	8,467,695	606,958	587	5.767	-66095	606,958
1952	12,833	44,581	8,785	29,333	0	Factors	0.058	22	9,944,946	588,376	935	5.648	32506	588,377
1953	11,670	15,124	9,361	21,074	0	-5	0.132	16	9,461,101	605,610	631	5.785	-87080	605,611
1954	11,124	18,586	9,652	10,306	0	-4	0.250	18	14,413,475	622,308	730	5.893	-239802	622,308
1955	9,598	7,832	8,545	49,648	0	-3	0.200	14	4,188,692	644,510	518	5.490	98065	644,510
1956	12,871	20,635	9,721	15,075	0			18	13,368,585	652,824	673	5.875	-207728	652,824
1957	11,015	13,209	9,338	45,119	0	Stocking		15	6,635,778	605,720	620	5.638	28399	605,720
1958	13,088	47,976	8,994	19,216	0	1922-1994	0	24	13,202,757	625,313	947	5.740	-73141	625,313
1959	9,588	7,730	8,661	8,248	0			13	7,397,929	624,500	514	5.754	-49915	624,500
1960	9,113	8,229	8,796	8,667	0			14	8,443,693	627,459	560	5.772	-69378	627,459
1961	9,447	7,765	8,253	13,450	0			14	6,224,511	640,365	523	5.661	11773	640,365
1962	10,356	9,856	10,362	21,920	0			15	12,419,617	643,884	556	5.932	-234734	643,884
1963	11,578	34,472	9,262	11,734	0			24	15,785,747	636,350	915	5.825	-192423	636,350
1964	9,483	7,059	10,060	32,185	0			13	8,650,094	652,385	489	5.825	-105581	652,385
1965	11,648	21,960	9,244	15,448	0			19	12,036,449	618,900	759	5.800	-125090	618,900
1966	9,924	8,921	9,416	27,443	0			13	7,268,429	576,171	545	5.755	-49763	576,171
1967	13,640	40,580	8,430	21,666	0			20	8,785,537	575,588	861	5.639	36794	575,588
1968	9,899	8,884	9,049	46,732	0			13	4,997,987	587,271	545	5.585	52413	587,271
1969	11,903	41,245	8,384	55,354	0			24	6,354,456	603,604	958	5.432	209368	603,604
1970	10,750	10,389	9,333	25,889	0			14	8,148,291	643,494	553	5.752	-53427	643,494
1971	11,899	16,567	9,918	12,024	0			18	15,004,111	679,797	650	5.923	-276159	679,797
1972	9,767	8,289	9,659	35,154	0			16	8,699,330	730,267	528	5.746	-53191	730,267
1973	11,413	12,446	9,409	53,479	0			17	6,760,538	726,332	579	5.599	58745	726,332
1974	12,807	28,454	9,669	26,913	0			20	12,784,215	640,580	785	5.797	-129682	640,580
1975	12,979	19,168	9,561	10,370	0			16	11,935,028	604,404	642	5.879	-188129	604,404
1976	8,970	6,751	4,455	4,983	0			13	1,769,693	642,769	501	5.132	191881	642,769
1977	4,209	6,199	6,069	26,211	0			19	3,360,152	641,320	723	5.252	241481	641,320
1978	10,109	22,742	8,796	17,777	0			21	10,903,351	603,247	851	5.718	-39489	603,247
1979	10,905	11,123	8,563	43,028	0			15	5,125,268	653,266	568	5.532	88630	653,266
1980	10,309	13,343	8,503	14,106	0			20	9,828,763	742,956	661	5.695	-14741	742,956
1981	9,959	8,680	9,530	49,674	0			16	6,974,355	740,047	534	5.640	28235	740,047
1982	13,198	53,700	8,703	89,960	0			29	5,387,604	722,216	979	5.275	355290	722,216
1983	11,387	71,278	7,392	57,007	0			34	6,282,715	711,251	1170	5.271	421001	711,251
1984	11,114	11,397	9,257	12,824	0			16	10,467,794	696,309	565	5.818	-122221	696,309
1985	9,668	8,375	9,521	51,399	0			16	6,988,133	757,308	537	5.629	37097	757,308
1986	10,282	13,901	8,198	10,104	0			23	10,944,364	855,838	676	5.672	7867	855,838
1987	9,440	7,478	7,338	7,492	0			17	5,978,275	806,049	511	5.557	83832	806,049
1988	7,102	6,117	5,447	8,634	0			17	3,055,540	731,274	566	5.262	211955	731,274
1989	9,956	10,605	7,973	6,929	0			17	7,818,288	707,512	602	5.657	17940	707,512
1990	8,860	7,376	4,668	7,140	0			15	2,176,518	707,150	537	5.151	221430	707,150
1991	6,249	6,956	5,797	8,542	0			20	4,045,387	739,914	654	5.315	227655	739,914
1992	6,806	6,704	6,898	23,426	0			18	4,585,962	746,478	612	5.395	182050	746,478
1993	12,071	22,484	8,795	10,411	0			23	13,175,963	759,155	744	5.762	-97080	759,155
1994	9,284	6,921			0			16	479,443	795,348	493	4.482	303324	795,348
Avg	10,231	16,657	8,433	23,564						676,637				681,979

DWRSIM Study 506 Year	Alternative 3 MODEL INPUT (Apr - Jul Exp + 3100 cfs) Apr - Jul Div	Apr - Jul Out	Aug - Mar Exp	Aug - Mar Out	stocking	Variables		YOY ASM Ouptut YOY	Losses	Adults	E1/E2 ASM Output E1	E2	<int calc>	Adults
1922	11,968	26,069	8,814	16,314	0			42	22,367,607	1,320,719	800	5.729	-103882	1,320,719
1923	11,283	12,942	8,130	5,807	0			26	12,489,531	1,073,714	599	5.687	-9636	1,073,714
1924	4,695	5,917	6,261	11,538	0			24	5,648,116	882,976	681	5.368	253476	882,976
1925	9,540	11,722	8,390	9,710	0			19	9,726,750	723,288	657	5.704	-22795	723,288
1926	10,155	11,132	9,070	29,057	0			22	10,758,634	894,475	607	5.693	-13809	894,475
1927	11,490	22,801	9,144	22,783	0			25	13,915,788	803,218	779	5.741	-79105	803,218
1928	10,780	14,352	8,930	6,631	0			15	9,577,848	558,530	660	5.805	-102686	558,530
1929	6,058	5,812	6,290	9,043	0	Adult Adjusted YOY Regression		14	3,351,615	558,530	604	5.388	171198	698,495
1930	9,569	8,358	6,233	4,951	0	**arint**	-2007 25782	12	3,116,622	558,530	541	5.403	141730	669,342
1931	6,682	6,160	6,352	8,269	0	**ardiv**	-0 052672953	13	3,386,432	558,530	590	5.402	148931	641,861
1932	10,174	8,870	6,135	5,215	0	**arout**	778 3401477	12	2,934,597	558,530	530	5.387	145417	673,909
1933	5,815	6,708	5,537	6,526	0			15	2,933,094	558,530	665	5.288	238982	729,770
1934	7,347	6,646	6,886	9,134	0	Adult Factor (FSM)		13	3,971,631	558,530	581	5.478	135148	756,636
1935	10,474	21,422	9,167	20,537	0	**araff**	2 40E+07	18	10,579,827	558,530	812	5.758	-102394	768,920
1936	10,982	12,722	8,804	15,490	0			19	10,268,229	772,743	609	5.733	-52119	794,659
1937	10,319	14,374	8,755	56,672	0			21	6,448,281	770,639	685	5.481	165697	796,267
1938	12,106	49,905	8,616	12,677	0	Loss Regression		30	15,555,981	722,832	1012	5.721	-61442	735,235
1939	9,710	7,593	7,907	24,975	0	**lrint**	4.482	14	4,761,827	676,174	502	5.540	77736	677,570
1940	11,249	25,609	9,531	48,108	0	**lrexp**	0 00015252	24	10,500,044	698,437	831	5.650	31874	699,234
1941	11,968	35,901	8,963	45,621	0	**lrout**	-0 00000594	26	9,702,069	697,394	908	5.578	109574	697,808
1942	12,098	28,326	9,148	38,120	0			23	10,318,240	693,627	821	5.651	30270	693,145
1943	11,159	16,813	8,916	10,933	0	Adult Regression		20	11,810,084	702,694	694	5.777	-101641	702,862
1944	9,768	7,721	8,924	13,731	0	**aint**	677276.2745	15	8,467,634	718,961	504	5.762	-62432	719,108
1945	10,697	9,518	9,253	23,642	0	**ayoy**	20494 53208	15	8,641,498	717,452	526	5.753	-57502	717,445
1946	10,470	9,461	9,570	8,472	0	**aloss**	-0.042860071	15	11,548,772	683,282	536	5.891	-190955	683,288
1947	9,854	8,066	7,860	6,322	0			14	5,972,684	650,769	514	5.643	22328	650,763
1948	11,222	16,395	10,006	9,782	0	Stocking factor (FSM)		18	15,839,619	641,973	682	5.950	-314687	641,968
1949	10,079	8,938	9,076	10,080	0	**stff**	7.28	13	8,546,960	611,565	537	5.806	-92733	611,561
1950	10,844	11,534	10,082	40,449	0			15	8,832,072	619,659	583	5.779	-77730	619,657
1951	11,006	11,961	9,886	37,871	0	**Weighting**	0 032	14	8,186,752	589,371	587	5.765	-62579	589,371
1952	12,796	45,307	8,785	29,331	0	**Factors**	0.058	22	9,722,611	570,281	943	5.648	31766	570,281
1953	11,686	15,124	9,363	21,080	0	-5	0.132	15	9,250,483	592,238	630	5.785	-85337	592,239
1954	11,124	18,586	9,659	10,340	0	-4	0.250	18	14,289,554	615,616	730	5.894	-238454	615,616
1955	9,624	7,874	8,476	49,636	0	-3	0.200	14	4,079,947	642,430	518	5.480	102110	642,430
1956	12,874	20,475	9,729	15,383	0			18	13,287,550	652,442	670	5.875	-205976	652,442
1957	11,014	13,197	9,474	44,809	0	Stocking		15	6,994,742	606,412	620	5.661	13203	606,412
1958	13,088	48,443	8,999	19,647	0	**1922-1994**	0	24	13,219,135	626,757	950	5.738	-71028	626,757
1959	9,601	7,751	8,669	8,279	0			13	7,438,308	626,116	514	5.755	-50840	626,116
1960	9,195	8,255	8,871	8,815	0			14	8,574,850	625,525	557	5.783	-77585	625,525
1961	9,455	7,777	8,515	13,500	0			14	6,791,210	637,503	523	5.700	-13673	637,503
1962	10,356	9,856	10,375	21,574	0			14	12,510,587	642,446	556	5.936	-239280	642,446
1963	11,647	34,472	9,221	11,695	0			23	15,450,827	633,934	911	5.819	-181779	633,934
1964	9,494	7,176	10,154	32,109	0			13	8,937,695	644,767	494	5.840	-118277	644,767
1965	11,851	22,057	9,337	15,545	0			19	12,107,324	610,568	749	5.814	-137965	610,568
1966	9,924	8,921	9,418	27,310	0			13	7,251,473	573,298	545	5.756	-50311	573,298
1967	13,640	40,988	8,428	22,459	0			20	8,685,415	573,374	864	5.634	41147	573,374
1968	9,912	8,897	9,043	46,935	0			13	4,928,250	581,868	544	5.582	52917	581,868
1969	11,920	41,286	8,382	55,356	0			23	6,299,804	599,074	958	5.432	207922	599,074
1970	10,775	10,435	9,306	25,875	0			14	8,057,384	642,129	553	5.748	-50050	642,129
1971	11,908	16,572	9,928	12,055	0			18	15,043,780	679,767	650	5.925	-278064	679,767
1972	9,801	8,385	9,781	34,992	0			16	9,137,171	730,241	530	5.766	-70676	730,241
1973	11,142	12,817	9,626	53,748	0			18	7,578,500	726,948	603	5.631	38581	726,948
1974	12,807	28,333	9,669	27,078	0			20	12,740,289	641,017	784	5.796	-128295	641,017
1975	12,979	19,100	9,570	10,366	0			16	11,881,429	600,810	641	5.880	-188302	600,810
1976	9,140	6,734	4,661	4,981	0			13	1,841,292	634,269	491	5.163	180180	634,269
1977	4,209	6,199	6,039	26,337	0			19	3,283,253	634,250	723	5.247	240640	634,250
1978	10,109	22,903	8,812	18,080	0			21	10,891,582	599,822	854	5.719	-40167	599,822
1979	10,905	11,123	8,534	43,222	0			15	5,031,819	649,348	568	5.527	90835	649,348
1980	10,357	13,347	8,469	14,154	0			20	9,625,137	739,288	658	5.690	-9466	739,288
1981	9,968	8,692	9,523	49,917	0			16	6,920,076	738,188	534	5.638	29794	738,188
1982	13,198	53,700	8,703	89,959	0			29	5,383,844	721,694	979	5.275	355040	721,694
1983	11,387	71,278	7,392	57,007	0			34	6,292,129	712,348	1170	5.271	421632	712,348
1984	11,143	11,452	9,265	12,982	0			16	10,502,119	698,163	565	5.818	-122809	698,163
1985	9,863	8,421	9,474	51,552	0			16	6,761,952	758,450	529	5.621	42002	758,450
1986	10,487	14,040	8,213	10,048	0			23	10,895,565	856,483	668	5.675	5047	856,483
1987	9,472	7,470	7,440	7,459	0			17	6,176,115	806,313	509	5.572	74075	806,313
1988	7,170	6,139	5,751	8,559	0			17	3,392,874	732,226	563	5.308	196487	732,226
1989	9,956	10,609	8,030	6,901	0			17	7,987,920	708,124	602	5.666	11044	708,124
1990	8,726	7,385	4,850	7,142	0			16	2,345,753	705,129	544	5.179	217654	705,129
1991	6,671	6,956	5,791	8,597	0			19	3,868,560	734,277	632	5.314	218736	734,277
1992	7,640	6,704	7,139	23,499	0			17	4,589,368	739,940	568	5.431	151767	739,940
1993	11,753	22,085	8,795	10,514	0			23	13,257,489	753,980	755	5.761	-97017	753,980
1994	9,289	6,929			0			16	476,801	790,508	493	4.482	301652	790,508
Average	10,299	16,713	8,486	23,622						673,829				678,140

DWRSIM Study 507 Year	Alternative 4 {Apr - Jul Exp + 3100 cfs} Apr - Jul Div	Apr - Jul Out	MODEL INPUT Aug - Mar Exp	Aug - Mar Out	stocking	Variables		YOY ASM Ouptut YOY	Model Losses	Model Adults	E1/E2 ASM Output E1	E2	<int calc>	Adults
1922	11,968	26,078	8,814	16,341	0			42	22,362,445	1,320,719	800	5.729	-103,544	1,320,719
1923	11,283	12,946	8,179	5,807	0			26	12,707,706	1,073,714	599	5.695	-18,891	1,073,714
1924	4,761	5,917	6,267	11,538	0			24	5,631,585	882,976	678	5.369	251,677	882,976
1925	9,536	11,722	8,418	9,721	0			19	9,822,663	723,288	658	5.708	-26,773	723,288
1926	10,114	11,086	9,087	29,061	0			22	10,835,817	894,475	608	5.695	-16,560	894,475
1927	11,486	22,801	9,147	22,917	0			25	13,908,406	803,218	780	5.741	-78,646	803,218
1928	10,780	14,352	8,930	6,631	0			15	9,577,848	558,530	660	5.805	-102,686	558,530
1929	6,058	5,812	6,290	9,043	0	Adult Adjusted YOY Regression		14	3,351,615	558,530	604	5.388	170,649	696,189
1930	9,569	8,358	6,233	4,951	0	**arint**	-2007.25782	12	3,116,622	558,530	541	5.403	141,418	667,824
1931	6,674	6,160	6,370	8,299	0	**ardiv**	-0.052672953	13	3,407,912	558,530	591	5.404	147,970	641,325
1932	10,154	8,870	6,135	5,215	0	**arout**	778.3401477	12	2,940,530	558,530	531	5.387	145,641	673,576
1933	5,815	6,708	5,581	6,578	0			15	2,976,134	558,530	665	5.294	236,506	729,510
1934	7,360	6,646	6,888	9,134	0	Adult Factor (FSM)		13	3,969,974	558,530	580	5.478	134,776	756,307
1935	10,513	21,485	9,181	20,541	0	**araff**	2.40E+07	18	10,618,742	558,530	811	5.760	-105,302	768,652
1936	10,982	12,722	8,806	15,610	0			19	10,253,756	772,338	609	5.732	-51,673	794,058
1937	10,323	14,311	8,735	56,236	0			21	6,420,826	770,121	684	5.480	165,457	795,539
1938	12,106	49,420	8,618	12,681	0	Loss Regression		29	15,499,952	722,089	1,009	5.721	-61,602	734,216
1939	9,678	7,643	7,922	24,990	0	**lrint**	4.482	14	4,817,903	675,591	505	5.542	77,262	676,748
1940	11,227	25,567	9,525	48,048	0	**lrexp**	0.00015252	24	10,491,760	698,147	832	5.649	32,385	698,813
1941	11,948	35,901	8,963	45,627	0	**lrout**	-0.00000594	26	9,710,287	697,233	909	5.578	109,716	697,595
1942	12,098	28,326	9,148	38,136	0			23	10,311,692	693,424	821	5.651	30,415	692,912
1943	11,200	16,813	8,922	10,932	0	Adult Regression		20	11,797,615	702,664	692	5.778	-102,371	702,825
1944	9,768	7,721	8,924	13,738	0	**aint**	677276.2745	15	8,467,777	719,044	504	5.762	-62,404	719,185
1945	10,656	9,497	9,269	23,628	0	**ayoy**	20494.53208	15	8,717,815	717,555	527	5.755	-59,868	717,545
1946	10,466	9,461	9,570	8,492	0	**aloss**	-0.042860071	15	11,549,107	683,208	536	5.891	-190,876	683,211
1947	9,854	8,066	7,862	6,322	0			14	5,975,906	650,636	514	5.644	22,135	650,629
1948	11,222	16,395	10,006	9,782	0	Stocking factor (FSM)		18	15,826,406	641,423	682	5.950	-314,424	641,418
1949	10,079	8,938	9,076	10,080	0	**stff**	7.28	13	8,538,663	610,956	537	5.806	-92,643	610,952
1950	10,844	11,534	10,082	40,400	0			15	8,833,038	619,306	583	5.780	-77,939	619,304
1951	11,014	11,965	9,886	37,831	0	**Weighting**	0.032	14	8,184,985	589,250	587	5.765	-62,720	589,250
1952	12,796	45,307	8,787	29,339	0	**Factors**	0.058	22	9,728,242	570,268	943	5.648	31,516	570,269
1953	11,686	15,124	9,363	21,082	0	-5	0.132	15	9,250,320	592,245	630	5.785	-85,326	592,246
1954	11,124	18,586	9,679	10,392	0	-4	0.250	18	14,380,186	615,557	730	5.897	-242,373	615,557
1955	9,613	7,738	8,482	49,707	0	-3	0.200	13	4,042,280	642,330	513	5.480	100,847	642,330
1956	12,883	20,647	9,729	15,212	0			18	13,363,418	652,353	673	5.876	-208,003	652,353
1957	11,006	13,205	9,474	44,989	0	Stocking		15	6,975,477	605,582	620	5.660	13,938	605,582
1958	13,088	48,052	8,999	19,653	0	**1930 - 1935**	0	24	13,154,344	625,509	947	5.738	-70,638	625,509
1959	9,601	7,751	8,669	8,281	0	**1936 on**	0	13	7,423,673	624,869	514	5.755	-50,733	624,869
1960	9,195	8,255	8,871	8,815	0			14	8,564,801	624,773	557	5.783	-77,494	624,773
1961	9,455	7,777	8,515	13,523	0			14	6,787,008	637,299	523	5.700	-13,579	637,299
1962	10,356	9,856	10,380	21,764	0			14	12,500,555	642,505	556	5.936	-238,823	642,505
1963	11,647	34,472	9,221	11,699	0			23	15,451,748	634,009	911	5.819	-181,763	634,009
1964	9,494	7,176	10,152	32,192	0			13	8,924,188	644,869	494	5.839	-117,657	644,869
1965	11,851	22,057	9,338	15,551	0			19	12,109,677	610,713	749	5.814	-137,977	610,713
1966	9,924	8,921	9,418	27,545	0			13	7,229,974	573,436	545	5.755	-49,328	573,436
1967	13,640	40,937	8,430	21,777	0			20	8,771,766	573,571	864	5.638	37,386	573,571
1968	9,912	8,901	9,043	46,898	0			13	4,933,745	582,051	545	5.583	52,840	582,051
1969	11,903	41,286	8,384	55,362	0			23	6,312,386	599,364	958	5.432	208,037	599,364
1970	10,822	10,523	9,299	25,853	0			14	8,042,702	641,656	553	5.747	-49,413	641,656
1971	11,908	16,572	9,934	12,055	0			18	15,058,663	678,962	650	5.926	-279,124	678,962
1972	9,801	8,385	9,777	35,016	0			16	9,115,298	729,804	530	5.765	-69,925	729,804
1973	11,141	12,800	9,626	53,672	0			18	7,580,516	726,907	603	5.631	38,216	726,907
1974	12,807	28,454	9,667	27,098	0			20	12,747,116	640,856	785	5.795	-127,916	640,856
1975	12,979	19,168	9,578	10,366	0			16	11,936,973	600,784	642	5.881	-190,102	600,784
1976	9,140	6,734	4,661	4,981	0			13	1,841,334	634,284	491	5.163	180,184	634,284
1977	4,209	6,199	6,041	26,374	0			19	3,284,414	634,293	723	5.247	240,616	634,293
1978	10,109	22,903	8,804	18,063	0			21	10,857,620	599,518	854	5.718	-38,923	599,518
1979	10,905	11,123	8,532	43,206	0			15	5,026,358	648,952	568	5.527	90,887	648,952
1980	10,333	13,347	8,481	14,149	0			20	9,680,082	739,056	659	5.691	-11,156	739,056
1981	9,968	8,692	9,523	49,927	0			16	6,920,494	738,340	534	5.638	29,841	738,340
1982	13,198	53,700	8,705	89,965	0			29	5,389,133	721,955	979	5.275	355,019	721,955
1983	11,387	71,278	7,392	57,007	0			34	6,290,740	712,186	1,170	5.271	421,539	712,186
1984	11,143	11,452	9,265	12,987	0			16	10,496,614	697,829	565	5.818	-122,725	697,829
1985	9,890	8,354	9,460	51,550	0			16	6,673,730	758,277	524	5.619	43,108	758,277
1986	10,495	14,040	8,209	10,066	0			23	10,868,933	856,369	668	5.674	5,825	856,369
1987	9,456	7,495	7,452	7,457	0			17	6,226,503	806,253	511	5.574	73,202	806,253
1988	7,157	6,075	5,589	8,635	0			17	3,186,058	732,456	561	5.283	203,713	732,456
1989	9,956	10,601	7,977	6,933	0			17	7,838,599	708,560	601	5.658	17,501	708,560
1990	8,739	7,389	4,917	7,146	0			16	2,400,156	705,297	544	5.189	215,132	705,297
1991	6,696	6,956	5,830	8,575	0			19	3,921,287	735,674	631	5.320	216,380	735,674
1992	7,621	6,704	6,976	23,452	0			17	4,361,396	742,999	569	5.407	163,546	742,999
1993	11,733	22,484	8,793	10,606	0			23	13,391,340	756,017	762	5.760	-97,060	756,017
1994	9,289	6,929			0			16	476,884	790,651	493	4.482	301,705	790,651
Average	10,298	16,708	8,483	23,619					8,171,148	673,767				677,982

DWRSIM Study 513 Year	Flow Alternative 5 Apr - Jul Exp + 3100 cfs Apr - Jul Div	Apr - Jul Out	MODEL INPUT Aug - Mar Exp	Aug - Mar Out	stocking	Variables		YOY ASM Ouptut YOY	Model Losses	Model Adults	E1/E2 ASM Output E1	E2	<int calc>	Adults
1922	12,625	27,440	8,963	17,358	0			40.805	22,733,892	1,320,719	782	5.746	-138099	1,320,719
1923	11,754	13,964	8,335	6,689	0			25.687	13,279,419	1,073,714	600	5.713	-42713	1,073,714
1924	7,228	6,207	6,537	13,748	0			20.021	4,999,314	882,976	564	5.397	196042	882,976
1925	9,395	12,327	8,429	10,534	0			19.950	10,114,529	723,288	682	5.705	-24645	723,288
1926	10,834	11,247	9,027	31,767	0			20.667	9,667,826	894,475	575	5.670	9203	894,475
1927	12,344	24,044	9,141	24,105	0			24.367	13.178,074	803,218	752	5.733	-65415	803,218
1928	11,509	15,794	8,930	7,612	0			14.882	9,362,561	558,530	654	5.799	-96271	558,530
1929	8,482	6,605	6,808	9,989	0	Adult Adjusted YOY Regression		11.807	3,412,749	558,530	519	5.461	117938	692,049
1930	10,102	8,571	7,955	5,727	0	**arint**	-2007.25782	11.868	5,439,861	558,530	522	5.661	12092	673,214
1931	7,566	6,228	7,206	8,676	0	**ardiv**	-0.052672953	12.453	4,215,225	558,530	548	5.530	86137	647,682
1932	8,998	9,892	6,807	5,973	0	**arout**	778.3401477	14.293	4,363,199	558,530	628	5.485	126100	667,940
1933	7,719	6,964	6,608	7,079	0			13.127	3,681,637	558,530	577	5.448	137252	692,915
1934	8,553	6,923	7,517	9,525	0	Adult Factor (FSM)		12.083	4,509,316	558,530	531	5.572	68261	705,482
1935	12,297	22,233	8,960	24,098	0	**araff**	2.40E+07	16.568	8,407,211	558,530	728	5.705	-26956	729,369
1936	11,784	15,116	8,594	16,350	0			18.683	9,271,100	739,422	625	5.696	-14708	752,014
1937	11,196	16,127	8,674	58,075	0			20.132	5,806,544	734,544	678	5.460	166463	747,218
1938	13,294	50,986	8,529	14,147	0	Loss Regression		27.479	13,736,172	709,872	957	5.699	-25815	717,078
1939	10,326	7,657	8,062	26,926	0	**lrint**	4.482	13.118	4,671,976	686,158	472	5.552	68839	688,549
1940	11,022	26,811	9,818	49,493	0	**lrexp**	0.00015252	24.690	11,968,442	710,319	859	5.686	-6961	711,617
1941	12,365	38,710	8,823	46,955	0	**lrout**	-0.00000594	26.272	9,296,690	711,633	912	5.549	140108	712,317
1942	12,551	29,915	9,093	39,265	0			23.262	10.052,398	704,768	815	5.636	45899	704,905
1943	12,236	18,555	8,938	12,569	0	Adult Regression		18.968	11,181,890	698,637	671	5.771	-90547	698,810
1944	10,530	8,138	8,827	15,491	0	**aint**	677276.2745	13.963	7,607,562	716,303	482	5.736	-39902	716,429
1945	11,591	11,338	8,946	25,237	0	**ayoy**	20494.53208	15.747	7,830,230	723,632	538	5.697	-12880	723,670
1946	11,406	10,352	9,369	9,895	0	**aloss**	-0.042860071	14.466	10,291,673	690,897	517	5.852	-144629	690,918
1947	10,346	8,514	8,671	7,180	0			13.576	7,846,644	660,640	507	5.762	-58077	660,641
1948	12,365	19,490	10,110	11,312	0	Stocking factor (FSM)		18.205	16,480,844	659,851	680	5.957	-333257	659,851
1949	10,326	10,348	8,850	11,333	0	**stff**	7.28	14.814	8,612,808	636,080	574	5.764	-65545	636,077
1950	11,476	13,115	10,292	41,757	0			15.003	9,548,095	622,693	593	5.804	-101749	622,691
1951	11,585	12,800	9,687	39,518	0	**Weighting**	0.032	13.555	7,192,063	575,004	579	5.725	-30445	575,003
1952	13,394	47,114	8,859	30,716	0	**Factors**	0.058	21.248	9,507,574	564,542	925	5.651	27972	564,542
1953	11,854	17,134	9,325	22,729	0	-5	0.132	15.888	9,337,362	588,583	664	5.769	-74588	588,583
1954	11,735	19,797	9,541	11,728	0	-4	0.250	17.990	13,258,433	616,028	719	5.867	-199570	616,028
1955	10,255	8,377	8,540	51,513	0	-3	0.200	13.296	4,001,663	647,501	506	5.479	100977	647,501
1956	13,555	22,157	9,739	17,236	0			17.624	12,918,045	657,363	661	5.865	-192469	657,363
1957	11,516	14,029	9,410	46,612	0	Stocking		15.400	6,727,942	617,468	614	5.640	27245	617,468
1958	13,812	50,487	8,903	20,895	0	**1930 - 1935**	0	23.993	12,469,726	638,453	926	5.716	-42726	638,453
1959	10,257	8,517	8,388	10,323	0	**1936 on**	0	13.169	6,600,321	634,176	512	5.700	-12988	634,176
1960	9,519	8,293	9,244	10,909	0			13.937	9,358,755	634,142	541	5.827	-115477	634,142
1961	9,964	7,698	9,351	14,982	0			12.988	8,565,434	649,617	493	5.819	-100929	649,617
1962	11,047	10,882	10,242	24,205	0			14.788	11,754,467	659,682	553	5.900	-200733	659,682
1963	12,911	35,910	9,090	12,800	0			22.318	13,837,140	640,784	858	5.792	-135672	640,784
1964	10,196	8,020	10,050	32,762	0			12.549	8,295,256	624,942	494	5.820	-98356	624,942
1965	12,368	22,993	9,389	17,671	0			17.795	11,463,970	594,571	736	5.809	-126638	594,571
1966	10,578	9,638	9,294	29,359	0			12.650	6,718,626	579,611	536	5.725	-28696	579,611
1967	13,640	43,628	8,798	23,335	0			21.169	10,256,806	587,722	886	5.685	-5766	587,722
1968	10,384	9,412	8,592	48,965	0			13.024	4,133,481	594,672	539	5.502	89755	594,672
1969	12,749	42,369	8,385	56,405	0			22.969	6.122,721	612,741	923	5.426	208318	612,741
1970	11,369	11,357	9,139	27,899	0			14.342	7,357,138	642,247	550	5.710	-21395	642,247
1971	12,671	18,451	9,589	13,880	0			17.781	12,941,869	679,567	646	5.862	-190279	679,567
1972	10,547	10,409	9,638	35,842	0			16.761	9,190,763	734,920	564	5.739	-50405	734,920
1973	12,040	14,004	9,397	55,529	0			17.420	6,706,037	735,619	586	5.585	69586	735,619
1974	13,628	30,481	9,552	28,410	0			20.668	12,174,110	666,425	765	5.770	-98192	666,425
1975	13,427	21,205	9,587	11,650	0			16.746	12,557,975	631,750	653	5.875	-195028	631,750
1976	9,636	6,790	5,143	5,283	0			12.495	2,146,480	658,804	468	5.235	164077	658,804
1977	4,928	6,673	6,366	28,364	0			18.904	3,639,514	656,669	710	5.284	231430	656,669
1978	10,327	25,293	8,855	19,350	0			21.848	11,403,653	614,035	876	5.718	-40994	614,035
1979	11,420	11,818	8,401	44,351	0			14.814	4.682,731	650,861	561	5.500	102905	650,861
1980	11,473	15,631	8,779	15,154	0			19.404	10,443,609	735,257	653	5.731	-49942	735,257
1981	10,506	9,059	9,173	52,218	0			15.414	5.738,037	734,158	519	5.571	69977	734,158
1982	13,557	55,779	8,870	90,483	0			28.400	5,632,430	721,541	973	5.297	340636	721,541
1983	11,387	71,635	7,420	58,027	0			33.493	6.221,627	706,115	1,172	5.269	419768	706,115
1984	11,475	12,215	9,170	15,361	0			16.076	9,897,641	697,354	569	5.789	-94752	697,354
1985	10,351	8,674	9,340	53,328	0			15.757	6,126,584	760,920	513	5.590	60354	760,920
1986	11,465	16,383	8,322	11,362	0			23.039	11,123,339	855,869	669	5.684	-4571	855,869
1987	9,835	7,540	7,470	7,592	0			16.095	6,065,596	810,599	493	5.576	69884	810,599
1988	9,049	7,096	6,924	10,117	0			15.422	4.635,924	743,090	514	5.478	117366	743,090
1989	10,563	13,470	8,828	7,615	0			18.788	11,405,883	713,927	650	5.783	-103805	713,927
1990	8,322	7,236	5,542	7,569	0			15.955	3,056,404	705,879	558	5.282	195995	705,879
1991	7,408	8,774	6,452	9,340	0			19.513	5,022,163	718,082	672	5.411	184668	718,082
1992	8,769	7,228	8,152	25,324	0			15.078	5,666,313	696,691	535	5.575	66162	696,691
1993	12,379	23,453	8,843	11,472	0			21.326	12,344,069	709,976	742	5.763	-92004	709,976
1994	9,767	6,902		3,806	0			14.285	411,404	758,399	466	4.459	275127	758,399
Average	10,972	17,870	8,634	24,682					8,141,566	675,624				677,391

A2-7

DWRSIM Study 485 Year	Flow Alternative 6 MODEL INPUT Apr - Jul Exp + 3100 cfs Apr - Jul Div	Apr - Jul Out	Aug - Mar Exp	Aug - Mar Out	stocking	Variables		YOY ASM Ouptut YOY	Model Losses	Model Adults	E1/E2 ASM Output E1	E2	<int calc>	Adults
1922	11,996	26,009	8,587	15.371	0			41 589	20,865,880	1,320,719	797	5 700	-41963	1,320,719
1923	11,474	13,021	7,751	5,689	0			25.306	10,805,380	1,073,714	591	5.630	55506	1,073,714
1924	5,349	5,926	6,271	11,611	0			22.975	5,380,247	882,976	647	5.370	240256	882,976
1925	9,888	12,068	7,319	9,900	0			18 982	6,574,969	723,288	649	5.540	107221	723,288
1926	10,137	11,382	8,466	28,190	0			22 129	8,929,538	894,475	616	5.606	70811	894,475
1927	11,977	22,865	8,890	22,061	0			24.444	12,448,157	803,218	755	5.707	-32565	803,218
1928	11,242	15,188	8,578	6.215	0			14.902	8,445,784	558,530	655	5.753	-56586	558,530
1929	5,781	5,849	6,307	9,064	0	Adult Adjusted YOY Regression		14.108	3,463,322	558,530	620	5.390	187911	751,845
1930	9,586	8,404	6,134	4.903	0	**arint**	-2007.25782	12.336	3,017,875	558,530	542	5.389	157771	718,253
1931	6,194	6,177	6,272	8,374	0	**ardiv**	-0 052672953	14.032	3,435,346	558,530	617	5.389	170267	680,981
1932	10,441	9,210	5,942	5.215	0	**arout**	778.3401477	12.016	2,735,332	558,530	528	5.357	161651	703,910
1933	5,779	6,708	5,510	6,598	0			15.163	2,910,252	558,530	667	5.283	247426	748,608
1934	7,623	6,646	6,191	9,338	0	Adult Factor (FSM)		12.882	3,025,236	558,530	566	5.371	183933	771,251
1935	10,606	21,594	8,976	19,645	0	**araff**	2.40E+07	18.369	9,964,206	558,530	808	5.734	-70211	782,036
1936	11,599	12,745	8,458	16,896	0			18.095	8,494,971	776,824	577	5.672	6980	804,676
1937	10,154	14,118	8,118	55,707	0			21.641	5,303,915	779,652	688	5.389	224880	812,018
1938	11,926	50,081	8,288	12,691	0	Loss Regression		30.472	14,275,558	737,177	1,023	5.671	12977	756,577
1939	9,750	7,761	7,952	24.361	0	**lrint**	4 482	14.337	5,088,159	698,587	507	5.550	76409	704,873
1940	11,479	25,558	9,691	47,086	0	**lrexp**	0.00015252	24.138	11,563,509	729,155	819	5.680	-914	733,162
1941	11,936	35,792	8,535	45,411	0	**lrout**	-0.00000594	27.030	8,827,920	735,983	908	5.514	176222	738,678
1942	12,098	28,322	8,561	38.062	0			24.001	8,748,172	722,956	821	5.562	117069	723,711
1943	10,823	16,873	8,575	10.880	0	Adult Regression		20.493	10,885,933	710,383	713	5.725	-46618	711,099
1944	9,861	7,897	8,713	13,546	0	**aint**	677276.2745	14.958	8,040,980	729,746	507	5.730	-38109	730,250
1945	10,746	9,591	8,933	22,711	0	**ayoy**	20494 53208	15.922	8,156,352	749,153	526	5.710	-23278	749,381
1946	10,747	9,982	9,422	8,225	0	**aloss**	-0.042860071	15.768	11,692,381	722,708	539	5.870	-178004	722,831
1947	9,930	8,205	7,680	6,258	0			14.296	5,908,091	683,617	516	5.616	39767	683,652
1948	11,538	15,081	9,970	9,609	0	Stocking factor (FSM)		17.288	15,248,310	669,268	637	5.945	-299234	669,281
1949	10,319	9,383	8,202	9,812	0	**stff**	7.28	13.879	6,561,973	631,842	541	5.675	3191	631,832
1950	10,827	11,502	9,525	41.096	0			15.009	7,361,472	634,057	583	5.691	-7911	634,047
1951	11,164	11,976	9,830	37,572	0	**Weighting**	0.032	14.152	8,108,308	601,279	579	5.758	-57491	601,273
1952	12,480	45,623	8,276	29,374	0	**Factors**	0.058	23.363	8,674,369	597,462	962	5.570	107019	597,459
1953	11,686	15,124	9,068	20,228	0	-5	0.132	16.215	9,011,006	633,607	630	5.745	-53898	633,605
1954	11,410	19,119	9,629	9.633	0	-4	0.250	19.044	14,898,260	648,186	724	5.893	-248234	648,186
1955	9,701	7,902	8,232	49,804	0	-3	0.200	14.082	3,893,247	674,013	516	5.442	121749	674,013
1956	12,887	20,659	9,599	15.073	0			18.670	13,417,763	685,252	673	5.857	-192456	685,252
1957	11,040	13,252	9,284	44.455	0	Stocking		15.724	6,768,746	624,752	620	5.634	32149	624,752
1958	13,030	48,728	8,363	19,538	0	**1930 - 1935**	0	24.692	10,815,241	636,911	955	5.641	42504	636,911
1959	9,685	7,923	8,304	8,254	0	**1936 on**	0	13.366	6,690,293	636,624	517	5.699	-12808	636,624
1960	9,282	8,389	8,524	8,005	0			14.394	7,812,001	635,713	558	5.735	-39824	635,713
1961	9,448	7,718	8,605	12,699	0			14.097	7,381,577	667,552	521	5.719	-27473	667,552
1962	10,217	9,237	10,522	21,199	0			14.958	13,671,189	682,297	541	5.961	-279399	682,297
1963	12,184	34,477	9,429	11,085	0			23.887	17,075,466	667,510	883	5.854	-242308	667,510
1964	9,588	7,229	10,011	31,434	0			13.222	8,780,061	663,621	491	5.822	-105346	663,621
1965	12,184	22,226	8,919	15,404	0			18.197	10,252,464	609,877	734	5.751	-66473	609,877
1966	10,298	10,112	9,346	26.518	0			12.774	7,182,624	552,738	567	5.750	-46043	552,738
1967	13,221	41,821	8,173	22,579	0			20.226	7,950,729	555,944	893	5.594	73756	555,944
1968	10,000	9,052	8,552	46,732	0			13.064	4,215,579	588,637	546	5.509	87054	588,637
1969	11,903	41,286	8,166	55,363	0			23.935	5,993,190	614,715	958	5.399	233669	614,715
1970	10,855	10,582	9,230	25.082	0			14.769	8,129,366	658,001	553	5.741	-45744	658,001
1971	11,887	16,590	10,018	11.349	0			18.448	16,161,987	699,839	651	5.943	-314611	699,839
1972	9,918	8,608	9,775	34,645	0			16.167	9,457,396	750,727	533	5.767	-74015	750,727
1973	11,630	12,627	9,238	53.514	0			17.138	6,414,017	740,768	572	5.573	76327	740,768
1974	12,807	28,450	9,241	26,742	0			20.426	11,033,554	641,190	785	5.733	-54286	641,190
1975	12,979	19,176	9,324	9.598	0			15.523	10,915,905	594,156	643	5.847	-149727	594,156
1976	9,154	6,831	4,705	5,005	0			12.805	1,893,223	637,216	495	5.170	181290	637,216
1977	4,521	6,194	5,907	26,143	0			18.788	3,173,851	656,055	706	5.228	249021	656,055
1978	10,113	22,886	8,327	17,681	0			21.815	9,676,990	629,652	853	5.647	32327	629,652
1979	11,350	11,409	7,951	42.775	0			15.036	4,146,982	671,059	553	5 441	130421	671,059
1980	10,296	13,364	8,143	14,236	0			20 102	8,762,583	751,811	662	5.639	36406	751,811
1981	10,035	8,818	9,219	49.596	0			16.412	6,436,422	759,494	535	5 593	60488	759,494
1982	13.143	53,754	8,284	89.978	0			29.771	4,839,139	750,097	982	5.211	402742	750,097
1983	11,387	71,278	7,416	57,007	0			35.071	6,598,968	741,506	1.170	5.275	435930	741,506
1984	11,156	11,490	9,028	12,024	0			16.589	10,171,115	725,440	565	5.788	-95947	725,440
1985	9,811	8,543	9,697	51.872	0			17.007	7,647,382	786,295	536	5.653	20788	786,295
1986	10,823	13,254	8,035	10,264	0			22.308	9,883,806	879,209	631	5.646	33572	879,209
1987	9,436	7,461	7,534	7.505	0			16.948	6,540,717	824,784	510	5 587	67000	824,784
1988	7,153	6,071	5,502	8.731	0			16.776	3,118,817	740,305	561	5.269	210142	740,305
1989	10,090	10,845	7,677	6 649	0			17 403	7,143,999	714,419	602	5.613	50468	714,419
1990	8,991	7,422	4,676	7,149	0			15.279	2,171,554	710,034	532	5.153	220069	710,034
1991	6,479	6,960	5,873	8,586	0			19.180	4,069,345	738,636	642	5 327	218664	738,636
1992	6,998	6,704	7,025	23.166	0			18 283	4,763,033	751,276	602	5 416	170559	751,276
1993	12,075	22,484	8,708	9,350	0			23.028	13,086,639	766,601	744	5 755	-88943	766,601
1994	9,309	6,975			0			15 875	481,617	796,874	494	4.482	304700	796,874
Average	10,357	16,790	8,266	23,371					7,788,179	691,580				697,804

DWRSIM Study 519A Year	Flow Alternative 7 Apr - Jul Exp + 3100 cfs Apr - Jul Div	Apr - Jul Out	MODEL INPUT Aug - Mar Exp	Aug - Mar Out	stocking	Variables		YOY ASM Ouptut YOY	Model Losses	Model Adults	E1/E2 ASM Output E1	E2	<int calc>	Adults
1922	11693	26,208	8813	16,014	0			42.557	22,909,997	1,320,719	816	5.731	-109740	1,320,719
1923	11310	12,174	7885	5,809	0			24.703	11,038,650	1,073,714	577	5.650	33155	1,073,714
1924	4669	5,913	6107	13,211	0			24.221	5,238,534	882,976	683	5.335	271870	882,976
1925	9357	10,507	7833	9,491	0			18.429	7,687,506	723,288	630	5.620	48213	723,288
1926	9646	10,287	8350	29,100	0			21.832	8,352,408	894,475	608	5.583	89445	894,475
1927	11331	23,093	9390	22,437	0			25.653	15,488,383	803,218	792	5.781	-138084	803,218
1928	10985	14,657	8866	6,089	0			14.936	9,381,994	558,530	657	5.798	-96015	558,530
1929	5094	5,862	6480	9,006	0	Adult Adjusted YOY Regression		14.947	3,902,155	558,530	657	5.417	183296	741,589
1930	9685	8,537	6193	4,895	0	**arint**	-2007.25782	12.337	3,081,528	558,530	542	5.398	149481	695,120
1931	5807	6,181	6336	8,303	0	**ardiv**	-0 052672953	14.501	3,634,304	558,530	638	5.399	163189	646,810
1932	8909	8,870	5837	5,300	0	**arout**	778.3401477	13.561	2,971,652	558,530	596	5.341	181992	678,409
1933	5692	6,708	5499	6,524	0			15.268	2,922,455	558,530	671	5.282	245214	735,075
1934	7775	6,646	6814	9,174	0	Adult Factor (FSM)		12.700	3,720,777	558,530	558	5.467	136334	761,543
1935	10744	21,258	9315	20,710	0	**araff**	2.40E+07	18.084	10,887,243	558,530	795	5.780	-133169	781,728
1936	11106	12,846	8840	16,172	0			19.126	10,369,700	782,461	606	5.734	-54107	807,750
1937	10218	14,437	8714	56,382	0			21.680	6,490,106	776,175	692	5.476	171915	803,964
1938	11967	49,290	8654	12,678	0	Loss Regression		29.611	15,775,701	721,218	1,015	5.727	-70369	732,765
1939	9991	7,748	7721	24,514	0	**lrint**	4.482	13.441	4,388,671	671,751	494	5.514	87284	671,164
1940	11355	24,708	9666	48,384	0	**lrexp**	0.00015252	22.950	10,705,395	696,477	814	5.669	11512	696,178
1941	11740	35,579	8964	45,806	0	**lrout**	-0.00000594	25.822	9,753,099	695,591	917	5.577	111182	695,570
1942	11889	28,620	9114	38,069	0			23.455	10,378,475	693,352	835	5.646	35836	692,561
1943	11176	16,717	8874	10,858	0	Adult Regression		19.591	11,560,251	700,170	691	5.771	-93981	700,289
1944	9964	7,913	8614	13,602	0	**aint**	677276.2745	14.532	7,538,823	715,182	502	5.715	-25300	715,290
1945	10509	9,401	9240	23,725	0	**ayoy**	20494.53208	15.414	8,676,218	716,586	532	5.750	-55958	716,538
1946	10312	9,461	9664	8,420	0	**aloss**	-0.042860071	15.113	12,170,635	685,563	544	5.906	-211891	685,547
1947	9689	8,365	7135	6,265	0			14.335	4,890,344	660,296	535	5.533	84187	660,286
1948	11372	15,704	9958	9,724	0	Stocking factor (FSM)		17.472	15,323,337	652,935	660	5.943	-298681	652,930
1949	10100	8,984	8724	9,886	0	**stff**	7.28	13.402	7,604,152	613,287	538	5.754	-51245	613,287
1950	10765	11,108	9676	41,846	0			14.684	7,517,691	629,395	575	5.709	-21267	629,396
1951	10662	11,850	10023	37,659	0	**Weighting**	0.032	14.835	9,085,456	606,506	602	5.787	-85375	606,507
1952	12776	45,229	8791	29,366	0	**Factors**	0.058	22.617	10,065,641	589,590	943	5.648	32112	589,590
1953	10899	15,175	9386	20,788	0	-5	0.132	16.919	10,432,472	618,916	673	5.790	-100391	618,917
1954	11065	18,595	9654	9,714	0	-4	0.250	18.850	14,860,572	633,515	733	5.897	-250607	633,515
1955	9533	7,842	8683	50,151	0	-3	0.200	13.702	4,418,277	647,177	522	5.508	91446	647,177
1956	12516	20,303	9796	15,646	0			18.125	13,851,346	651,078	686	5.883	-222201	651,078
1957	10764	13,296	9351	44,761	0	Stocking		15.517	6,810,729	600,736	635	5.642	26101	600,736
1958	12999	48,662	9043	19,643	0	**1930 - 1935**	0	24.040	13,351,531	618,901	956	5.745	-79560	618,900
1959	9690	7,962	8490	8,005	0	**1936 on**	0	13.014	6,979,315	617,743	519	5.729	-32408	617,743
1960	9080	8,738	8754	8,309	0			14.696	8,608,702	621,467	582	5.768	-67789	621,467
1961	9177	8,164	8341	13,397	0			14.303	6,761,461	635,871	554	5.675	3338	635,871
1962	10508	10,159	10201	21,170	0			14.590	11,917,088	644,434	558	5.912	-211748	644,434
1963	11244	34,853	9543	11,669	0			24.294	17,931,729	639,599	936	5.868	-270667	639,599
1964	9336	7,454	9935	31,760	0			13.640	8,780,285	652,966	515	5.809	-96776	652,966
1965	11384	21,808	9333	15,592	0			19.466	12,650,986	622,411	770	5.813	-143280	622,411
1966	9825	8,983	9445	27,197	0			12.722	7,338,280	565,790	552	5.761	-53787	565,790
1967	13640	41,776	8401	22,510	0			19.873	8,468,191	560,420	871	5.630	44333	560,420
1968	10294	9,135	8865	46,626	0			12.511	4,512,549	576,549	533	5.557	62997	576,549
1969	11769	41,278	8335	55,474	0			23.379	6,202,062	595,627	965	5.424	213328	595,627
1970	10657	10,553	9418	25,367	0			14.615	8,560,984	639,629	563	5.768	-67405	639,629
1971	11181	16,420	10089	11,784	0			18.935	16,903,065	682,491	685	5.951	-336403	682,491
1972	9771	8,339	9495	35,091	0			15.728	8,285,597	733,890	530	5.722	-32791	733,890
1973	11605	12,295	9397	54,501	0			16.586	6,473,596	726,233	565	5.591	62454	726,233
1974	12034	28,472	9792	27,310	0			21.009	13,667,440	626,416	826	5.813	-155209	626,416
1975	12444	19,067	9712	10,404	0			16.105	12,834,455	592,162	669	5.901	-220024	592,162
1976	8998	6,704	4234	4,978	0			12.908	1,618,370	639,955	497	5.098	195180	639,955
1977	4565	6,199	5754	26,430	0			18.172	2,897,251	635,914	704	5.203	248246	635,914
1978	10113	22,932	8812	17,927	0			20.499	10,747,616	590,262	854	5.720	-40522	590,262
1979	11116	11,082	8436	43,146	0			14.500	4,718,269	643,449	555	5.512	94935	643,449
1980	10060	13,237	8532	14,247	0			20.059	10,020,876	739,558	671	5.699	-18398	739,558
1981	10378	8,777	9310	49,685	0			15.401	6,228,621	739,315	515	5.607	48670	739,315
1982	13189	53,716	8669	89,987	0			28.660	5,332,338	723,296	980	5 270	358838	723,296
1983	11388	71,282	7388	57,015	0			33.736	6,283,106	712,452	1.170	5 270	422118	712,452
1984	10781	11,247	9234	12,579	0			16.391	10,720,854	700,471	578	5 816	-123578	700,471
1985	9756	8,352	9481	51,990	0			16.371	6,811,449	762,966	531	5.619	43578	762,966
1986	10052	13,516	8215	10,296	0			23.462	11,068,074	859,636	678	5.674	6455	859,636
1987	9786	7,461	7143	7,424	0			16.006	5,389,772	807,591	492	5.527	97023	807,591
1988	6941	6,075	5468	8,686	0			16.958	3,116,679	733,230	572	5.264	213973	733,230
1989	10379	10,019	7744	6,863	0			16.067	6,733,960	708,845	560	5.622	40672	708,845
1990	8626	7,368	4540	7,150	0			15.766	2,136,065	710,249	549	5.132	231564	710,249
1991	6838	6,906	5786	8,410	0			18.660	3,849,487	743,755	621	5.314	217444	743,755
1992	7092	6,708	6883	23,552	0			18 187	4,484,405	753,395	598	5 392	180541	753,395
1993	11881	22,326	8794	10,271	0			23.306	13,482,284	767,840	752	5.762	-100199	767,840
1994	9504	6,921			0			15.507	470,480	799,374	481	4.482	297654	799,374
Average	10,184	16,700	8,411	23,612					8,183,704	675,968				681,598

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Study 467 Joaquin River Fall Run Salmon Smolt Survival Model WITH BARRIER

Barrier at head of Old River from Apr 15 to May 15

Old River Barrier Open above 7500.00 cfs a
Consumptive Depletion for April 1053.00 cfs
Consumptive Depletion for May 1053.00 cfs

Year	Water Year Type	APRIL Vernalis Flows	CVP + SWP exports	exp/v-oct	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	Calculated Mortality m2	m34	m3	m4	m234	Calculated Survival s234
1922	A	5,687	9,546	1.685	3,571	2,126	0.63	0.37	60.2	0.947	0.755	0.823	0.349	0.826	17.4%
1923	B	4,487	10,100	2.267	2,735	1,752	0.61	0.39	59.7	0.958	0.793	0.882	0.348	0.857	14.3%
1924	C	1,687	571	0.343	1,125	572	0.66	0.34	60.6	0.993	0.796	0.796	0.000	0.883	13.7%
1925	D	3,596	11,226	3.149	2,099	1,498	0.58	0.42	63.4	0.966	0.897	0.727	0.622	0.926	7.4%
1926	D	3,092	10,739	3.509	1,772	1,321	0.57	0.43	63.4	0.971	0.900	0.751	0.597	0.930	7.0%
1927	W	4,941	9,784	1.989	3,053	1,888	0.62	0.38	57.1	0.954	0.721	0.660	0.179	0.810	19.0%
1928	A	4,470	10,083	2.272	2,724	1,746	0.61	0.39	60.2	0.958	0.802	0.883	0.377	0.883	13.7%
1929	C	2,033	5,395	2.655	1,211	822	0.60	0.40	60.6	0.986	0.824	0.790	0.161	0.889	11.1%
1930	D	2,186	9,344	4.374	1,186	981	0.55	0.45	63.4	0.961	0.902	0.792	0.526	0.938	6.2%
1931	C	1,597	4,269	2.726	948	648	0.59	0.41	60.6	0.991	0.829	0.809	0.104	0.895	10.5%
1932	D	4,521	538	0.120	3,039	1,482	0.67	0.33	63.4	0.995	0.867	0.661	0.077	0.778	22.2%
1933	C	2,302	1,765	0.777	1,500	802	0.65	0.35	60.6	0.986	0.770	0.770	0.000	0.845	15.5%
1934	C	1,832	689	0.383	1,213	619	0.66	0.34	60.6	0.992	0.790	0.790	0.000	0.858	14.2%
1935	B	7,243	11,142	1.545	4,572	2,671	0.63	0.37	59.7	0.930	0.732	0.552	0.402	0.805	19.5%
1936	B	6,420	9,781	1.531	4,054	2,366	0.63	0.37	59.7	0.939	0.725	0.569	0.332	0.804	19.6%
1937	B	7,852	9,579	1.212	4,873	6,059	0.24	0.76	59.7	0.829	0.826	0.743	0.322	0.828	17.2%
1938	W	18,049	7,714	0.428	5,163	12,886	0.29	0.71	57.1	0.624	0.546	0.510	0.075	0.802	39.8%
1939	D	2,891	7,983	2.762	1,716	1,175	0.59	0.41	63.4	0.975	0.867	0.755	0.457	0.911	8.9%
1940	A	6,470	10,265	1.587	4,073	2,397	0.63	0.37	60.2	0.939	0.747	0.587	0.387	0.818	18.2%
1941	W	10,083	9,310	0.926	2,585	7,519	0.25	0.75	57.1	0.785	0.742	0.694	0.156	0.774	22.6%
1942	W	6,907	9,646	1.403	4,386	2,519	0.64	0.36	57.1	0.935	0.640	0.565	0.173	0.748	25.2%
1943	W	7,915	9,663	1.220	1,883	6,053	0.24	0.76	57.1	0.820	0.789	0.744	0.174	0.819	18.1%
1944	D	3,428	9,579	2.820	2,033	1,395	0.59	0.41	63.4	0.960	0.876	0.732	0.538	0.914	8.6%
1945	B	6,537	9,784	1.501	4,134	2,403	0.63	0.37	59.7	0.938	0.721	0.563	0.331	0.801	19.9%
1946	B	4,924	10,100	2.064	3,031	1,893	0.62	0.38	59.7	0.954	0.779	0.661	0.348	0.846	15.4%
1947	D	2,252	10,134	4.584	1,220	1,032	0.54	0.46	63.4	0.979	0.909	0.780	0.567	0.941	5.9%
1948	B	3,647	11,092	3.066	2,137	1,510	0.59	0.41	59.7	0.995	0.834	0.725	0.369	0.889	11.1%
1949	D	2,975	9,814	3.335	1,719	1,256	0.58	0.42	63.4	0.973	0.889	0.754	0.560	0.925	7.5%
1950	B	3,042	10,067	3.344	1,757	1,285	0.58	0.42	59.7	0.972	0.838	0.752	0.347	0.884	10.6%
1951	A	3,583	9,092	2.575	2,139	1,424	0.60	0.40	60.2	0.966	0.814	0.724	0.326	0.876	12.4%
1952	W	10,823	8,773	0.813	2,830	7,992	0.26	0.74	57.1	0.771	0.717	0.675	0.129	0.757	24.3%
1953	W	2,857	9,764	3.456	1,641	1,218	0.57	0.43	57.1	0.974	0.803	0.760	0.179	0.876	12.4%
1954	A	3,949	10,386	2.651	2,363	1,587	0.60	0.40	60.2	0.963	0.823	0.709	0.392	0.879	12.1%
1955	D	2,286	9,008	3.966	1,276	1,010	0.56	0.44	63.4	0.980	0.895	0.786	0.509	0.933	6.7%
1956	W	4,790	10,386	2.183	2,932	1,858	0.61	0.39	57.1	0.955	0.738	0.668	0.211	0.822	17.8%
1957	A	2,708	10,184	3.808	1,526	1,180	0.56	0.44	60.2	0.975	0.857	0.788	0.382	0.908	9.2%
1958	W	14,907	9,663	0.650	4,056	10,851	0.27	0.73	57.1	0.885	0.880	0.586	0.174	0.878	32.2%
1959	B	2,218	8,470	3.873	1,246	972	0.56	0.44	59.7	0.981	0.844	0.786	0.265	0.904	9.6%
1960	D	2,269	6,857	3.085	1,326	941	0.59	0.41	63.4	0.982	0.869	0.782	0.399	0.918	8.4%
1961	D	1,697	7,932	4.762	909	788	0.54	0.46	63.4	0.987	0.897	0.812	0.454	0.939	6.1%
1962	B	4,218	10,487	2.505	2,542	1,676	0.60	0.40	59.7	0.980	0.808	0.696	0.366	0.888	13.2%
1963	W	5,361	10,117	1.888	3,327	2,034	0.62	0.38	57.1	0.949	0.711	0.640	0.197	0.802	19.8%
1964	D	2,168	9,008	4.218	1,196	972	0.55	0.45	63.4	0.981	0.898	0.791	0.509	0.935	6.5%
1965	W	6,958	9,932	1.434	4,414	2,544	0.63	0.37	57.1	0.934	0.645	0.563	0.188	0.751	24.9%
1966	B	2,454	9,986	4.115	1,362	1,092	0.56	0.45	59.7	0.978	0.855	0.780	0.342	0.910	9.0%
1967	W	13,613	8,722	0.642	3,709	9,904	0.27	0.73	57.1	0.713	0.662	0.613	0.126	0.699	30.1%
1968	B	2,370	8,470	3.623	1,349	1,021	0.57	0.43	59.7	0.980	0.839	0.781	0.285	0.900	10.0%
1969	W	20,923	7,495	0.359	6,079	14,844	0.29	0.71	57.1	0.565	0.480	0.445	0.083	0.540	46.0%
1970	W	4,017	8,470	2.126	2,464	1,552	0.61	0.39	57.1	0.964	0.735	0.701	0.113	0.824	17.6%
1971	W	2,891	10,386	3.633	1,645	1,245	0.57	0.43	57.1	0.973	0.810	0.760	0.211	0.880	12.0%
1972	B	1,983	9,646	4.943	1,052	931	0.53	0.47	59.9	0.983	0.857	0.802	0.278	0.916	8.4%
1973	A	6,571	10,117	1.547	4,147	2,424	0.63	0.37	59.2	0.936	0.716	0.582	0.320	0.798	20.2%
1974	W	7,647	10,100	1.326	1,751	5,895	0.23	0.77	56.9	0.834	0.798	0.752	0.185	0.825	17.5%
1975	W	6,821	10,386	1.578	4,173	2,449	0.63	0.37	53.7	0.937	0.585	0.580	0.012	0.715	28.5%
1976	C	1,982	7,613	4.114	1,044	838	0.55	0.45	57.8	0.985	0.824	0.802	0.110	0.898	10.4%
1977	C	1,529	9,008	6.014	784	786	0.50	0.50	62.0	0.987	0.898	0.822	0.427	0.943	5.7%
1978	A	14,957	8,872	0.581	4,134	10,823	0.28	0.72	61.4	0.886	0.739	0.583	0.375	0.701	29.9%
1979	B	5,327	9,846	1.822	3,318	2,009	0.62	0.38	60.5	0.950	0.774	0.641	0.372	0.841	15.9%
1980	A	6,722	8,554	1.279	4,295	2,427	0.64	0.36	60.1	0.936	0.697	0.571	0.293	0.784	21.6%
1981	D	2,807	9,784	3.519	1,607	1,200	0.57	0.43	64.5	0.974	0.909	0.762	0.618	0.937	6.3%
1982	W	27,023	8,974	0.332	7,900	19,123	0.29	0.71	52.8	0.437	0.315	0.315	0.000	0.401	59.9%
1983	W	20,736	8,958	0.336	6,054	14,684	0.29	0.71	57.2	0.570	0.470	0.448	0.042	0.541	45.9%
1984	W	3,860	9,646	2.644	2,202	1,478	0.60	0.40	60.7	0.988	0.827	0.720	0.364	0.863	11.7%
1985	D	2,470	10,335	4.238	1,362	1,108	0.55	0.45	62.5	0.977	0.895	0.780	0.524	0.932	6.8%
1986	W	9,798	7,714	0.790	2,575	7,223	0.26	0.74	61.3	0.794	0.792	0.694	0.320	0.793	20.7%
1987	D	2,033	5,092	2.544	1,220	813	0.60	0.40	62.3	0.986	0.841	0.790	0.245	0.899	10.1%
1988	C	1,786	2,067	1.170	1,150	648	0.64	0.36	62.1	0.991	0.811	0.795	0.079	0.878	12.4%
1989	D	2,067	11,075	5.441	1,067	1,000	0.52	0.48	64.1	0.980	0.931	0.801	0.655	0.955	4.5%
1990	C	1,785	6,621	3.821	993	771	0.56	0.44	60.6	0.987	0.849	0.808	0.224	0.910	9.0%
1991	C	2,454	10,991	4.536	1,332	1,122	0.54	0.46	60.6	0.977	0.879	0.782	0.446	0.924	7.6%
1992	C	2,269	9,898	4.425	1,238	1,030	0.55	0.45	60.6	0.980	0.871	0.788	0.391	0.920	8.0%

Year	MAY Vernalis Flows	CVP+SWP exports	exp/v-oct	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	Calculated Mortality m2	m34	m3	m4	m234	Calculated Survival s234	Weighted (April + June) total survival
1922	4,180	5,985	1.443	2,485	1,695	0.59	0.41	66.6	0.980	0.863	0.700	0.542	0.902	9.8%	13.2%
1923	3,399	5,985	1.777	1,983	1,418	0.58	0.42	66.0	0.958	0.870	0.736	0.507	0.911	8.9%	11.3%
1924	1,236	4,017	3.335	856	580	0.53	0.47	63.9	0.993	0.878	0.830	0.284	0.932	6.8%	9.9%
1925	2,867	5,985	2.271	1,512	1,155	0.57	0.43	67.3	0.976	0.904	0.769	0.583	0.935	6.5%	6.9%
1926	2,098	5,985	2.898	1,146	952	0.55	0.45	67.3	0.982	0.915	0.795	0.583	0.945	5.5%	6.2%
1927	3,318	5,985	1.821	1,931	1,387	0.58	0.42	64.2	0.969	0.844	0.739	0.402	0.898	10.4%	14.3%
1928	2,342	5,985	2.590	1,303	1,039	0.56	0.44	66.6	0.979	0.901	0.784	0.542	0.936	6.4%	9.7%
1929	1,513	4,375	2.954	822	691	0.54	0.46	63.9	0.990	0.873	0.818	0.302	0.926	7.4%	9.0%
1930	1,545	5,985	3.955	791	754	0.51	0.49	67.3	0.988	0.925	0.820	0.583	0.956	4.4%	5.2%
1931	1,220	4,326	3.641	635	584	0.52	0.48	63.9	0.993	0.882	0.831	0.300	0.935	6.5%	8.3%
1932	2,785	5,985	2.190	1,575	1,190	0.57	0.43	67.3	0.975	0.902	0.785	0.583	0.933	6.7%	13.7%
1933	1,756	4,472	2.593	976	781	0.56	0.44	63.9	0.987	0.866	0.807	0.307	0.920	8.0%	11.4%
1934	1,252	4,977	4.077	635	617	0.51	0.49	63.9	0.992	0.887	0.831	0.333	0.939	6.1%	9.7%
1935	6,086	5,985	0.992	3,698	2,368	0.61	0.39	66.0	0.939	0.810	0.614	0.507	0.880	14.0%	16.5%
1936	4,359	5,985	1.383	2,600	1,759	0.60	0.40	66.0	0.958	0.848	0.692	0.507	0.892	10.8%	14.7%
1937	8,132	5,985	0.739	2,160	5,971	0.27	0.73	66.0	0.831	0.863	0.723	0.507	0.840	16.0%	16.5%
1938	24,285	5,985	0.247	7,221	17,044	0.30	0.70	64.2	0.499	0.619	0.384	0.402	0.535	46.5%	43.8%
1939	1,952	4,993	2.600	1,084	867	0.56	0.44	67.3	0.984	0.906	0.799	0.532	0.941	5.9%	7.3%
1940	4,635	5,985	1.300	2,778	1,857	0.60	0.40	66.6	0.955	0.853	0.679	0.542	0.894	10.6%	14.0%
1941	9,579	5,985	0.627	2,614	6,965	0.27	0.73	64.2	0.802	0.815	0.691	0.402	0.805	19.5%	20.9%
1942	5,741	5,985	1.048	3,489	2,252	0.61	0.39	64.2	0.943	0.778	0.629	0.402	0.843	15.7%	20.0%
1943	6,184	5,985	0.978	3,761	2,403	0.61	0.39	64.2	0.938	0.786	0.606	0.402	0.833	16.7%	17.3%
1944	2,570	4,993	1.987	1,482	1,098	0.58	0.42	67.3	0.978	0.893	0.771	0.532	0.929	7.1%	7.8%
1945	4,180	5,855	1.411	2,499	1,690	0.60	0.40	66.0	0.960	0.850	0.700	0.500	0.864	10.6%	14.8%
1946	3,708	5,582	1.513	2,195	1,513	0.59	0.41	66.0	0.965	0.856	0.720	0.485	0.901	9.9%	12.4%
1947	1,675	4,993	3.036	907	789	0.54	0.46	67.3	0.987	0.912	0.812	0.532	0.947	5.3%	5.8%
1948	2,879	5,985	2.102	1,848	1,230	0.57	0.43	66.0	0.974	0.881	0.759	0.507	0.921	7.9%	9.4%
1949	2,212	5,985	2.745	1,219	982	0.55	0.45	67.3	0.981	0.912	0.790	0.583	0.943	5.7%	6.9%
1950	2,212	5,985	2.745	1,219	982	0.55	0.45	66.0	0.981	0.896	0.790	0.507	0.934	6.6%	8.4%
1951	2,862	5,985	2.114	1,638	1,225	0.57	0.43	66.6	0.974	0.890	0.760	0.542	0.926	7.4%	9.7%
1952	15,467	5,985	0.386	4,461	11,006	0.29	0.71	64.2	0.680	0.737	0.560	0.402	0.897	30.3%	27.6%
1953	2,277	5,985	2.666	1,261	1,016	0.55	0.45	64.2	0.980	0.872	0.787	0.402	0.920	8.0%	10.0%
1954	2,505	5,822	2.354	1,413	1,092	0.56	0.44	66.6	0.978	0.898	0.776	0.534	0.931	6.9%	9.2%
1955	1,964	4,993	2.557	1,105	879	0.56	0.44	67.3	0.984	0.905	0.798	0.532	0.940	6.0%	6.3%
1956	6,131	5,985	0.981	3,740	2,391	0.61	0.39	64.2	0.939	0.767	0.611	0.402	0.834	16.6%	17.1%
1957	2,423	5,985	2.502	1,355	1,058	0.56	0.44	66.6	0.978	0.899	0.780	0.542	0.934	6.6%	7.7%
1958	13,190	5,985	0.455	3,747	9,443	0.28	0.72	64.2	0.727	0.767	0.610	0.402	0.738	26.2%	26.9%
1959	1,594	4,993	3.198	854	740	0.54	0.46	66.0	0.986	0.900	0.816	0.456	0.941	5.9%	7.6%
1960	1,643	4,993	3.099	866	757	0.54	0.46	67.3	0.986	0.913	0.813	0.532	0.947	5.3%	6.7%
1961	1,269	4,993	4.036	645	624	0.51	0.49	67.3	0.992	0.921	0.831	0.532	0.956	4.4%	5.2%
1962	2,440	4,993	2.074	1,398	1,041	0.57	0.43	66.0	0.979	0.879	0.777	0.456	0.922	7.8%	10.2%
1963	4,163	5,985	1.448	2,475	1,689	0.59	0.41	64.2	0.960	0.821	0.701	0.402	0.877	12.3%	16.7%
1964	1,708	4,993	2.979	927	780	0.54	0.46	67.3	0.987	0.911	0.810	0.532	0.946	5.4%	6.9%
1965	4,326	5,985	1.394	2,579	1,747	0.60	0.40	64.2	0.958	0.816	0.693	0.402	0.874	12.6%	18.2%
1966	1,870	4,993	2.715	1,032	838	0.55	0.45	66.0	0.985	0.893	0.803	0.456	0.934	6.6%	7.7%
1967	18,003	5,985	0.375	4,630	11,373	0.29	0.71	64.2	0.689	0.729	0.548	0.402	0.887	31.3%	30.8%
1968	1,740	4,993	2.922	948	792	0.54	0.46	66.0	0.987	0.898	0.809	0.456	0.937	5.3%	8.0%
1969	26,217	5,985	0.229	7,834	18,383	0.30	0.70	66.4	0.459	0.681	0.320	0.530	0.525	47.5%	46.8%
1970	3,074	5,985	1.967	1,774	1,300	0.58	0.42	61.2	0.971	0.807	0.750	0.228	0.876	12.4%	14.7%
1971	2,358	5,985	2.572	1,314	1,045	0.56	0.44	64.2	0.979	0.870	0.783	0.402	0.918	8.2%	9.9%
1972	1,464	4,993	3.456	771	693	0.53	0.47	68.0	0.990	0.903	0.822	0.456	0.944	5.6%	6.9%
1973	5,448	5,985	1.105	3,301	2,147	0.61	0.39	66.3	0.946	0.830	0.642	0.525	0.876	12.4%	16.9%
1974	5,418	5,985	1.112	3,260	2,138	0.61	0.39	66.1	0.946	0.826	0.643	0.513	0.874	12.6%	14.6%
1975	4,651	5,985	1.296	2,788	1,863	0.60	0.40	61.5	0.955	0.757	0.678	0.244	0.836	16.4%	21.8%
1976	1,366	4,359	3.266	728	638	0.53	0.47	65.8	0.991	0.897	0.825	0.412	0.941	5.9%	7.9%
1977	1,269	3,867	3.142	661	588	0.54	0.46	62.3	0.993	0.860	0.828	0.184	0.921	7.9%	6.9%
1978	10,864	5,985	0.553	3,018	7,846	0.28	0.72	66.9	0.775	0.851	0.662	0.560	0.798	20.4%	24.7%
1979	4,062	5,985	1.478	2,422	1,660	0.59	0.41	66.0	0.961	0.854	0.704	0.507	0.898	10.2%	12.8%
1980	6,635	5,985	0.906	4,064	2,571	0.61	0.39	66.6	0.933	0.811	0.588	0.542	0.859	14.1%	17.9%
1981	1,822	5,497	3.071	964	837	0.54	0.46	68.7	0.985	0.930	0.806	0.640	0.956	4.4%	5.3%
1982	15,158	5,985	0.396	4,364	10,793	0.29	0.71	65.1	0.687	0.763	0.586	0.454	0.709	29.1%	43.0%
1983	19,077	5,985	0.314	5,594	13,483	0.29	0.71	61.3	0.606	0.600	0.479	0.232	0.804	39.6%	42.4%
1984	2,848	5,985	2.126	1,627	1,219	0.57	0.43	66.0	0.974	0.862	0.761	0.507	0.921	7.9%	9.6%
1985	1,805	4,993	2.815	990	815	0.55	0.45	65.1	0.986	0.884	0.808	0.404	0.930	7.0%	8.9%
1986	8,087	5,985	0.745	2,140	5,927	0.27	0.73	65.8	0.833	0.861	0.724	0.495	0.840	16.0%	18.1%
1987	1,447	4,993	3.528	760	687	0.53	0.47	68.6	0.990	0.930	0.822	0.609	0.959	4.1%	6.8%
1988	1,334	4,977	3.822	687	646	0.52	0.48	63.7	0.991	0.883	0.828	0.321	0.935	6.5%	9.1%
1989	1,498	5,985	4.066	759	737	0.51	0.49	68.7	0.988	0.920	0.822	0.548	0.954	4.6%	4.6%
1990	1,265	5,009	3.967	655	630	0.51	0.49	63.9	0.992	0.867	0.830	0.334	0.938	6.2%	7.5%
1991	1,659	5,204	3.198	869	770	0.54	0.46	63.9	0.987	0.878	0.813	0.344	0.928	7.2%	7.4%
1992	1,480	4,131	2.852	809	671	0.55	0.45	63.9	0.990	0.871	0.819	0.290	0.925	7.5%	7.7%
														Average:	13.60%

Calculations- San Joaquin River Fall Run Smolt Survival Model WITH BARRIER

C8 ='Study 467 Flow Data'!AB7
D8 ='Study 467 Flow Data'!G7 (HIDDEN)
E8 ='Study 467 Flow Data'!Q7 (HIDDEN)
F8 =D8+E8
G8 =F8/(C8-0.03*$R$2)
H8 =IF(C8<$R$1,(0.47*(0.3137*C8-0.0156*$R$2-0.0625*F8)+0.53*C8),(0.3137*C8-0.0156*$R$2-0.0625*F8))
I8 =C8-H8
J8 =H8/C8
K8 =I8/C8
M8 =(1.01045-0.00003*I8)
N8 =(O8+P8)-(O8*P8)
O8 =IF((0.87634-0.000071*H8)<0,0,(0.87634-0.000071*H8))
P8 =IF((-3.65867+0.058492*L8+0.000051*F8)<0,0,(-3.65867+0.058492*L8+0.000051*F8))
Q8 =((K8*M8)+(J8*N8))
R8 =(1-Q8)

T8 ='Study 467 Flow Data'!AC7
U8 ='Study 467 Flow Data'!H7 (HIDDEN)
V8 ='Study 467 Flow Data'!R7 (HIDDEN)
W8 =U8+V8
X8 =W8/(T8-0.03*$R$3)
Y8 =IF(T8<$R$1,(0.52*(0.3137*T8-0.0156*$R$3-0.0625*W8)+0.48*T8),(0.3137*T8-0.0156*$R$3-0.0625*W8))
Z8 =T8-Y8
AA8 =Y8/T8
AB8 =Z8/T8
AD8 =(1.01045-0.00003*Z8)
AE8 =(AF8+AG8)-(AF8*AG8)
AF8 =IF((0.87634-0.000071*Y8)<0,0,(0.87634-0.000071*Y8))
AG8 =IF((-3.65867+0.058492*AC8+0.000051*W8)<0,0,(-3.65867+0.058492*AC8+0.000051*W8))
AH8 =((AB8*AD8)+(AA8*AE8))
AI8 =(1-AH8)
AK8 =0.45*G94+0.55*AI8

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Study: Joaquin River Fall Run Salmon Smolt Survival Model WITHOUT BARRIER AT HEAD OF OLD RIVER

Consumptive Depletion for April 1053.00 cfs

Consumptive Depletion for May 1053.00 cfs

San Joaquin River temperatures based on limited historical data from USBR

APRIL Year	Water Year Type	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton Q	OldR Flo	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survivability s234
1922	A	5,897	9,546	1.695	1,174	4,523	0.21	0.79	60.2	0.875	0.865	0.793	0.349	0.873	12.7%
1923	B	4,487	10,100	2.267	760	3,727	0.17	0.83	59.7	0.899	0.864	0.822	0.348	0.898	10.4%
1924	C	1,897	571	0.343	460	1,217	0.28	0.72	60.6	0.974	0.842	0.842	0.000	0.937	6.3%
1925	D	3,566	11,226	3.149	410	3,186	0.11	0.89	63.4	0.915	0.942	0.847	0.622	0.918	8.2%
1926	D	3,092	10,739	3.509	282	2,810	0.09	0.91	63.4	0.926	0.942	0.856	0.597	0.926	7.2%
1927	W	4,941	9,764	1.989	923	4,018	0.19	0.81	57.1	0.860	0.845	0.811	0.179	0.881	11.9%
1928	A	4,470	10,083	2.272	756	3,715	0.17	0.83	60.2	0.899	0.889	0.823	0.377	0.897	10.3%
1929	C	2,033	5,365	2.605	284	1,749	0.14	0.86	60.6	0.958	0.879	0.856	0.161	0.947	5.3%
1930	D	2,188	9,344	4.374	80	2,088	0.04	0.96	63.4	0.948	0.939	0.871	0.526	0.947	5.3%
1931	C	1,897	4,289	2.728	218	1,379	0.14	0.86	60.6	0.969	0.875	0.861	0.104	0.958	4.4%
1932	D	4,821	538	0.120	1,368	3,153	0.30	0.70	63.4	0.916	0.786	0.779	0.077	0.860	12.8%
1933	C	2,302	1,785	0.777	598	1,707	0.26	0.74	60.6	0.959	0.834	0.834	0.000	0.927	7.3%
1934	C	1,832	689	0.383	515	1,317	0.28	0.72	60.6	0.971	0.840	0.840	0.000	0.934	6.6%
1935	B	7,243	11,142	1.545	1,558	5,684	0.22	0.78	59.7	0.840	0.880	0.786	0.402	0.844	15.6%
1936	B	6,420	9,781	1.531	1,386	5,034	0.22	0.78	59.7	0.859	0.852	0.778	0.332	0.858	14.2%
1937	B	7,932	9,579	1.212	1,873	6,059	0.24	0.76	59.7	0.829	0.826	0.743	0.322	0.828	17.2%
1938	W	18,049	7,714	0.428	5,163	12,886	0.29	0.71	57.1	0.824	0.546	0.510	0.075	0.602	39.8%
1939	D	2,891	7,983	2.762	391	2,499	0.14	0.86	63.4	0.935	0.918	0.849	0.457	0.933	6.7%
1940	A	6,470	10,285	1.597	1,370	5,100	0.21	0.79	60.2	0.857	0.865	0.779	0.367	0.859	14.1%
1941	W	10,083	9,310	0.926	2,585	7,519	0.25	0.75	57.1	0.785	0.742	0.694	0.156	0.774	22.6%
1942	W	6,907	9,648	1.403	1,547	5,360	0.22	0.78	57.1	0.850	0.807	0.766	0.173	0.840	16.8%
1943	W	7,815	9,663	1.226	1,863	6,053	0.24	0.76	57.1	0.829	0.769	0.744	0.174	0.819	18.1%
1944	D	3,428	9,579	2.820	460	2,968	0.13	0.87	63.4	0.921	0.928	0.844	0.536	0.922	7.8%
1945	B	6,537	9,764	1.501	1,424	5,113	0.22	0.78	59.7	0.857	0.850	0.775	0.331	0.855	14.5%
1946	B	4,924	10,100	2.064	897	4,027	0.18	0.82	59.7	0.890	0.878	0.813	0.348	0.888	11.2%
1947	D	2,252	10,134	4.564	57	2,195	0.03	0.97	63.4	0.945	0.945	0.872	0.567	0.945	5.5%
1948	B	3,647	11,082	3.088	434	3,212	0.12	0.88	59.7	0.914	0.907	0.846	0.399	0.913	8.7%
1949	D	2,975	9,814	3.335	303	2,671	0.10	0.90	63.4	0.930	0.935	0.855	0.550	0.931	6.9%
1950	B	3,042	10,057	3.344	309	2,733	0.10	0.90	59.7	0.928	0.905	0.854	0.347	0.928	7.4%
1951	A	3,983	9,092	2.575	333	3,030	0.15	0.85	60.2	0.920	0.891	0.838	0.326	0.915	8.5%
1952	W	10,823	8,773	0.813	2,830	7,992	0.26	0.74	57.1	0.771	0.717	0.675	0.129	0.757	24.3%
1953	W	2,857	9,784	3.456	270	2,587	0.09	0.91	57.1	0.933	0.863	0.857	0.179	0.928	7.2%
1954	A	3,949	10,386	2.651	573	3,376	0.15	0.85	60.2	0.909	0.900	0.836	0.362	0.908	9.2%
1955	D	2,286	9,008	3.996	136	2,149	0.06	0.94	63.4	0.946	0.935	0.867	0.509	0.945	5.5%
1956	W	4,790	10,386	2.183	637	3,953	0.17	0.83	57.1	0.862	0.858	0.817	0.211	0.886	11.4%
1957	A	2,706	10,184	3.808	196	2,510	0.07	0.93	60.2	0.935	0.915	0.862	0.382	0.934	6.6%
1958	W	14,907	9,663	0.650	4,056	10,851	0.27	0.73	57.1	0.685	0.660	0.588	0.174	0.678	32.2%
1959	B	2,218	8,470	3.873	150	2,068	0.07	0.93	59.7	0.948	0.901	0.866	0.285	0.945	6.5%
1960	D	2,289	6,857	3.085	267	2,002	0.12	0.88	63.4	0.950	0.914	0.857	0.399	0.946	6.4%
1961	D	1,897	7,932	4.762	20	1,877	0.01	0.99	63.4	0.960	0.932	0.875	0.454	0.960	4.0%
1962	B	4,218	10,487	2.505	651	3,567	0.15	0.85	59.7	0.903	0.893	0.830	0.398	0.902	9.8%
1963	W	5,351	10,117	1.898	1,033	4,328	0.19	0.81	57.1	0.881	0.842	0.803	0.197	0.873	12.7%
1964	D	2,188	9,008	4.216	101	2,087	0.05	0.95	63.4	0.948	0.936	0.869	0.509	0.948	5.2%
1965	W	6,958	9,932	1.434	1,545	5,412	0.22	0.78	57.1	0.848	0.810	0.767	0.188	0.840	16.0%
1966	B	2,454	9,986	4.115	130	2,323	0.05	0.95	59.7	0.941	0.912	0.867	0.342	0.938	6.1%
1967	W	13,813	8,722	0.842	3,709	9,904	0.27	0.73	57.1	0.713	0.662	0.613	0.126	0.698	30.1%
1968	B	2,370	8,470	3.623	198	2,172	0.08	0.92	59.7	0.945	0.899	0.862	0.265	0.941	6.9%
1969	W	20,823	7,495	0.359	6,079	14,844	0.29	0.71	57.1	0.565	0.480	0.445	0.063	0.540	46.0%
1970	W	4,017	8,470	2.126	714	3,302	0.18	0.82	57.1	0.911	0.845	0.826	0.113	0.900	10.0%
1971	W	2,891	10,386	3.633	241	2,649	0.08	0.92	57.1	0.931	0.889	0.859	0.211	0.927	7.3%
1972	B	1,983	9,648	4.943	3	1,980	0.00	1.00	58.9	0.951	0.911	0.878	0.278	0.951	4.9%
1973	A	8,571	10,117	1.547	1,413	5,158	0.21	0.79	59.2	0.856	0.846	0.776	0.320	0.854	14.6%
1974	W	7,647	10,100	1.326	1,751	5,895	0.23	0.77	58.9	0.834	0.798	0.752	0.185	0.825	17.5%
1975	W	6,821	10,386	1.576	1,412	5,210	0.21	0.79	53.7	0.854	0.779	0.778	0.012	0.838	16.2%
1976	C	1,882	7,613	4.114	98	1,784	0.05	0.95	57.8	0.957	0.864	0.869	0.110	0.953	4.7%
1977	C	1,529	9,008	6.014	0	1,529	0.00	1.00	62.0	0.965	0.929	0.878	0.427	0.965	3.5%
1978	A	14,957	8,672	0.581	4,134	10,823	0.28	0.72	61.4	0.688	0.739	0.583	0.375	0.701	29.9%
1979	B	5,327	9,646	1.822	1,052	4,275	0.20	0.80	60.5	0.882	0.875	0.802	0.372	0.881	11.9%
1980	A	6,722	8,554	1.279	1,558	5,165	0.23	0.77	60.1	0.856	0.834	0.768	0.293	0.851	14.9%
1981	D	2,807	9,764	3.519	254	2,553	0.09	0.91	64.6	0.934	0.945	0.858	0.618	0.935	6.5%
1982	W	27,023	6,974	0.332	7,900	19,123	0.29	0.71	52.8	0.437	0.315	0.315	0.000	0.401	59.9%
1983	W	20,736	6,956	0.336	6,054	14,684	0.29	0.71	57.2	0.570	0.470	0.446	0.042	0.541	46.9%
1984	W	3,880	9,646	2.644	535	3,145	0.15	0.85	60.7	0.916	0.900	0.838	0.384	0.914	8.6%
1985	D	2,470	10,335	4.236	113	2,358	0.05	0.95	62.5	0.940	0.937	0.868	0.524	0.940	6.0%
1986	W	9,798	7,714	0.790	2,575	7,223	0.26	0.74	61.3	0.794	0.792	0.694	0.320	0.793	20.7%
1987	D	2,033	5,092	2.544	303	1,730	0.15	0.85	62.3	0.959	0.890	0.855	0.245	0.948	5.2%
1988	C	1,798	2,067	1.170	418	1,380	0.23	0.77	62.1	0.969	0.859	0.847	0.079	0.943	5.7%
1989	D	2,087	11,075	5.441	0	2,067	0.00	1.00	64.1	0.948	0.957	0.876	0.655	0.948	5.2%
1990	C	1,785	6,821	3.821	123	1,641	0.07	0.93	60.6	0.961	0.867	0.868	0.224	0.957	4.3%
1991	C	2,454	10,991	4.538	66	2,387	0.03	0.97	60.6	0.939	0.929	0.872	0.446	0.939	6.1%
1992	C	2,269	9,898	4.425	77	2,192	0.03	0.97	60.6	0.945	0.921	0.871	0.391	0.944	5.8%

MAY Year	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	Calculated Mortality m2	m34	m3	m4	m234	Calculated Survivability s234	Weighted total survival
1922	4,180	5,985	1.443	921	3259	0.22	0.78	66.6	0.913	0.913	0.811	0.542	0.913	8.7%	10.6%
1923	3,399	5,985	1.777	676	2723	0.20	0.80	66.0	0.929	0.915	0.828	0.507	0.926	7.4%	8.7%
1924	1,236	4,017	3.335	120	1116	0.10	0.90	63.9	0.977	0.905	0.868	0.284	0.970	3.9%	4.6%
1925	2,867	5,985	2.271	446	2221	0.17	0.83	67.3	0.944	0.935	0.845	0.583	0.942	6.8%	6.9%
1926	2,098	5,985	2.896	268	1830	0.13	0.87	67.3	0.958	0.941	0.857	0.583	0.954	4.8%	6.8%
1927	3,318	5,985	1.821	680	2667	0.20	0.80	64.2	0.930	0.898	0.830	0.402	0.924	7.8%	9.6%
1928	2,342	5,985	2.590	344	1998	0.15	0.85	66.6	0.951	0.932	0.852	0.542	0.946	5.2%	7.5%
1929	1,513	4,376	2.954	185	1328	0.12	0.88	63.9	0.971	0.905	0.863	0.302	0.963	3.7%	4.4%
1930	1,545	5,985	3.955	94	1451	0.06	0.94	67.3	0.967	0.946	0.870	0.583	0.966	3.4%	4.3%
1931	1,220	4,326	3.641	96	1124	0.08	0.92	63.9	0.977	0.909	0.870	0.300	0.971	2.9%	3.6%
1932	2,765	5,985	2.190	477	2288	0.17	0.83	67.3	0.942	0.934	0.842	0.583	0.941	6.9%	8.7%
1933	1,756	4,472	2.593	256	1501	0.15	0.85	63.9	0.965	0.902	0.858	0.307	0.956	4.4%	5.7%
1934	1,252	4,977	4.077	85	1167	0.05	0.95	63.9	0.975	0.914	0.872	0.333	0.972	2.8%	4.5%
1935	6,086	5,985	0.992	1,513	4554	0.25	0.75	66.0	0.874	0.886	0.769	0.507	0.877	12.3%	13.8%
1936	4,359	5,985	1.383	977	3382	0.22	0.78	66.0	0.909	0.905	0.807	0.507	0.908	9.2%	11.5%
1937	6,132	5,985	0.739	2,160	5971	0.27	0.73	66.0	0.831	0.863	0.723	0.507	0.840	16.0%	16.5%
1938	24,285	5,985	0.247	7,221	17044	0.30	0.70	64.2	0.469	0.619	0.364	0.402	0.535	46.5%	43.5%
1939	1,952	4,983	2.600	264	1688	0.15	0.85	67.3	0.960	0.933	0.856	0.532	0.956	4.4%	6.4%
1940	4,635	5,985	1.300	1,064	3572	0.23	0.77	66.6	0.903	0.909	0.801	0.542	0.905	9.5%	11.8%
1941	9,579	5,985	0.627	2,814	6985	0.27	0.73	64.2	0.802	0.815	0.691	0.402	0.805	19.5%	20.9%
1942	5,741	5,985	1.048	1,410	4331	0.25	0.75	64.2	0.881	0.866	0.776	0.402	0.877	12.3%	14.0%
1943	6,184	5,985	0.978	1,543	4621	0.25	0.75	64.2	0.872	0.860	0.767	0.402	0.869	13.1%	16.3%
1944	2,570	4,983	1.987	478	2092	0.19	0.81	67.3	0.946	0.926	0.842	0.532	0.944	5.8%	8.6%
1945	4,180	5,855	1.411	929	3251	0.22	0.78	66.0	0.913	0.905	0.810	0.500	0.911	8.9%	11.4%
1946	3,708	5,562	1.513	699	2909	0.22	0.78	66.0	0.923	0.907	0.820	0.485	0.920	8.0%	9.8%
1947	1,675	4,983	3.038	197	1478	0.12	0.88	67.3	0.966	0.936	0.862	0.532	0.963	3.7%	4.6%
1948	2,879	5,985	2.102	513	2366	0.18	0.82	66.0	0.939	0.921	0.840	0.507	0.936	6.4%	7.4%
1949	2,212	5,985	2.745	303	1908	0.14	0.86	67.3	0.953	0.939	0.855	0.583	0.951	4.9%	5.8%
1950	2,212	5,985	2.745	303	1908	0.14	0.86	66.0	0.953	0.928	0.855	0.507	0.950	5.0%	6.1%
1951	2,862	5,985	2.114	507	2355	0.18	0.82	66.6	0.940	0.927	0.840	0.542	0.938	6.2%	7.3%
1952	15,467	5,985	0.388	4,461	11005	0.29	0.71	64.2	0.680	0.737	0.580	0.402	0.697	30.3%	27.8%
1953	2,277	5,985	2.666	324	1953	0.14	0.86	64.2	0.952	0.912	0.853	0.402	0.946	5.4%	6.2%
1954	2,505	5,822	2.354	405	2099	0.16	0.84	66.6	0.947	0.929	0.848	0.534	0.944	5.6%	7.2%
1955	1,984	4,983	2.557	284	1690	0.15	0.85	67.3	0.960	0.932	0.855	0.532	0.956	4.4%	4.9%
1956	6,131	5,985	0.961	1,533	4598	0.25	0.75	64.2	0.872	0.861	0.768	0.402	0.870	13.0%	12.3%
1957	2,423	5,985	2.502	370	2054	0.15	0.85	66.6	0.949	0.931	0.850	0.542	0.946	5.4%	5.9%
1958	13,190	5,985	0.455	3,747	9443	0.28	0.72	64.2	0.727	0.767	0.610	0.402	0.738	26.2%	28.9%
1959	1,594	4,983	3.196	171	1422	0.11	0.89	66.0	0.968	0.928	0.864	0.456	0.963	3.7%	4.6%
1960	1,643	4,983	3.099	187	1456	0.11	0.89	67.3	0.967	0.936	0.863	0.532	0.963	3.7%	4.4%
1961	1,269	4,983	4.036	89	1199	0.05	0.95	67.3	0.974	0.940	0.871	0.532	0.973	2.7%	3.3%
1962	2,440	4,983	2.074	437	2003	0.18	0.82	66.0	0.950	0.918	0.845	0.456	0.944	5.6%	7.5%
1963	4,163	5,985	1.448	916	3248	0.22	0.78	64.2	0.913	0.887	0.811	0.402	0.907	8.3%	10.8%
1964	1,708	4,983	2.979	207	1500	0.12	0.88	67.3	0.965	0.935	0.862	0.532	0.962	3.9%	4.4%
1965	4,326	5,985	1.384	967	3359	0.22	0.78	64.2	0.910	0.885	0.808	0.402	0.904	8.9%	12.6%
1966	1,870	4,983	2.715	258	1612	0.14	0.86	66.0	0.962	0.923	0.858	0.456	0.957	4.3%	6.1%
1967	18,003	5,985	0.375	4,830	11373	0.29	0.71	64.2	0.669	0.729	0.548	0.402	0.687	31.3%	30.8%
1968	1,740	4,983	2.922	217	1523	0.12	0.88	66.0	0.965	0.924	0.881	0.456	0.960	4.0%	4.9%
1969	26,217	5,985	0.229	7,834	18383	0.30	0.70	66.4	0.459	0.681	0.320	0.530	0.525	47.5%	46.8%
1970	3,074	5,985	1.947	574	2500	0.19	0.81	61.2	0.935	0.873	0.836	0.226	0.924	7.6%	8.7%
1971	2,358	5,985	2.572	349	2009	0.15	0.85	64.2	0.950	0.911	0.852	0.402	0.944	5.6%	6.3%
1972	1,464	4,983	3.466	131	1333	0.09	0.91	66.0	0.970	0.928	0.867	0.456	0.967	3.3%	4.0%
1973	5,448	5,985	1.105	1,319	4130	0.24	0.76	66.3	0.867	0.897	0.783	0.525	0.889	11.1%	12.7%
1974	5,416	5,985	1.112	1,308	4107	0.24	0.76	66.1	0.867	0.895	0.783	0.513	0.889	11.1%	14.0%
1975	4,651	5,985	1.296	1,069	3583	0.23	0.77	61.5	0.903	0.849	0.800	0.244	0.891	10.8%	13.3%
1976	1,366	4,359	3.266	140	1226	0.10	0.90	65.8	0.974	0.922	0.866	0.412	0.968	3.2%	3.9%
1977	1,269	3,887	3.142	139	1130	0.11	0.89	62.3	0.977	0.891	0.867	0.184	0.967	3.3%	3.4%
1978	10,864	5,985	0.553	3,018	7846	0.28	0.72	66.9	0.775	0.851	0.682	0.580	0.796	28.4%	24.7%
1979	4,082	5,985	1.478	860	3192	0.22	0.78	66.0	0.915	0.908	0.813	0.507	0.913	8.7%	10.1%
1980	6,535	5,985	0.906	1,891	4944	0.25	0.75	66.6	0.862	0.888	0.756	0.542	0.869	13.1%	13.9%
1981	1,822	5,497	3.071	211	1610	0.12	0.88	68.7	0.962	0.950	0.861	0.640	0.961	3.9%	6.1%
1982	15,158	5,985	0.395	4,364	10793	0.29	0.71	65.1	0.687	0.763	0.566	0.454	0.709	28.1%	43.0%
1983	19,077	5,985	0.314	5,594	13483	0.29	0.71	61.3	0.606	0.600	0.479	0.232	0.604	39.8%	42.4%
1984	2,846	5,985	2.128	502	2344	0.18	0.82	66.0	0.940	0.921	0.841	0.507	0.937	6.3%	7.4%
1985	1,805	4,983	2.815	238	1567	0.13	0.87	65.1	0.963	0.916	0.859	0.404	0.957	4.3%	6.1%
1986	8,087	5,985	0.745	2,140	5927	0.27	0.73	65.8	0.833	0.861	0.724	0.485	0.840	16.0%	18.1%
1987	1,447	4,983	3.526	128	1322	0.09	0.91	68.8	0.971	0.948	0.867	0.609	0.969	3.1%	4.0%
1988	1,334	4,977	3.822	91	1243	0.07	0.93	63.7	0.973	0.912	0.870	0.321	0.969	3.1%	4.3%
1989	1,498	5,985	4.066	79	1417	0.05	0.95	66.7	0.968	0.942	0.871	0.548	0.967	3.3%	4.2%
1990	1,285	5,009	3.997	74	1211	0.06	0.94	63.9	0.974	0.914	0.871	0.334	0.971	2.9%	3.6%
1991	1,659	5,204	3.198	179	1480	0.11	0.89	63.9	0.966	0.911	0.864	0.344	0.960	4.0%	5.0%
1992	1,480	4,131	2.852	190	1290	0.13	0.87	63.9	0.972	0.903	0.863	0.290	0.963	3.7%	4.6%

Average: 11.06%

Formulas: San Joaquin River Fall Run Smolt Survival Model WITHOUT BARRIER

C7 ='Study 467 Flow Data'!AB7

D7 ='Study 467 Flow Data'!G7 (HIDDEN)

E7 ='Study 467 Flow Data'!Q7 (HIDDEN)

F7 =D7+E7

G7 =F7/(C7-0.03*$H$2)

H7 =IF((0.3137*C7-0.0156*$H$2-0.0625*F7)<0,0,(0.3137*C7-0.0156*$H$2-0.0625*F7))

I7 =C7-H7

J7 =H7/C7

K7 =I7/C7

M7 =(1.01045+0.00003*I7)

N7 =(O7+P7)-(O7*P7)

O7 =(0.87634-0.000071*H7)

P7 =IF((-3.65867+0.058492*L7+0.000051*F7)<0,0,(-3.65867+0.058492*L7+0.000051*F7))

Q7 =((K7*M7)+(J7*N7))

R7 =(1-Q7)

T7 ='Study 467 Flow Data'!AC7

U7 ='Study 467 Flow Data'!H (HIDDEN)

V7 ='Study 467 Flow Data'!R (HIDDEN)

W7 =U7+V7

X7 =W7/(T7-0.03*$H$3)

Y7 =IF((0.3137*T7-0.0156*$H$3-0.0625*W7)<0,0,(0.3137*T7-0.0156*$H$3-0.0625*W7))

Z7 =T7-Y7

AA7 =Y7/T7

AB7 =Z7/T7

AD7 =(1.01045-0.00003*Z7)

AE7 =(AF7+AG7)-(AF7*AG7)

AF7 =(0.87634-0.000071*Y7)

AG7 =IF((-3.65867+0.058492*AC7+0.000051*W7)<0,0,(-3.65867+0.058492*AC7+0.000051*W7))

AH7 =((AB7*AD7)+(AA7*AE7))

AI7 =(1-AH7)

AK7 =0.45*R7+0.55*AI7

C-032352

C—032352

STUDY: 1995C6F-SWRCB-467 DWRSIM: recirc818-f, 17 Jun 97
CVP, CVP EXPORT AT TRACY PP (converted from TAF to CFS)

Project: /1995C6F-SWRCB-467/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	3887	4386	2992	3008
1923	4302	4212	4212	4285	4228	4605	2992	3008
1924	4302	4212	4212	4085	4228	403	2147	1697
1925	1832	3871	1610	4231	4228	4605	2992	3008
1926	3832	4212	4212	4231	4228	4470	2992	2991
1927	4252	4212	4212	3277	3464	4605	2992	3008
1928	4302	4212	4212	4103	4228	4588	2992	3008
1929	4285	4212	4212	4249	3220	2101	2374	2470
1930	2470	4212	4212	4249	4228	4218	2992	3008
1931	4269	3432	4212	3781	1984	2840	2326	1412
1932	1681	4212	4212	4103	4228	319	2992	3008
1933	3092	2992	4212	4231	3919	891	2456	2554
1934	1664	3334	3936	4231	4228	269	2976	3008
1935	3008	2261	4212	1386	4228	4521	2992	3008
1936	4285	4212	4212	4103	4228	4605	2992	3008
1937	4302	4212	4212	4231	4228	4605	2992	3008
1938	4302	4212	4212	4285	3627	3344	2992	3008
1939	4302	4212	4212	4249	3610	4235	2992	3008
1940	2907	2423	4212	4103	4228	4605	2992	2991
1941	4302	4212	4212	4285	4228	4605	2992	3008
1942	4302	4212	4212	4285	4228	4605	2992	3008
1943	4302	4212	4212	4285	4228	4605	2992	823
1944	4302	4212	4212	4103	4228	4538	2992	3008
1945	4269	4212	4212	4231	3350	4605	2992	3008
1946	4302	4212	4212	4285	4228	4605	2976	3008
1947	4302	4212	4212	4249	4228	4554	2992	3008
1948	4269	3919	2797	4085	3188	4470	2992	3008
1949	4285	4212	4212	4249	4228	4605	2992	3008
1950	4285	4212	4212	4249	4228	4605	2992	3008
1951	4285	4212	4212	4285	4228	4605	2992	3008
1952	4302	4212	4212	4138	4228	4605	2992	3008
1953	4285	4212	4212	4285	4228	4605	2992	3008
1954	4302	4212	4212	4285	4228	4605	2992	3008
1955	4285	4212	4212	4267	4228	4605	2992	3008
1956	4285	4212	4212	4138	3578	4605	2992	3008
1957	4302	4212	4212	4249	4228	4605	2992	3008
1958	4285	4212	4212	4267	4228	4605	2992	3008
1959	4302	4212	4212	4267	4228	4605	2992	3008
1960	4285	4212	4212	4085	3610	4151	2992	3008
1961	4269	4212	4212	2647	2879	4235	2992	3008
1962	4269	4212	4212	4249	4228	4605	2992	3008
1963	4302	4212	4212	4285	4228	4605	2992	3008
1964	4302	4212	4212	4120	4228	4521	2992	3008
1965	4269	4212	4212	4267	3610	4521	2992	3008
1966	4302	4212	4212	4285	4228	4588	2992	3008
1967	4285	4212	4212	4285	4228	3781	2992	3008
1968	4302	4212	4212	4138	3627	4605	2992	3008
1969	4285	4212	4212	4285	3480	3328	2992	3008
1970	4302	4212	4212	3799	3220	4605	2992	3008
1971	4302	4212	4212	4285	4228	4605	2992	3008
1972	4285	4212	4212	4120	4228	4605	2992	3008
1973	4285	4212	4212	4267	4228	4605	2992	2017
1974	4302	4212	4212	4267	4228	4605	2992	3008
1975	4285	4212	4212	4249	4228	4605	2992	3008
1976	4302	4212	4212	4103	4228	2807	2358	2454
1977	2622	1870	797	3133	1984	2941	2391	101
1978	1227	2732	4212	4267	4228	4605	2992	3008
1979	4285	4212	4212	4249	4228	4605	2992	3008
1980	4302	4212	4212	4103	4228	4605	2992	3008
1981	4302	4212	4212	4267	4228	4605	2992	3008
1982	4285	4212	4212	4285	4228	3412	2992	3008
1983	4302	4212	4212	4285	2049	3311	2992	3008
1984	4302	4212	1626	1565	3415	4605	2992	3008
1985	4302	4212	4212	4249	4228	4554	2992	3008
1986	4000	4212	4212	4249	2098	2538	2992	3008
1987	4269	4212	2179	1494	2586	1176	2992	3008
1988	4235	4212	4212	4103	2683	605	2976	3008
1989	4087	3188	2342	4231	4228	4453	2992	2773
1990	4252	4212	2765	1531	2602	3445	2651	2756
1991	2386	2781	976	3961	4228	4369	2992	3008
1992	2504	2505	2440	4085	3887	3815	2651	2756

STUDY: 1995C6F-SWRCB-467 DWRSIM: recirc818-f, 17 Jun 97
SWP, SWP EXPORT AT BANKS PP (converted from TAF to CFS)

Project: /1995C6F-SWRCB-467/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	3227	7107	7579	7220	4147	5159	2992	3008
1923	6672	7091	3643	4375	4424	5495	2992	2000
1924	4706	6944	6310	6989	3058	168	1870	2000
1925	3714	4635	1561	7581	5855	6621	2992	2000
1926	3075	2814	6635	7635	6977	6268	2992	2000
1927	6672	7042	7286	8499	4147	5159	2992	2000
1928	6672	7075	3643	4225	4424	5495	2992	2000
1929	6672	6928	4489	7220	4359	3294	2000	2000
1930	2823	6782	7156	7238	4716	5126	2992	2000
1931	5092	3058	2716	7202	5725	1428	2000	2000
1932	2840	7188	7823	8206	4391	218	2992	2151
1933	2605	2407	3789	7364	7026	874	2017	2000
1934	2504	5965	5757	7508	6635	420	2000	2000
1935	4672	2635	7660	3673	7270	6621	2992	2000
1936	5495	6944	7449	7528	4163	5176	2992	2000
1937	3949	6993	5892	8355	4001	4974	2992	2000
1938	6672	7530	6896	3943	3968	4369	2992	3008
1939	6672	4538	3269	3961	4001	3748	2000	2000
1940	2924	2667	8018	8206	5643	5680	2992	2000
1941	6672	7351	8181	5780	3838	4706	2992	3008
1942	6672	5156	3269	3961	4001	5042	2992	3008
1943	6672	5822	3334	4015	4050	5058	2992	1647
1944	6504	6261	5318	3859	4017	5042	2000	2000
1945	6672	6961	7253	4411	4147	5159	2862	2000
1946	6672	7595	5725	4411	4440	5495	2586	2000
1947	6672	7140	7416	6752	4180	5579	2000	2000
1948	5143	3415	5497	5946	4050	6621	2992	3008
1949	6672	6928	7140	7220	5090	5210	2992	2000
1950	6084	3432	7188	7544	4456	5462	2992	2756
1951	6672	7595	8067	4682	4700	4487	2992	3008
1952	6672	7107	8506	4624	3952	4188	2992	3008
1953	6571	3741	3334	4051	4115	5159	2992	3008
1954	6672	6879	3871	4646	4684	5781	2830	2000
1955	6672	6928	7188	7238	4245	4403	2000	2000
1956	6201	7595	8506	4520	4700	5781	2992	3008
1957	6672	7026	7367	4808	4586	5579	2992	1933
1958	6672	6928	7221	5060	4082	5058	2992	3008
1959	6672	5725	3350	4069	4115	3865	2000	2000
1960	3966	2797	4342	7058	7010	2706	2000	2000
1961	6672	6912	7140	7184	5269	3697	2000	2000
1962	4521	6912	7123	6914	4342	5882	2000	2000
1963	6672	6928	7253	8409	4456	5512	2992	2000
1964	6672	6993	6554	4520	4700	4487	2000	2000
1965	6672	7465	8506	7941	4472	5411	2992	1260
1966	6672	7514	7530	4411	4440	5378	2000	2000
1967	6672	7123	7676	4610	3301	4941	2992	3008
1968	4235	3741	3334	3912	4115	3865	2000	2000
1969	6672	6977	8506	3169	3253	4168	2992	3008
1970	6672	3480	3334	4051	4115	3865	2992	2000
1971	6672	7042	7485	4682	4700	5781	2992	3008
1972	6672	6944	7172	4955	4570	5042	2000	2000
1973	6672	6928	7563	5402	4472	5512	2992	2000
1974	6672	7172	8343	4411	4440	5495	2992	3008
1975	6672	7091	5757	4682	4700	5781	2992	3008
1976	6672	6993	7286	4433	4424	4806	2000	2000
1977	3479	3188	1334	2665	1724	6067	1496	370
1978	1815	6928	7774	8139	3887	4067	2992	1092
1979	6672	5546	3269	3961	4001	5042	2992	2840
1980	6672	6993	5351	3668	3350	3949	2992	2118
1981	6672	5042	3350	4069	4115	5159	2505	2000
1982	6672	7026	8506	5132	4668	5563	2992	3008
1983	6672	7595	5920	2827	2635	3647	2992	3008
1984	3630	3106	2879	3720	4001	5042	2992	2403
1985	6672	6961	3871	4646	4684	5781	2000	2000
1986	5075	6944	7351	8499	4147	5176	2992	3008
1987	4151	5172	6440	4357	4277	3916	2000	2000
1988	2706	6912	7123	6102	2667	1462	2000	2000
1989	3781	2830	2407	4123	6961	6621	2992	2000
1990	6235	6912	7123	7184	4001	3176	2358	2000
1991	2790	2797	992	2971	7091	6621	2212	1109
1992	2084	1935	1334	7215	7026	6084	1480	1966

STUDY: 1995C6F-SWRCB-467 DWRSIM: recirc818-f, 17 Jun 97
CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (TAF to CFS)

Project: /1995C6F-SWRCB-467/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	1887	1697	2488	2683	6770	5351	5697	4180	7294
1923	3968	2101	3741	4196	4267	2586	4487	3399	2185
1924	3139	1513	1513	1480	1634	1708	1697	1236	1109
1925	1464	1462	1415	1382	2719	2423	3596	2667	1697
1926	1724	1479	1464	1464	2863	1773	3092	2098	1344
1927	1675	1949	2179	1789	5474	3578	4941	3318	1899
1928	4375	1849	2326	2277	2590	3871	4470	2342	1395
1929	1513	1479	1431	1382	1603	1708	2033	1513	1092
1930	1626	1412	1350	1399	1657	1935	2168	1545	1076
1931	1952	1395	1350	1350	1567	1447	1597	1220	1025
1932	1480	1445	3074	3432	8571	4554	4521	2765	2118
1933	3529	1496	1447	1610	2035	2065	2302	1756	1176
1934	1496	1428	1399	1496	2467	1675	1832	1252	1059
1935	1496	1479	1464	2944	3259	3513	7243	6066	3933
1936	3188	1546	1578	2309	12413	5757	6420	4359	2605
1937	3058	1583	1870	2700	15017	11010	7932	8132	2672
1938	3155	1798	5090	6993	23984	33340	18049	24265	15764
1939	9075	2319	2293	2505	3655	2765	2891	1952	1311
1940	1610	1513	1464	4001	8084	10522	6470	4635	1916
1941	2505	1765	4050	4489	16007	11970	10083	9579	8268
1942	4912	2353	5318	9173	10371	5936	6907	5741	5630
1943	7237	3092	3545	11157	10894	17743	7915	6164	2655
1944	3415	1815	1935	2147	3581	3106	3428	2570	1546
1945	1756	1832	1691	1708	8931	8034	6537	4180	2269
1946	3968	2252	5692	6522	6212	4391	4924	3708	1865
1947	2277	2353	2716	2196	2701	1903	2252	1675	1210
1948	1513	1445	1382	1317	1443	1756	3647	2879	1832
1949	1578	1496	1431	1382	1621	2586	2975	2212	1378
1950	1578	1496	1431	1496	2575	2293	3042	2212	1378
1951	1578	6134	13987	12523	9921	6196	3563	2862	1597
1952	1870	1697	2537	7725	7962	12295	10823	15467	11209
1953	8571	2168	3041	4944	5744	3627	2857	2277	1462
1954	1626	1513	1464	1431	1909	2407	3949	2505	1462
1955	1594	1496	1447	1529	1675	1740	2286	1964	1344
1956	1561	1496	12393	21744	15264	6473	4790	6131	7546
1957	6310	1966	2082	2065	3331	3155	2706	2423	1546
1958	1691	1546	1496	1626	4177	11498	14907	13190	12923
1959	7855	2118	1903	2309	4538	3643	2218	1594	1176
1960	1513	1445	1382	1366	1808	1919	2269	1643	1227
1961	1480	1445	1415	1382	1531	1464	1697	1269	1109
1962	1496	1428	1366	1334	5978	4489	4218	2440	1344
1963	1561	1479	1415	1724	6266	2700	5361	4163	2655
1964	3058	2151	1805	1854	1825	2163	2168	1708	1193
1965	1545	1647	4884	11954	7905	4781	6958	4326	2874
1966	4619	3580	4960	5009	5726	3708	2454	1870	1311
1967	1675	1546	2635	2960	4105	6977	13613	16003	15747
1968	9205	2050	2196	2261	4068	2797	2370	1740	1244
1969	1643	1513	1724	14800	32753	21045	20923	26217	18368
1970	8587	2554	3594	17044	9489	7432	4017	3074	1613
1971	1822	1731	2147	2326	3709	4017	2891	2358	1445
1972	1626	1479	1545	1464	1965	1854	1983	1464	1109
1973	1545	1479	1447	2651	7977	9075	6571	5448	2336
1974	3432	2470	2895	9059	7076	8441	7647	5416	2538
1975	4082	2084	2407	2586	6590	8831	6621	4651	6285
1976	4098	1832	1822	1789	2434	1724	1882	1366	1076
1977	2830	2118	1610	1366	1476	1399	1529	1269	1076
1978	1513	1462	1464	3269	7184	11010	14957	10864	7058
1979	4228	1933	1691	4066	9399	8668	5327	4082	1815
1980	2846	1714	1822	15467	23991	14572	6722	6635	6184
1981	5416	2084	2098	2976	2773	2960	2807	1822	1244
1982	1691	1630	2000	9368	19626	15304	27023	15158	9865
1983	12685	8621	19044	24867	36534	41114	20738	19077	36451
1984	12116	13545	21500	15190	9718	6017	3680	2846	1647
1985	1822	1781	1708	1529	3259	2358	2470	1805	1294
1986	1643	1597	1545	1984	26721	26396	9798	8067	7630
1987	3480	1731	1545	1464	1873	1935	2033	1447	1126
1988	1480	1428	1350	1334	1408	1431	1798	1334	1092
1989	1480	1395	1382	1366	1494	1643	2067	1496	1059
1990	1480	1395	1334	1334	1513	1480	1765	1285	1025
1991	1464	1395	1334	1285	1404	2407	2454	1659	1126
1992	1480	1496	1350	1334	2277	2065	2269	1480	1193

C-032353

C-032353

Study 468 San Joaquin River Fall Run Salmon Smolt Survival Model WITH BARRIER

Barrier at head of Old River from Apr 15 to May 15

Old River Barrier Open above 7500.00 cfs
Consumptive Depletion for April 1053.00 cfs
Consumptive Depletion for May 1053.00 cfs

Year	Water Year Type	APRIL Vernalis Flows	CVP + SWP exports	expfv-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234
1922	A	6,201	8,369	1.357	3,947	2,254	0.64	0.36	60.2	0.943	0.713	0.568	0.269	0.797	20.3%
1923	B	5,344	7,932	1.493	3,380	1,985	0.63	0.37	59.7	0.952	0.723	0.636	0.238	0.807	19.3%
1924	C	1,983	2,790	1.430	1,254	729	0.63	0.37	60.8	0.989	0.793	0.787	0.028	0.865	13.5%
1925	D	3,963	6,958	1.761	2,486	1,497	0.62	0.38	63.4	0.986	0.821	0.700	0.405	0.875	12.5%
1926	D	3,664	6,855	1.832	2,279	1,385	0.62	0.38	63.4	0.989	0.826	0.715	0.389	0.880	12.0%
1927	W	5,344	8,100	1.525	3,375	1,989	0.63	0.37	57.1	0.951	0.671	0.637	0.094	0.774	22.6%
1928	A	4,470	7,830	1.719	2,798	1,674	0.63	0.37	60.2	0.960	0.759	0.678	0.252	0.834	16.6%
1929	C	2,017	2,353	1.185	1,269	727	0.64	0.36	60.8	0.989	0.786	0.785	0.008	0.859	14.1%
1930	D	2,420	3,899	1.632	1,517	903	0.63	0.37	63.4	0.983	0.828	0.769	0.249	0.865	11.5%
1931	C	1,983	2,958	1.518	1,249	734	0.63	0.37	60.8	0.986	0.795	0.788	0.037	0.867	13.3%
1932	D	4,504	5,378	1.202	2,885	1,618	0.64	0.36	63.4	0.962	0.778	0.671	0.324	0.844	15.6%
1933	C	2,807	4,134	1.490	1,772	1,034	0.63	0.37	60.8	0.979	0.775	0.751	0.097	0.850	15.0%
1934	C	1,983	3,563	1.826	1,231	752	0.62	0.38	60.8	0.986	0.803	0.789	0.068	0.873	12.7%
1935	B	7,226	9,092	1.264	4,621	2,806	0.64	0.36	59.7	0.932	0.662	0.548	0.287	0.773	22.7%
1936	B	6,403	8,369	1.314	4,084	2,319	0.64	0.36	59.7	0.941	0.694	0.568	0.280	0.783	21.7%
1937	B	7,932	8,050	1.019	1,989	5,963	0.25	0.75	59.7	0.832	0.801	0.737	0.244	0.824	17.6%
1938	W	18,049	8,420	0.467	5,119	12,930	0.28	0.72	57.1	0.623	0.567	0.513	0.111	0.607	39.3%
1939	D	2,891	4,134	1.446	1,829	1,062	0.63	0.37	63.4	0.979	0.813	0.746	0.261	0.874	12.6%
1940	A	5,863	8,268	1.468	3,586	2,077	0.63	0.37	60.2	0.948	0.729	0.622	0.284	0.810	19.0%
1941	W	10,063	9,310	0.928	2,565	7,519	0.25	0.75	57.1	0.785	0.742	0.694	0.158	0.774	22.6%
1942	W	6,907	8,907	1.295	4,410	2,497	0.64	0.36	57.1	0.936	0.822	0.663	0.135	0.736	26.4%
1943	W	7,915	9,462	1.200	1,875	6,040	0.24	0.76	57.1	0.829	0.785	0.743	0.164	0.819	18.1%
1944	D	3,428	4,235	1.247	2,190	1,238	0.64	0.36	63.4	0.973	0.795	0.721	0.266	0.859	14.1%
1945	B	5,781	6,252	1.087	3,725	2,056	0.64	0.36	59.7	0.949	0.671	0.612	0.152	0.770	23.0%
1946	B	5,344	5,949	1.120	3,438	1,906	0.64	0.36	59.7	0.953	0.683	0.632	0.137	0.779	22.1%
1947	D	3,664	4,907	1.351	2,330	1,334	0.64	0.36	63.4	0.970	0.798	0.711	0.300	0.861	13.9%
1948	B	3,963	6,823	1.727	2,480	1,493	0.63	0.37	59.7	0.986	0.754	0.700	0.181	0.833	16.7%
1949	D	3,963	5,975	1.264	2,541	1,442	0.64	0.36	63.4	0.967	0.790	0.696	0.309	0.854	14.6%
1950	B	3,963	6,252	1.582	2,507	1,476	0.63	0.37	59.7	0.986	0.744	0.698	0.152	0.826	17.4%
1951	A	5,344	6,386	1.202	3,425	1,919	0.64	0.36	60.2	0.953	0.702	0.633	0.188	0.792	20.8%
1952	W	10,840	8,773	0.812	2,836	8,004	0.26	0.74	57.1	0.770	0.717	0.675	0.129	0.756	24.4%
1953	W	3,963	5,647	1.429	2,525	1,456	0.63	0.37	57.1	0.967	0.697	0.697	0.000	0.796	20.4%
1954	A	3,963	7,361	1.863	2,474	1,509	0.62	0.38	60.2	0.986	0.772	0.701	0.236	0.845	15.5%
1955	D	2,807	3,864	1.320	1,786	1,021	0.64	0.36	63.4	0.980	0.809	0.750	0.237	0.871	12.9%
1956	W	6,201	7,986	1.291	3,959	2,242	0.64	0.36	57.1	0.943	0.631	0.565	0.087	0.744	25.6%
1957	A	3,963	6,453	1.633	2,501	1,462	0.63	0.37	60.2	0.986	0.757	0.699	0.192	0.834	16.6%
1958	W	14,907	9,863	0.650	4,056	10,851	0.27	0.73	57.1	0.685	0.660	0.568	0.174	0.678	32.2%
1959	B	2,807	3,796	1.369	1,782	1,025	0.63	0.37	59.7	0.980	0.757	0.750	0.027	0.838	16.2%
1960	D	2,420	4,033	1.669	1,513	907	0.63	0.37	63.4	0.983	0.826	0.769	0.255	0.866	11.4%
1961	D	1,983	3,546	1.817	1,232	752	0.62	0.38	63.4	0.988	0.836	0.789	0.231	0.895	10.5%
1962	B	4,201	5,579	1.338	2,675	1,527	0.64	0.36	59.7	0.985	0.723	0.686	0.118	0.811	18.9%
1963	W	5,344	8,100	1.525	3,375	1,989	0.63	0.37	57.1	0.951	0.671	0.637	0.094	0.774	22.6%
1964	D	2,807	3,466	1.260	1,791	1,016	0.64	0.36	63.4	0.980	0.806	0.749	0.228	0.869	13.1%
1965	W	6,201	8,537	1.384	3,942	2,259	0.64	0.36	57.1	0.943	0.643	0.598	0.117	0.752	24.8%
1966	B	3,963	4,974	1.259	2,544	1,439	0.64	0.36	59.7	0.967	0.722	0.666	0.087	0.811	18.9%
1967	W	12,772	9,546	0.749	3,394	9,379	0.27	0.73	57.1	0.729	0.697	0.635	0.168	0.720	28.0%
1968	B	3,664	5,243	1.444	2,320	1,343	0.63	0.37	59.7	0.970	0.741	0.712	0.101	0.825	17.5%
1969	W	20,923	7,512	0.360	6,078	14,845	0.29	0.71	57.1	0.585	0.461	0.445	0.064	0.541	45.9%
1970	W	5,344	6,586	1.240	3,419	1,925	0.64	0.36	57.1	0.953	0.640	0.634	0.017	0.753	24.7%
1971	W	3,963	6,586	1.667	2,497	1,486	0.63	0.37	57.1	0.986	0.704	0.699	0.017	0.802	19.8%
1972	B	3,664	4,708	1.286	2,336	1,328	0.64	0.36	58.9	0.971	0.718	0.710	0.028	0.810	19.0%
1973	A	5,680	7,428	1.315	3,622	2,058	0.64	0.36	59.2	0.949	0.669	0.619	0.183	0.783	21.7%
1974	W	7,863	9,327	1.222	1,805	5,859	0.24	0.76	58.9	0.835	0.785	0.748	0.145	0.823	17.7%
1975	W	8,621	8,773	1.331	4,220	2,401	0.64	0.36	53.7	0.938	0.577	0.577	0.000	0.708	29.2%
1976	C	1,983	3,008	1.542	1,247	736	0.63	0.37	57.8	0.986	0.786	0.786	0.000	0.862	13.8%
1977	C	1,983	3,008	1.542	1,247	736	0.63	0.37	62.0	0.986	0.814	0.786	0.121	0.878	12.2%
1978	A	14,923	7,512	0.504	4,186	10,728	0.28	0.72	61.4	0.689	0.712	0.578	0.316	0.695	30.5%
1979	B	5,344	6,857	1.291	3,411	1,933	0.64	0.36	60.5	0.952	0.718	0.634	0.230	0.803	19.7%
1980	A	8,722	6,958	1.040	4,342	2,380	0.65	0.35	60.1	0.939	0.659	0.568	0.212	0.758	24.2%
1981	D	3,664	5,445	1.499	2,314	1,349	0.63	0.37	64.6	0.970	0.827	0.712	0.398	0.879	12.1%
1982	W	27,023	9,158	0.339	7,868	19,135	0.29	0.71	52.8	0.436	0.318	0.318	0.000	0.401	59.9%
1983	W	20,738	6,958	0.336	6,054	14,684	0.29	0.71	57.2	0.570	0.470	0.446	0.042	0.541	45.9%
1984	W	5,344	6,857	1.291	3,411	1,933	0.64	0.36	60.7	0.952	0.722	0.634	0.241	0.806	19.4%
1985	D	2,807	4,235	1.526	1,789	1,037	0.63	0.37	62.5	0.979	0.804	0.751	0.213	0.869	13.1%
1986	W	9,814	7,512	0.766	2,563	7,222	0.26	0.74	61.3	0.794	0.788	0.692	0.310	0.792	29.8%
1987	D	2,033	3,466	1.746	1,287	768	0.62	0.38	62.3	0.987	0.821	0.786	0.164	0.864	11.8%
1988	C	1,983	2,867	1.464	1,252	731	0.63	0.37	62.1	0.989	0.813	0.787	0.119	0.878	12.2%
1989	D	2,420	5,647	2.364	1,466	954	0.61	0.39	64.1	0.982	0.858	0.772	0.379	0.907	9.3%
1990	C	1,983	3,529	1.808	1,232	751	0.62	0.38	60.8	0.986	0.803	0.789	0.098	0.873	12.7%
1991	C	2,437	4,252	1.768	1,518	919	0.62	0.38	60.6	0.983	0.792	0.769	0.103	0.864	13.6%
1992	C	2,252	3,731	1.680	1,408	844	0.63	0.37	60.6	0.985	0.793	0.776	0.078	0.865	13.5%

Year	MAY Vernalis Flows	CVP+SWP exports	expfv-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234	Weighted (April + June) total survival
1922	5,936	8,685	1.471	3,527	2,409	0.59	0.41	66.6	0.938	0.880	0.626	0.880	0.904	9.6%	14.5%
1923	5,156	6,245	1.219	3,104	2,051	0.60	0.40	66.0	0.949	0.836	0.656	0.520	0.880	12.0%	15.3%
1924	1,870	781	0.425	1,189	701	0.62	0.38	63.9	0.989	0.818	0.793	0.119	0.862	11.8%	12.5%
1925	3,822	5,042	1.330	2,286	1,536	0.60	0.40	67.3	0.984	0.867	0.714	0.535	0.906	9.4%	10.8%
1926	3,545	4,879	1.369	2,113	1,432	0.60	0.40	67.3	0.967	0.870	0.726	0.527	0.910	9.0%	10.4%
1927	5,156	8,327	1.625	3,036	2,119	0.59	0.41	64.2	0.947	0.838	0.651	0.521	0.882	11.8%	16.6%
1928	3,822	6,375	1.682	2,242	1,580	0.59	0.41	66.6	0.963	0.876	0.717	0.582	0.912	8.8%	12.3%
1929	1,870	3,058	1.663	1,095	775	0.59	0.41	63.9	0.987	0.846	0.799	0.235	0.904	9.6%	11.6%
1930	1,870	3,513	1.911	1,080	790	0.58	0.42	67.3	0.987	0.891	0.800	0.457	0.932	6.8%	8.9%
1931	1,870	2,797	1.521	1,103	787	0.59	0.41	63.9	0.987	0.843	0.796	0.222	0.902	9.8%	11.4%
1932	3,871	4,847	1.262	2,323	1,547	0.60	0.40	67.3	0.964	0.863	0.711	0.525	0.903	9.7%	12.3%
1933	2,683	2,700	1.018	1,630	1,054	0.61	0.39	63.9	0.979	0.813	0.761	0.217	0.878	12.2%	13.5%
1934	1,870	2,944	1.801	1,099	772	0.59	0.41	63.9	0.987	0.845	0.798	0.229	0.903	9.7%	11.0%
1935	6,050	5,465	0.908	3,705	2,345	0.61	0.39	66.0	0.940	0.799	0.613	0.480	0.854	14.6%	18.3%
1936	5,156	6,310	1.232	3,102	2,054	0.60	0.40	66.0	0.949	0.836	0.656	0.524	0.881	11.9%	16.3%
1937	8,132	6,733	0.831	2,114	6,018	0.26	0.74	66.0	0.830	0.876	0.726	0.545	0.842	15.8%	16.6%
1938	23,972	9,449	0.395	9,913	17,059	0.29	0.71	64.2	0.499	0.741	0.386	0.578	0.569	43.1%	41.4%
1939	2,683	3,480	1.312	1,604	1,079	0.60	0.40	67.3	0.978	0.871	0.782	0.455	0.914	8.6%	10.4%
1940	5,156	6,278	1.225	3,103	2,052	0.60	0.40	66.6	0.949	0.846	0.656	0.557	0.888	11.2%	14.7%
1941	9,579	9,726	1.019	2,361	7,198	0.25	0.75	64.2	0.794	0.861	0.707	0.593	0.818	18.4%	20.3%
1942	5,936	8,685	1.471	3,527	2,409	0.59	0.41	64.2	0.938	0.828	0.626	0.539	0.873	12.7%	18.9%
1943	6,180	8,327	1.354	3,695	2,485	0.60	0.40	64.2	0.936	0.815	0.614	0.521	0.864	13.9%	15.6%
1944	2,978	3,741	1.270	1,784	1,192	0.60	0.40	67.3	0.975	0.867	0.750	0.469	0.910	9.0%	11.3%
1945	3,871	5,237	1.364	2,311	1,560	0.60	0.40	66.0	0.964	0.847	0.712	0.469	0.894	10.6%	16.2%
1946	3,871	5,269	1.373	2,310	1,561	0.60	0.40	66.0	0.964	0.848	0.712	0.471	0.894	10.6%	15.7%
1947	2,683	3,480	1.312	1,604	1,079	0.60	0.40	67.3	0.978	0.871	0.782	0.456	0.914	8.6%	11.0%
1948	3,822	7,676	2.025	2,200	1,622	0.58	0.42	66.0	0.962	0.886	0.720	0.563	0.916	8.2%	12.0%
1949	2,978	4,749	1.613	1,751	1,225	0.59	0.41	67.3	0.974	0.881	0.752	0.520	0.919	8.1%	11.0%
1950	3,822	5,269	1.380	2,278	1,544	0.60	0.40	66.0	0.964	0.849	0.715	0.471	0.895	10.5%	13.6%
1951	5,156	7,123	1.380	3,076	2,080	0.60	0.40	66.6	0.948	0.863	0.656	0.600	0.897	10.3%	15.9%
1952	15,450	9,709	0.630	4,223	11,227	0.27	0.73	64.2	0.674	0.827	0.576	0.562	0.718	28.4%	26.8%
1953	3,822	7,676	2.025	2,200	1,622	0.58	0.42	64.2	0.962	0.857	0.720	0.488	0.901	9.9%	14.8%
1954	3,822	7,432	1.961	2,208	1,614	0.58	0.42	66.6	0.962	0.892	0.720	0.616	0.922	7.8%	11.3%
1955	2,683	3,968	1.496	1,586	1,095	0.59	0.41	67.3	0.978	0.877	0.764	0.480	0.918	8.2%	10.3%
1956	5,936	8,685	1.471	3,527	2,409	0.59	0.41	64.2	0.938	0.828	0.626	0.539	0.873	12.7%	18.5%
1957	3,822	5,952	1.570	2,256	1,566	0.59	0.41	66.6	0.963	0.870	0.716	0.540	0.908	9.2%	12.5%
1958	13,173	10,685	0.813	3,448	9,725	0.26	0.74	64.2	0.719	0.868	0.632	0.641	0.758	24.2%	27.8%
1959	2,683	3,676	1.368	1,598	1,086	0.60	0.40	66.0	0.978	0.855	0.763	0.389	0.905	9.6%	12.6%
1960	1,870	3,360	1.822	1,085	785	0.58	0.42	67.3	0.987	0.889	0.799	0.449	0.930	7.0%	9.0%
1961	1,870	2,992	1.627	1,097	773	0.59	0.41	67.3	0.987	0.885	0.798	0.430	0.927	7.3%	8.7%
1962	3,822	5,334	1.407	2,276	1,546	0.60	0.40	66.0	0.964	0.850	0.715	0.474	0.898	10.4%	14.2%
1963	5,156	8,327	1.625	3,036	2,119	0.59	0.41	64.2	0.947	0.838	0.651	0.521	0.882	11.8%	16.6%
1964	2,683	3,741	1.411	1,596	1,088	0.59	0.41	67.3	0.978	0.874	0.763	0.469	0.916	8.4%	10.5%
1965	5,936	7,725	1.306	3,558	2,378	0.60	0.40	64.2	0.939	0.806	0.624	0.490	0.861	13.9%	18.3%
1966	2,978	4,761	1.624	1,750	1,226	0.59	0.41	66.0	0.974	0.863	0.752	0.446	0.906	9.2%	13.6%
1967	15,483	10,051	0.650	4,212	11,270	0.27	0.73	64.2	0.672	0.835	0.577	0.609	0.717	28.3%	28.2%
1968	2,683	3,643	1.374	1,599	1,085	0.60	0.40	66.0	0.978	0.855	0.763	0.388	0.905	9.5%	13.1%
1969	26,038	9,010	0.346	7,588	18,449	0.29	0.71	66.4	0.457	0.791	0.338	0.685	0.554	44.6%	45.2%
1970	5,156	5,920	1.155	3,115	2,041	0.60	0.40	61.2	0.949	0.732	0.655	0.223	0.818	18.2%	21.1%
1971	3,822	7,676	2.025	2,200	1,622	0.58	0.42	64.2	0.962	0.857	0.720	0.488	0.901	9.9%	14.3%
1972	2,683	3,871	1.480	1,591	1,092	0.59	0.41	66.0	0.978	0.858	0.763	0.399	0.907	9.3%	13.7%
1973	5,156	8,505	1.270	3,098	2,060	0.60	0.40	66.3	0.949	0.846	0.657	0.551	0.887	11.3%	16.0%
1974	5,936	8,685	1.471	3,527	2,409	0.59	0.41	66.1	0.938	0.869	0.626	0.651	0.897	10.3%	13.6%
1975	5,936	8,685	1.471	3,527	2,409	0.59	0.41	61.5	0.938	0.799	0.626	0.382	0.837	16.3%	22.1%
1976	1,870	3,123	1.696	1,093	777	0.58	0.42	65.8	0.987	0.869	0.799	0.349	0.918	8.2%	10.7%
1977	1,870	732	0.398	1,171	700	0.63	0.37	62.3	0.989	0.798	0.793	0.023	0.870	13.0%	12.6%
1978	10,831	8,197	0.759	2,869	7,962	0.26	0.74	66.9	0.772	0.893	0.673	0.672	0.804	19.6%	24.5%
1979	5,156	5,985	1.188	3,113	2,043	0.60	0.40	66.0	0.949	0.830	0.655	0.507	0.877	12.3%	15.6%
1980	6,619	7,465	1.133	4,006	2,613	0.61	0.39	66.6	0.932	0.844	0.592	0.618	0.879	12.1%	17.5%
1981	2,683	3,513	1.325	1,603	1,060	0.60	0.40	68.7	0.978	0.890	0.763	0.539	0.928	7.4%	9.5%
1982	15,158	10,701	0.707	4,070	11,088	0.27	0.73	65.1	0.678	0.874	0.587	0.695	0.731	26.9%	41.8%
1983	19,077	7,548	0.396	5,498	13,581	0.29	0.71	61.3	0.603	0.846	0.486	0.312	0.615	38.5%	41.8%
1984	5,156	6,148	1.200	3,107	2,048	0.60	0.40	66.0	0.949	0.833	0.656	0.515	0.879	12.1%	15.4%
1985	2,683	4,228	1.595	1,560	1,104	0.59	0.41	65.1	0.977	0.850	0.764	0.365	0.902	9.8%	11.3%
1986	8,067	8,132	1.012	2,006	6,061	0.25	0.75	65.8	0.829	0.895	0.734	0.605	0.845	15.5%	17.9%
1987	1,870	2,830	1.539	1,102	768	0.59	0.41	66.6	0.987	0.899	0.798	0.498	0.935	6.5%	8.8%
1988	1,870	3,058	1.663	1,095	775	0.59	0.41	63.7	0.987	0.844	0.799	0.223	0.903	9.7%	10.8%
1989	1,870	3,836	2.141	1,066	804	0.57	0.43	66.7	0.986	0.889	0.801	0.443	0.931	6.9%	8.0%
1990	1,870	2,700	1.468	1,107	764	0.59	0.41	63.9	0.988	0.842	0.798	0.217	0.901	9.9%	11.2%
1991	1,870	2,862	1.557	1,101	769	0.59	0.41	63.9	0.987	0.844	0.798	0.225	0.903	9.7%	11.8%
1992	1,870	2,927	1.592	1,099	771	0.59	0.41	63.9	0.987	0.844	0.798	0.228	0.903	9.7%	11.4%
														Average:	15.95%

Calculations- San Joaquin River Fall

Run Smolt Survival Model WITH BARRIER

C8 ='Study 468 Flow Data'!AB7
D8 ='Study 468 Flow Data'!G7
E8 ='Study 468 Flow Data'!Q7
F8 =D8+E8
G8 =F8/(C8-0.03*$R$2)
H8 =IF(C8<$R$1,(0.47*(0.3137*C8-0.0156*$R$2-0.0625*F8)+0.53*C8),(0.3137*C8-0.0156*$R$2-0.0625*F8))
I8 =C8-H8
J8 =H8/C8
K8 =I8/C8
M8 =(1.01045-0.00003*I8)
N8 =(O8+P8)-(O8*P8)
O8 =IF((0.87634-0.000071*H8)<0,0,(0.87634-0.000071*H8))
P8 =IF((-3.65867+0.058492*L8+0.000051*F8)<0,0,(-3.65867+0.058492*L8+0.000051*F8))
Q8 =((K8*M8)+(J8*N8))
R8 =(1-Q8)

T8 ='Study 468 Flow Data'!AC7
U8 ='Study 468 Flow Data'!H7
V8 ='Study 468 Flow Data'!R7
W8 =U8+V8
X8 =W8/(T8-0.03*$R$3)
Y8 =IF(T8<$R$1,(0.52*(0.3137*T8-0.0156*$R$3-0.0625*W8)+0.48*T8),(0.3137*T8-0.0156*$R$3-0.0625*W8))
Z8 =T8-Y8
AA8 =Y8/T8
AB8 =Z8/T8
AD8 =(1.01045-0.00003*Z8)
AE8 =(AF8+AG8)-(AF8*AG8)
AF8 =IF((0.87634-0.000071*Y8)<0,0,(0.87634-0.000071*Y8))
AG8 =IF((-3.65867+0.058492*AC8+0.000051*W8)<0,0,(-3.65867+0.058492*AC8+0.000051*W8))
AH8 =((AB8*AD8)+(AA8*AE8))
AI8 =(1-AH8)
AK8 =0.45*G94+0.55*AI8

Study n Joaquin River Fall Run Salmon Smolt Survival Model WITHOUT BARRIER AT HEAD OF OLD RIVER

Consumptive Depletion for April 1053.00 cfs
Consumptive Depletion for May 1053.00 cfs

San Joaquin River temperatures based on limited historical data from USGS

APRIL Year	Water Year Type	Vernalis Flows	CVP + SWP exports	expV-cd	Calculated Stockton Q	OldR Flo	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survivability s234
1922	A	8,201	8,388	1,357	1,406	4,798	0.23	0.77	60.2	0.867	0.841	0.777	0.269	0.861	13.9%
1923	B	5,344	7,932	1,493	1,154	4,180	0.22	0.78	59.7	0.885	0.843	0.794	0.238	0.876	12.4%
1924	C	1,863	2,790	1,450	431	1,562	0.22	0.78	60.8	0.964	0.860	0.846	0.026	0.938	6.1%
1925	D	3,863	6,958	1,761	798	3,186	0.20	0.80	63.4	0.915	0.863	0.820	0.405	0.910	8.9%
1926	D	3,864	6,866	1,832	717	2,947	0.20	0.80	63.4	0.922	0.863	0.825	0.389	0.918	8.4%
1927	W	5,344	8,100	1,525	1,154	4,190	0.22	0.78	57.1	0.885	0.814	0.794	0.094	0.889	13.1%
1928	A	4,470	7,830	1,719	909	3,951	0.20	0.80	60.2	0.904	0.859	0.812	0.252	0.885	10.8%
1929	C	2,017	2,353	1,185	468	1,548	0.23	0.77	60.6	0.964	0.844	0.843	0.006	0.936	6.4%
1930	D	2,420	3,899	1,632	489	1,921	0.21	0.79	63.4	0.953	0.860	0.841	0.249	0.938	6.2%
1931	C	1,863	2,986	1,518	421	1,862	0.21	0.79	60.8	0.964	0.862	0.846	0.037	0.940	6.0%
1932	D	4,894	5,378	1,202	1,060	3,444	0.24	0.76	63.4	0.907	0.866	0.801	0.324	0.887	10.3%
1933	C	2,897	4,134	1,460	606	2,201	0.22	0.78	60.8	0.944	0.849	0.833	0.097	0.924	7.8%
1934	C	1,863	3,563	1,826	363	1,800	0.19	0.81	60.6	0.952	0.869	0.849	0.098	0.943	6.7%
1935	B	7,226	9,082	1,264	1,662	5,544	0.23	0.77	59.7	0.844	0.829	0.757	0.297	0.841	16.9%
1936	B	6,403	8,369	1,314	1,469	4,934	0.23	0.77	59.7	0.862	0.831	0.772	0.280	0.855	14.8%
1937	B	7,932	8,050	1,019	1,959	5,983	0.25	0.75	59.7	0.832	0.801	0.737	0.244	0.824	17.6%
1938	W	18,048	8,420	0.467	5,119	12,930	0.28	0.72	57.1	0.623	0.567	0.513	0.111	0.607	39.3%
1939	D	2,891	4,134	1,446	832	2,259	0.22	0.78	63.4	0.943	0.875	0.831	0.281	0.926	7.2%
1940	A	5,863	8,298	1,468	1,243	4,420	0.22	0.78	60.2	0.878	0.846	0.786	0.284	0.871	12.9%
1941	W	10,083	9,310	0.926	2,585	7,519	0.25	0.75	57.1	0.785	0.742	0.684	0.158	0.774	22.6%
1942	W	8,907	8,907	1,295	1,904	5,313	0.23	0.77	57.1	0.851	0.795	0.763	0.126	0.838	16.2%
1943	W	7,915	9,462	1,200	1,875	6,040	0.24	0.76	57.1	0.829	0.785	0.743	0.164	0.819	18.1%
1944	D	3,428	4,235	1,247	784	2,634	0.23	0.77	63.4	0.931	0.866	0.820	0.266	0.917	8.3%
1945	B	5,781	6,252	1,087	1,406	4,375	0.24	0.76	59.7	0.879	0.810	0.776	0.152	0.862	13.8%
1946	B	5,344	5,949	1,120	1,286	4,056	0.24	0.76	59.7	0.889	0.814	0.785	0.137	0.871	12.9%
1947	D	3,864	4,907	1,361	826	2,837	0.23	0.77	63.4	0.925	0.872	0.818	0.300	0.913	8.7%
1948	B	3,863	6,823	1,727	807	3,176	0.20	0.80	59.7	0.915	0.862	0.819	0.181	0.902	9.8%
1949	D	3,863	5,075	1,264	916	3,087	0.23	0.77	63.4	0.918	0.870	0.811	0.309	0.907	9.3%
1950	B	3,863	6,252	1,582	842	3,141	0.21	0.79	59.7	0.916	0.844	0.817	0.152	0.901	9.9%
1951	A	5,344	6,388	1,202	1,261	4,083	0.24	0.76	60.2	0.886	0.827	0.787	0.186	0.874	12.6%
1952	W	10,640	8,773	0.812	2,836	8,004	0.26	0.74	57.1	0.770	0.717	0.675	0.129	0.758	24.4%
1953	W	3,863	5,647	1,429	880	3,103	0.22	0.78	57.1	0.917	0.814	0.814	0.000	0.864	10.8%
1954	A	3,863	7,361	1,863	773	3,210	0.19	0.81	60.2	0.914	0.864	0.821	0.236	0.904	9.8%
1955	D	2,807	3,664	1,320	636	2,172	0.23	0.77	63.4	0.946	0.871	0.831	0.237	0.929	7.1%
1956	W	6,201	7,986	1,291	1,431	4,770	0.23	0.77	57.1	0.867	0.794	0.775	0.087	0.861	14.9%
1957	A	3,863	6,453	1,833	830	3,153	0.21	0.79	60.2	0.918	0.852	0.817	0.182	0.903	9.7%
1958	W	14,907	9,863	0.650	4,058	10,861	0.27	0.73	57.1	0.685	0.660	0.568	0.174	0.678	32.2%
1959	B	2,807	3,798	1,389	627	2,180	0.22	0.78	59.7	0.945	0.836	0.832	0.027	0.921	7.9%
1960	D	2,420	4,033	1,669	491	1,929	0.20	0.80	63.4	0.953	0.882	0.842	0.255	0.936	6.2%
1961	D	1,863	3,546	1,617	384	1,589	0.19	0.81	63.4	0.962	0.884	0.849	0.231	0.947	5.3%
1962	B	4,201	5,579	1,338	953	3,248	0.23	0.77	59.7	0.913	0.831	0.809	0.118	0.894	10.6%
1963	W	5,344	8,100	1,525	1,154	4,190	0.22	0.78	57.1	0.885	0.814	0.794	0.094	0.889	13.1%
1964	D	2,807	3,496	1,260	646	2,161	0.23	0.77	63.4	0.946	0.869	0.831	0.226	0.928	7.2%
1965	W	6,201	8,537	1,384	1,305	4,806	0.23	0.77	57.1	0.866	0.803	0.777	0.117	0.862	14.8%
1966	B	3,863	4,974	1,259	922	3,061	0.23	0.77	59.7	0.919	0.827	0.811	0.087	0.897	10.3%
1967	W	12,772	9,546	0.749	3,394	9,379	0.27	0.73	57.1	0.729	0.697	0.635	0.188	0.720	28.0%
1968	B	3,864	5,243	1,444	805	2,858	0.22	0.78	59.7	0.925	0.837	0.819	0.101	0.908	9.4%
1969	W	20,823	7,512	0.360	6,078	14,846	0.29	0.71	57.1	0.565	0.461	0.445	0.064	0.541	46.9%
1970	W	5,344	6,588	1,240	1,248	4,086	0.23	0.77	57.1	0.866	0.791	0.786	0.017	0.865	13.5%
1971	W	3,863	6,588	1,867	821	3,182	0.21	0.79	57.1	0.916	0.821	0.818	0.017	0.896	10.4%
1972	B	3,864	4,706	1,296	839	2,825	0.23	0.77	58.9	0.926	0.822	0.817	0.026	0.902	9.8%
1973	A	5,860	7,428	1,315	1,301	4,379	0.23	0.77	59.2	0.879	0.823	0.784	0.183	0.886	13.4%
1974	W	7,863	9,327	1,222	1,805	5,859	0.24	0.76	56.9	0.835	0.785	0.748	0.145	0.823	17.7%
1975	W	6,821	8,773	1,331	1,512	5,109	0.23	0.77	53.7	0.857	0.769	0.769	0.000	0.837	16.3%
1976	C	1,863	3,008	1,542	418	1,565	0.21	0.79	57.8	0.963	0.847	0.847	0.000	0.939	6.1%
1977	C	1,863	3,008	1,542	418	1,565	0.21	0.79	62.0	0.963	0.865	0.847	0.121	0.943	6.7%
1978	A	14,923	7,512	0.504	4,198	10,726	0.28	0.72	61.4	0.689	0.712	0.578	0.316	0.866	30.8%
1979	B	5,344	6,857	1,291	1,231	4,113	0.23	0.77	60.5	0.887	0.837	0.789	0.250	0.876	12.4%
1980	A	6,722	8,956	1,040	1,857	5,065	0.25	0.75	60.1	0.859	0.810	0.759	0.212	0.848	16.4%
1981	D	3,864	5,445	1,469	793	2,871	0.22	0.78	64.8	0.924	0.862	0.820	0.386	0.917	9.3%
1982	W	27,023	9,159	0.339	7,868	19,135	0.29	0.71	52.8	0.436	0.316	0.316	0.000	0.401	59.9%
1983	W	20,736	8,958	0.336	6,054	14,684	0.29	0.71	57.2	0.570	0.470	0.445	0.042	0.541	46.9%
1984	W	5,344	6,857	1,291	1,231	4,113	0.23	0.77	60.7	0.887	0.840	0.789	0.241	0.876	12.4%
1985	D	2,807	4,236	1,526	598	2,207	0.21	0.79	62.5	0.944	0.869	0.834	0.213	0.926	7.2%
1986	W	9,814	7,512	0.766	2,993	7,222	0.26	0.74	61.3	0.794	0.739	0.662	0.310	0.792	20.8%
1987	D	2,033	3,496	1,746	403	1,630	0.20	0.80	62.3	0.962	0.873	0.848	0.164	0.944	5.6%
1988	C	1,863	2,857	1,464	427	1,856	0.22	0.78	62.1	0.964	0.864	0.846	0.119	0.942	5.8%
1989	D	2,420	5,647	2,364	390	2,030	0.16	0.84	64.1	0.960	0.906	0.849	0.379	0.943	6.7%
1990	C	1,863	3,529	1,806	385	1,598	0.19	0.81	60.6	0.963	0.859	0.848	0.066	0.942	5.8%
1991	C	2,437	4,252	1,766	482	1,955	0.20	0.80	60.6	0.952	0.858	0.842	0.103	0.933	6.7%
1992	C	2,252	3,731	1,660	457	1,795	0.20	0.80	60.6	0.957	0.858	0.844	0.076	0.936	6.4%

MAY Year	Vernalis Flows	CVP + SWP exports	expV-cd	Calculated Stockton	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survivability s234	Weighted total survival
1922	5,936	8,885	1,471	1,303	4633	0.22	0.78	66.6	0.871	0.931	0.784	0.880	0.864	11.8%	12.8%
1923	5,156	6,245	1,219	1,211	3945	0.23	0.77	66.0	0.882	0.889	0.790	0.520	0.884	10.8%	11.4%
1924	1,870	781	0.425	821	1348	0.28	0.72	63.9	0.970	0.858	0.838	0.119	0.939	6.1%	6.1%
1925	3,822	5,042	1,330	887	2965	0.23	0.77	67.3	0.922	0.914	0.815	0.535	0.920	8.0%	8.4%
1926	3,545	4,879	1,389	791	2755	0.22	0.78	67.3	0.928	0.915	0.820	0.527	0.925	7.8%	7.9%
1927	5,156	8,327	1,625	1,080	4075	0.21	0.79	64.2	0.888	0.904	0.800	0.521	0.892	10.8%	11.8%
1928	3,822	6,375	1,682	784	3038	0.21	0.79	66.6	0.919	0.921	0.821	0.582	0.920	8.0%	9.3%
1929	1,870	3,058	1,863	379	1491	0.20	0.80	63.9	0.966	0.865	0.848	0.235	0.949	5.1%	5.7%
1930	1,870	3,513	1,911	361	1520	0.19	0.81	67.3	0.965	0.919	0.851	0.457	0.956	4.4%	5.2%
1931	1,870	2,797	1,521	385	1475	0.21	0.79	63.9	0.966	0.882	0.848	0.222	0.948	5.2%	5.6%
1932	3,671	4,847	1,282	885	2976	0.23	0.77	67.3	0.921	0.911	0.813	0.525	0.919	9.1%	9.1%
1933	2,863	2,700	1,018	657	2027	0.24	0.76	63.9	0.950	0.867	0.830	0.217	0.929	7.1%	7.3%
1934	1,870	2,944	1,601	396	1484	0.21	0.79	63.9	0.965	0.864	0.849	0.229	0.949	5.1%	5.4%
1935	6,050	5,465	0.908	1,640	4510	0.25	0.75	66.0	0.875	0.879	0.767	0.480	0.876	12.4%	14.8%
1936	5,156	6,310	1,232	1,208	3940	0.23	0.77	66.0	0.882	0.900	0.791	0.524	0.894	10.8%	12.3%
1937	8,132	8,733	0.831	2,114	6018	0.26	0.74	66.0	0.830	0.876	0.726	0.546	0.842	16.8%	16.8%
1938	23,972	9,449	0.395	6,913	17059	0.29	0.71	64.2	0.469	0.741	0.366	0.578	0.569	43.1%	41.4%
1939	2,863	3,480	1,312	608	2076	0.23	0.77	67.3	0.946	0.909	0.833	0.456	0.939	6.1%	6.8%
1940	5,156	6,278	1,225	1,809	3947	0.23	0.77	66.6	0.892	0.907	0.791	0.557	0.896	10.4%	11.8%
1941	9,579	9,728	1,019	2,381	7198	0.25	0.75	64.2	0.794	0.861	0.707	0.593	0.816	19.4%	20.3%
1942	5,936	8,885	1,471	1,303	4633	0.22	0.78	64.2	0.871	0.900	0.784	0.539	0.878	12.2%	14.9%
1943	6,180	6,327	1,354	1,402	4778	0.23	0.77	64.2	0.867	0.893	0.777	0.521	0.873	12.7%	16.1%
1944	2,978	3,741	1,270	683	2293	0.23	0.77	67.3	0.942	0.909	0.828	0.468	0.934	6.6%	7.4%
1945	3,671	5,237	1,364	671	3000	0.22	0.78	66.0	0.920	0.901	0.815	0.469	0.916	8.4%	10.8%
1946	3,671	5,269	1,373	696	3002	0.22	0.78	66.0	0.920	0.902	0.815	0.471	0.916	8.4%	10.4%
1947	2,863	3,480	1,312	608	2076	0.23	0.77	67.3	0.946	0.909	0.833	0.456	0.939	6.1%	7.2%
1948	3,822	7,676	2,025	703	3119	0.18	0.82	66.0	0.917	0.929	0.826	0.593	0.919	8.1%	8.8%
1949	2,978	4,749	1,613	620	2356	0.21	0.79	67.3	0.940	0.920	0.832	0.520	0.936	6.4%	7.7%
1950	3,822	5,269	1,380	863	2869	0.22	0.78	66.0	0.921	0.902	0.816	0.471	0.917	8.3%	9.0%
1951	5,156	7,123	1,380	1,156	4000	0.22	0.78	66.6	0.890	0.916	0.794	0.600	0.897	10.3%	11.4%
1952	15,450	9,709	0.630	4,223	11227	0.27	0.73	64.2	0.674	0.827	0.576	0.592	0.716	28.4%	26.8%
1953	3,822	7,676	2,025	703	3119	0.18	0.82	64.2	0.917	0.911	0.828	0.468	0.916	8.4%	8.4%
1954	3,822	7,432	1,961	718	3104	0.19	0.81	66.6	0.917	0.933	0.825	0.616	0.920	8.0%	8.7%
1955	2,863	3,988	1,496	577	2106	0.22	0.78	67.3	0.947	0.914	0.835	0.480	0.940	6.0%	6.6%
1956	5,936	8,885	1,471	1,303	4633	0.22	0.78	64.2	0.871	0.900	0.784	0.539	0.878	12.2%	13.4%
1957	3,822	5,962	1,570	810	3011	0.21	0.79	66.6	0.920	0.917	0.819	0.540	0.919	8.1%	8.8%
1958	13,173	10,886	0.813	3,448	9725	0.26	0.74	64.2	0.719	0.868	0.632	0.641	0.758	24.2%	27.8%
1959	2,863	3,676	1,386	596	2088	0.22	0.78	66.0	0.948	0.869	0.834	0.389	0.937	6.3%	7.0%
1960	1,870	3,350	1,822	361	1509	0.19	0.81	67.3	0.965	0.918	0.861	0.449	0.956	4.4%	5.2%
1961	1,870	2,992	1,627	363	1487	0.20	0.80	67.3	0.966	0.914	0.849	0.430	0.955	4.5%	4.8%
1962	3,822	5,334	1,407	849	2973	0.22	0.78	66.0	0.921	0.903	0.816	0.474	0.917	8.3%	9.3%
1963	5,156	8,327	1,625	1,080	4075	0.21	0.79	64.2	0.888	0.904	0.800	0.521	0.892	10.8%	11.8%
1964	2,863	3,741	1,411	592	2082	0.22	0.78	67.3	0.948	0.912	0.834	0.489	0.940	6.0%	6.6%
1965	5,936	7,725	1,308	1,363	4573	0.23	0.77	64.2	0.873	0.888	0.780	0.480	0.877	12.3%	13.4%
1966	2,978	4,781	1,624	618	2358	0.21	0.79	66.0	0.940	0.907	0.832	0.446	0.933	6.7%	8.3%
1967	15,463	10,061	0.650	4,212	11270	0.27	0.73	64.2	0.672	0.835	0.577	0.609	0.717	28.3%	28.2%
1968	2,863	3,643	1,374	596	2086	0.22	0.78	66.0	0.948	0.868	0.834	0.388	0.937	6.3%	7.7%
1969	26,038	9,010	0.346	7,586	18449	0.29	0.71	66.4	0.457	0.791	0.336	0.686	0.554	44.6%	46.2%
1970	5,156	5,920	1,155	1,231	3925	0.24	0.76	61.2	0.863	0.836	0.789	0.223	0.879	12.1%	12.7%
1971	3,822	7,676	2,025	703	3119	0.18	0.82	64.2	0.917	0.911	0.826	0.486	0.918	8.4%	9.3%
1972	2,863	3,871	1,480	583	2100	0.22	0.78	66.0	0.947	0.901	0.835	0.389	0.937	6.3%	7.9%
1973	5,156	6,505	1,270	1,194	3961	0.23	0.77	66.3	0.892	0.906	0.792	0.551	0.895	10.8%	11.8%
1974	5,936	8,885	1,471	1,303	4633	0.22	0.78	66.1	0.871	0.924	0.784	0.651	0.883	11.7%	14.4%
1975	5,936	8,885	1,471	1,303	4633	0.22	0.78	61.5	0.871	0.866	0.784	0.382	0.870	13.0%	14.9%
1976	1,870	3,123	1,698	375	1465	0.20	0.80	65.6	0.966	0.902	0.850	0.349	0.953	4.7%	5.3%
1977	1,870	732	0.368	525	1346	0.28	0.72	62.3	0.970	0.843	0.839	0.023	0.934	6.6%	6.2%
1978	10,831	8,197	0.759	2,869	7962	0.26	0.74	66.9	0.772	0.893	0.673	0.672	0.804	19.6%	24.6%
1979	5,156	6,985	1,168	1,227	3929	0.24	0.76	66.0	0.893	0.866	0.789	0.507	0.883	10.7%	11.8%
1980	6,919	7,466	1,133	1,883	5026	0.24	0.76	66.6	0.860	0.909	0.763	0.618	0.872	12.8%	14.9%
1981	2,863	3,513	1,325	608	2078	0.23	0.77	66.7	0.948	0.923	0.833	0.539	0.942	6.0%	6.9%
1982	15,158	10,701	0.707	4,070	11068	0.27	0.73	66.1	0.678	0.874	0.587	0.696	0.731	26.9%	41.8%
1983	19,077	7,546	0.396	5,496	13581	0.29	0.71	61.3	0.603	0.846	0.486	0.312	0.815	38.8%	41.8%
1984	5,156	6,148	1,200	1,217	3939	0.24	0.76	66.0	0.892	0.898	0.790	0.515	0.894	10.8%	11.4%
1985	2,863	4,228	1,585	561	2122	0.21	0.79	66.1	0.947	0.898	0.837	0.385	0.936	6.4%	6.7%
1986	8,067	8,132	1,012	2,008	6061	0.25	0.75	65.8	0.829	0.895	0.734	0.605	0.845	16.5%	17.9%
1987	1,870	2,830	1,539	393	1477	0.21	0.79	66.6	0.966	0.924	0.848	0.498	0.957	4.3%	4.8%
1988	1,870	3,058	1,663	379	1491	0.20	0.80	63.7	0.966	0.863	0.849	0.223	0.949	5.1%	5.4%
1989	1,870	3,936	2,141	324	1546	0.17	0.83	66.7	0.964	0.918	0.853	0.443	0.956	4.4%	5.8%
1990	1,870	2,700	1,468	402	1469	0.21	0.79	63.9	0.966	0.861	0.848	0.217	0.948	5.2%	5.5%
1991	1,870	2,862	1,557	391	1479	0.21	0.79	63.9	0.966	0.863	0.849	0.225	0.949	5.1%	5.8%
1992	1,870	2,927	1,592	367	1463	0.21	0.79	63.9	0.966	0.863	0.849	0.226	0.949	5.1%	5.7%

Average: 12.25%

Formulas: San Joaquin River Fall Run Smolt Survival Model WITHOUT BARRIER

C7 ='Study 468 Flow Data'!AB7
D7 ='Study 468 Flow Data'!G7
E7 ='Study 468 Flow Data'!Q7
F7 =D7+E7
G7 =F7/(C7-0.03*$H$2)
H7 =IF((0.3137*C7-0.0156*$H$2-0.0625*F7)<0,0,(0.3137*C7-0.0156*$H$2-0.0625*F7))
I7 =C7-H7
J7 =H7/C7
K7 =I7/C7
M7 =(1.01045-0.00003*I7)
N7 =(O7+P7)-(O7*P7)
O7 =(0.87634-0.000071*H7)
P7 =IF((-3.65867+0.058492*L7+0.000051*F7)<0,0,(-3.65867+0.058492*L7+0.000051*F7))
Q7 =((K7*M7)+(J7*N7))
R7 =(1-Q7)

T7 ='Study 468 Flow Data'!AC7
U7 ='Study 468 Flow Data'!H7
V7 ='Study 468 Flow Data'!R7
W7 =U7+V7
X7 =W7/(T7-0.03*$H$3)
Y7 =IF((0.3137*T7-0.0156*$H$3-0.0625*W7)<0,0,(0.3137*T7-0.0156*$H$3-0.0625*W7))
Z7 =T7-Y7
AA7 =Y7/T7
AB7 =Z7/T7
AD7 =(1.01045-0.00003*Z7)
AE7 =(AF7+AG7)-(AF7*AG7)
AF7 =(0.87634-0.000071*Y7)
AG7 =IF((-3.65867+0.058492*AC7+0.000051*W7)<0,0,(-3.65867+0.058492*AC7+0.000051*W7))
AH7 =((AB7*AD7)+(AA7*AE7))
AI7 =(1-AH7)
AK7 =0.45*R7+0.55*AI7

C-032355

C—032355

STUDY: 1995C06F-SWRCB-468 — DWRSIM: recirc818-f, 17 Jun 97
CVP, CVP EXPORT AT TRACY PP — (converted from TAF to CFS)

Project: /1995C06F-SWRCB-468/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	3773	4185	4342	4605
1923	4302	4212	4212	4285	4228	3966	3123	4218
1924	3832	3919	4212	4068	1480	1395	423	454
1925	1311	4212	3545	4213	3708	3479	2521	3479
1926	4302	4212	4212	4231	4228	3328	2440	3580
1927	4252	4212	4212	2827	3236	4050	4163	4605
1928	4285	4212	4212	4103	4228	3815	2992	3025
1929	4269	4212	4212	4231	4066	538	2944	3025
1930	2286	4212	4212	2791	2976	1949	1756	4302
1931	2655	2179	4212	3331	1659	1479	1496	1563
1932	1176	4212	4212	4085	927	2689	2423	3596
1933	3059	2017	4212	3835	293	2067	1626	1697
1934	992	4163	4212	1621	2179	1781	1935	4101
1935	2538	3220	4212	684	4228	4470	2992	4101
1936	4285	4212	4212	4103	4228	4185	3155	4605
1937	4285	4212	4212	4231	4228	3075	2683	3042
1938	4285	4212	4212	4267	4228	4050	4001	4605
1939	4302	4212	4212	2593	2667	2067	1740	4302
1940	2807	1431	4212	4085	4228	4134	2992	4084
1941	4269	4212	4212	4285	4228	4605	4603	4605
1942	4302	4212	4212	4285	4228	4453	4342	4605
1943	4302	4212	4212	4267	4228	4605	4163	4605
1944	4285	4212	4212	4103	4228	2118	1870	4168
1945	4269	4212	4212	4249	4228	3126	2618	3378
1946	4285	4212	4212	4267	4228	2975	2635	3361
1947	4269	4212	4212	4249	4228	2454	1740	4302
1948	3025	2293	4212	4085	4228	3412	3838	4605
1949	4269	4212	4212	4249	3773	2538	2374	3630
1950	4285	4212	4212	4249	4228	3126	2635	4605
1951	4269	4212	4212	4285	4228	3193	3562	4605
1952	4285	4212	4212	4138	4228	4605	4440	4605
1953	4302	4212	4212	4285	3448	2823	3838	4605
1954	4285	4212	4212	4267	4228	3680	2992	3277
1955	4285	4212	4212	4249	4228	1832	1984	4050
1956	4269	4212	4212	4138	2488	3983	4342	4605
1957	4302	4212	4212	4249	4228	3227	2976	4504
1958	4285	4212	4212	4249	4228	4605	4603	4605
1959	4302	4212	4212	4249	4228	1899	1838	4201
1960	4269	4212	4212	4085	3432	303	1675	4353
1961	4269	4212	4212	4249	3497	303	1496	4554
1962	2672	4212	4212	4231	4228	2790	2667	3949
1963	4285	4212	4212	4285	4228	4050	4163	4605
1964	4269	4212	4212	4120	3643	1748	1870	4168
1965	4067	4212	4212	4249	4228	4269	2992	4605
1966	4302	4212	4212	4285	4228	2487	2391	3630
1967	4269	4212	4212	4285	4228	4605	4603	4605
1968	4302	4212	4212	2677	2992	2622	1822	4218
1969	4285	4212	4212	4285	3643	3344	3985	4605
1970	4302	4212	4163	1206	3106	3294	2960	4185
1971	4285	4212	4212	4285	4228	3294	3838	4605
1972	4269	4212	4212	4103	3724	2353	1935	4101
1973	4269	4212	4212	4267	4228	3714	3253	2454
1974	4285	4212	4212	4267	4228	4605	4342	4605
1975	4302	4212	4212	4249	4228	4386	4342	4605
1976	4302	4212	4212	4085	4228	639	1561	4453
1977	2689	1708	2098	666	797	1059	293	50
1978	2470	4131	2521	1711	2114	3445	4098	4605
1979	4302	4212	4212	4249	4228	3428	2992	2823
1980	4269	4212	4212	4103	3757	3008	3594	4605
1981	4285	4212	4212	2899	2992	2723	1756	4302
1982	4285	4212	4212	4285	4228	3596	4017	4605
1983	4302	4212	4212	3421	2049	3311	3952	4605
1984	3328	2992	1334	1443	3204	3428	3074	4403
1985	4285	4212	4212	4249	4228	2118	2114	3899
1986	2487	4212	4212	4249	4228	2302	2651	3933
1987	4269	4212	1106	1260	2342	319	1415	4605
1988	2975	4212	4212	3981	2000	1428	1529	4470
1989	2386	2472	4196	954	4228	2823	1968	4067
1990	4252	4212	2553	1224	2228	1765	1350	4538
1991	2487	1659	1691	396	4228	2084	1447	1949
1992	3109	2960	4212	1565	1984	1865	1887	3764

STUDY: 1995C06F-SWRCB-468 — DWRSIM: recirc818-f, 17 Jun 97
SWP, SWP EXPORT AT BANKS PP — (converted from TAF to CFS)

Project: /1995C06F-SWRCB-468/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4319	7107	7579	6356	4147	4185	4342	6672
1923	6672	4505	3643	2377	3367	3966	3123	3395
1924	3748	6424	6852	4624	1675	1395	358	471
1925	3210	4847	3155	7581	4163	3479	2521	2941
1926	3109	3871	7140	7635	3497	3328	2440	2487
1927	6672	7042	7286	8499	4147	4050	4163	3748
1928	6672	5513	3643	4225	4424	3815	3383	2672
1929	5462	6180	7091	3853	2765	1815	114	101
1930	1765	6278	7091	3997	4066	1949	1756	2672
1931	3277	2992	4879	1891	1626	1479	1301	1328
1932	1647	7188	7823	5894	2732	2689	2423	3798
1933	2605	2488	5416	2701	4342	2067	1073	84
1934	1563	5546	7156	4411	2277	1781	1008	1311
1935	4285	3399	7660	3943	6977	4622	2472	3512
1936	3445	3285	7449	8206	7058	4185	3155	3361
1937	3664	5741	7579	4556	4001	4974	4050	4605
1938	6672	7530	3936	3943	3968	4369	5448	6672
1939	5277	3741	3236	3961	3985	2067	1740	3075
1940	1748	2667	8018	8206	4651	4134	3285	3092
1941	6100	7335	8132	6878	3838	4706	5123	6302
1942	6168	3610	3236	3961	4001	4453	4342	6672
1943	6521	3773	3301	3997	4050	4857	4163	3143
1944	6672	6424	3269	3825	4001	2118	1870	3176
1945	6605	6961	5188	3997	4131	3126	2618	3798
1946	6672	7595	3643	3979	4424	2975	2635	3596
1947	6621	7140	6684	3997	3985	2454	1740	2958
1948	3630	3090	6522	1791	3432	3412	3838	4521
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3378	3448	7172	7526	4603	3126	2635	3529
1951	6672	7595	7319	4682	4700	3193	3562	2823
1952	6672	7107	6847	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3854	4628	4684	3680	4440	2739
1955	6672	6912	6017	3889	3025	1832	1984	3025
1956	4218	7595	8018	4520	4700	3983	4342	6672
1957	6672	5806	3887	4646	4375	3227	2976	3462
1958	6672	6928	3367	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3025	1899	1838	2991
1960	3075	2797	6408	7041	4033	3731	1675	2689
1961	6235	6896	7075	7112	4554	3243	1496	3008
1962	3378	6879	3919	8481	3497	2790	2667	2874
1963	6672	6896	7253	8499	4375	4050	4163	4017
1964	6672	6050	3871	3512	3350	1748	1870	2840
1965	6252	7465	8506	5618	4277	4269	4733	3630
1966	6672	6180	3659	4375	4424	2487	2391	2622
1967	6672	7123	7676	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2807
1969	6353	6977	5286	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3294	2960	2622
1971	6672	7042	5465	4285	4700	3294	3838	5042
1972	6672	6196	3887	4485	4359	2353	1935	2706
1973	6672	6896	6408	4429	4456	3714	3253	5579
1974	6672	7140	3643	4375	4424	4722	4342	4924
1975	5411	4245	3854	4628	4684	4386	4342	6672
1976	6672	4651	3806	4085	3627	2370	1561	2941
1977	3311	3009	2440	1404	1252	1949	439	387
1978	1714	5530	7774	7418	3903	4067	4098	3899
1979	6588	3676	3269	3961	4001	3428	2992	5227
1980	6672	6993	3155	3633	3350	3949	3871	4067
1981	5579	4115	3350	4069	4115	2723	1756	2891
1982	6672	7026	7644	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	3428	3074	3361
1985	6672	6619	3871	4646	4519	2118	2114	2622
1986	4168	6944	7351	7328	4180	5210	5481	3848
1987	3496	6099	6359	4213	4131	3176	1415	3143
1988	1865	6879	7058	2538	1773	1428	1529	1378
1989	3361	3253	4521	1765	6961	2823	1968	2487
1990	3563	6196	7058	6572	3643	1765	1350	2907
1991	2370	3171	1708	846	7075	2168	1415	1076
1992	1445	1610	4781	7197	6245	1865	1041	1378

STUDY: 1995C06F-SWRCB-468 — DWRSIM: 8.18, 27 Nov 96
CP # 682, SAN JOAQUIN RIVER AT VERNALIS — (Converted from TAF to CFS)

Project: /1995C06F-SWRCB-468/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	2000	1697	2488	2683	6752	5351	6201	5936	7294
1923	3968	2101	3741	4196	4267	3415	5344	5156	2168
1924	3106	1462	1496	1399	1617	1708	1983	1870	1378
1925	1756	1361	1252	1171	2701	2423	3983	3822	1949
1926	2000	1412	1382	1366	2863	2277	3664	3545	1681
1927	2000	1933	2179	1789	5474	3578	5344	5156	3428
1928	4359	1849	2309	2277	2590	3871	4470	3822	1412
1929	1887	1395	1301	1203	1458	1691	2017	1870	891
1930	2000	1244	1106	1220	1549	1935	2420	1870	924
1931	1952	1193	1106	1122	1350	1317	1983	1870	840
1932	1334	1294	3058	3432	8536	4538	4504	3871	2134
1933	3513	1462	1317	1610	2017	2065	2807	2683	1412
1934	1838	1277	1203	1431	2467	1659	1983	1870	874
1935	1301	1395	1350	2944	3223	3513	7226	6050	3916
1936	3171	1546	1561	2309	12413	5757	6403	5156	2588
1937	3058	1563	1870	2683	15017	11010	7932	8132	2672
1938	3155	1798	5074	6993	22417	31047	18049	23972	11764
1939	8636	2319	2293	2505	3637	2765	2891	2683	1630
1940	2000	1479	1399	4001	8049	10425	5663	5156	3428
1941	2326	1697	3903	4359	14549	11482	10083	9579	8285
1942	4912	2235	4456	8392	10353	5936	6907	5936	5647
1943	6879	3092	3562	11157	10894	17760	7915	6180	3428
1944	3415	1815	1919	1984	3112	3106	3428	2976	1865
1945	2000	1832	1691	1708	8985	7937	5781	3871	2252
1946	3806	2202	5595	5448	5888	4391	5344	3871	2134
1947	2261	2336	2716	2179	2683	2277	3664	2683	1529
1948	1903	1344	1203	1122	1373	1740	3983	3822	2286
1949	2000	1428	1285	1171	1476	2586	3983	2976	1731
1950	2000	1428	1285	1480	2557	2293	3983	3822	1714
1951	2000	6134	10571	10636	7941	5562	5344	5156	2134
1952	2000	1664	2505	6847	6102	11368	10840	15450	8470
1953	8343	2185	3058	4960	5744	3627	3983	3822	2286
1954	2000	1513	1415	1334	2287	2407	3983	3822	1798
1955	2000	1428	1334	1529	2287	2277	2807	2683	1681
1956	2000	1445	12376	21321	12917	5985	6201	5936	7546
1957	4635	1597	1626	1529	2341	3139	3983	3822	2286
1958	2000	1529	1447	1626	4177	10604	14907	13173	10184
1959	4830	1798	1578	2163	4519	3643	2807	2683	1462
1960	1870	1328	1171	1155	1791	1919	2420	1870	1529
1961	1805	1344	1236	1171	1278	1350	1983	1870	1378
1962	1382	1294	1155	1138	5942	4489	4201	3822	1681
1963	2000	1412	1252	1724	6266	3415	5344	5156	3428
1964	3041	2134	1789	1854	2208	2277	2807	2683	1513
1965	1968	1647	4684	11954	7905	4619	6201	5936	3428
1966	4424	3479	4798	4847	5186	3708	3983	2976	1647
1967	2000	1548	2635	2960	4105	6831	12772	15483	13797
1968	4700	1697	1724	1643	3181	2797	3664	2683	1563
1969	2000	1479	1724	14800	30556	19695	20923	26038	18368
1970	8327	2554	3594	17044	9489	7432	5344	5156	2134
1971	2000	1731	2147	2000	2611	3968	3983	3822	2286
1972	2000	1412	1480	1366	2208	2277	3664	2683	1412
1973	1952	1395	1317	2651	7977	8945	5680	5156	2302
1974	3253	2386	2749	7026	5366	7237	7663	5936	3428
1975	3545	1731	1935	2033	5366	8831	6621	5936	6285
1976	4098	1832	1805	1529	1947	1708	1983	1870	1328
1977	2814	2101	1610	1155	1242	1203	1983	1870	1260
1978	1285	1311	1350	3253	7202	10978	14923	10831	7075
1979	4245	1933	1691	4066	9381	8652	5344	5156	2134
1980	2830	1697	1805	13255	24009	14572	6722	6819	6184
1981	5090	2084	2098	2960	2773	2960	3664	2683	1563
1982	2000	1630	2000	9368	16403	15304	27023	15158	9865
1983	12442	8621	19044	24867	36534	41114	20738	19077	36451
1984	12116	13545	21500	15190	9718	8001	5344	5156	2134
1985	2000	1781	1691	1529	2359	2358	2807	2683	1613
1986	2000	1597	1545	1984	22381	26168	9814	8067	7613
1987	3454	1714	1545	1464	1855	1919	2033	1870	1412
1988	1805	1294	1138	1122	1182	1285	1983	1870	1311
1989	1301	1176	1171	1155	1260	1626	2420	1870	1328
1990	1334	1227	1138	1122	1260	1382	1983	1870	1244
1991	1285	1210	1122	1090	1152	2358	2437	1870	958
1992	1334	1428	1138	1138	2243	2049	2252	1870	1025

C-032356

C-032356

Study 50[illegible] [illegible]oaquin River Fall Run Salmon Smolt Survival Model WITH BARRIER

Barrier at head of old River from Apr 15 to May 15

Old River Barrier Open above	7500.00	cfs
Consumptive Depletion for April	1053.00	cfs
Consumptive Depletion for May	1053.00	cfs

Year	Water Year Type	APRIL Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234
1922	A	8,201	8,369	1.357	3,947	2,254	0.64	0.36	60.2	0.943	0.713	0.598	0.289	0.787	20.3%
1923	B	5,344	7,932	1.493	3,380	1,965	0.63	0.37	59.7	0.952	0.723	0.636	0.238	0.807	19.3%
1924	C	2,202	2,824	1.348	1,398	804	0.63	0.37	60.6	0.966	0.785	0.777	0.036	0.858	14.2%
1925	D	3,983	6,968	1.761	2,486	1,497	0.62	0.38	63.4	0.966	0.821	0.700	0.405	0.875	12.5%
1926	D	[illegible]	[illegible]	[illegible]	[illegible]	1,388	[illegible]	[illegible]	63.4	[illegible]	[illegible]	0.716	0.381	[illegible]	14.9%
1927	W	5,344	8,100	1.525	3,375	1,969	0.63	0.37	57.1	0.951	0.671	0.637	0.094	0.774	22.6%
1928	A	3,983	7,361	1.663	2,474	1,509	0.62	0.38	60.2	0.965	0.772	0.701	0.236	0.845	15.5%
1929	C	2,017	2,706	1.363	1,279	738	0.63	0.37	60.6	0.966	0.791	0.786	0.024	0.863	13.7%
1930	D	2,420	3,899	1.832	1,517	903	0.63	0.37	63.4	0.983	0.826	0.769	0.249	0.885	11.5%
1931	C	2,118	3,059	1.466	1,337	781	0.63	0.37	60.6	0.967	0.791	0.781	0.042	0.863	13.7%
1932	D	4,821	5,378	1.198	2,897	1,624	0.64	0.36	63.4	0.962	0.777	0.671	0.324	0.844	15.6%
1933	C	2,807	4,134	1.490	1,772	1,034	0.63	0.37	60.6	0.979	0.775	0.751	0.097	0.850	15.0%
1934	C	1,983	3,563	1.826	1,231	752	0.62	0.38	60.6	0.986	0.803	0.789	0.068	0.873	12.7%
1935	B	8,739	8,840	1.318	4,298	2,441	0.64	0.36	59.7	0.937	0.693	0.571	0.284	0.781	21.9%
1936	B	6,403	8,403	1.319	4,083	2,320	0.64	0.36	59.7	0.941	0.695	0.586	0.262	0.784	21.6%
1937	B	7,932	8,218	1.040	1,958	5,974	0.25	0.75	59.7	0.831	0.804	0.737	0.252	0.824	17.6%
1938	W	18,049	8,420	0.467	5,119	12,930	0.28	0.72	57.1	0.623	0.587	0.513	0.111	0.607	39.3%
1939	D	2,891	4,134	1.446	1,829	1,062	0.63	0.37	63.4	0.979	0.813	0.746	0.261	0.874	12.6%
1940	A	6,252	8,571	1.376	3,976	2,276	0.64	0.36	60.2	0.942	0.718	0.594	0.300	0.798	20.2%
1941	W	10,083	9,310	0.926	2,565	7,519	0.25	0.75	57.1	0.786	0.742	0.694	0.156	0.774	22.6%
1942	W	6,907	8,907	1.295	4,410	2,497	0.64	0.36	57.1	0.936	0.622	0.563	0.135	0.736	26.4%
1943	W	7,915	9,462	1.200	1,875	6,040	0.24	0.76	57.1	0.829	0.785	0.743	0.164	0.819	18.1%
1944	D	3,428	4,235	1.247	2,190	1,238	0.64	0.36	63.4	0.973	0.795	0.721	0.266	0.859	14.1%
1945	B	6,336	6,689	1.061	4,088	2,248	0.65	0.35	59.7	0.943	0.658	0.586	0.174	0.759	24.1%
1946	B	5,344	5,949	1.120	3,438	1,906	0.64	0.36	59.7	0.953	0.683	0.632	0.137	0.779	22.1%
1947	D	3,664	4,941	1.360	2,329	1,335	0.64	0.36	63.4	0.970	0.798	0.711	0.302	0.861	13.9%
1948	B	3,983	6,857	1.735	2,489	1,494	0.62	0.38	59.7	0.966	0.755	0.700	0.183	0.834	16.6%
1949	D	3,983	5,075	1.284	2,541	1,442	0.64	0.36	63.4	0.967	0.790	0.696	0.309	0.854	14.6%
1950	B	3,983	6,265	1.591	2,506	1,477	0.63	0.37	59.7	0.966	0.745	0.698	0.154	0.827	17.3%
1951	A	5,344	6,353	1.196	3,426	1,918	0.64	0.36	60.2	0.963	0.702	0.633	0.187	0.792	20.8%
1952	W	10,840	8,773	0.812	2,836	8,004	0.26	0.74	57.1	0.770	0.717	0.675	0.129	0.756	24.4%
1953	W	3,983	5,647	1.429	2,525	1,458	0.63	0.37	57.1	0.967	0.697	0.697	0.000	0.796	20.4%
1954	A	3,983	7,361	1.863	2,474	1,509	0.62	0.38	60.2	0.965	0.772	0.701	0.236	0.845	15.5%
1955	D	2,807	3,664	1.320	1,786	1,021	0.64	0.36	63.4	0.980	0.809	0.750	0.237	0.871	12.9%
1956	W	6,235	7,999	1.280	3,981	2,254	0.64	0.36	57.1	0.943	0.630	0.594	0.069	0.743	25.7%
1957	A	3,983	6,420	1.625	2,502	1,481	0.63	0.37	60.2	0.966	0.756	0.699	0.190	0.834	16.6%
1958	W	14,772	9,663	0.656	4,014	10,756	0.27	0.73	57.1	0.668	0.662	0.591	0.174	0.681	31.9%
1959	B	2,807	3,798	1.369	1,782	1,025	0.63	0.37	59.7	0.980	0.757	0.750	0.027	0.836	16.2%
1960	D	2,420	4,033	1.669	1,513	907	0.63	0.37	63.4	0.983	0.828	0.769	0.256	0.886	11.4%
1961	D	1,983	3,546	1.817	1,232	752	0.62	0.38	63.4	0.986	0.836	0.789	0.231	0.895	10.5%
1962	B	4,201	5,579	1.338	2,675	1,527	0.64	0.36	59.7	0.965	0.723	0.666	0.118	0.811	18.9%
1963	W	5,344	8,100	1.525	3,375	1,969	0.63	0.37	57.1	0.951	0.671	0.637	0.094	0.774	22.6%
1964	D	2,807	3,496	1.260	1,791	1,016	0.64	0.36	63.4	0.980	0.806	0.749	0.228	0.869	13.1%
1965	W	6,201	8,587	1.384	3,942	2,259	0.64	0.36	57.1	0.943	0.643	0.596	0.117	0.752	24.8%
1966	B	3,983	4,974	1.259	2,544	1,439	0.64	0.36	59.7	0.967	0.722	0.696	0.087	0.811	18.9%
1967	W	13,881	9,546	0.689	3,742	10,140	0.27	0.73	57.1	0.708	0.676	0.611	0.166	0.698	30.2%
1968	B	3,664	5,243	1.444	2,320	1,343	0.63	0.37	59.7	0.970	0.741	0.712	0.101	0.825	17.5%
1969	W	20,923	7,512	0.360	6,078	14,845	0.29	0.71	57.1	0.585	0.481	0.445	0.064	0.541	45.9%
1970	W	5,344	6,688	1.240	3,419	1,926	0.64	0.36	57.1	0.963	0.640	0.634	0.017	0.753	24.7%
1971	W	3,983	6,621	1.676	2,496	1,487	0.63	0.37	57.1	0.966	0.705	0.699	0.019	0.802	19.8%
1972	B	3,664	4,739	1.305	2,335	1,329	0.64	0.36	58.9	0.971	0.719	0.711	0.028	0.810	19.0%
1973	A	5,880	7,495	1.327	3,620	2,060	0.64	0.36	59.2	0.949	0.690	0.619	0.186	0.784	21.6%
1974	W	7,663	9,327	1.222	1,805	5,859	0.24	0.76	58.9	0.835	0.785	0.748	0.145	0.823	17.7%
1975	W	6,621	8,773	1.331	4,220	2,401	0.64	0.36	53.7	0.938	0.577	0.577	0.000	0.708	29.2%
1976	C	1,983	3,008	1.542	1,247	736	0.63	0.37	57.8	0.966	0.786	0.786	0.000	0.862	13.8%
1977	C	1,983	2,991	1.533	1,248	735	0.63	0.37	62.0	0.966	0.813	0.786	0.120	0.878	12.2%
1978	A	14,823	7,512	0.504	4,196	10,726	0.28	0.72	61.4	0.689	0.712	0.578	0.316	0.695	30.5%
1979	B	5,344	6,857	1.291	3,411	1,933	0.64	0.36	60.5	0.952	0.718	0.634	0.230	0.803	19.7%
1980	A	6,722	6,941	1.037	4,342	2,380	0.65	0.35	60.1	0.939	0.659	0.568	0.211	0.758	24.2%
1981	D	3,664	5,445	1.499	2,314	1,349	0.63	0.37	64.6	0.970	0.827	0.712	0.398	0.879	12.1%
1982	W	27,040	9,159	0.339	7,894	19,147	0.29	0.71	52.8	0.436	0.316	0.316	0.000	0.401	59.9%
1983	W	20,738	6,856	0.336	6,054	14,664	0.29	0.71	57.2	0.570	0.470	0.446	0.042	0.541	45.9%
1984	W	5,344	6,867	1.291	3,411	1,933	0.64	0.36	60.7	0.952	0.722	0.634	0.241	0.806	19.4%
1985	D	3,664	4,874	1.342	2,331	1,333	0.64	0.36	62.5	0.970	0.782	0.711	0.246	0.850	15.0%
1986	W	9,814	7,546	0.771	2,591	7,224	0.26	0.74	61.3	0.794	0.788	0.692	0.312	0.792	20.8%
1987	D	2,033	3,496	1.746	1,267	766	0.62	0.38	62.3	0.967	0.821	0.786	0.164	0.864	11.6%
1988	C	1,983	2,924	1.498	1,250	733	0.63	0.37	62.1	0.968	0.814	0.788	0.123	0.878	12.2%
1989	D	2,420	5,647	2.364	1,466	954	0.61	0.39	64.1	0.982	0.868	0.772	0.379	0.907	9.3%
1990	C	1,983	3,546	1.817	1,232	752	0.62	0.38	60.6	0.986	0.803	0.789	0.067	0.873	12.7%
1991	C	2,437	4,252	1.768	1,518	919	0.62	0.38	60.6	0.983	0.792	0.769	0.103	0.864	13.6%
1992	C	2,252	3,731	1.680	1,408	844	0.63	0.37	60.6	0.985	0.793	0.776	0.076	0.865	13.5%

Year	MAY Vernalis Flows	CVP+SWP exports	exp/v-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234	Weighted (April + June) total survival
1922	5,936	8,685	1.471	3,527	2,409	0.59	0.41	66.6	0.936	0.860	0.626	0.660	0.904	9.6%	14.5%
1923	5,156	6,245	1.219	3,104	2,051	0.60	0.40	66.0	0.949	0.836	0.656	0.520	0.880	12.0%	15.3%
1924	1,903	1,171	0.626	1,177	726	0.62	0.38	63.9	0.969	0.822	0.793	0.139	0.865	11.5%	12.7%
1925	3,822	5,042	1.330	2,286	1,536	0.60	0.40	67.3	0.984	0.867	0.714	0.535	0.908	9.4%	10.8%
1926	3,646	4,878	1.388	2,113	1,432	0.60	0.40	67.3	0.967	0.870	0.726	0.527	0.910	9.0%	10.4%
1927	5,156	8,327	1.625	3,036	2,119	0.59	0.41	64.2	0.947	0.836	0.661	0.521	0.882	11.8%	16.8%
1928	3,822	6,375	1.662	2,242	1,580	0.59	0.41	66.6	0.963	0.876	0.717	0.562	0.912	8.8%	11.8%
1929	1,870	3,106	1.669	1,093	777	0.58	0.42	63.9	0.967	0.846	0.799	0.237	0.905	9.5%	11.4%
1930	1,870	3,513	1.911	1,080	790	0.58	0.42	67.3	0.987	0.891	0.800	0.457	0.932	6.8%	8.9%
1931	2,017	3,220	1.622	1,184	833	0.59	0.41	63.9	0.985	0.843	0.792	0.243	0.902	9.8%	11.6%
1932	3,871	4,847	1.282	2,323	1,547	0.60	0.40	67.3	0.984	0.863	0.711	0.525	0.903	9.7%	12.4%
1933	2,663	3,155	1.190	1,615	1,069	0.60	0.40	63.9	0.978	0.819	0.762	0.240	0.882	11.8%	13.2%
1934	1,870	2,944	1.601	1,099	772	0.59	0.41	63.9	0.987	0.845	0.798	0.229	0.903	9.7%	11.0%
1935	6,050	5,627	0.936	3,699	2,351	0.61	0.39	66.0	0.940	0.803	0.614	0.489	0.856	14.4%	17.8%
1936	5,156	6,310	1.232	3,102	2,054	0.60	0.40	66.0	0.949	0.836	0.656	0.524	0.881	11.9%	16.3%
1937	8,132	6,961	0.859	2,099	6,032	0.26	0.74	66.0	0.829	0.879	0.727	0.557	0.842	15.8%	16.8%
1938	24,265	9,449	0.390	7,005	17,260	0.29	0.71	64.2	0.493	0.736	0.370	0.578	0.564	43.6%	41.7%
1939	3,058	3,708	1.226	1,837	1,220	0.60	0.40	67.3	0.974	0.895	0.746	0.487	0.908	9.2%	10.7%
1940	5,156	6,198	1.209	3,108	2,050	0.60	0.40	66.6	0.949	0.846	0.656	0.553	0.887	11.3%	15.3%
1941	9,579	9,726	1.019	2,381	7,198	0.25	0.75	64.2	0.794	0.861	0.707	0.593	0.816	18.4%	20.3%
1942	5,936	8,685	1.471	3,527	2,409	0.59	0.41	64.2	0.938	0.828	0.626	0.539	0.873	12.7%	18.9%
1943	6,180	8,327	1.364	3,695	2,485	0.60	0.40	64.2	0.936	0.815	0.614	0.521	0.864	13.6%	15.6%
1944	2,976	3,741	1.270	1,784	1,192	0.60	0.40	67.3	0.975	0.867	0.750	0.469	0.910	9.0%	11.3%
1945	4,033	5,237	1.309	2,415	1,618	0.60	0.40	66.0	0.962	0.843	0.705	0.469	0.891	10.9%	16.8%
1946	3,871	5,269	1.373	2,310	1,561	0.60	0.40	66.0	0.964	0.848	0.712	0.471	0.894	10.6%	15.7%
1947	2,663	3,545	1.337	1,602	1,061	0.60	0.40	67.3	0.978	0.871	0.763	0.459	0.914	8.6%	11.0%
1948	3,822	7,676	2.025	2,200	1,622	0.58	0.42	66.0	0.962	0.886	0.720	0.593	0.918	8.2%	12.0%
1949	2,976	4,749	1.613	1,751	1,225	0.59	0.41	67.3	0.974	0.861	0.752	0.520	0.919	8.1%	11.0%
1950	3,822	5,269	1.390	2,278	1,544	0.60	0.40	66.0	0.964	0.849	0.715	0.471	0.895	10.5%	13.8%
1951	5,156	7,123	1.390	3,076	2,080	0.60	0.40	66.6	0.948	0.863	0.658	0.600	0.897	10.3%	15.0%
1952	15,460	9,563	0.620	4,233	11,218	0.27	0.73	64.2	0.674	0.824	0.576	0.584	0.715	28.5%	26.8%
1953	3,822	7,676	2.025	2,200	1,622	0.58	0.42	64.2	0.962	0.857	0.720	0.488	0.901	9.9%	14.6%
1954	3,822	7,432	1.961	2,208	1,614	0.58	0.42	66.6	0.962	0.892	0.720	0.616	0.922	7.8%	11.3%
1955	2,663	3,966	1.496	1,586	1,095	0.59	0.41	67.3	0.978	0.877	0.764	0.480	0.918	8.2%	10.3%
1956	5,936	8,685	1.471	3,527	2,409	0.59	0.41	64.2	0.936	0.828	0.626	0.539	0.873	12.7%	18.6%
1957	3,822	5,985	1.579	2,255	1,567	0.59	0.41	66.6	0.963	0.870	0.716	0.542	0.906	9.2%	12.5%
1958	13,173	10,685	0.813	3,448	9,725	0.26	0.74	64.2	0.719	0.868	0.632	0.641	0.758	24.2%	27.7%
1959	2,663	3,676	1.366	1,596	1,066	0.60	0.40	66.0	0.978	0.855	0.763	0.389	0.905	9.5%	12.5%
1960	1,870	3,360	1.822	1,085	785	0.58	0.42	67.3	0.987	0.889	0.799	0.449	0.930	7.0%	9.0%
1961	1,870	2,992	1.627	1,097	773	0.59	0.41	67.3	0.987	0.885	0.798	0.430	0.927	7.3%	8.7%
1962	3,822	5,334	1.407	2,276	1,546	0.60	0.40	66.0	0.964	0.860	0.715	0.474	0.896	10.4%	14.2%
1963	5,156	8,327	1.625	3,036	2,119	0.59	0.41	64.2	0.947	0.836	0.661	0.521	0.882	11.8%	16.8%
1964	2,663	3,871	1.460	1,591	1,092	0.59	0.41	67.3	0.978	0.876	0.763	0.475	0.917	8.3%	10.4%
1965	5,936	7,937	1.344	3,551	2,385	0.60	0.40	64.2	0.939	0.813	0.624	0.501	0.863	13.7%	18.7%
1966	2,976	4,781	1.624	1,750	1,226	0.59	0.41	66.0	0.974	0.863	0.752	0.446	0.908	9.2%	13.6%
1967	16,003	10,051	0.629	4,376	11,626	0.27	0.73	64.2	0.662	0.830	0.566	0.609	0.708	29.2%	29.7%
1968	2,663	3,643	1.374	1,599	1,065	0.60	0.40	66.0	0.978	0.855	0.763	0.388	0.905	9.5%	13.1%
1969	28,217	9,010	0.344	7,645	18,572	0.29	0.71	66.4	0.453	0.790	0.334	0.685	0.551	44.9%	45.3%
1970	6,158	5,920	1.156	3,116	2,041	0.60	0.40	61.2	0.949	0.732	0.665	0.223	0.818	18.2%	21.1%
1971	3,822	7,678	2.028	2,200	1,677	0.58	0.42	64.2	0.962	0.857	0.720	0.488	0.901	9.9%	14.3%
1972	2,663	3,903	1.472	1,590	1,093	0.59	0.41	66.0	0.978	0.858	0.763	0.401	0.907	9.3%	13.7%
1973	5,156	6,570	1.282	3,094	2,062	0.60	0.40	66.3	0.949	0.847	0.657	0.554	0.888	11.2%	15.9%
1974	5,936	8,685	1.471	3,527	2,409	0.59	0.41	66.1	0.938	0.869	0.626	0.651	0.897	10.3%	13.6%
1975	5,936	8,685	1.471	3,527	2,409	0.59	0.41	61.5	0.936	0.769	0.626	0.382	0.837	16.3%	22.1%
1976	2,086	3,253	1.599	1,214	851	0.59	0.41	65.8	0.985	0.865	0.790	0.356	0.914	8.6%	10.9%
1977	1,870	732	0.396	1,171	700	0.63	0.37	62.3	0.969	0.798	0.793	0.023	0.870	13.0%	12.7%
1978	10,831	8,197	0.759	2,869	7,962	0.26	0.74	66.9	0.772	0.893	0.673	0.672	0.804	19.6%	24.5%
1979	5,156	5,985	1.166	3,113	2,043	0.60	0.40	66.0	0.949	0.830	0.655	0.507	0.877	12.3%	15.6%
1980	6,619	7,461	1.136	4,005	2,614	0.61	0.39	66.6	0.932	0.844	0.592	0.618	0.879	12.1%	17.5%
1981	2,663	3,513	1.325	1,603	1,060	0.60	0.40	66.7	0.978	0.890	0.763	0.539	0.926	7.4%	9.5%
1982	15,158	10,701	0.707	4,070	11,088	0.27	0.73	65.1	0.678	0.874	0.587	0.695	0.731	26.9%	41.8%
1983	19,077	7,546	0.396	5,496	13,581	0.29	0.71	61.3	0.603	0.646	0.486	0.312	0.615	38.5%	41.8%
1984	5,156	6,148	1.200	3,107	2,048	0.60	0.40	66.0	0.949	0.833	0.656	0.515	0.879	12.1%	15.4%
1985	3,139	4,521	1.455	1,863	1,276	0.59	0.41	65.1	0.972	0.841	0.744	0.380	0.894	10.6%	12.5%
1986	8,067	8,132	1.012	2,006	6,061	0.25	0.75	65.8	0.829	0.895	0.734	0.605	0.845	15.5%	17.9%
1987	2,131	2,992	1.426	1,264	866	0.59	0.41	66.6	0.984	0.895	0.787	0.506	0.931	6.9%	9.0%
1988	1,870	3,025	1.645	1,096	774	0.59	0.41	63.7	0.987	0.843	0.799	0.222	0.903	9.7%	10.8%
1989	1,870	3,936	2.141	1,066	804	0.57	0.43	66.7	0.988	0.889	0.801	0.443	0.931	6.9%	8.0%
1990	1,870	2,700	1.468	1,107	764	0.59	0.41	63.9	0.988	0.842	0.796	0.217	0.901	9.9%	11.1%
1991	1,870	2,882	1.557	1,101	769	0.59	0.41	63.9	0.987	0.844	0.798	0.225	0.903	9.7%	11.5%
1992	3,269	3,757	1.160	1,972	1,297	0.60	0.40	63.9	0.972	0.808	0.736	0.271	0.873	12.7%	13.1%
														Average:	16.03%

Calculations- San Joaquin River Fall Run Smolt Survival Model WITH BARRIER

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C8 ='Study 506 Flow Data'!AB7
D8 ='Study 506 Flow Data'!G7     (HIDDEN)
E8 ='Study 506 Flow Data'!Q7     (HIDDEN)
F8 =D8+E8
G8 =F8/(C8-0.03*$R$2)
H8 =IF(C8<$R$1,(0.47*(0.3137*C8-0.0156*$R$2-0.0625*F8)+0.53*C8),(0.3137*C8-0.0156*$R$2-0.0625*F8))
I8 =C8-H8
J8 =H8/C8
K8 =I8/C8
M8 =(1.01045-0.00003*I8)
N8 =(O8+P8)-(O8*P8)
O8 =IF((0.87634-0.000071*H8)<0,0,(0.87634-0.000071*H8))
P8 =IF((-3.65867+0.058492*L8+0.000051*F8)<0,0,(-3.65867+0.058492*L8+0.000051*F8))
Q8 =((K8*M8)+(J8*N8))
R8 =(1-Q8)
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T8 ='Study 506 Flow Data'!AC7
U8 ='Study 506 Flow Data'!H7     (HIDDEN)
V8 ='Study 506 Flow Data'!R7     (HIDDEN)
W8 =U8+V8
X8 =W8/(T8-0.03*$R$3)
Y8 =IF(T8<$R$1,(0.52*(0.3137*T8-0.0156*$R$3-0.0625*W8)+0.48*T8),(0.3137*T8-0.0156*$R$3-0.0625*W8))
Z8 =T8-Y8
AA8 =Y8/T8
AB8 =Z8/T8
AD8 =(1.01045-0.00003*Z8)
AE8 =(AF8+AG8)-(AF8*AG8)
AF8 =IF((0.87634-0.000071*Y8)<0,0,(0.87634-0.000071*Y8))
AG8 =IF((-3.65867+0.058492*AC8+0.000051*W8)<0,0,(-3.65867+0.058492*AC8+0.000051*W8))
AH8 =((AB8*AD8)+(AA8*AE8))
AI8 =(1-AH8)
AK8 =0.45*G94+0.55*AI8
```

A2-17

C-032357

C-032358

C — 0 3 2 3 5 8

Study 506 San Joaquin River Fall Run Salmon Smolt Survival Model WITHOUT BARRIER AT HEAD OF OLD RIVER

Consumptive Depletion for April 1053.00 cfs
Consumptive Depletion for May 1053.00 cfs

San Joaquin River temperatures based on limited historical data from USBR

APRIL

Year	Water Year Type	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton Q	OldR Flo	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	m2	m34	m3	m4	m234	Calculated Survivability s234
1922	A	6,201	8,369	1.357	1,408	4,795	0.23	0.77	60.2	0.867	0.841	0.777	0.269	0.861	13.9%
1923	B	5,344	7,932	1.493	1,164	4,180	0.22	0.78	59.7	0.885	0.843	0.794	0.238	0.876	12.4%
1924	C	2,202	2,924	1.348	491	1,710	0.22	0.78	60.6	0.959	0.847	0.841	0.035	0.934	6.6%
1925	D	3,963	6,958	1.761	798	3,165	0.20	0.80	63.4	0.915	0.893	0.820	0.405	0.910	9.0%
1926	D	3,664	6,689	1.842	715	2,949	0.20	0.80	63.4	0.922	0.894	0.826	0.391	0.916	8.4%
1927	W	5,344	8,100	1.525	1,154	4,190	0.22	0.78	57.1	0.885	0.814	0.794	0.094	0.869	13.1%
1928	A	3,983	7,361	1.863	773	3,210	0.19	0.81	60.2	0.914	0.864	0.821	0.238	0.904	9.6%
1929	C	2,017	2,708	1.363	447	1,570	0.22	0.78	60.6	0.963	0.848	0.845	0.024	0.938	6.2%
1930	D	2,420	3,899	1.632	499	1,921	0.21	0.79	63.4	0.953	0.880	0.841	0.249	0.938	6.2%
1931	C	2,118	3,059	1.466	457	1,661	0.22	0.78	60.6	0.961	0.850	0.844	0.042	0.937	6.3%
1932	D	4,521	5,378	1.198	1,066	3,455	0.24	0.76	63.4	0.907	0.865	0.801	0.324	0.897	10.3%
1933	C	2,807	4,134	1.490	606	2,201	0.22	0.78	60.6	0.944	0.849	0.833	0.097	0.924	7.6%
1934	C	1,983	3,563	1.826	383	1,600	0.19	0.81	60.6	0.962	0.859	0.849	0.068	0.943	5.7%
1935	B	6,739	8,840	1.318	1,545	5,194	0.23	0.77	59.7	0.855	0.833	0.767	0.284	0.850	15.0%
1936	B	6,403	8,403	1.319	1,467	4,936	0.23	0.77	59.7	0.862	0.832	0.772	0.282	0.856	14.5%
1937	B	7,932	8,218	1.040	1,958	5,974	0.25	0.75	59.7	0.831	0.804	0.737	0.252	0.824	17.6%
1938	W	18,049	8,420	0.467	5,119	12,930	0.28	0.72	57.1	0.623	0.567	0.513	0.111	0.607	39.3%
1939	D	2,891	4,134	1.448	632	2,259	0.22	0.78	63.4	0.943	0.875	0.831	0.261	0.926	7.2%
1940	A	6,252	8,571	1.378	1,409	4,843	0.23	0.77	60.2	0.865	0.843	0.776	0.300	0.860	14.0%
1941	W	10,083	9,310	0.926	2,565	7,519	0.25	0.75	57.1	0.785	0.742	0.694	0.156	0.774	22.6%
1942	W	6,907	8,907	1.296	1,594	5,313	0.23	0.77	57.1	0.851	0.795	0.763	0.135	0.836	16.2%
1943	W	7,916	8,462	[illegible]	1,876	6,040	0.24	0.76	57.1	0.829	0.785	0.743	0.164	0.819	18.1%
1944	D	[illegible]	4,235	1.247	[illegible]	2,834	0.23	0.77	63.4	[illegible]	[illegible]	[illegible]	[illegible]	0.917	8.4%
1945	B	6,336	6,669	1.061	1,553	4,783	0.25	0.75	59.7	0.867	0.807	0.766	0.174	0.852	14.8%
1946	B	5,344	5,949	1.120	1,288	4,056	0.24	0.76	59.7	0.889	0.814	0.785	0.137	0.871	12.9%
1947	D	3,664	4,941	1.360	824	2,840	0.22	0.78	63.4	0.925	0.873	0.818	0.302	0.913	8.7%
1948	B	3,983	6,857	1.735	804	3,178	0.20	0.80	59.7	0.915	0.852	0.819	0.183	0.902	9.8%
1949	D	3,983	5,075	1.284	916	3,067	0.23	0.77	63.4	0.918	0.870	0.811	0.309	0.907	9.3%
1950	B	3,983	6,285	1.591	840	3,143	0.21	0.79	59.7	0.918	0.845	0.817	0.154	0.901	9.9%
1951	A	5,344	6,353	1.196	1,263	4,081	0.24	0.76	60.2	0.886	0.826	0.787	0.187	0.873	12.7%
1952	W	10,840	8,773	0.812	2,836	8,004	0.26	0.74	57.1	0.770	0.717	0.675	0.129	0.756	24.4%
1953	W	3,983	5,647	1.429	880	3,103	0.22	0.78	57.1	0.917	0.814	0.814	0.000	0.894	10.6%
1954	A	3,983	7,361	1.863	773	3,210	0.19	0.81	60.2	0.914	0.864	0.821	0.238	0.904	9.6%
1955	D	2,807	3,664	1.320	635	2,172	0.23	0.77	63.4	0.945	0.871	0.831	0.237	0.929	7.1%
1956	W	6,235	7,999	1.290	1,439	4,795	0.23	0.77	57.1	0.867	0.794	0.774	0.069	0.850	15.0%
1957	A	3,983	6,420	1.625	832	3,151	0.21	0.79	60.2	0.916	0.852	0.817	0.190	0.903	9.7%
1958	W	14,772	9,663	0.656	4,014	10,758	0.27	0.73	57.1	0.688	0.662	0.591	0.174	0.681	31.9%
1959	B	2,807	3,798	1.369	627	2,180	0.22	0.78	59.7	0.945	0.836	0.832	0.027	0.921	7.9%
1960	D	2,420	4,033	1.889	491	1,929	0.20	0.80	63.4	0.953	0.882	0.842	0.255	0.938	6.2%
1961	D	1,963	3,546	1.817	384	1,599	0.19	0.81	63.4	0.962	0.884	0.849	0.231	0.947	5.3%
1962	B	4,201	5,579	1.338	953	3,249	0.23	0.77	59.7	0.913	0.831	0.809	0.118	0.894	10.6%
1963	W	5,344	8,100	1.525	1,154	4,190	0.22	0.78	57.1	0.885	0.814	0.794	0.094	0.869	13.1%
1964	D	2,807	3,496	1.260	646	2,161	0.23	0.77	63.4	0.946	0.869	0.831	0.228	0.928	7.2%
1965	W	6,201	8,537	1.384	1,395	4,806	0.23	0.77	57.1	0.866	0.803	0.777	0.117	0.852	14.8%
1966	B	3,983	4,974	1.259	922	3,061	0.23	0.77	59.7	0.919	0.827	0.811	0.087	0.897	10.3%
1967	W	13,881	9,548	0.689	3,742	10,140	0.27	0.73	57.1	0.706	0.676	0.611	0.188	0.698	30.2%
1968	B	3,664	5,243	1.444	805	2,858	0.22	0.78	59.7	0.925	0.837	0.819	0.101	0.906	9.4%
1969	W	20,923	7,512	0.360	6,078	14,845	0.29	0.71	57.1	0.565	0.481	0.445	0.064	0.541	45.9%
1970	W	5,344	6,586	1.240	1,248	4,096	0.23	0.77	57.1	0.888	0.791	0.788	0.017	0.865	13.5%
1971	W	3,983	6,621	1.676	819	3,164	0.21	0.79	57.1	0.918	0.822	0.818	0.019	0.896	10.4%
1972	B	3,664	4,739	1.305	837	2,827	0.23	0.77	58.9	0.926	0.822	0.817	0.028	0.902	9.8%
1973	A	5,680	7,495	1.327	1,297	4,383	0.23	0.77	59.2	0.879	0.824	0.784	0.186	0.867	13.3%
1974	W	7,663	9,327	1.222	1,805	5,859	0.24	0.76	56.9	0.835	0.785	0.748	0.145	0.823	17.7%
1975	W	6,621	8,773	1.331	1,512	5,109	0.23	0.77	53.7	0.857	0.769	0.769	0.000	0.837	16.3%
1976	C	1,983	3,006	1.542	418	1,565	0.21	0.79	57.8	0.963	0.847	0.847	0.000	0.939	6.1%
1977	C	1,983	2,991	1.533	419	1,564	0.21	0.79	62.0	0.964	0.865	0.847	0.120	0.943	5.7%
1978	A	14,923	7,512	0.504	4,196	10,726	0.28	0.72	61.4	0.689	0.712	0.578	0.316	0.695	30.5%
1979	B	5,344	6,857	1.291	1,231	4,113	0.23	0.77	60.5	0.887	0.837	0.789	0.230	0.876	12.4%
1980	A	6,722	6,941	1.037	1,659	5,064	0.25	0.75	60.1	0.859	0.809	0.759	0.211	0.846	15.4%
1981	D	3,664	5,445	1.499	793	2,871	0.22	0.78	64.6	0.924	0.892	0.820	0.398	0.917	8.3%
1982	W	27,040	9,159	0.339	7,894	19,147	0.29	0.71	52.8	0.436	0.316	0.316	0.000	0.401	59.9%
1983	W	20,738	6,958	0.336	6,054	14,684	0.29	0.71	57.2	0.570	0.470	0.446	0.042	0.541	45.9%
1984	W	5,344	6,857	1.291	1,231	4,113	0.23	0.77	60.7	0.887	0.840	0.789	0.241	0.878	12.4%
1985	D	3,664	4,874	1.342	826	2,835	0.23	0.77	62.5	0.925	0.862	0.818	0.246	0.911	8.9%
1986	W	9,814	7,546	0.771	2,591	7,224	0.26	0.74	61.3	0.794	0.788	0.692	0.312	0.792	20.8%
1987	D	2,033	3,496	1.746	403	1,630	0.20	0.80	62.3	0.962	0.873	0.848	0.164	0.944	5.6%
1988	C	1,963	2,924	1.488	423	1,560	0.21	0.79	62.1	0.964	0.865	0.846	0.123	0.943	5.7%
1989	C	2,420	[illegible]	[illegible]	[illegible]	2,030	0.16	0.84	64.1	[illegible]	[illegible]	0.849	0.378	0.943	5.7%
1990	C	1,963	3,546	1.817	384	1,599	0.19	0.81	60.6	0.962	0.859	0.849	0.067	0.942	5.8%
1991	C	2,437	4,252	1.768	482	1,955	0.20	0.80	60.6	0.952	0.858	0.842	0.103	0.933	6.7%
1992	C	2,252	3,731	1.680	457	1,795	0.20	0.80	60.6	0.957	0.856	0.844	0.076	0.936	6.4%

MAY

Year	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	m2	m34	m3	m4	m234	Calculated Survivability s234	Weighted total survival
1922	5,936	8,685	1.471	1,303	4633	0.22	0.78	66.6	0.871	0.931	0.784	0.680	0.884	11.6%	12.6%
1923	5,156	6,245	1.219	1,211	3945	0.23	0.77	66.0	0.892	0.899	0.790	0.520	0.894	10.6%	11.4%
1924	1,903	1,171	0.626	507	1396	0.27	0.73	63.9	0.969	0.862	0.840	0.139	0.940	6.0%	6.2%
1925	3,822	5,042	1.330	867	2955	0.23	0.77	67.3	0.922	0.914	0.815	0.535	0.920	8.0%	8.4%
1926	3,545	4,879	1.389	791	2755	0.22	0.78	67.3	0.926	0.915	0.820	0.527	0.925	7.5%	7.9%
1927	5,156	8,327	1.625	1,080	4075	0.21	0.79	64.2	0.886	0.904	0.800	0.521	0.892	10.8%	11.8%
1928	3,822	6,375	1.682	784	3038	0.21	0.79	66.6	0.919	0.921	0.821	0.562	0.920	8.0%	8.7%
1929	1,870	3,106	1.689	376	1494	0.20	0.80	63.9	0.966	0.885	0.850	0.237	0.949	5.1%	5.6%
1930	1,870	3,513	1.911	351	1520	0.19	0.81	67.3	0.965	0.919	0.851	0.457	0.956	4.4%	5.2%
1931	2,017	3,220	1.622	415	1602	0.21	0.79	63.9	0.962	0.884	0.847	0.243	0.946	5.4%	5.8%
1932	3,871	4,847	1.262	895	2976	0.23	0.77	67.3	0.921	0.911	0.813	0.525	0.919	8.1%	9.1%
1933	2,683	3,155	1.190	628	2055	0.23	0.77	63.9	0.949	0.872	0.832	0.240	0.931	6.9%	7.2%
1934	1,870	2,944	1.601	386	1484	0.21	0.79	63.9	0.966	0.884	0.849	0.229	0.949	5.1%	5.4%
1935	6,050	5,627	0.935	1,530	4520	0.25	0.75	66.0	0.875	0.881	0.768	0.489	0.876	12.4%	13.6%
1936	5,156	6,310	1.232	1,206	3949	0.23	0.77	66.0	0.892	0.900	0.791	0.524	0.894	10.6%	12.3%
1937	8,132	6,961	0.859	2,099	6032	0.26	0.74	66.0	0.829	0.879	0.727	0.557	0.842	15.8%	16.6%
1938	24,265	9,449	0.390	7,005	17260	0.29	0.71	64.2	0.493	0.738	0.379	0.578	0.564	43.6%	41.7%
1939	3,058	3,708	1.225	711	2347	0.23	0.77	67.3	0.940	0.907	0.826	0.467	0.932	6.8%	7.0%
1940	5,156	6,196	1.209	1,214	3942	0.24	0.76	66.6	0.892	0.906	0.790	0.563	0.895	10.5%	12.0%
1941	9,579	9,726	1.019	2,381	7198	0.25	0.75	64.2	0.794	0.881	0.707	0.593	0.816	18.4%	20.3%
1942	5,938	8,685	1.471	1,303	4633	0.22	0.78	64.2	0.871	0.900	0.784	0.539	0.878	12.2%	14.0%
1943	6,180	8,327	1.364	1,402	4778	0.23	0.77	64.2	0.867	0.893	0.777	0.521	0.873	12.7%	15.1%
1944	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	67.3	[illegible]	[illegible]	[illegible]	0.466	[illegible]	[illegible]	[illegible]
1945	4,033	5,237	1.308	872	3112	0.23	0.77	66.0	0.917	0.900	0.811	0.469	0.913	8.7%	11.4%
1946	3,871	5,269	1.373	868	3002	0.22	0.78	66.0	0.920	0.902	0.815	0.471	0.916	8.4%	10.4%
1947	2,683	3,545	1.337	604	2080	0.23	0.77	67.3	0.948	0.910	0.833	0.459	0.939	6.1%	7.2%
1948	3,822	7,676	2.025	703	3119	0.18	0.82	66.0	0.917	0.929	0.826	0.593	0.919	8.1%	8.8%
1949	2,976	4,749	1.613	620	2356	0.21	0.79	67.3	0.940	0.920	0.832	0.520	0.936	6.4%	7.7%
1950	3,822	5,269	1.390	853	2969	0.22	0.78	66.0	0.921	0.902	0.816	0.471	0.917	8.3%	9.0%
1951	5,156	7,123	1.390	1,158	4000	0.22	0.78	66.6	0.890	0.918	0.794	0.600	0.897	10.3%	11.4%
1952	15,450	9,563	0.620	4,233	11218	0.27	0.73	64.2	0.674	0.824	0.576	0.584	0.715	28.5%	26.6%
1953	3,822	7,676	2.025	703	3119	0.18	0.82	64.2	0.917	0.911	0.826	0.486	0.916	8.4%	9.4%
1954	3,822	7,432	1.961	718	3104	0.19	0.81	66.6	0.917	0.933	0.825	0.616	0.920	8.0%	8.7%
1955	2,683	3,968	1.496	577	2106	0.22	0.78	67.3	0.947	0.914	0.835	0.480	0.940	6.0%	6.5%
1956	5,936	8,685	1.471	1,303	4633	0.22	0.78	64.2	0.871	0.900	0.784	0.539	0.878	12.2%	13.6%
1957	3,822	5,985	1.579	808	3013	0.21	0.79	66.6	0.920	0.917	0.819	0.542	0.919	8.1%	8.8%
1958	13,173	10,685	0.813	3,448	9725	0.26	0.74	64.2	0.719	0.868	0.632	0.641	0.758	24.2%	27.7%
1959	2,683	3,676	1.386	596	2088	0.22	0.78	66.0	0.948	0.899	0.834	0.389	0.937	6.3%	7.0%
1960	1,870	3,350	1.822	361	1509	0.19	0.81	67.3	0.965	0.918	0.851	0.449	0.956	4.4%	5.2%
1961	1,870	2,982	1.627	383	1487	0.20	0.80	67.3	0.966	0.914	0.849	0.430	0.955	4.5%	4.8%
1962	3,822	5,334	1.407	849	2973	0.22	0.78	66.0	0.921	0.903	0.816	0.474	0.917	8.3%	9.3%
1963	5,156	8,327	1.625	1,080	4075	0.21	0.79	64.2	0.886	0.904	0.800	0.521	0.892	10.8%	11.8%
1964	2,683	3,871	1.460	583	2100	0.22	0.78	67.3	0.947	0.913	0.835	0.475	0.940	6.0%	6.5%
1965	5,936	7,937	1.344	1,350	4586	0.23	0.77	64.2	0.873	0.891	0.781	0.501	0.877	12.3%	13.4%
1966	2,976	4,781	1.624	618	2358	0.21	0.79	66.0	0.940	0.907	0.832	0.448	0.933	6.7%	8.3%
1967	16,003	10,051	0.629	4,376	11628	0.27	0.73	64.2	0.662	0.830	0.566	0.609	0.706	29.2%	29.7%
1968	2,683	3,643	1.374	598	2086	0.22	0.78	66.0	0.948	0.898	0.834	0.388	0.937	6.3%	7.7%
1969	26,217	9,010	0.344	7,645	18572	0.29	0.71	66.4	0.453	0.790	0.334	0.685	0.551	44.9%	45.3%
1970	5,156	5,920	1.155	1,231	3925	0.24	0.76	61.2	0.893	0.836	0.789	0.223	0.879	12.1%	12.7%
1971	3,822	7,676	2.025	703	3119	0.18	0.82	64.2	0.917	0.911	0.826	0.488	0.916	8.4%	9.3%
1972	2,683	3,903	1.472	581	2102	0.22	0.78	66.0	0.947	0.901	0.835	0.401	0.937	6.3%	7.9%
1973	5,156	6,570	1.282	1,190	3965	0.23	0.77	66.3	0.891	0.907	0.792	0.554	0.895	10.5%	11.8%
1974	5,936	8,685	1.471	1,303	4633	0.22	0.78	66.1	0.871	0.924	0.784	0.651	0.883	11.7%	14.4%
1975	5,936	8,685	1.471	1,303	4633	0.22	0.78	61.5	0.871	0.866	0.784	0.382	0.870	13.0%	14.5%
1976	2,065	3,253	1.598	428	1637	0.21	0.79	65.8	0.961	0.901	0.846	0.356	0.949	5.1%	5.6%
1977	1,870	732	0.398	525	1346	0.28	0.72	62.3	0.970	0.843	0.839	0.023	0.934	6.6%	6.2%
1978	10,831	8,197	0.759	2,869	7962	0.26	0.74	66.9	0.772	0.893	0.673	0.672	0.804	19.6%	24.5%
1979	5,156	5,986	1.168	1,227	3929	0.24	0.76	66.0	0.893	0.898	0.789	0.507	0.893	10.7%	11.5%
1980	6,619	7,481	1.136	1,592	5027	0.24	0.76	66.6	0.860	0.910	0.763	0.618	0.872	12.8%	14.0%
1981	2,683	3,513	1.325	606	2078	0.23	0.77	66.7	0.946	0.923	0.833	0.539	0.942	5.8%	6.9%
1982	15,158	10,701	0.707	4,070	11088	0.27	0.73	65.1	0.678	0.874	0.587	0.695	0.731	26.9%	41.8%
1983	19,077	7,546	0.398	5,496	13581	0.29	0.71	61.3	0.603	0.848	0.486	0.312	0.615	38.5%	41.8%
1984	5,156	6,148	1.200	1,217	3939	0.24	0.76	66.0	0.892	0.898	0.790	0.515	0.894	10.6%	11.4%
1985	3,139	4,521	1.455	686	2453	0.22	0.78	65.1	0.937	0.893	0.828	0.380	0.927	7.3%	8.0%
1986	8,067	8,132	1.012	2,006	6061	0.25	0.75	65.8	0.829	0.895	0.734	0.605	0.845	15.5%	17.9%
1987	2,131	2,992	1.426	465	1666	0.22	0.78	66.6	0.960	0.923	0.843	0.506	0.952	4.8%	5.2%
1988	1,870	3,025	1.645	381	1489	0.20	0.80	63.7	0.966	0.883	0.849	0.222	0.949	5.1%	5.4%
1989	1,870	[illegible]	[illegible]	[illegible]	[illegible]	0.17	0.83	66.7	0.964	[illegible]	[illegible]	0.443	[illegible]	4.4%	[illegible]
1990	1,870	2,700	1.468	402	1469	0.21	0.79	63.9	[illegible]	[illegible]	0.848	[illegible]	[illegible]	[illegible]	[illegible]
1991	1,870	2,862	1.557	391	1479	0.21	0.79	63.9	0.966	0.883	0.849	0.225	0.949	5.1%	5.8%
1992	3,269	3,757	1.160	774	2495	0.24	0.76	63.9	0.936	0.870	0.821	0.271	0.920	8.0%	7.3%

Average: 12.34%

Formulas: San Joaquin River Fall Run Smolt Survival Model WITHOUT BARRIER

C7 ='Study 506 Flow Data'!AB7
D7 ='Study 506 Flow Data'!G7 (HIDDEN)
E7 ='Study 506 Flow Data'!Q7 (HIDDEN)
F7 =D7+E7
G7 =F7/(C7-0.03*$H$2)
H7 =IF((0.3137*C7-0.0156*$H$2-0.0625*F7)<0,0,(0.3137*C7-0.0156*$H$2-0.0625*F7))
I7 =C7-H7
J7 =H7/C7
K7 =I7/C7
M7 =(1.01045-0.00003*I7)
N7 =(O7+P7)-(O7*P7)
O7 =(0.87834-0.000071*H7)
P7 =IF((-3.65867+0.058492*L7+0.000051*F7)<0,0,(-3.65867+0.058492*L7+0.000051*F7))
Q7 =((K7*M7)+(J7*N7))
R7 =(1-Q7)

T7 ='Study 506 Flow Data'!AC7
U7 ='Study 506 Flow Data'!H7 (HIDDEN)
V7 ='Study 506 Flow Data'!R7 (HIDDEN)
W7 =U7+V7
X7 =W7/(T7-0.03*$H$3)
Y7 =IF((0.3137*T7-0.0156*$H$3-0.0625*W7)<0,0,(0.3137*T7-0.0156*$H$3-0.0625*W7))
Z7 =T7-Y7
AA7 =Y7/T7
AB7 =Z7/T7
AD7 =(1.01045-0.00003*Z7)
AE7 =(AF7+AG7)-(AF7*AG7)
AF7 =(0.87834-0.000071*Y7)
AG7 =IF((-3.65867+0.058492*AC7+0.000051*W7)<0,0,(-3.65867+0.058492*AC7+0.000051*W7))
AH7 =((AB7*AD7)+(AA7*AE7))
AI7 =(1-AH7)
AK7 =0.45*R7+0.55*AI7

STUDY: 1995C06F-SWRCB-506 DWRSIM: recirc818-f, 17 Jun 97
CVP, CVP EXPORT AT TRACY PP (converted from TAF to CFS)

Project. /1995C06F-SWRCB-506/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	3806	4185	4342	4605
1923	4302	4212	4212	4285	4228	3966	3123	4605
1924	3832	3919	4212	4068	1513	1462	781	823
1925	1311	4212	3545	4213	3708	3479	2521	3479
1926	4302	4212	4212	4231	4228	3344	2440	3580
1927	4252	4212	4212	4285	3741	4050	4163	4605
1928	4285	4212	4212	4103	4228	3680	2992	3025
1929	4285	4212	4212	4231	4017	823	2992	3025
1930	2288	4212	4212	2773	2944	1949	1756	4302
1931	2655	2423	4212	3565	2114	1529	1610	3445
1932	1210	4212	4212	4103	2553	2487	2423	3596
1933	3059	2017	4212	3835	1561	2067	2082	2168
1934	1529	4163	4212	1260	2293	1781	2179	3832
1935	2538	3220	4212	1188	4228	4420	2992	4101
1936	4269	4212	4212	4103	4228	4201	3155	4605
1937	4285	4212	4212	4231	4228	3243	2895	3395
1938	4285	4212	4212	4267	4228	4050	4001	4605
1939	4302	4212	4212	2629	2716	2067	1854	4201
1940	2807	1431	4212	4103	4228	4285	2992	4605
1941	4269	4212	4212	4285	4228	4605	4603	4605
1942	4302	4212	4212	4285	4228	4453	4342	4605
1943	4302	4212	4212	4285	4228	4605	4163	4605
1944	4285	4212	4212	4103	4228	2118	1870	4168
1945	4269	4212	4212	4249	4228	3344	2618	3378
1946	4285	4212	4212	4285	4228	2975	2635	3378
1947	4269	4212	4212	4249	4228	2470	1773	4269
1948	3680	4212	4212	4085	4228	3428	3838	4605
1949	4285	4212	4212	4249	4228	2538	2374	3647
1950	4285	4212	4212	4249	4228	3143	2635	4605
1951	4269	4212	4212	4285	4228	3176	3562	4605
1952	4285	4212	4212	4138	4228	4605	4294	4605
1953	4302	4212	4212	4285	3448	2823	3838	4605
1954	4285	4212	4212	4267	4228	3680	2992	3277
1955	4285	4212	4212	4267	4228	1832	1984	4050
1956	4269	4212	4212	4138	2472	4000	4342	4605
1957	4302	4212	4212	4249	4228	3210	2992	4504
1958	4285	4212	4212	4249	4228	4605	4603	4605
1959	4302	4212	4212	4249	4228	1899	1838	4201
1960	4269	4212	4212	4085	3545	303	1675	4353
1961	4269	4212	4212	4249	3513	303	1496	4554
1962	2924	4212	4212	4249	4228	2790	2667	3949
1963	4285	4212	4212	4285	4228	4050	4163	4605
1964	4269	4212	4212	4120	3415	1748	1935	4101
1965	4067	4212	4212	4249	4228	4269	2992	4605
1966	4302	4212	4212	4285	4228	2487	2391	3630
1967	4269	4212	4212	4285	4228	4605	4603	4605
1968	4302	4212	4212	2660	2992	2622	1822	4218
1969	4285	4212	4212	4285	3643	3344	3985	4605
1970	4302	4212	4163	1206	3106	3294	2960	4185
1971	4285	4212	4212	4285	4228	3311	3838	4605
1972	4269	4212	4212	4120	3741	2370	1952	4084
1973	4269	4212	4212	4267	4228	3748	3285	4554
1974	4285	4212	4212	4267	4228	4605	4342	4605
1975	4302	4212	4212	4249	4228	4386	4342	4605
1976	4302	4212	4212	4085	4228	639	1626	4420
1977	2689	1691	2098	684	829	1109	293	50
1978	2470	4131	3074	1747	2114	3445	4098	4605
1979	4302	4212	4212	4249	4228	3428	2992	2823
1980	4269	4212	4212	4103	3773	2991	3594	4605
1981	4285	4212	4212	2647	2992	2723	1756	4302
1982	4285	4212	4212	4285	4228	3596	4017	4605
1983	4302	4212	4212	3421	2049	3311	3952	4605
1984	3328	2992	1334	1443	3204	3428	3074	4521
1985	4285	4212	4212	4249	4228	2437	2261	3764
1986	2605	4212	4212	4249	4228	2336	2749	4117
1987	4269	4212	1480	1278	2358	319	1496	4538
1988	2975	4212	4212	3894	2082	1462	1513	4487
1989	2790	3285	4212	972	4228	2823	1968	4067
1990	4252	4212	2781	1296	2326	235	1350	4554
1991	2487	1740	1691	432	4228	2084	1447	2622
1992	3025	2960	4212	1147	2098	1865	2716	3311

STUDY: 1995C06F-SWRCB-506 DWRSIM: recirc818-f, 17 Jun 97
SWP, SWP EXPORT AT BANKS PP (converted from TAF to CFS)

Project: /1995C06F-SWRCB-506/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4319	7107	7579	6392	4147	4185	4342	6672
1923	6672	4456	3643	2377	3367	3966	3123	3395
1924	3748	6424	6652	4624	1740	1462	390	487
1925	3210	4847	3155	7581	4163	3479	2521	2689
1926	3109	3822	7091	7454	3497	3344	2440	2487
1927	6672	7042	7286	6590	4147	4050	4163	3748
1928	6672	6164	3643	4225	4424	3680	3383	2672
1929	5462	6180	7091	3799	2814	1882	114	101
1930	1765	6294	7091	4015	4375	1949	1756	2874
1931	3260	2976	5058	1873	1903	1529	1610	2067
1932	1849	7188	7790	5442	2700	2891	2423	4117
1933	2605	2472	5416	2701	3074	2067	1073	84
1934	1580	5546	7091	4538	1675	1781	764	1008
1935	4302	3399	7660	3943	6977	4420	2635	3546
1936	3949	4033	7449	8206	5790	4201	3155	3361
1937	3412	5578	7579	5042	4001	4974	4066	4269
1938	6672	7530	3236	3907	3952	4369	5448	6672
1939	5260	3741	3236	3961	4001	2067	1854	3109
1940	1748	2683	8018	8206	4651	4285	3204	3092
1941	6100	7335	8164	6842	3838	4706	5123	6302
1942	6134	3610	3236	3961	4001	4453	4342	6672
1943	6504	3773	3301	3997	4050	4857	4163	3143
1944	6672	6424	3269	3825	4001	2118	1870	3243
1945	6672	6961	5595	3997	4131	3344	2618	3798
1946	6672	7595	3643	4213	4424	2975	2635	3596
1947	6672	7140	6733	3961	3919	2470	1773	2975
1948	3630	3238	7010	1721	3480	3428	3838	4521
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3496	3676	7172	7526	4554	3143	2635	3529
1951	6672	7595	7449	4682	4700	3176	3562	2907
1952	6672	7107	6766	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3854	4628	4684	3680	4440	2739
1955	6672	6912	5920	3925	3025	1832	1984	3126
1956	4235	7595	7985	4520	4700	4000	4342	6521
1957	6672	5839	3887	4646	4440	3210	2992	3462
1958	6672	6928	3562	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3058	1899	1838	3042
1960	3075	2797	8408	7041	3985	3731	1675	2756
1961	6235	6896	7075	7112	4538	3243	1496	3042
1962	3496	6879	4163	8499	3497	2790	2667	2874
1963	6672	6896	7253	8265	4700	4050	4163	4017
1964	6672	6034	3871	3512	3318	1748	1935	2823
1965	6252	7302	8506	6050	4375	4269	4944	3714
1966	6672	6245	3659	4375	4424	2487	2391	2622
1967	6672	7123	7676	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2857
1969	6016	6977	6310	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3294	2960	2723
1971	6672	7042	5465	4195	4700	3311	3838	5042
1972	6672	6180	3887	4485	4424	2370	1952	2790
1973	6672	6896	6912	4429	4458	3748	3285	4017
1974	6672	7140	3643	4375	4424	4722	4342	4924
1975	5411	4245	3854	4628	4684	4386	4342	6672
1976	6672	4651	3806	4172	3627	2370	1626	2941
1977	3412	3106	2440	1422	1187	1882	439	387
1978	1697	5530	7758	6554	3903	4067	4098	3899
1979	6672	3676	3269	3961	4001	3428	2992	5227
1980	6672	6993	3155	3668	3350	3949	3887	4067
1981	5579	4066	3350	4069	4115	2723	1756	2924
1982	6672	6944	7709	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	3428	3074	3361
1985	6672	5741	3871	4646	4635	2437	2261	2605
1986	4168	6944	7172	7689	4180	5210	5383	3848
1987	3496	6099	6261	4267	4163	3176	1496	3176
1988	1865	6879	7058	2469	1756	1462	1513	1176
1989	3361	3562	4847	1837	6766	2823	1968	2487
1990	3563	6196	7058	6500	3545	3311	1350	2907
1991	2370	3139	1708	828	7075	2168	1415	1344
1992	1496	1610	4781	7197	6131	1865	1041	1361

STUDY: 1995C06F-SWRCB-506 DWRSIM: recirc818-f, 17 Jun 97
CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (TAF to CFS)

Project: /1995C06F-SWRCB-506/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	2,000	1,697	2,488	2,683	6,770	5,351	6,201	5,936	7,260
1923	4,001	1,899	3,741	4,196	4,267	3,415	5,344	5,156	4,353
1924	2,000	1,462	1,496	1,399	1,617	1,708	2,202	1,903	1,849
1925	1,968	1,361	1,252	1,171	2,719	2,423	3,983	3,822	5,210
1926	2,000	1,412	1,334	1,203	2,323	2,277	3,664	3,545	2,017
1927	2,000	1,916	2,147	1,789	5,438	3,578	5,344	5,156	3,428
1928	4,359	1,849	2,309	2,277	2,590	2,960	3,983	3,822	2,067
1929	2,000	1,395	1,301	1,203	1,458	1,691	2,017	1,870	2,420
1930	1,952	1,260	1,138	1,220	1,549	1,935	2,420	1,870	4,084
1931	1,415	1,210	1,138	1,138	1,260	1,334	2,118	2,017	1,781
1932	1,350	1,294	3,009	3,334	7,354	4,538	4,521	3,871	2,134
1933	3,529	1,462	1,317	1,610	2,035	2,065	2,807	2,683	1,462
1934	1,903	1,277	1,220	1,220	1,747	1,659	1,983	1,870	1,798
1935	2,000	1,395	1,350	2,944	3,223	3,513	6,739	6,050	3,899
1936	3,171	1,546	1,561	2,309	12,569	5,774	6,403	5,156	2,134
1937	3,058	1,563	1,870	2,683	13,090	8,587	7,932	8,132	2,672
1938	3,155	1,798	5,090	6,993	22,489	32,494	18,049	24,265	15,764
1939	8,864	2,319	2,293	2,505	3,637	2,765	2,891	3,058	1,983
1940	2,000	1,479	1,399	4,001	7,180	10,474	6,252	5,156	4,958
1941	2,033	1,714	3,871	4,440	13,072	12,116	10,083	9,579	8,285
1942	4,912	2,235	5,302	9,173	10,443	5,936	6,907	5,936	5,647
1943	6,912	3,092	3,562	11,157	10,966	17,776	7,915	6,180	3,428
1944	3,204	1,815	1,919	1,984	3,181	3,106	3,428	2,976	3,412
1945	2,000	1,832	1,691	1,545	7,364	8,002	6,336	4,033	2,252
1946	3,952	2,202	5,643	6,570	6,212	4,391	5,344	3,871	3,462
1947	2,131	2,353	2,716	2,196	2,701	2,277	3,664	2,683	1,933
1948	2,000	1,344	1,203	1,122	1,373	1,740	3,983	3,822	2,286
1949	2,000	1,445	1,285	1,171	1,476	2,586	3,983	2,976	3,008
1950	2,000	1,428	1,285	1,464	2,557	2,293	3,983	3,822	3,832
1951	2,000	3,630	8,880	9,384	9,921	6,180	5,344	5,156	2,756
1952	2,000	1,697	2,521	5,660	5,824	12,620	10,840	15,450	11,226
1953	8,343	2,185	3,058	4,960	5,744	3,627	3,983	3,822	2,286
1954	2,000	1,513	1,415	1,334	2,287	2,407	3,983	3,822	1,949
1955	2,000	1,428	1,334	1,529	2,287	2,277	2,807	2,683	3,714
1956	2,000	1,445	10,197	20,199	12,917	6,099	6,235	5,936	6,756
1957	4,895	1,933	2,082	2,065	3,313	3,155	3,983	3,822	2,286
1958	2,000	1,529	1,447	1,626	3,601	9,465	14,772	13,173	12,184
1959	7,563	2,118	1,903	2,309	4,538	3,643	2,807	2,683	1,882
1960	2,000	1,328	1,171	1,155	1,791	1,919	2,420	1,870	2,286
1961	1,984	1,344	1,236	1,171	1,278	1,350	1,983	1,870	1,849
1962	1,382	1,294	1,155	1,138	5,780	4,489	4,201	3,822	1,681
1963	2,000	1,412	1,252	1,691	4,772	3,415	5,344	5,156	3,428
1964	3,041	2,134	1,789	1,854	2,208	2,062	2,807	2,683	2,252
1965	2,000	1,647	3,741	11,433	7,905	4,619	6,201	5,936	3,428
1966	4,424	3,479	4,798	4,847	5,186	3,708	3,983	2,976	2,000
1967	2,000	1,546	2,635	2,960	3,421	5,481	13,881	16,003	13,797
1968	8,733	2,067	2,196	2,261	4,051	2,797	3,664	2,683	1,933
1969	2,000	1,479	1,724	13,482	31,474	21,045	20,923	26,217	18,368
1970	8,327	2,554	3,594	17,044	9,489	7,432	5,344	5,156	3,344
1971	2,000	1,731	2,147	2,000	2,287	2,732	3,983	3,822	2,286
1972	2,000	1,462	1,513	1,382	2,208	2,277	3,664	2,683	1,832
1973	2,000	1,395	1,317	1,952	5,672	8,620	5,680	5,156	5,630
1974	2,781	2,386	2,749	4,538	5,366	7,725	7,663	5,936	3,428
1975	3,383	1,731	1,935	2,277	6,572	8,831	6,621	5,936	6,016
1976	4,115	1,832	1,805	1,529	1,965	1,708	1,983	2,065	1,815
1977	2,830	2,101	1,610	1,155	1,242	1,203	1,983	1,870	1,748
1978	1,269	1,277	1,350	3,220	7,761	11,336	14,923	10,831	7,075
1979	4,228	1,933	1,691	3,968	8,157	8,652	5,344	5,156	4,453
1980	2,407	1,697	1,805	12,198	24,217	14,572	6,722	6,619	6,184
1981	5,107	2,084	2,098	2,960	2,791	2,960	3,664	2,683	1,916
1982	2,000	1,630	1,545	8,278	18,888	15,467	27,040	15,158	9,865
1983	12,442	8,621	19,061	24,867	36,534	41,114	20,738	19,077	36,451
1984	12,116	13,545	21,500	15,190	9,718	6,001	5,344	5,156	3,647
1985	2,000	1,781	1,691	1,431	2,287	2,277	3,664	3,139	1,966
1986	2,000	1,597	1,545	1,464	19,140	26,770	9,814	8,067	7,613
1987	3,480	1,731	1,545	1,464	1,855	1,919	2,033	2,131	1,865
1988	2,000	1,277	1,138	1,122	1,182	1,285	1,983	1,870	1,798
1989	1,317	1,178	1,171	1,155	1,260	1,626	2,420	1,870	2,672
1990	1,334	1,227	1,138	1,122	1,260	1,382	1,983	1,870	1,781
1991	1,285	1,210	1,122	1,090	1,170	2,358	2,437	1,870	3,378
1992	1,334	1,277	1,138	1,138	2,260	2,049	2,252	3,269	1,899

C-032359

C-032359

Study 507 San 1 River Fall Run Salmon Smolt Survival Model WITH BARRIER

Barrier at head of Ok. om Apr 15 to May 15

Old River Barrier Open above 7500.00 cfs

Consumptive Depletion for April 1053 00 cfs

Consumptive Depletion for May 1053 00 cfs

Year	Water Year Type	APRIL Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234
1922	A	6,201	8,369	1 357	3,947	2,254	0 64	0.36	60.2	0.943	0 713	0.596	0.289	0 797	20.3%
1923	B	5,344	7,932	1 493	3,380	1,965	0.63	0.37	59 7	0.952	0 723	0 636	0 238	0.807	19.3%
1924	C	2,050	2,823	1 399	1,298	752	0.63	0.37	60 6	0 988	0 791	0.784	0.030	0.863	13.7%
1925	D	3,983	6,958	1.761	2,486	1,497	0.62	0.38	63.4	0.966	0 821	0.700	0.405	0.875	12.5%
1926	D	3,664	6,621	1 823	2,280	1,384	0 62	0.38	63.4	0.969	0 825	0 714	0.387	0 879	12.1%
1927	W	5,344	8,100	1 525	3,375	1,969	0 63	0.37	57.1	0.951	0 671	0.637	0 094	0.774	22.6%
1928	A	3,983	7,361	1.863	2,474	1,509	0 62	0.38	60.2	0.965	0.772	0 701	0.238	0.845	15.5%
1929	C	2,017	2,706	1.363	1,279	738	0 63	0.37	60 6	0.988	0.791	0 786	0.024	0.863	13.7%
1930	D	2,420	3,899	1 632	1,517	903	0 63	0 37	63 4	0 983	0 826	0 769	0 249	0 885	11.5%
1931	C	2,118	3,059	1 466	1,337	781	0.63	0.37	60.6	0.987	0.791	0 781	0 042	0.863	13.7%
1932	D	4,521	5,378	1.198	2,897	1,624	0.64	0.36	63 4	0.962	0 777	0.671	0.324	0 844	15.6%
1933	C	2,807	4,134	1 490	1,772	1,034	0.63	0 37	60 6	0.979	0.775	0 751	0.097	0.850	15.0%
1934	C	1,983	3,563	1 826	1,231	752	0 62	0.38	60 6	0 988	0 803	0 789	0.068	0 873	12.7%
1935	B	7,277	9,125	1 260	4,654	2,623	0.64	0.36	59 7	0 932	0 682	0 546	0.299	0 772	22.8%
1936	B	6,403	8,403	1 319	4,083	2,320	0 64	0.36	59 7	0.941	0 695	0 586	0.262	0 784	21.6%
1937	B	7,932	8,235	1.042	1,957	5,975	0.25	0.75	59 7	0.831	0 804	0 737	0.253	0.824	17.6%
1938	W	18,049	8,420	0.467	5,119	12,930	0.28	0.72	57 1	0.623	0 567	0.513	0.111	0.607	39.3%
1939	D	2,891	4,134	1.446	1,829	1,062	0.63	0.37	63 4	0 979	0 813	0.746	0.261	0 874	12.6%
1940	A	5,832	8,336	1 437	3,698	2,134	0 63	0 37	60 2	0 946	0.725	0.614	0.288	0.806	19.4%
1941	W	10,083	9,310	0 926	2,565	7,519	0.25	0.75	57 1	0.785	0 742	0 694	0.156	0.774	22.6%
1942	W	6,907	8,907	1.295	4,410	2,497	0 64	0 36	57 1	0.936	0 622	0 563	0.135	0 736	26.4%
1943	W	7,915	9,462	1 200	1,875	6,040	0.24	0.76	57.1	0.829	0.785	0 743	0.164	0.819	18.1%
1944	D	3,428	4,235	1.247	2,190	1,238	0 64	0.36	63.4	0.973	0 795	0 721	0.266	0.859	14.1%
1945	B	6,168	6,588	1 074	3,977	2,191	0.64	0.36	59.7	0.945	0.663	0 594	0.169	0.763	23.7%
1946	B	5,344	5,949	1 120	3,438	1,906	0.64	0.36	59 7	0.953	0.683	0.632	0.137	0.779	22.1%
1947	D	3,664	4,941	1 360	2,329	1,335	0 64	0.36	63.4	0 970	0.798	0.711	0.302	0 861	13.9%
1948	B	3,983	6,857	1 735	2,489	1,494	0 62	0.38	59.7	0 966	0.755	0.700	0.183	0 834	16.6%
1949	D	3,983	5,075	1 284	2,541	1,442	0 64	0 36	63 4	0 967	0.790	0 696	0 309	0.854	14.6%
1950	R	3,983	6,285	1 591	2,506	1,477	0 63	0 37	59 7	0 966	0.745	0 698	0.154	0 827	17.3%
1951	A	5,344	6,386	1 202	3,425	1,919	0 64	0 36	60 2	0 953	0 702	0 633	0 188	0 792	20.8%
1952	W	10,840	8,773	0 812	2,836	8,004	0 26	0 74	57 1	0 770	0 717	0 675	0.129	0.756	24.4%
1953	W	3,983	5,647	1 429	2,525	1,458	0 63	0 37	57 1	0 967	0 697	0 697	0.000	0 796	20.4%
1954	A	3,983	7,361	1 863	2,474	1,509	0.62	0 38	60.2	0 965	0.772	0 701	0.238	0.845	15.5%
1955	D	2,807	3,664	1 320	1,786	1,021	0 64	0.36	63 4	0 980	0 809	0.750	0.237	0.871	12.9%
1956	W	6,201	7,966	1 291	3,959	2,242	0 64	0.36	57.1	0 943	0.631	0 595	0.087	0.744	25.8%
1957	A	3,983	6,420	1 625	2,502	1,481	0.63	0 37	60.2	0 966	0 756	0.699	0.190	0.834	16.8%
1958	W	14,923	9,663	0 649	4,061	10,862	0.27	0 73	57.1	0 685	0 660	0.588	0 174	0.678	32.2%
1959	B	2,807	3,798	1 369	1,782	1,025	0.63	0 37	59 7	0 980	0 757	0 750	0.027	0 838	16.2%
1960	D	2,420	4,033	1 689	1,513	907	0 63	0.37	63 4	0 983	0 828	0 769	0 255	0.886	11.4%
1961	D	1,983	3,546	1 817	1,232	752	0 62	0 38	63 4	0 988	0 838	0 789	0.231	0 895	10.5%
1962	B	4,201	5,579	1 338	2,675	1,527	0 64	0.36	59.7	0 965	0 723	0 686	0.118	0.811	18.9%
1963	W	5,344	8,100	1 525	3,375	1,969	0 63	0.37	57 1	0 951	0 671	0 637	0 094	0.774	22.6%
1964	D	2,807	3,496	1 260	1,791	1,016	0 64	0 36	63 4	0 960	0 806	0 749	0 226	0 869	13.1%
1965	W	6,201	8,537	1 384	3,942	2,259	0 64	0.36	57.1	0 943	0 643	0 596	0 117	0.752	24.8%
1966	B	3,983	4,974	1 259	2,544	1,439	0 64	0 36	59 7	0 967	0 722	0 696	0 067	0.811	18.9%
1967	W	13,680	9,546	0 699	3,678	10,001	0 27	0 73	57 1	0.710	0 660	0 615	0.168	0.702	29.8%
1968	B	3,664	5,243	1 444	2,320	1,343	0 63	0 37	59 7	0 970	0 741	0 712	0.101	0 825	17.5%
1969	W	20,923	7,512	0 360	6,078	14,845	0 29	0 71	57 1	0 565	0 481	0 445	0 064	0 541	45.9%
1970	W	5,344	6,588	1 240	3,419	1,925	0 64	0 36	57 1	0 953	0 640	0 634	0 017	0.753	24.7%
1971	W	3,983	6,621	1 676	2,496	1,487	0 63	0.37	57 1	0 966	0 705	0 699	0.019	0 802	19.8%
1972	B	3,664	4,739	1 305	2,335	1,329	0.64	0 36	58 9	0.971	0.719	0.711	0.028	0 810	19.0%
1973	A	5,680	7,495	1 327	3,620	2,060	0 64	0.36	59 2	0.949	0.690	0 619	0.166	0.784	21.6%
1974	W	7,663	9,327	1 222	1,805	5,859	0.24	0.76	56.9	0 835	0.785	0 748	0.145	0.823	17.7%
1975	W	6,621	8,773	1.331	4,220	2,401	0.64	0.36	53.7	0.938	0.577	0.577	0.000	0.708	29.2%
1976	C	1,983	3,008	1.542	1,247	736	0.63	0.37	57.8	0.988	0.788	0.788	0.000	0.862	13.8%
1977	C	1,983	2,991	1.533	1,248	736	0.63	0.37	62.0	0 988	0.813	0.788	0.120	0.878	12.2%
1978	A	14,923	7,512	0.504	4,196	10,726	0 28	0 72	61.4	0.689	0 712	0.578	0.316	0 695	30.5%
1979	B	5,344	6,857	1.291	3,411	1,933	0.64	0 36	60 5	0 952	0 718	0 634	0.230	0.803	19.7%
1980	A	6,722	6,941	1 037	4,342	2,380	0 65	0.35	60.1	0 939	0.659	0 568	0.211	0.758	24.2%
1981	D	3,664	5,445	1 499	2,314	1,349	0 63	0 37	64 6	0 970	0 827	0.712	0.398	0 879	12.1%
1982	W	27,040	9,159	0 339	7,894	19,147	0 29	0 71	52 8	0 436	0 316	0 316	0.000	0 401	59.9%
1983	W	20,738	6,958	0 336	6,054	14,684	0 29	0 71	57 2	0.570	0.470	0.446	0.042	0 541	45.9%
1984	W	5,344	6,857	1 291	3,411	1,933	0 64	0 36	60 7	0.952	0 722	0.634	0.241	0 806	19.4%
1985	D	3,664	4,874	1 342	2,331	1,333	0 64	0 36	62.5	0.970	0.782	0.711	0.246	0.850	15.0%
1986	W	9,614	7,546	0 771	2,591	7,224	0.26	0.74	61 3	0 794	0 788	0.692	0.312	0.792	20.8%
1987	D	2,033	3,496	1 746	1,267	766	0 62	0.38	62 3	0.987	0 821	0.786	0.164	0 884	11.6%
1988	C	1,983	2,857	1 464	1,252	731	0 63	0 37	62.1	0.989	0 813	0.787	0.119	0 878	12.2%
1989	D	2,420	5,647	2 364	1,466	954	0 61	0.39	64.1	0 982	0 858	0.772	0.379	0.907	9.3%
1990	C	1,983	3,529	1 808	1,232	751	0 62	0.38	60.6	0.988	0 803	0.789	0.066	0 873	12.7%
1991	C	2,437	4,252	1 768	1,518	919	0.62	0.38	60.6	0 983	0.792	0.769	0 103	0.864	13.6%
1992	C	2,252	3,731	1 680	1,408	844	0 63	0.37	60.6	0 985	0.793	0.776	0.076	0.865	13.5%

Year	MAY Vernalis Flows	CVP+SWP exports	exp/v-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234	Weighted (April + June) total survival
1922	5,936	8,685	1.471	3,527	2,409	0 59	0 41	66 6	0 938	0.880	0 626	0.680	0 904	9.6%	14.5%
1923	5,156	6,245	1.219	3,104	2,051	0.60	0 40	66 0	0 949	0 835	0 656	0 520	0.880	12.0%	15.3%
1924	1,903	1,301	0.695	1,173	730	0 62	0 38	63 9	0 989	0 823	0 793	0 145	0 887	11.3%	12.4%
1925	3,822	5,042	1.330	2,286	1,536	0 60	0 40	67.3	0 964	0.867	0 714	0.535	0 906	9.4%	10.8%
1926	3,545	4,879	1.389	2,113	1,432	0 60	0 40	67 3	0.967	0 870	0 726	0.527	0 910	9.0%	10.4%
1927	5,156	8,327	1.625	3,036	2,119	0 59	0 41	64 2	0 947	0 838	0.661	0 521	0 882	11.8%	16.6%
1928	3,822	6,375	1.682	2,242	1,580	0.59	0.41	66 6	0 963	0 876	0 717	0 562	0 912	8.8%	11.8%
1929	1,870	3,106	1.689	1,093	777	0 58	0 42	63 9	0 987	0 846	0 799	0 237	0 905	9.5%	11.4%
1930	1,870	3,513	1.911	1,080	790	0 58	0 42	67 3	0 987	0 891	0 800	0 457	0 932	6.8%	8.9%
1931	1,870	3,123	1.698	1,093	777	0 58	0 42	63 9	0 987	0 847	0 799	0 238	0 905	9.5%	11.4%
1932	3,871	4,847	1.262	2,323	1,547	0 60	0 40	67 3	0 964	0 863	0 711	0 525	0 903	9.7%	12.4%
1933	2,683	3,155	1 190	1,615	1,069	0 60	0 40	63 9	0 978	0 819	0 762	0 240	0 882	11.8%	13.2%
1934	1,870	2,944	1 601	1,099	772	0 59	0 41	63 9	0 987	0 845	0 798	0 229	0 903	9.7%	11.0%
1935	6,050	5,611	0.932	3,700	2,350	0 61	0 39	66 0	0 940	0 802	0 614	0 488	0 856	14.4%	18.2%
1936	5,156	6,310	1 232	3,102	2,054	0 60	0 40	66 0	0 949	0 836	0 656	0 524	0 881	11.9%	16.3%
1937	8,132	6,749	0.833	2,113	6,019	0 26	0 74	66 0	0 830	0 876	0 726	0 546	0 842	15.8%	16.6%
1938	23,972	9,449	0 395	6,913	17,059	0 29	0 71	64 2	0 499	0 741	0 386	0 578	0 569	43.1%	41.4%
1939	2,683	3,480	1.312	1,604	1,079	0 60	0 40	67 3	0 978	0 871	0 762	0 455	0 914	8.6%	10.4%
1940	5,156	6,196	1.209	3,106	2,050	0 60	0 40	66 6	0 949	0 846	0.656	0 553	0 887	11.3%	14.9%
1941	9,579	9,726	1.019	2,381	7,198	0 25	0 75	64 2	0.794	0 861	0 707	0.593	0 816	18.4%	20.3%
1942	5,936	8,685	1 471	3,527	2,409	0 59	0 41	64.2	0 938	0 828	0 626	0 539	0 873	12.7%	16.9%
1943	6,180	8,327	1.354	3,695	2,485	0.60	0.40	64 2	0 936	0 815	0 614	0.521	0 864	13.6%	15.6%
1944	2,976	3,741	1 270	1,784	1,192	0 60	0 40	67 3	0.975	0 867	0 750	0 469	0 910	9.0%	11.3%
1945	3,936	5,172	1 325	2,355	1,581	0.60	0 40	66 0	0 963	0 845	0 709	0 466	0 892	10.8%	16.6%
1946	3,871	5,269	1.373	2,310	1,561	0 60	0 40	66 0	0 964	0 848	0 712	0 471	0 894	10.6%	15.7%
1947	2,683	3,545	1.337	1,602	1,081	0 60	0 40	67.3	0 978	0 871	0 763	0 459	0 914	8.6%	11.0%
1948	3,822	7,676	2.025	2,200	1,622	0 58	0 42	66 0	0 962	0 886	0 720	0 593	0 918	8.2%	12.0%
1949	2,976	4,749	1 613	1,751	1,225	0 59	0 41	67 3	0 974	0 881	0 752	0 520	0 919	8.1%	11.0%
1950	3,822	5,269	1.390	2,278	1,544	0 60	0 40	66 0	0 964	0 849	0 715	0 471	0 895	10.5%	13.5%
1951	5,156	7,123	1 390	3,076	2,080	0 60	0 40	66 6	0 948	0 863	0 658	0 600	0 897	10.3%	15.0%
1952	15,450	9,563	0.620	4,233	11,218	0 27	0 73	64 2	0 674	0 824	0 576	0 584	0 715	28.5%	26.8%
1953	3,822	7,676	2.025	2,200	1,622	0 58	0 42	64 2	0 962	0 857	0 720	0 488	0 901	9.9%	14.6%
1954	3,822	7,432	1.961	2,208	1,614	0 58	0 42	66 6	0 962	0 892	0 720	0 616	0 922	7.8%	11.3%
1955	2,683	3,773	1 423	1,595	1,089	0 59	0 41	67 3	0 978	0 875	0 763	0 470	0 916	8.4%	10.4%
1956	6,034	8,750	1 458	3,588	2,446	0 59	0 41	64.2	0 937	0 827	0 622	0 543	0 872	12.8%	16.6%
1957	3,822	5,952	1.570	2,256	1,566	0 59	0 41	66 6	0 963	0 870	0 716	0 540	0 908	9.2%	12.5%
1958	13,173	10,685	0 813	3,448	9,725	0 26	0 74	64 2	0 719	0 868	0 632	0 641	0 758	24.2%	27.8%
1959	2,683	3,676	1.386	1,598	1,086	0 60	0 40	66 0	0 978	0 855	0 763	0 389	0 905	9.5%	12.5%
1960	1,870	3,350	1 822	1,085	785	0 58	0 42	67.3	0 987	0 889	0 799	0 449	0 930	7.0%	9.0%
1961	1,870	2,992	1.627	1,097	773	0 59	0 41	67.3	0 987	0 885	0 798	0 430	0 927	7.3%	8.7%
1962	3,822	5,334	1 407	2,276	1,546	0 60	0 40	66.0	0 964	0 850	0 715	0 474	0 896	10.4%	14.2%
1963	5,156	8,327	1.625	3,036	2,119	0 59	0 41	64 2	0 947	0 838	0 661	0 521	0 882	11.8%	16.6%
1964	2,683	3,871	1 460	1,591	1,092	0 59	0 41	67 3	0 978	0 876	0 763	0 475	0 917	8.3%	10.4%
1965	5,936	7,937	1.344	3,551	2,385	0 60	0 40	64 2	0 939	0 813	0 624	0 501	0 863	13.7%	18.7%
1966	2,976	4,781	1.624	1,750	1,226	0 59	0 41	66 0	0 974	0 863	0 752	0 446	0 908	9.2%	13.6%
1967	16,003	10,051	0 629	4,376	11,628	0 27	0 73	64 2	0 662	0 830	0 568	0 609	0 708	29.2%	29.5%
1968	2,683	3,843	1 374	1,599	1,085	0 60	0 40	66 0	0 978	0 855	0 763	0 388	0 905	9.5%	13.1%
1969	26,217	9,010	0 344	7,645	18,572	0 29	0 71	66 4	0 453	0 790	0 334	0 685	0 551	44.9%	45.3%
1970	5,156	5,920	1 155	3,115	2,041	0 60	0 40	61 2	0 949	0 732	0 655	0 223	0 818	18.2%	21.1%
1971	3,822	7,676	2.025	2,200	1,622	0 58	0 42	64 2	0 962	0 857	0 720	0 488	0 901	9.9%	14.3%
1972	2,683	3,903	1.472	1,590	1,093	0 59	0 41	66 0	0 978	0 858	0 763	0 401	0 907	9.3%	13.7%
1973	5,156	6,570	1.282	3,094	2,062	0 60	0 40	66 3	0 949	0 847	0 657	0 554	0 888	11.2%	15.9%
1974	5,936	8,685	1.471	3,527	2,409	0 59	0 41	66 1	0 938	0 869	0 626	0 651	0 897	10.3%	13.6%
1975	5,936	8,685	1.471	3,527	2,409	0 59	0 41	61.5	0 938	0 769	0 626	0 382	0 837	16.3%	22.1%
1976	2,065	3,253	1.599	1,214	851	0 59	0 41	65.8	0 985	0 865	0 790	0 356	0 914	8.6%	10.9%
1977	1,870	732	0.398	1,171	700	0.63	0 37	62.3	0 989	0 798	0 793	0.023	0 870	13.0%	12.7%
1978	10,831	8,197	0.759	2,869	7,962	0 26	0.74	66 9	0 772	0 893	0 673	0 672	0 804	19.6%	24.5%
1979	5,156	5,985	1.168	3,113	2,043	0 60	0 40	66 0	0 949	0 830	0 655	0 507	0 877	12.3%	15.6%
1980	6,619	7,481	1.136	4,005	2,614	0 61	0 39	66 6	0 932	0 844	0 592	0 618	0 879	12.1%	17.5%
1981	2,683	3,513	1.325	1,603	1,080	0 60	0 40	68 7	0 978	0 890	0 763	0 539	0 926	7.4%	9.5%
1982	15,158	10,701	0.707	4,070	11,088	0 27	0 73	65 1	0 678	0 874	0 587	0 695	0 731	26.9%	41.8%
1983	19,077	7,546	0 396	5,496	13,581	0 29	0 71	61 3	0 603	0 646	0 486	0 312	0 615	38.5%	41.8%
1984	5,156	6,148	1.200	3,107	2,048	0 60	0 40	66 0	0 949	0 833	0 656	0 515	0 879	12.1%	15.4%
1985	3,610	4,781	1 338	2,158	1,452	0 60	0 40	65 1	0 967	0 832	0 723	0 393	0 886	11.4%	13.0%
1986	8,067	8,132	1 012	2,006	6,061	0 25	0 75	65 8	0 829	0 895	0 734	0 605	0 845	15.5%	17.9%
1987	1,887	2,862	1.543	1,112	775	0 59	0 41	68 6	0 987	0 899	0 797	0 500	0 935	6.5%	8.8%
1988	1,870	3,058	1.663	1,095	775	0 59	0 41	63 7	0 987	0 844	0 799	0 223	0 903	9.7%	10.8%
1989	1,870	3,936	2.141	1,066	804	0 57	0.43	66 7	0 986	0 889	0 801	0 443	0 931	6.9%	8.0%
1990	1,870	2,700	1.468	1,107	764	0 59	0 41	63 9	0 988	0 842	0 798	0 217	0 901	9.9%	11.2%
1991	1,870	2,879	1.566	1,101	770	0 59	0.41	63.9	0 987	0 844	0 798	0 226	0 903	9.7%	11.5%
1992	2,862	3,529	1.247	1,718	1,145	0.60	0.40	63 9	0 976	0 818	0 754	0 259	0 881	11.9%	12.6%
														Average:	16.01%

Calculations- San Joaquin River Fall

Run Smolt Survival Model WITH BARRIE

C8 ='Study 507 Flow Data'!AB7
D8 ='Study 507 Flow Data'!G7 (HIDDEN)
E8 ='Study 507 Flow Data'!Q7 (HIDDEN)
F8 =D8+E8
G8 =F8/(C8-0 03*$R$2)
H8 =IF(C8<$R$1,(0.47*(0.3137*C8-0 0156*$R$2-0.0625*F8)+0 53*C8),(0.3137*C8-0.0156*$R$2-0.0625*F8))
I8 =C8-H8
J8 =H8/C8
K8 =I8/C8
M8 =(1.01045-0 00003*I8)
N8 =(O8+P8)-(O8*P8)
O8 =IF((0 87634-0.000071*H8)<0,0,(0.87634-0.000071*H8))
P8 =IF((-3 65867+0.058492*L8+0.000051*F8)<0,0,(-3 65867+0 058492*L8+0.000051*F8))
Q8 =((K8*M8)+(J8*N8))
R8 =(1-Q8)

T8 ='Study 507 Flow Data'!AC7
U8 ='Study 507 Flow Data'!H7 (HIDDEN)
V8 ='Study 507 Flow Data'!R7 (HIDDEN)
W8 =U8+V8
X8 =W8/(T8-0 03*$R$3)
Y8 =IF(T8<$R$1,(0 52*(0 3137*T8-0 0156*$R$3-0 0625*W8)+0 48*T8),(0 3137*T8-0.0156*$R$3-0 0625*W8))
Z8 =T8-Y8
AA8 =Y8/T8
AB8 =Z8/T8
AD8 =(1.01045-0.00003*Z8)
AE8 =(AF8+AG8)-(AF8*AG8)
AF8 =IF((0.87634-0.000071*Y8)<0,0,(0.87634-0.000071*Y8))
AG8 =IF((-3.65867+0.058492*AC8+0.000051*W8)<0,0,(-3.65867+0.058492*AC8+0.000051*W8))
AH8 =((AB8*AD8)+(AA8*AE8))
AI8 =(1-AH8)
AK8 =0.45*G94+0.55*AI8

Prep[redacted]vin Long on 11/26/1997

Sj[redacted]

SJR Smolt Survial with Barr[redacted]tions

C-032360

C—032360

Study ...n Joaquin River Fall Run Salmon Smolt Survival Model WITHOUT BARRIER AT HEAD OF OLD RIVER

Consumptive Depletion for April 1053.00 cfs

Consumptive Depletion for May 1053.00 cfs

San Joaquin River temperatures based on limited historical data from USGS

APRIL Year	Water Year Type	Vernalis Flows	CVP + SWP exports	expAv-cd	Calculated Stockton Q	OldR Flo	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survivability s234
1922	A	6,201	8,389	1.357	1,408	4,795	0.23	0.77	60.2	0.867	0.841	0.777	0.289	0.861	13.9%
1923	B	5,344	7,932	1.463	1,184	4,180	0.22	0.78	59.7	0.885	0.843	0.794	0.236	0.876	12.4%
1924	C	2,050	2,823	1.369	450	1,600	0.22	0.78	60.6	0.962	0.849	0.844	0.030	0.938	6.2%
1925	D	3,963	6,958	1.761	798	3,185	0.20	0.80	63.4	0.915	0.893	0.820	0.405	0.910	9.0%
1926	D	3,864	6,821	1.823	719	2,945	0.20	0.80	63.4	0.922	0.893	0.825	0.367	0.916	8.4%
1927	W	5,344	8,100	1.525	1,154	4,190	0.22	0.78	57.1	0.885	0.814	0.794	0.084	0.869	13.1%
1928	A	3,963	7,361	1.863	773	3,210	0.19	0.81	60.2	0.914	0.864	0.821	0.238	0.904	9.6%
1929	C	2,017	2,706	1.363	447	1,570	0.22	0.78	60.6	0.963	0.848	0.845	0.024	0.938	6.2%
1930	D	2,420	3,899	1.632	499	1,921	0.21	0.79	63.4	0.953	0.860	0.841	0.249	0.938	6.2%
1931	C	2,118	3,059	1.466	457	1,661	0.22	0.78	60.6	0.961	0.850	0.844	0.042	0.937	6.3%
1932	D	4,821	5,378	1.198	1,088	3,455	0.24	0.76	63.4	0.907	0.885	0.801	0.324	0.897	10.3%
1933	C	2,807	4,134	1.480	608	2,201	0.22	0.78	60.6	0.944	0.849	0.833	0.097	0.924	7.6%
1934	C	1,983	3,963	1.826	383	1,600	0.19	0.81	60.6	0.962	0.858	0.849	0.066	0.943	5.7%
1935	B	7,277	9,125	1.260	1,696	5,581	0.23	0.77	59.7	0.843	0.829	0.756	0.299	0.840	16.0%
1936	B	6,403	8,403	1.319	1,467	4,936	0.23	0.77	59.7	0.862	0.832	0.772	0.262	0.855	14.5%
1937	B	7,932	8,235	1.042	1,957	5,975	0.25	0.75	59.7	0.831	0.804	0.737	0.253	0.824	17.6%
1938	W	18,049	8,420	0.467	5,119	12,930	0.28	0.72	57.1	0.623	0.567	0.513	0.111	0.607	39.3%
1939	D	2,891	4,134	1.446	632	2,259	0.22	0.78	63.4	0.943	0.875	0.831	0.261	0.928	7.2%
1940	A	5,832	9,336	1.437	1,292	4,540	0.22	0.78	60.2	0.874	0.847	0.785	0.289	0.886	13.2%
1941	W	10,083	9,310	0.926	2,585	7,519	0.25	0.75	57.1	0.785	0.742	0.684	0.198	0.774	22.6%
1942	W	6,907	8,907	1.295	1,594	5,313	0.23	0.77	57.1	0.851	0.795	0.763	0.135	0.838	16.2%
1943	W	7,915	9,462	1.200	1,875	6,040	0.24	0.76	57.1	0.829	0.785	0.743	0.164	0.819	18.1%
1944	D	3,428	4,235	1.247	794	2,634	0.23	0.77	63.4	0.931	0.888	0.820	0.268	0.917	8.3%
1945	B	6,168	8,588	1.074	1,507	4,661	0.24	0.76	59.7	0.871	0.808	0.769	0.168	0.855	14.5%
1946	B	5,344	5,949	1.120	1,288	4,056	0.24	0.76	59.7	0.889	0.814	0.785	0.157	0.871	12.9%
1947	D	3,864	4,941	1.380	824	2,840	0.22	0.78	63.4	0.925	0.873	0.818	0.302	0.913	8.7%
1948	B	3,963	6,857	1.736	804	3,178	0.20	0.80	59.7	0.915	0.852	0.819	0.183	0.902	9.8%
1949	D	3,963	5,075	1.284	916	3,067	0.23	0.77	63.4	0.918	0.870	0.811	0.309	0.907	9.3%
1950	B	3,963	6,285	1.591	840	3,143	0.21	0.79	59.7	0.916	0.845	0.817	0.154	0.901	9.9%
1951	A	5,344	6,366	1.202	1,281	4,063	0.24	0.76	60.2	0.888	0.827	0.787	0.186	0.874	12.6%
1952	W	10,840	8,773	0.812	2,836	8,004	0.26	0.74	57.1	0.770	0.717	0.675	0.129	0.756	24.4%
1953	W	3,963	5,647	1.429	660	3,103	0.22	0.78	57.1	0.917	0.814	0.814	0.000	0.894	10.6%
1954	A	3,963	7,361	1.863	773	3,210	0.19	0.81	60.2	0.914	0.864	0.821	0.238	0.904	9.6%
1955	D	2,807	3,664	1.320	635	2,172	0.23	0.77	63.4	0.946	0.871	0.831	0.237	0.929	7.1%
1956	W	6,201	7,966	1.291	1,431	4,770	0.23	0.77	57.1	0.867	0.794	0.775	0.067	0.861	14.9%
1957	A	3,963	6,420	1.625	632	3,151	0.21	0.79	60.2	0.916	0.852	0.817	0.190	0.903	9.7%
1958	W	14,923	9,863	0.649	4,061	10,862	0.27	0.73	57.1	0.685	0.660	0.568	0.174	0.678	32.2%
1959	B	2,807	3,798	1.369	627	2,180	0.22	0.78	59.7	0.945	0.836	0.832	0.027	0.921	7.9%
1960	D	2,420	4,033	1.689	491	1,929	0.20	0.80	63.4	0.953	0.862	0.842	0.235	0.938	6.2%
1961	D	1,983	3,546	1.817	364	1,589	0.19	0.81	63.4	0.962	0.864	0.849	0.231	0.947	5.3%
1962	B	4,201	5,579	1.336	953	3,248	0.23	0.77	59.7	0.913	0.831	0.809	0.118	0.894	10.6%
1963	W	5,344	8,100	1.525	1,154	4,190	0.22	0.78	57.1	0.885	0.814	0.794	0.084	0.869	13.1%
1964	D	2,807	3,496	1.280	646	2,161	0.23	0.77	63.4	0.946	0.869	0.831	0.228	0.928	7.2%
1965	W	6,201	8,537	1.384	1,395	4,808	0.23	0.77	57.1	0.866	0.803	0.777	0.117	0.852	14.8%
1966	B	3,963	4,974	1.259	922	3,061	0.23	0.77	59.7	0.919	0.827	0.811	0.087	0.897	10.3%
1967	W	13,680	9,546	0.699	3,678	10,001	0.27	0.73	57.1	0.710	0.660	0.615	0.188	0.702	29.8%
1968	B	3,864	5,243	1.444	805	2,858	0.22	0.78	59.7	0.925	0.837	0.819	0.101	0.906	9.4%
1969	W	20,923	7,512	0.360	6,078	14,845	0.29	0.71	57.1	0.565	0.481	0.445	0.084	0.541	46.9%
1970	W	5,344	6,586	1.240	1,246	4,098	0.23	0.77	57.1	0.888	0.791	0.788	0.017	0.895	13.6%
1971	W	3,963	6,621	1.676	819	3,164	0.21	0.79	57.1	0.916	0.822	0.818	0.019	0.896	10.4%
1972	B	3,864	4,739	1.306	837	2,827	0.23	0.77	59.9	0.926	0.822	0.817	0.026	0.902	9.8%
1973	A	5,680	7,495	1.327	1,287	4,363	0.23	0.77	59.2	0.879	0.824	0.784	0.196	0.867	13.3%
1974	W	7,863	9,327	1.222	1,805	5,859	0.24	0.76	56.9	0.835	0.785	0.748	0.146	0.823	17.7%
1975	W	6,621	8,773	1.331	1,512	5,109	0.23	0.77	53.7	0.857	0.769	0.769	0.000	0.837	16.3%
1976	C	1,983	3,008	1.542	418	1,565	0.21	0.79	57.8	0.953	0.847	0.847	0.000	0.939	6.1%
1977	C	1,983	2,991	1.533	419	1,564	0.21	0.79	62.0	0.954	0.865	0.847	0.120	0.943	5.7%
1978	A	14,923	7,512	0.504	4,196	10,728	0.28	0.72	61.4	0.689	0.712	0.578	0.316	0.695	30.5%
1979	B	5,344	6,857	1.291	1,231	4,113	0.23	0.77	60.5	0.887	0.837	0.789	0.230	0.876	12.4%
1980	A	6,722	6,941	1.037	1,659	5,064	0.25	0.75	60.1	0.869	0.809	0.759	0.211	0.846	16.4%
1981	D	3,864	5,445	1.409	763	2,871	0.22	0.78	64.6	0.924	0.882	0.820	0.308	0.917	8.3%
1982	W	27,040	9,159	0.339	7,884	19,147	0.29	0.71	52.8	0.436	0.316	0.316	0.000	0.401	59.9%
1983	W	20,738	6,958	0.336	6,054	14,664	0.29	0.71	57.2	0.570	0.470	0.446	0.042	0.541	46.9%
1984	W	5,344	6,857	1.291	1,231	4,113	0.23	0.77	60.7	0.887	0.840	0.789	0.241	0.876	12.4%
1985	D	3,864	4,874	1.342	828	2,836	0.23	0.77	62.5	0.925	0.862	0.818	0.246	0.911	8.9%
1986	W	9,814	7,548	0.771	2,561	7,224	0.26	0.74	61.3	0.794	0.788	0.692	0.312	0.792	20.8%
1987	D	2,033	3,496	1.746	403	1,630	0.20	0.80	62.3	0.962	0.873	0.848	0.164	0.944	5.6%
1988	C	1,983	2,857	1.464	427	1,556	0.22	0.78	62.1	0.964	0.864	0.846	0.119	0.942	5.8%
1989	D	2,420	5,647	2.364	360	2,030	0.16	0.84	64.1	0.950	0.906	0.849	0.379	0.943	5.7%
1990	C	1,983	3,529	1.806	365	1,598	0.19	0.81	60.6	0.963	0.859	0.849	0.066	0.942	5.8%
1991	C	2,437	4,252	1.768	482	1,955	0.20	0.80	60.6	0.952	0.858	0.842	0.103	0.933	6.7%
1992	C	2,252	3,731	1.680	457	1,795	0.20	0.80	60.6	0.957	0.856	0.844	0.076	0.936	6.4%

MAY Year	Vernalis Flows	CVP + SWP exports	expAv-cd	Calculated Stockton	OldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survivability s234	Weighted total survival
1922	5,936	8,685	1.471	1,303	4633	0.22	0.78	66.6	0.871	0.931	0.784	0.660	0.864	11.6%	12.6%
1923	5,156	6,245	1.219	1,211	3945	0.23	0.77	66.0	0.892	0.899	0.790	0.520	0.894	10.6%	11.4%
1924	1,903	1,301	0.695	469	1404	0.26	0.74	63.9	0.968	0.864	0.841	0.145	0.941	5.9%	6.1%
1925	3,822	5,042	1.330	867	2955	0.23	0.77	67.3	0.922	0.914	0.815	0.535	0.920	8.0%	8.4%
1926	3,545	4,879	1.369	791	2755	0.22	0.78	67.3	0.928	0.915	0.820	0.527	0.925	7.5%	7.9%
1927	5,156	8,327	1.625	1,080	4075	0.21	0.79	64.2	0.868	0.904	0.800	0.521	0.892	10.8%	11.8%
1928	3,822	6,375	1.662	784	3038	0.21	0.79	66.6	0.919	0.921	0.821	0.562	0.920	8.0%	8.7%
1929	1,870	3,106	1.669	376	1494	0.20	0.80	63.9	0.966	0.885	0.850	0.237	0.949	5.1%	5.8%
1930	1,870	3,513	1.911	351	1520	0.19	0.81	67.3	0.965	0.919	0.851	0.457	0.956	4.4%	5.2%
1931	1,870	3,123	1.696	375	1495	0.20	0.80	63.9	0.966	0.886	0.850	0.238	0.950	5.0%	5.8%
1932	3,871	4,847	1.262	895	2976	0.23	0.77	67.3	0.921	0.911	0.813	0.525	0.919	8.1%	9.1%
1933	2,883	3,155	1.190	626	2055	0.23	0.77	63.9	0.949	0.872	0.832	0.240	0.931	6.9%	7.2%
1934	1,870	2,944	1.601	386	1484	0.21	0.79	63.9	0.966	0.864	0.849	0.229	0.949	5.1%	5.4%
1935	6,060	5,611	0.932	1,831	4519	0.25	0.75	66.0	0.875	0.861	0.768	0.468	0.876	12.4%	14.8%
1936	5,156	6,310	1.232	1,208	3949	0.23	0.77	66.0	0.892	0.900	0.791	0.524	0.894	10.6%	12.2%
1937	8,132	6,749	0.833	2,113	6019	0.26	0.74	66.0	0.830	0.878	0.726	0.546	0.842	16.8%	16.8%
1938	23,972	9,449	0.395	8,913	17059	0.29	0.71	64.2	0.499	0.741	0.366	0.578	0.589	43.1%	41.4%
1939	2,883	3,480	1.312	608	2076	0.23	0.77	67.3	0.946	0.909	0.833	0.465	0.939	6.1%	6.6%
1940	5,156	6,196	1.209	1,214	3942	0.24	0.76	66.6	0.862	0.906	0.790	0.553	0.895	10.6%	11.7%
1941	9,579	9,726	1.019	2,381	7198	0.25	0.75	64.2	0.794	0.881	0.707	0.593	0.816	18.4%	20.3%
1942	5,936	8,685	1.471	1,303	4633	0.22	0.78	64.2	0.871	0.900	0.784	0.539	0.878	12.2%	14.0%
1943	6,180	6,327	1.364	1,462	4778	0.23	0.77	64.2	0.867	0.863	0.777	0.521	0.873	12.7%	16.1%
1944	2,976	3,741	1.270	983	2293	0.23	0.77	67.3	0.942	0.909	0.828	0.469	0.934	6.6%	7.4%
1945	3,936	5,172	1.325	895	3041	0.23	0.77	66.0	0.919	0.900	0.813	0.496	0.915	8.5%	11.2%
1946	3,871	5,269	1.373	868	3002	0.22	0.78	66.0	0.920	0.902	0.815	0.471	0.916	8.4%	10.4%
1947	2,883	3,546	1.337	604	2090	0.23	0.77	67.3	0.948	0.910	0.833	0.459	0.939	6.1%	7.2%
1948	3,822	7,678	2.025	703	3119	0.18	0.82	66.0	0.917	0.929	0.826	0.583	0.919	8.1%	8.8%
1949	2,976	4,749	1.613	820	2358	0.21	0.79	67.3	0.940	0.920	0.832	0.520	0.936	6.4%	7.7%
1950	3,822	5,269	1.380	863	2989	0.22	0.78	66.0	0.921	0.902	0.816	0.471	0.917	8.3%	9.9%
1951	5,156	7,123	1.380	1,156	4000	0.22	0.78	66.6	0.860	0.918	0.794	0.600	0.897	10.3%	11.4%
1952	15,460	9,563	0.620	4,233	11218	0.27	0.73	64.2	0.674	0.824	0.576	0.584	0.715	28.5%	29.9%
1953	3,822	7,678	2.025	703	3119	0.18	0.82	64.2	0.917	0.911	0.826	0.486	0.918	8.4%	9.4%
1954	3,822	7,432	1.961	718	3104	0.19	0.81	66.6	0.917	0.933	0.825	0.616	0.920	8.0%	8.7%
1955	2,883	3,773	1.423	590	2094	0.22	0.78	67.3	0.948	0.912	0.834	0.470	0.940	6.0%	6.5%
1956	6,034	8,750	1.458	1,329	4704	0.22	0.78	64.2	0.869	0.900	0.782	0.543	0.876	12.4%	13.6%
1957	3,822	5,952	1.570	810	3011	0.21	0.79	66.6	0.920	0.917	0.819	0.540	0.919	8.1%	8.8%
1958	13,173	10,886	0.813	3,448	9725	0.26	0.74	64.2	0.719	0.868	0.632	0.641	0.758	24.2%	27.8%
1959	2,883	3,676	1.386	596	2088	0.22	0.78	66.0	0.948	0.899	0.834	0.389	0.937	6.3%	7.0%
1960	1,870	3,350	1.822	361	1509	0.19	0.81	67.3	0.965	0.918	0.851	0.449	0.956	4.4%	5.2%
1961	1,870	2,992	1.627	363	1487	0.20	0.80	67.3	0.966	0.914	0.849	0.430	0.955	4.6%	4.8%
1962	3,822	5,334	1.407	849	2973	0.22	0.78	66.0	0.921	0.903	0.816	0.474	0.917	8.3%	9.3%
1963	5,156	8,327	1.625	1,080	4075	0.21	0.79	64.2	0.868	0.904	0.800	0.521	0.892	10.8%	11.8%
1964	2,883	3,871	1.460	583	2100	0.22	0.78	67.3	0.947	0.913	0.835	0.475	0.940	6.0%	6.6%
1965	5,936	7,937	1.344	1,350	4686	0.23	0.77	64.2	0.873	0.891	0.781	0.501	0.877	12.3%	13.4%
1966	2,976	4,781	1.624	818	2358	0.21	0.79	66.0	0.940	0.907	0.832	0.446	0.933	6.7%	8.3%
1967	16,003	10,061	0.629	4,376	11826	0.27	0.73	64.2	0.662	0.830	0.566	0.609	0.708	29.2%	29.8%
1968	2,883	3,643	1.374	598	2096	0.22	0.78	66.0	0.948	0.898	0.834	0.388	0.937	6.3%	7.7%
1969	26,217	9,010	0.344	7,646	18572	0.29	0.71	66.4	0.453	0.790	0.334	0.686	0.561	44.9%	46.3%
1970	5,156	5,920	1.155	1,231	3925	0.24	0.76	61.2	0.863	0.836	0.789	0.223	0.879	12.1%	12.7%
1971	3,822	7,678	2.025	703	3119	0.18	0.82	64.2	0.917	0.911	0.826	0.486	0.918	8.4%	9.3%
1972	2,883	3,903	1.472	561	2102	0.22	0.78	66.0	0.947	0.901	0.835	0.401	0.937	6.3%	7.9%
1973	5,156	6,570	1.262	1,190	3985	0.23	0.77	66.3	0.891	0.907	0.792	0.554	0.895	10.8%	11.8%
1974	5,936	8,685	1.471	1,303	4633	0.22	0.78	66.1	0.871	0.924	0.784	0.651	0.883	11.7%	14.4%
1975	5,936	8,685	1.471	1,303	4633	0.22	0.78	61.5	0.671	0.866	0.784	0.382	0.870	13.9%	14.9%
1976	2,065	3,253	1.599	428	1637	0.21	0.79	65.8	0.961	0.901	0.846	0.356	0.949	5.1%	6.6%
1977	1,870	732	0.398	525	1346	0.28	0.72	62.3	0.970	0.843	0.839	0.023	0.934	6.6%	6.2%
1978	10,831	8,197	0.759	2,899	7982	0.26	0.74	66.9	0.772	0.893	0.673	0.872	0.804	19.6%	24.5%
1979	5,156	5,986	1.168	1,227	3929	0.24	0.76	66.0	0.863	0.896	0.789	0.507	0.893	10.7%	11.5%
1980	6,619	7,481	1.136	1,582	5027	0.24	0.76	66.6	0.860	0.910	0.783	0.518	0.872	12.9%	14.0%
1981	2,883	3,513	1.325	608	2078	0.23	0.77	66.7	0.946	0.923	0.833	0.539	0.942	5.8%	6.9%
1982	15,158	10,701	0.707	4,070	11086	0.27	0.73	66.1	0.678	0.874	0.587	0.695	0.731	26.9%	41.8%
1983	19,077	7,546	0.396	5,496	13581	0.29	0.71	61.3	0.603	0.646	0.486	0.312	0.815	38.5%	41.8%
1984	5,156	6,148	1.200	1,217	3939	0.24	0.76	66.0	0.862	0.896	0.790	0.515	0.894	10.6%	11.4%
1985	3,810	4,781	1.336	817	2793	0.23	0.77	66.1	0.927	0.890	0.818	0.383	0.918	8.2%	8.6%
1986	8,067	8,132	1.012	2,006	6061	0.25	0.75	65.8	0.829	0.895	0.734	0.605	0.845	16.8%	17.9%
1987	1,867	2,862	1.543	396	1490	0.21	0.79	66.6	0.966	0.924	0.848	0.500	0.957	4.3%	4.9%
1988	1,870	3,058	1.663	379	1491	0.20	0.80	63.7	0.966	0.863	0.849	0.223	0.949	5.1%	5.4%
1989	1,870	3,936	2.141	324	1546	0.17	0.83	66.7	0.964	0.918	0.853	0.443	0.956	4.4%	6.0%
1990	1,870	2,700	1.468	402	1469	0.21	0.79	63.9	0.966	0.861	0.848	0.217	0.948	5.2%	5.9%
1991	1,870	2,879	1.586	360	1480	0.21	0.79	63.9	0.966	0.863	0.849	0.226	0.949	5.1%	5.8%
1992	2,862	3,529	1.247	661	2201	0.23	0.77	63.9	0.944	0.874	0.829	0.259	0.926	7.2%	8.8%

Average: 12.32%

Formulas: San Joaquin River Fall Run Smolt Survival Model WITHOUT BARRIER

C7 ='Study 507 Flow Data'!AB7
D7 ='Study 507 Flow Data'!G7
E7 ='Study 507 Flow Data'!Q7
F7 =D7+E7
G7 =F7/(C7-0.03*$H$2)
H7 =IF((0.3137*C7-0.0156*$H$2-0.0625*F7)<0,0,(0.3137*C7-0.0156*$H$2-0.0625*F7))
I7 =C7-H7
J7 =H7/C7
K7 =I7/C7
M7 =(1.01045-0.00003*I7)
N7 =(O7+P7)-(O7*P7)
O7 =(0.87634-0.000071*H7)
P7 =IF((-3.65867+0.058492*L7+0.000051*F7)<0,0,(-3.65867+0.058492*L7+0.000051*F7))
Q7 =((K7*M7)+(J7*N7))
R7 =(1-Q7)

T7 ='Study 507 Flow Data'!AC7
U7 ='Study 507 Flow Data'!H7
V7 ='Study 507 Flow Data'!R7
W7 =U7+V7
X7 =W7/(T7-0.03*$H$3)
Y7 =IF((0.3137*T7-0.0156*$H$3-0.0625*W7)<0,0,(0.3137*T7-0.0156*$H$3-0.0625*W7))
Z7 =T7-Y7
AA7 =Y7/T7
AB7 =Z7/T7
AD7 =(1.01045-0.00003*Z7)
AE7 =(AF7+AG7)-(AF7*AG7)
AF7 =(0.87634-0.000071*Y7)
AG7 =IF((-3.65867+0.058492*AC7+0.000051*W7)<0,0,(-3.65867+0.058492*AC7+0.000051*W7))
AH7 =((AB7*AD7)+(AA7*AE7))
AI7 =(1-AH7)
AK7 =0.45*R7+0.55*AI7

C-032361

C-032361

STUDY: 1995C06F-SWRCB-507 DWRSIM: recirc818-f, 17 Jun 97
CVP, CVP EXPORT AT TRACY PP (Converted from TAF to CFS)

Project. /1995C06F-SWRCB-507/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	3806	4185	4342	4605
1923	4302	4212	4212	4285	4228	3966	3123	4605
1924	3832	3919	4212	4068	1529	1412	748	790
1925	1311	4212	3545	4213	3757	3479	2521	3479
1926	4302	4212	4212	4231	4228	3311	2440	3580
1927	4252	4212	4212	4285	3773	4050	4163	4605
1928	4285	4212	4212	4103	4228	3680	2992	3025
1929	4285	4212	4212	4231	4017	823	2992	3025
1930	2286	4212	4212	2773	2944	1949	1756	4302
1931	2655	2423	4212	3565	2114	1529	1561	3479
1932	1210	4212	4212	4103	2537	2487	2423	3596
1933	3059	2017	4212	3835	1561	2067	2082	2168
1934	1529	4163	4212	1621	2309	1781	2163	3848
1935	2538	3220	4212	1188	4228	4504	2992	4101
1936	4269	4212	4212	4103	4228	4201	3155	4605
1937	4285	4212	4212	4231	4228	3260	2683	3008
1938	4285	4212	4212	4267	4228	4050	4001	4605
1939	4302	4212	4212	2629	2716	2067	1740	4302
1940	2807	1431	4212	4103	4228	4168	2976	4605
1941	4269	4212	4212	4285	4228	4605	4603	4605
1942	4302	4212	4212	4285	4228	4453	4342	4605
1943	4302	4212	4212	4267	4228	4605	4163	4605
1944	4285	4212	4212	4103	4228	2118	1870	4168
1945	4269	4212	4212	4249	4228	3294	2588	3378
1946	4285	4212	4212	4285	4228	2975	2635	3361
1947	4269	4212	4212	4249	4228	2470	1773	4269
1948	3680	4212	4212	4085	4228	3428	3838	4605
1949	4285	4212	4212	4249	4228	2538	2374	3647
1950	4285	4212	4212	4249	4228	3143	2635	4605
1951	4269	4212	4212	4285	4228	3193	3562	4605
1952	4285	4212	4212	4138	4228	4605	4294	4605
1953	4302	4212	4212	4285	3448	2823	3838	4605
1954	4285	4212	4212	4267	4228	3680	2992	3277
1955	4285	4212	4212	4267	4228	1832	1887	4151
1956	4269	4212	4212	4138	2472	3983	4375	4605
1957	4302	4212	4212	4249	4228	3210	2976	4504
1958	4285	4212	4212	4249	4228	4605	4603	4605
1959	4302	4212	4212	4249	4228	1899	1838	4201
1960	4269	4212	4212	4085	3545	303	1675	4353
1961	4269	4212	4212	4249	3513	303	1496	4554
1962	2924	4212	4212	4249	4228	2790	2667	3949
1963	4285	4212	4212	4285	4228	4050	4163	4605
1964	4269	4212	4212	4120	3415	1748	1935	4101
1965	4067	4212	4212	4249	4228	4269	2992	4605
1966	4302	4212	4212	4285	4228	2487	2391	3630
1967	4269	4212	4212	4285	4228	4605	4603	4605
1968	4302	4212	4212	2660	2992	2622	1822	4218
1969	4285	4212	4212	4285	3643	3344	3985	4605
1970	4302	4212	4163	1206	3106	3294	2960	4353
1971	4285	4212	4212	4285	4228	3311	3838	4605
1972	4269	4212	4212	4120	3789	2370	1952	4084
1973	4269	4212	4212	4267	4228	3748	3285	4521
1974	4285	4212	4212	4267	4228	4605	4342	4605
1975	4302	4212	4212	4249	4228	4386	4342	4605
1976	4302	4212	4212	4085	4228	639	1626	4420
1977	2689	1691	2098	684	829	1109	293	50
1978	2470	4131	3074	1765	2114	3445	4098	4605
1979	4302	4212	4212	4249	4228	3428	2992	2823
1980	4269	4212	4212	4103	3757	2991	3594	4605
1981	4285	4212	4212	2737	2992	2723	1756	4302
1982	4285	4212	4212	4285	4228	3596	4017	4605
1983	4302	4212	4212	3421	2049	3311	3952	4605
1984	3328	2992	1334	1443	3204	3428	3074	4521
1985	4285	4212	4212	4249	4228	2437	2391	3613
1986	2605	4212	4212	4249	4228	2336	2749	4117
1987	4269	4212	1480	1278	2358	319	1431	4605
1988	2975	4212	4212	3894	2082	1428	1529	4487
1989	2386	2846	3936	990	4228	2823	1968	4067
1990	4252	4212	2521	1314	2358	235	1350	4571
1991	2487	1773	1691	432	4228	2084	1447	2706
1992	3109	2960	4212	1321	2082	1865	2521	3512

STUDY: 1995C06F-SWRCB-507 DWRSIM: recirc818-f, 17 Jun 97
SWP, SWP EXPORT AT BANKS PP (Converted from TAF to CFS)

Project: /1995C06F-SWRCB-507/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4319	7107	7579	6392	4147	4185	4342	6672
1923	6672	4359	3643	2377	3367	3966	3123	3395
1924	3748	6424	6652	4624	1789	1412	553	672
1925	3210	4847	3155	7581	4131	3479	2521	2672
1926	3109	3822	7091	7508	3497	3311	2440	2487
1927	6672	7042	7286	6626	4147	4050	4163	3748
1928	6672	5465	3643	4225	4424	3680	3383	2672
1929	5462	6180	7091	3799	2814	1882	114	101
1930	1765	6294	7091	4015	4375	1949	1756	2874
1931	3260	2976	5058	1873	1903	1529	1561	2101
1932	1849	7188	7823	5563	2700	2891	2423	4117
1933	2605	2472	5416	2701	3074	2067	1073	84
1934	1580	5546	7091	4411	1691	1781	781	1025
1935	4302	3399	7660	3943	6977	4622	2618	3529
1936	3949	4033	7449	8206	5790	4201	3155	3361
1937	3412	5578	7579	5042	4001	4974	4066	4655
1938	6672	7530	3676	3943	3968	4369	5448	6672
1939	5260	3741	3236	3961	4001	2067	1740	3109
1940	1748	2683	8018	8206	4651	4168	3220	3092
1941	6100	7319	8148	6860	3838	4706	5123	6302
1942	6117	3610	3236	3961	4001	4453	4342	6672
1943	6470	3773	3301	3997	4050	4857	4163	3143
1944	6672	6424	3269	3825	4001	2118	1870	3243
1945	6672	6961	5595	3997	4131	3294	2586	3798
1946	6672	7595	3643	4213	4424	2975	2635	3596
1947	6672	7140	6554	3961	3919	2470	1773	2975
1948	3630	3236	7010	1721	3480	3428	3838	4521
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3496	3676	7172	7526	4554	3143	2635	3529
1951	6672	7595	7449	4682	4700	3193	3562	2907
1952	6672	7107	6766	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3854	4628	4684	3680	4440	2739
1955	6672	6912	5920	3925	3188	1832	1887	3176
1956	4235	7595	7985	4520	4700	3983	4375	6672
1957	6672	5790	3887	4646	4440	3210	2976	3462
1958	6672	6928	3582	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3058	1899	1838	3042
1960	3075	2797	6408	7041	3985	3731	1675	2756
1961	6235	6896	7075	7112	4538	3243	1496	3042
1962	3496	6879	4163	8499	3497	2790	2667	2874
1963	6672	6896	7270	8499	4489	4050	4163	4017
1964	6672	6034	3871	3512	3318	1748	1935	2823
1965	6252	7416	8506	5924	4375	4269	4944	3714
1966	6672	6213	3659	4375	4424	2487	2391	2622
1967	6672	7123	7676	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2857
1969	6016	6977	6310	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3294	2960	2739
1971	6672	7042	5465	4195	4700	3311	3838	5042
1972	6672	6180	3887	4485	4424	2370	1952	2790
1973	6672	6896	6912	4429	4456	3748	3285	4017
1974	6672	7140	3643	4375	4424	4722	4342	4924
1975	5361	4245	3854	4628	4684	4386	4342	6672
1976	6672	4651	3806	4172	3627	2370	1626	2941
1977	3412	3106	2440	1422	1187	1882	439	387
1978	1697	5530	7758	6554	3903	4067	4098	3899
1979	6672	3676	3269	3961	4001	3428	2992	5227
1980	6672	6993	3155	3668	3350	3949	3887	4067
1981	5579	4033	3350	4069	4115	2723	1756	2924
1982	6672	6977	7676	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	3428	3074	3361
1985	6672	5741	3871	4646	4635	2437	2391	2605
1986	4168	6944	7172	7725	4180	5210	5383	3848
1987	3496	6099	6245	4267	4163	3176	1431	3176
1988	1865	6879	7058	2469	1756	1428	1529	1160
1989	3361	3562	1554	1801	6961	2823	1968	2487
1990	3583	6196	7058	6482	3497	3294	1350	2907
1991	2370	3139	1708	828	7075	2168	1431	1344
1992	1496	1810	4781	7197	6164	1865	1008	1344

STUDY: 1995C06F-SWRCB-507 DWRSIM: recirc818-f, 17 Jun 97
CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (TAF to CFS)

Project: /1995C06F-SWRCB-507/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	2000	1697	2488	2683	6770	5351	6201	5936	7294
1923	4001	2000	3741	4196	4267	3415	5344	5156	4420
1924	2602	1462	1496	1399	1617	1708	2050	1903	1849
1925	1968	1361	1252	1171	2719	2423	3983	3822	5210
1926	2000	1412	1334	1203	2467	2277	3664	3545	2033
1927	2000	1949	2179	1789	5438	3578	5344	5156	3428
1928	4359	1849	2309	2277	2590	2960	3983	3822	2067
1929	2000	1395	1301	1203	1458	1691	2017	1870	2420
1930	1952	1260	1138	1220	1549	1935	2420	1870	4084
1931	1415	1210	1138	1138	1260	1334	2118	1870	1781
1932	1350	1294	3009	3399	7667	4538	4521	3871	2336
1933	3529	1482	1317	1610	2035	2065	2807	2683	1462
1934	2000	1277	1220	1220	2413	1659	1983	1870	1798
1935	2000	1395	1350	2944	3223	3513	7277	6050	3899
1936	3171	1546	1561	2309	12448	5774	6403	5156	2134
1937	3058	1563	1870	2683	13090	9644	7932	8132	2672
1938	3155	1798	5090	6993	22489	31047	18049	23972	14117
1939	8896	2319	2293	2505	3637	2765	2891	2683	1983
1940	2000	1479	1399	4001	7928	10441	5832	5156	4958
1941	2000	1731	3806	4391	12838	12116	10083	9579	8285
1942	4912	2252	5318	9173	10443	5936	6907	5936	5647
1943	6977	3092	3562	11157	10966	17776	7915	6180	3428
1944	3432	1815	1919	1984	3129	3106	3428	2976	3412
1945	2000	1832	1691	1545	7436	7985	6168	3936	2252
1946	3919	2218	5627	6619	6212	4391	5344	3871	3479
1947	2309	2353	2718	2179	2701	2277	3664	2683	1933
1948	2000	1344	1203	1122	1373	1740	3983	3822	2286
1949	2000	1445	1285	1171	1476	2586	3983	2976	3008
1950	2000	1428	1285	1464	2557	2293	3983	3822	3832
1951	2000	5243	9660	7514	8823	6180	5344	5156	2756
1952	2000	1697	2521	5660	5494	12620	10840	15450	11226
1953	8359	2185	3058	4980	5744	3627	3983	3822	2286
1954	2000	1513	1415	1334	2287	2407	3983	3822	2185
1955	2000	1428	1334	1529	2287	2277	2807	2683	3832
1956	2000	1445	10604	20053	12917	6099	6201	6034	7546
1957	4765	1613	1740	1643	2935	3155	3983	3822	2286
1958	2000	1529	1447	1626	3745	10604	14923	13173	10453
1959	7595	2118	1903	2309	4538	3643	2807	2683	1882
1960	2000	1328	1171	1155	1791	1919	2420	1870	2286
1961	1984	1344	1236	1171	1278	1350	1983	1870	1849
1962	1382	1294	1155	1138	5942	4489	4201	3822	1681
1963	2000	1412	1252	1740	6266	3415	5344	5156	3428
1964	3041	2134	1789	1854	2208	2082	2807	2683	2252
1965	2000	1647	4391	11433	7905	4619	6201	5936	3428
1966	4424	3479	4798	4847	5186	3708	3983	2976	2000
1967	2000	1546	2635	2960	3799	6977	13680	16003	13797
1968	4847	1748	1854	1773	3581	2797	3664	2683	1933
1969	2000	1479	1724	14084	30556	21012	20923	26217	18368
1970	8343	2554	3594	17044	9489	7432	5344	5156	3647
1971	2000	1731	2147	2000	2287	2732	3983	3822	2286
1972	2000	1462	1513	1382	2208	2277	3664	2683	1832
1973	2000	1395	1317	1952	5672	8620	5680	5156	5579
1974	2781	2386	2749	4538	5366	7676	7663	5936	3428
1975	3545	1731	1935	2196	6572	8831	6621	5936	6285
1976	4115	1832	1805	1529	1965	1708	1983	2065	1815
1977	2830	2101	1610	1155	1242	1447	1983	1870	1748
1978	1252	1277	1350	3220	7797	11336	14923	10831	7075
1979	4228	1933	1691	3968	8157	8652	5344	5156	4453
1980	2407	1697	1805	12019	24217	14572	6722	6619	6184
1981	5123	2084	2098	2960	2791	2960	3664	2683	1916
1982	2000	1630	1756	9368	17484	15467	27040	15158	9865
1983	12458	8621	19093	24867	36534	41114	20738	19077	35451
1984	12116	13545	21500	15190	9718	6001	5344	5156	3647
1985	2000	1781	1691	1431	2287	2277	3664	3610	1966
1986	2000	1597	1545	1464	18366	26786	9814	8067	7613
1987	3480	1731	1545	1464	1855	1919	2033	1887	1865
1988	2000	1277	1138	1122	1182	1285	1983	1870	1798
1989	1317	1176	1171	1155	1260	1626	2420	1870	2672
1990	1334	1227	1138	1122	1260	1399	1983	1870	1781
1991	1285	1210	1122	1090	1170	2358	2437	1870	1395
1992	1350	1445	1138	1138	2260	2049	2252	2862	1899

C-032362
C—032362
AZ-22

Study 513 San Joaquin River Fall Run Salmon Smolt Survival Model WITH BARRIER

Barrier at head of Old River from Apr 15 to May 15

Old River Barrier Open above 7500.00 cfs
Consumptive Depletion for April 1053.00 cfs
Consumptive Depletion for May 1053.00 cfs

Year	Water Year Type	APRIL Vernalis Flows	CVP + SWP exports	exp/v-od	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234
1922	A	9,209	8,865	1.075	2,256	6,953	0.24	0.76	60.2	0.802	0.820	0.718	0.388	0.808	19.4%
1923	B	7,361	9,277	1.266	4,708	2,655	0.64	0.36	59.7	0.831	0.862	0.542	0.308	0.772	22.8%
1924	C	3,630	3,986	1.102	2,335	1,295	0.64	0.36	60.6	0.972	0.736	0.711	0.096	0.820	18.0%
1925	D	6,319	8,420	1.339	4,026	2,293	0.64	0.36	63.4	0.942	0.787	0.561	0.479	0.843	16.7%
1926	D	5,880	8,184	1.449	3,800	2,080	0.63	0.37	63.4	0.948	0.798	0.621	0.487	0.853	14.7%
1927	W	7,999	9,613	1.208	1,892	6,107	0.24	0.76	57.1	0.827	0.786	0.742	0.171	0.818	18.2%
1928	A	6,336	8,722	1.384	4,028	2,308	0.64	0.36	60.2	0.941	0.716	0.590	0.307	0.798	20.2%
1929	C	4,000	3,466	0.881	2,599	1,401	0.65	0.35	60.6	0.966	0.712	0.662	0.084	0.802	19.8%
1930	D	4,403	5,528	1.265	2,813	1,590	0.64	0.36	63.4	0.963	0.784	0.677	0.332	0.846	18.2%
1931	C	3,546	4,101	1.157	2,274	1,272	0.64	0.36	60.6	0.972	0.742	0.715	0.096	0.825	17.9%
1932	D	7,813	8,789	0.896	1,947	5,866	0.26	0.74	63.4	0.840	0.842	0.736	0.396	0.841	15.9%
1933	C	4,736	5,512	1.171	3,041	1,696	0.64	0.36	60.6	0.960	0.717	0.660	0.187	0.804	19.6%
1934	C	4,252	5,193	1.230	2,720	1,532	0.64	0.36	60.6	0.964	0.731	0.663	0.151	0.815	18.5%
1935	B	8,957	10,117	1.133	2,161	6,796	0.24	0.76	59.7	0.807	0.820	0.723	0.349	0.810	19.0%
1936	B	9,730	9,865	1.017	2,419	7,311	0.25	0.75	59.7	0.791	0.804	0.705	0.336	0.794	20.6%
1937	B	12,167	9,394	0.774	3,213	8,954	0.26	0.74	59.7	0.742	0.758	0.648	0.312	0.746	26.4%
1938	W	19,864	9,075	0.456	5,648	14,216	0.28	0.72	57.1	0.584	0.561	0.475	0.144	0.575	42.5%
1939	D	5,428	5,865	1.087	3,497	1,931	0.64	0.36	63.4	0.953	0.758	0.626	0.349	0.827	17.3%
1940	A	9,361	10,335	1.106	2,274	7,087	0.24	0.76	60.2	0.798	0.826	0.715	0.390	0.805	19.8%
1941	W	13,982	9,411	0.675	3,782	10,201	0.27	0.73	57.1	0.704	0.671	0.606	0.161	0.695	30.5%
1942	W	9,865	9,747	0.991	2,469	7,396	0.25	0.75	57.1	0.789	0.754	0.701	0.178	0.780	22.0%
1943	W	11,092	9,764	0.883	2,863	8,239	0.26	0.74	57.1	0.763	0.732	0.674	0.179	0.755	24.5%
1944	D	6,134	6,319	1.035	3,982	2,172	0.65	0.35	63.4	0.945	0.746	0.595	0.372	0.816	18.4%
1945	B	9,361	8,722	0.935	2,375	6,986	0.25	0.75	59.7	0.801	0.789	0.708	0.278	0.798	20.2%
1946	B	7,863	7,815	1.024	1,898	5,764	0.25	0.75	59.7	0.836	0.801	0.742	0.232	0.829	17.1%
1947	D	4,956	6,117	1.242	3,171	1,787	0.64	0.36	63.4	0.957	0.777	0.651	0.362	0.842	18.5%
1948	B	8,201	8,655	1.403	3,939	2,262	0.64	0.36	59.7	0.943	0.707	0.587	0.275	0.793	20.7%
1949	D	5,899	5,378	0.917	3,830	2,068	0.65	0.35	63.4	0.948	0.733	0.604	0.324	0.808	19.2%
1950	B	5,731	7,865	1.360	3,843	2,087	0.64	0.36	59.7	0.948	0.707	0.618	0.234	0.795	20.5%
1951	A	7,411	7,966	1.079	4,779	2,632	0.64	0.36	60.2	0.931	0.661	0.537	0.269	0.757	24.3%
1952	W	14,033	8,873	0.634	3,831	10,202	0.27	0.73	57.1	0.704	0.657	0.604	0.134	0.692	30.8%
1953	W	5,596	7,042	1.265	3,577	2,020	0.64	0.36	57.1	0.950	0.636	0.622	0.040	0.750	28.0%
1954	A	5,986	8,620	1.436	3,784	2,182	0.63	0.37	60.2	0.945	0.724	0.608	0.297	0.805	19.5%
1955	D	4,874	5,512	1.138	3,132	1,742	0.64	0.36	63.4	0.958	0.766	0.654	0.331	0.836	16.4%
1956	W	9,209	10,151	1.106	2,238	6,971	0.24	0.76	57.1	0.801	0.774	0.717	0.199	0.795	20.5%
1957	A	5,365	7,378	1.376	3,430	1,935	0.64	0.36	60.2	0.952	0.720	0.633	0.239	0.805	19.5%
1958	W	16,722	9,784	0.585	4,619	12,103	0.28	0.72	57.1	0.647	0.629	0.548	0.179	0.842	34.8%
1959	B	4,941	5,714	1.164	3,172	1,769	0.64	0.36	59.7	0.957	0.695	0.651	0.125	0.789	21.1%
1960	D	4,586	5,210	1.143	2,947	1,641	0.64	0.36	63.4	0.961	0.772	0.667	0.315	0.840	16.0%
1961	D	4,084	4,874	1.203	2,816	1,468	0.64	0.36	63.4	0.966	0.783	0.691	0.298	0.849	15.1%
1962	B	7,092	7,529	1.066	4,575	2,516	0.65	0.35	59.7	0.935	0.649	0.561	0.217	0.760	25.0%
1963	W	8,117	9,680	1.197	1,925	6,192	0.24	0.76	57.1	0.825	0.785	0.740	0.175	0.815	18.5%
1964	D	4,840	5,193	1.080	3,119	1,721	0.64	0.36	63.4	0.959	0.783	0.655	0.315	0.833	16.7%
1965	W	9,529	9,999	1.053	2,348	7,181	0.25	0.75	57.1	0.795	0.765	0.710	0.191	0.786	21.2%
1966	B	5,361	6,586	1.236	3,430	1,930	0.64	0.36	59.7	0.953	0.695	0.633	0.169	0.788	21.2%
1967	W	15,461	9,846	0.625	4,231	11,230	0.27	0.73	57.1	0.674	0.649	0.578	0.173	0.687	33.3%
1968	B	5,025	6,201	1.242	3,214	1,811	0.64	0.36	59.7	0.958	0.701	0.648	0.150	0.793	20.7%
1969	W	21,125	7,830	0.362	6,133	14,991	0.29	0.71	57.1	0.561	0.480	0.441	0.070	0.537	46.3%
1970	W	7,546	8,083	1.076	1,845	5,700	0.24	0.76	57.1	0.839	0.769	0.745	0.093	0.822	17.8%
1971	W	5,568	7,798	1.401	3,554	2,042	0.64	0.36	57.1	0.949	0.654	0.624	0.079	0.781	23.9%
1972	B	4,888	6,991	1.501	2,953	1,725	0.63	0.37	58.9	0.959	0.714	0.666	0.143	0.804	19.9%
1973	A	9,830	10,218	1.065	2,366	7,264	0.25	0.75	59.2	0.793	0.803	0.708	0.325	0.795	20.6%
1974	W	10,571	10,201	0.966	2,662	7,909	0.25	0.75	56.9	0.773	0.747	0.667	0.190	0.767	23.3%
1975	W	9,865	10,487	1.066	2,423	7,442	0.25	0.75	53.7	0.787	0.709	0.704	0.017	0.786	23.2%
1976	C	3,865	4,586	1.187	2,476	1,389	0.64	0.36	57.8	0.969	0.701	0.701	0.000	0.787	20.3%
1977	C	3,277	3,916	1.207	2,087	1,180	0.64	0.36	62.0	0.975	0.773	0.727	0.198	0.846	18.4%
1978	A	17,293	7,613	0.441	4,833	12,360	0.29	0.71	61.4	0.640	0.678	0.526	0.321	0.861	34.9%
1979	B	8,554	9,310	1.092	2,065	6,489	0.24	0.76	60.5	0.816	0.825	0.726	0.355	0.818	18.2%
1980	A	10,756	8,285	0.773	2,840	7,916	0.26	0.74	60.1	0.773	0.766	0.675	0.279	0.771	22.9%
1981	D	5,210	6,756	1.305	3,323	1,887	0.64	0.36	64.6	0.954	0.807	0.640	0.464	0.860	14.0%
1982	W	27,376	9,915	0.363	7,952	19,424	0.29	0.71	52.8	0.426	0.312	0.312	0.000	0.384	60.8%
1983	W	21,864	7,075	0.324	6,400	15,464	0.29	0.71	57.2	0.547	0.450	0.422	0.048	0.518	48.2%
1984	W	7,563	8,420	1.118	1,830	5,733	0.24	0.76	60.7	0.838	0.828	0.746	0.321	0.836	16.4%
1985	D	5,092	6,117	1.209	3,262	1,830	0.64	0.36	62.5	0.956	0.765	0.645	0.309	0.827	17.3%
1986	W	12,739	7,815	0.615	3,491	9,247	0.27	0.73	61.3	0.733	0.749	0.626	0.325	0.738	26.2%
1987	D	4,386	4,319	0.992	2,837	1,549	0.65	0.35	62.3	0.964	0.742	0.675	0.208	0.820	18.0%
1988	C	4,033	4,636	1.159	2,588	1,445	0.64	0.36	62.1	0.967	0.757	0.693	0.210	0.832	16.8%
1989	D	4,302	6,773	1.586	2,708	1,594	0.63	0.37	64.1	0.963	0.822	0.684	0.436	0.874	12.6%
1990	C	4,000	4,689	1.182	2,564	1,436	0.64	0.36	60.6	0.967	0.733	0.694	0.125	0.817	18.3%
1991	C	4,521	6,201	1.361	2,873	1,648	0.64	0.36	60.6	0.961	0.739	0.672	0.202	0.820	18.0%
1992	C	4,822	5,344	1.164	2,966	1,855	0.64	0.36	60.6	0.961	0.719	0.666	0.158	0.805	19.5%

Year	MAY Vernalis Flows	CVP+SWP exports	exp/v-od	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234	Weighted (April + June) total survival
1922	8,896	10,166	1.147	2,139	6,757	0.24	0.76	66.6	0.808	0.933	0.724	0.755	0.838	16.2%	17.6%
1923	6,522	7,583	1.166	3,940	2,582	0.60	0.40	66.0	0.933	0.834	0.597	0.587	0.873	12.7%	17.2%
1924	3,269	4,310	1.331	1,954	1,315	0.60	0.40	63.9	0.971	0.816	0.736	0.299	0.878	12.2%	14.8%
1925	5,643	6,684	1.191	3,404	2,240	0.60	0.40	67.3	0.943	0.861	0.635	0.619	0.803	19.7%	12.9%
1926	4,895	5,839	1.200	2,950	1,945	0.60	0.40	67.3	0.952	0.859	0.687	0.576	0.896	10.4%	12.4%
1927	6,538	9,189	1.412	3,898	2,640	0.60	0.40	64.2	0.931	0.826	0.600	0.565	0.898	13.2%	15.4%
1928	5,481	7,481	1.373	3,273	2,208	0.60	0.40	66.6	0.944	0.864	0.644	0.618	0.898	10.4%	14.8%
1929	3,643	4,326	1.196	2,194	1,449	0.60	0.40	63.9	0.967	0.804	0.721	0.300	0.869	13.1%	16.1%
1930	3,988	5,221	1.326	2,374	1,594	0.60	0.40	67.3	0.963	0.867	0.708	0.544	0.905	9.5%	12.0%
1931	3,301	4,180	1.278	1,979	1,323	0.60	0.40	63.9	0.971	0.813	0.736	0.292	0.878	12.4%	14.7%
1932	5,820	6,701	1.138	3,561	2,339	0.60	0.40	67.3	0.940	0.856	0.622	0.620	0.889	11.1%	13.2%
1933	4,342	4,700	1.080	2,631	1,711	0.61	0.39	63.9	0.959	0.786	0.690	0.319	0.856	14.4%	16.8%
1934	3,822	4,440	1.171	2,305	1,517	0.60	0.40	63.9	0.965	0.800	0.713	0.305	0.866	13.4%	15.7%
1935	7,839	8,587	1.100	1,906	5,933	0.24	0.76	66.0	0.832	0.907	0.741	0.840	0.851	14.9%	16.8%
1936	6,977	8,018	1.154	4,218	2,759	0.60	0.40	66.0	0.928	0.835	0.577	0.611	0.872	12.8%	16.3%
1937	11,812	9,384	0.810	3,040	8,572	0.26	0.74	66.0	0.753	0.891	0.661	0.680	0.789	21.1%	23.0%
1938	25,192	10,083	0.401	7,256	17,936	0.29	0.71	64.2	0.472	0.751	0.361	0.611	0.553	44.7%	43.7%
1939	4,749	5,090	1.079	2,860	1,889	0.61	0.39	67.3	0.954	0.848	0.672	0.537	0.890	11.0%	13.8%
1940	7,123	5,952	0.839	4,379	2,744	0.61	0.39	66.6	0.928	0.800	0.586	0.540	0.850	16.8%	17.1%
1941	12,363	9,937	0.804	3,250	9,143	0.26	0.74	64.2	0.736	0.859	0.646	0.603	0.768	23.2%	26.4%
1942	8,343	10,083	1.213	1,971	6,373	0.24	0.76	64.2	0.819	0.897	0.736	0.611	0.838	16.2%	18.8%
1943	10,327	10,409	1.011	2,573	7,755	0.25	0.75	64.2	0.778	0.866	0.694	0.627	0.805	19.6%	21.8%
1944	5,481	5,839	1.071	3,327	2,154	0.61	0.39	67.3	0.946	0.847	0.640	0.576	0.886	11.4%	14.5%
1945	7,367	7,920	1.080	4,472	2,895	0.61	0.39	66.0	0.924	0.826	0.559	0.606	0.864	13.6%	16.6%
1946	6,749	7,205	1.072	4,098	2,651	0.61	0.39	66.0	0.931	0.821	0.585	0.569	0.864	13.6%	15.2%
1947	4,489	5,186	1.164	2,710	1,779	0.60	0.40	67.3	0.957	0.855	0.684	0.542	0.896	10.4%	12.8%
1948	5,839	8,864	1.528	3,458	2,380	0.59	0.41	66.0	0.939	0.872	0.631	0.654	0.899	10.1%	14.6%
1949	5,367	6,099	1.143	3,245	2,122	0.60	0.40	67.3	0.947	0.854	0.646	0.589	0.891	10.9%	14.6%
1950	5,123	6,847	1.345	3,084	2,059	0.60	0.40	66.0	0.949	0.847	0.659	0.551	0.886	11.2%	15.4%
1951	6,001	7,858	1.310	3,596	2,406	0.60	0.40	66.6	0.938	0.863	0.621	0.638	0.893	10.7%	16.8%
1952	16,263	10,083	0.621	4,455	11,808	0.27	0.73	64.2	0.656	0.829	0.560	0.611	0.703	29.7%	30.2%
1953	5,204	8,536	1.651	3,081	2,143	0.59	0.41	64.2	0.946	0.840	0.659	0.532	0.884	11.6%	17.6%
1954	5,448	8,508	1.570	3,219	2,229	0.59	0.41	66.6	0.944	0.864	0.648	0.671	0.908	9.2%	13.9%
1955	4,733	5,627	1.197	2,852	1,860	0.60	0.40	67.3	0.954	0.858	0.674	0.565	0.898	10.4%	13.1%
1956	11,417	11,466	1.007	2,848	8,568	0.25	0.75	64.2	0.753	0.896	0.674	0.681	0.789	21.1%	20.8%
1957	5,302	7,628	1.447	3,153	2,149	0.59	0.41	66.6	0.946	0.870	0.652	0.626	0.901	9.9%	14.2%
1958	14,897	10,897	0.733	3,976	10,921	0.27	0.73	64.2	0.683	0.859	0.594	0.652	0.730	27.0%	31.0%
1959	4,375	5,318	1.224	2,632	1,743	0.60	0.40	66.0	0.958	0.836	0.689	0.473	0.885	11.5%	15.8%
1960	4,163	5,808	1.405	2,480	1,683	0.60	0.40	67.3	0.960	0.872	0.700	0.574	0.908	9.2%	12.3%
1961	3,822	4,668	1.221	2,298	1,524	0.60	0.40	67.3	0.965	0.861	0.713	0.516	0.902	9.8%	12.2%
1962	5,495	6,473	1.191	3,295	2,189	0.60	0.40	66.0	0.945	0.833	0.642	0.532	0.877	12.3%	18.0%
1963	7,205	9,530	1.329	4,315	2,889	0.60	0.40	64.2	0.924	0.820	0.570	0.583	0.862	13.8%	15.9%
1964	4,536	5,546	1.231	2,729	1,808	0.60	0.40	67.3	0.956	0.861	0.683	0.561	0.899	10.1%	13.1%
1965	7,953	8,977	1.133	1,917	6,036	0.24	0.76	64.2	0.829	0.884	0.740	0.554	0.843	15.7%	18.2%
1966	4,977	6,099	1.233	2,994	1,983	0.60	0.40	66.0	0.951	0.836	0.684	0.513	0.882	11.8%	16.0%
1967	16,621	10,262	0.619	4,556	12,065	0.27	0.73	64.2	0.649	0.830	0.553	0.620	0.898	30.2%	31.6%
1968	4,536	5,361	1.187	2,738	1,802	0.60	0.40	66.0	0.956	0.833	0.682	0.475	0.882	11.8%	15.8%
1969	28,087	9,221	0.329	8,218	19,869	0.29	0.71	66.4	0.414	0.785	0.293	0.695	0.523	47.7%	47.1%
1970	6,245	7,172	1.154	3,775	2,470	0.60	0.40	61.2	0.936	0.721	0.608	0.287	0.806	19.4%	18.7%
1971	5,269	6,587	1.639	3,101	2,168	0.59	0.41	64.2	0.945	0.840	0.656	0.534	0.883	11.7%	17.2%
1972	4,310	5,351	1.251	2,589	1,721	0.60	0.40	66.0	0.959	0.838	0.692	0.475	0.887	11.3%	15.1%
1973	7,448	8,508	1.147	4,505	2,943	0.60	0.40	66.3	0.922	0.846	0.556	0.653	0.876	12.4%	16.9%
1974	8,490	10,148	1.200	2,012	6,477	0.24	0.76	66.1	0.816	0.927	0.733	0.725	0.842	16.8%	19.2%
1975	8,278	10,051	1.219	1,952	6,326	0.24	0.76	61.5	0.821	0.856	0.736	0.451	0.829	17.1%	19.8%
1976	3,513	4,326	1.243	2,110	1,403	0.60	0.40	65.8	0.958	0.839	0.727	0.411	0.891	10.9%	18.2%
1977	3,060	2,228	0.728	1,806	1,184	0.62	0.38	62.3	0.975	0.767	0.741	0.089	0.846	18.4%	18.4%
1978	14,556	8,382	0.576	4,025	10,531	0.28	0.72	66.9	0.695	0.870	0.561	0.662	0.743	28.7%	29.9%
1979	6,928	7,530	1.092	4,202	2,726	0.61	0.39	66.0	0.929	0.825	0.578	0.586	0.886	13.4%	16.8%
1980	11,449	9,823	0.860	2,961	8,488	0.26	0.74	66.6	0.756	0.912	0.666	0.738	0.796	20.4%	21.5%
1981	4,619	5,156	1.124	2,794	1,824	0.60	0.40	66.7	0.956	0.878	0.678	0.623	0.909	9.1%	11.3%
1982	17,026	10,913	0.642	4,843	12,385	0.27	0.73	65.1	0.639	0.867	0.547	0.706	0.701	29.9%	43.7%
1983	18,638	7,758	0.417	5,345	13,292	0.29	0.71	61.3	0.812	0.659	0.497	0.323	0.625	37.5%	42.3%
1984	6,034	7,336	1.222	3,634	2,400	0.60	0.40	66.0	0.936	0.838	0.818	0.576	0.878	12.2%	14.1%
1985	4,586	5,578	1.225	2,760	1,827	0.60	0.40	65.1	0.956	0.819	0.680	0.434	0.873	12.7%	14.8%
1986	10,734	9,530	0.890	2,755	7,979	0.26	0.74	65.8	0.771	0.897	0.681	0.676	0.803	19.7%	22.6%
1987	4,001	4,554	1.147	2,418	1,584	0.60	0.40	66.6	0.963	0.878	0.705	0.586	0.912	8.8%	13.0%
1988	3,789	4,505	1.189	2,262	1,507	0.60	0.40	63.7	0.965	0.799	0.714	0.297	0.865	13.5%	15.0%
1989	3,936	6,488	1.662	2,312	1,624	0.59	0.41	66.7	0.962	0.877	0.712	0.574	0.912	8.8%	10.5%
1990	3,708	4,163	1.132	2,241	1,467	0.60	0.40	63.9	0.966	0.800	0.717	0.291	0.866	13.4%	15.6%
1991	3,919	4,651	1.186	2,361	1,558	0.60	0.40	63.9	0.964	0.801	0.709	0.316	0.866	13.4%	15.5%
1992	4,017	4,586	1.151	2,426	1,591	0.60	0.40	63.9	0.963	0.797	0.704	0.313	0.862	13.8%	16.3%
														Average:	18.41%

Calculations- San Joaquin River Fall

Run Smolt Survival Model WITH BARRIER

C8 ='Study 513 Flow Data'!AB7
D8 ='Study 513 Flow Data'!G7
E8 ='Study 513 Flow Data'!Q7
F8 =D8+E8
G8 =F8/(C8-0.03*$R$2)
H8 =IF(C8<$R$1,(0.47*(0.3137*C8-0.0156*$R$2-0.0625*F8)+0.53*C8),(0.3137*C8-0.0156*$R$2-0.0625*F8))
I8 =C8-H8
J8 =H8/C8
K8 =I8/C8
M8 =(1.01045-0.00003*I8)
N8 =(O8+P8)-(O8*P8)
O8 =IF((0.87634-0.000071*H8)<0,0,(0.87634-0.000071*H8))
P8 =IF((-3.65867+0.058492*L8+0.000051*F8)<0,0,(-3.65867+0.058492*L8+0.000051*F8))
Q8 =((K8*M8)+(J8*N8))
R8 =(1-Q8)

T8 ='Study 513 Flow Data'!AC7
U8 ='Study 513 Flow Data'!H7
V8 ='Study 513 Flow Data'!R7
W8 =U8+V8
X8 =W8/(T8-0.03*$R$3)
Y8 =IF(T8<$R$1,(0.52*(0.3137*T8-0.0156*$R$3-0.0625*W8)+0.48*T8),(0.3137*T8-0.0156*$R$3-0.0625*W8))
Z8 =T8-Y8
AA8 =Y8/T8
AB8 =Z8/T8
AD8 =(1.01045-0.00003*Z8)
AE8 =(AF8+AG8)-(AF8*AG8)
AF8 =IF((0.87634-0.000071*Y8)<0,0,(0.87634-0.000071*Y8))
AG8 =IF((-3.65867+0.058492*AC8+0.000051*W8)<0,0,(-3.65867+0.058492*AC8+0.000051*W8))
AH8 =((AB8*AD8)+(AA8*AE8))
AI8 =(1-AH8)
AK8 =0.45*G94+0.55*AI8

A2-23

C-032363

C-032363

Study n Joaquin River Fall Run Salmon Smolt Survival Model WITHOUT BARRIER AT HEAD OF OLD RIVER

Consumptive Depletion for April 1053.00 cfs
Consumptive Depletion for May 1053.00 cfs

San Joaquin River temperatures based on limited historical data from USBR

APRIL

Year	Water Year Type	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton Q	OldR Flo	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survivability s234
1922	A	9,209	9,865	1.075	2,256	6,953	0.24	0.76	60.2	0.802	0.620	0.716	0.366	0.806	19.4%
1923	B	7,361	9,277	1.266	1,713	5,648	0.23	0.77	59.7	0.841	0.630	0.755	0.308	0.836	16.2%
1924	C	3,630	3,986	1.102	874	2,756	0.24	0.76	60.6	0.926	0.831	0.814	0.086	0.904	9.6%
1925	D	6,319	8,420	1.339	1,440	4,879	0.23	0.77	63.4	0.864	0.862	0.774	0.479	0.868	13.2%
1926	D	5,680	8,184	1.449	1,254	4,426	0.22	0.78	63.4	0.878	0.887	0.787	0.467	0.880	12.0%
1927	W	7,989	9,613	1.206	1,862	6,107	0.24	0.76	57.1	0.827	0.786	0.742	0.171	0.818	18.2%
1928	A	6,336	8,722	1.364	1,426	4,910	0.23	0.77	60.2	0.863	0.644	0.775	0.307	0.859	14.1%
1929	C	4,000	3,496	0.881	1,020	2,980	0.25	0.75	60.6	0.921	0.817	0.804	0.084	0.894	10.6%
1930	D	4,403	5,529	1.265	1,019	3,384	0.23	0.77	63.4	0.909	0.869	0.804	0.332	0.900	10.0%
1931	C	3,546	4,101	1.167	840	2,706	0.24	0.76	60.6	0.929	0.834	0.817	0.096	0.907	9.3%
1932	D	7,613	6,789	0.896	1,947	5,666	0.26	0.74	63.4	0.840	0.642	0.738	0.396	0.841	15.9%
1933	C	4,739	5,612	1.171	1,126	3,613	0.24	0.76	60.6	0.902	0.830	0.798	0.187	0.885	11.6%
1934	C	4,252	5,193	1.230	993	3,259	0.23	0.77	60.6	0.913	0.835	0.808	0.151	0.895	10.5%
1935	B	8,957	10,117	1.133	2,161	6,796	0.24	0.76	59.7	0.807	0.620	0.723	0.349	0.810	19.0%
1936	B	9,730	9,865	1.017	2,419	7,311	0.25	0.75	59.7	0.791	0.804	0.705	0.336	0.794	20.6%
1937	B	12,167	9,394	0.774	3,213	8,954	0.26	0.74	59.7	0.742	0.758	0.646	0.312	0.746	25.4%
1938	W	19,864	9,075	0.458	5,648	14,216	0.28	0.72	57.1	0.584	0.551	0.475	0.144	0.575	42.5%
1939	D	5,428	5,865	1.087	1,320	4,108	0.24	0.76	63.4	0.887	0.858	0.783	0.349	0.880	12.0%
1940	A	9,381	10,335	1.106	2,274	7,087	0.24	0.76	60.2	0.796	0.826	0.715	0.390	0.805	19.5%
1941	W	13,982	9,411	0.675	3,782	10,201	0.27	0.73	57.1	0.704	0.671	0.606	0.181	0.665	34.9%
1942	W	9,865	9,747	0.991	2,469	7,396	0.25	0.75	57.1	0.789	0.754	0.701	0.178	0.780	22.0%
1943	W	11,082	9,764	0.883	2,853	8,239	0.26	0.74	57.1	0.763	0.732	0.674	0.179	0.755	24.5%
1944	D	8,134	6,319	1.035	1,513	4,621	0.25	0.75	63.4	0.872	0.866	0.789	0.372	0.866	13.2%
1945	B	9,381	8,722	0.935	2,375	6,986	0.25	0.75	59.7	0.801	0.789	0.706	0.278	0.798	20.2%
1946	B	7,883	7,815	1.024	1,899	5,764	0.25	0.75	59.7	0.838	0.801	0.742	0.232	0.829	17.1%
1947	D	4,958	6,117	1.242	1,156	3,801	0.23	0.77	63.4	0.896	0.869	0.794	0.362	0.890	11.0%
1948	B	6,201	8,655	1.403	1,388	4,813	0.22	0.78	59.7	0.896	0.839	0.778	0.275	0.860	14.0%
1949	D	5,899	5,378	0.917	1,498	4,401	0.25	0.75	63.4	0.878	0.845	0.770	0.324	0.870	13.0%
1950	B	5,731	7,665	1.380	1,290	4,441	0.23	0.77	59.7	0.877	0.836	0.785	0.234	0.868	13.2%
1951	A	7,411	7,985	1.079	1,811	5,601	0.24	0.76	60.2	0.842	0.816	0.748	0.269	0.836	16.4%
1952	W	14,033	6,873	0.634	3,831	10,202	0.27	0.73	57.1	0.704	0.657	0.604	0.134	0.692	30.8%
1953	W	5,596	7,042	1.265	1,299	4,297	0.23	0.77	57.1	0.862	0.793	0.784	0.040	0.861	13.9%
1954	A	5,986	8,520	1.436	1,323	4,643	0.22	0.78	60.2	0.871	0.847	0.782	0.297	0.866	13.4%
1955	D	4,874	5,512	1.138	1,168	3,706	0.24	0.76	63.4	0.899	0.862	0.793	0.331	0.890	11.0%
1956	W	9,209	10,151	1.106	2,238	6,971	0.24	0.76	57.1	0.801	0.774	0.717	0.189	0.795	20.5%
1957	A	5,395	7,378	1.376	1,215	4,180	0.23	0.77	60.2	0.885	0.840	0.790	0.239	0.875	12.5%
1958	W	18,722	9,764	0.585	4,619	12,103	0.28	0.72	57.1	0.647	0.629	0.546	0.179	0.642	36.8%
1959	B	4,941	5,714	1.164	1,176	3,764	0.24	0.76	59.7	0.896	0.819	0.793	0.125	0.879	12.1%
1960	D	4,586	5,210	1.143	1,097	3,491	0.24	0.76	63.4	0.906	0.862	0.798	0.315	0.895	10.5%
1961	D	4,084	4,874	1.203	980	3,124	0.24	0.76	63.4	0.917	0.865	0.808	0.296	0.905	9.5%
1962	B	7,092	7,529	1.066	1,738	5,354	0.25	0.75	59.7	0.850	0.807	0.753	0.217	0.839	16.1%
1963	W	8,117	9,880	1.197	1,925	6,192	0.24	0.76	57.1	0.825	0.785	0.740	0.175	0.815	18.5%
1964	D	4,840	5,193	1.080	1,177	3,663	0.24	0.76	63.4	0.901	0.856	0.793	0.315	0.890	11.0%
1965	W	9,529	9,999	1.053	2,348	7,181	0.25	0.75	57.1	0.795	0.765	0.710	0.191	0.786	21.2%
1966	B	5,361	6,588	1.236	1,254	4,107	0.23	0.77	59.7	0.867	0.823	0.787	0.169	0.872	12.8%
1967	W	15,461	9,646	0.625	4,231	11,230	0.27	0.73	57.1	0.674	0.649	0.576	0.173	0.667	33.3%
1968	B	5,025	6,201	1.242	1,172	3,853	0.23	0.77	59.7	0.895	0.824	0.793	0.150	0.878	12.2%
1969	W	21,125	7,630	0.362	6,133	14,991	0.29	0.71	57.1	0.561	0.480	0.441	0.070	0.537	46.3%
1970	W	7,546	8,083	1.076	1,845	5,700	0.24	0.76	57.1	0.839	0.769	0.745	0.093	0.822	17.8%
1971	W	5,596	7,798	1.401	1,252	4,344	0.22	0.78	57.1	0.860	0.804	0.787	0.079	0.863	13.7%
1972	B	4,669	6,991	1.501	1,017	3,671	0.22	0.78	58.9	0.900	0.832	0.804	0.143	0.866	11.4%
1973	A	9,630	10,218	1.065	2,386	7,264	0.25	0.75	59.2	0.793	0.803	0.708	0.325	0.796	20.8%
1974	W	10,571	10,201	0.966	2,662	7,909	0.25	0.75	56.9	0.773	0.747	0.667	0.190	0.767	23.3%
1975	W	9,865	10,487	1.066	2,423	7,442	0.25	0.75	53.7	0.787	0.709	0.704	0.017	0.788	23.2%
1976	C	3,865	4,568	1.197	909	2,956	0.24	0.76	57.8	0.922	0.812	0.812	0.000	0.898	10.4%
1977	C	3,277	3,916	1.207	767	2,510	0.23	0.77	62.0	0.935	0.852	0.822	0.166	0.916	8.4%
1978	A	17,283	7,613	0.441	4,933	12,380	0.29	0.71	61.4	0.640	0.678	0.528	0.321	0.851	34.9%
1979	B	8,864	9,310	1.092	2,085	6,499	0.24	0.76	60.5	0.816	0.825	0.728	0.356	0.818	16.2%
1980	A	10,756	8,285	0.773	2,840	7,916	0.26	0.74	60.1	0.773	0.766	0.675	0.279	0.771	22.9%
1981	D	5,210	6,758	1.305	1,196	4,014	0.23	0.77	64.6	0.890	0.868	0.791	0.464	0.880	11.0%
1982	W	27,376	9,915	0.363	7,952	19,424	0.29	0.71	52.8	0.428	0.312	0.312	0.000	0.394	60.6%
1983	W	21,864	7,075	0.324	6,400	15,464	0.29	0.71	57.2	0.547	0.450	0.422	0.048	0.518	48.2%
1984	W	7,563	8,420	1.118	1,830	5,733	0.24	0.76	60.7	0.838	0.828	0.746	0.321	0.836	16.4%
1985	D	5,092	6,117	1.209	1,199	3,893	0.24	0.76	62.5	0.894	0.858	0.791	0.309	0.885	11.5%
1986	W	12,739	7,815	0.615	3,491	9,247	0.27	0.73	61.3	0.733	0.749	0.628	0.325	0.738	26.2%
1987	D	4,366	4,319	0.982	1,090	3,297	0.25	0.75	62.3	0.912	0.840	0.799	0.206	0.894	10.6%
1988	C	4,033	4,638	1.150	959	3,074	0.24	0.76	62.1	0.918	0.849	0.808	0.210	0.902	9.8%
1989	D	4,302	6,773	1.586	910	3,392	0.21	0.79	64.1	0.909	0.894	0.812	0.436	0.906	8.4%
1990	C	4,000	4,689	1.182	945	3,054	0.24	0.76	60.6	0.919	0.833	0.809	0.125	0.899	10.1%
1991	C	4,521	6,201	1.381	1,014	3,507	0.22	0.78	60.6	0.905	0.844	0.804	0.202	0.894	10.9%
1992	C	4,622	5,344	1.164	1,099	3,522	0.24	0.76	60.6	0.905	0.830	0.798	0.156	0.887	11.3%

MAY

Year	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	Calculated Mortality m2	m34	m3	m4	m234	Calculated Survivability s234	Weighted total survival
1922	8,896	10,186	1.147	2,139	6757	0.24	0.76	66.6	0.808	0.933	0.724	0.755	0.838	16.2%	17.6%
1923	6,522	7,563	1.165	1,987	4965	0.24	0.76	68.0	0.862	0.903	0.766	0.567	0.872	12.8%	14.3%
1924	3,269	4,310	1.331	740	2529	0.23	0.77	63.9	0.935	0.876	0.824	0.299	0.921	7.9%	8.6%
1925	5,643	6,684	1.191	1,336	4307	0.24	0.76	67.3	0.881	0.917	0.781	0.619	0.890	11.0%	12.0%
1926	4,896	5,839	1.200	1,184	3741	0.24	0.76	67.3	0.896	0.913	0.794	0.576	0.902	9.8%	10.8%
1927	6,536	9,189	1.412	1,480	5078	0.22	0.78	64.2	0.858	0.901	0.773	0.565	0.868	13.2%	15.5%
1928	5,481	7,481	1.373	1,235	4245	0.23	0.77	66.6	0.863	0.919	0.789	0.618	0.891	10.9%	12.3%
1929	3,643	4,326	1.198	856	2787	0.23	0.77	63.9	0.927	0.871	0.816	0.300	0.914	8.6%	9.5%
1930	3,966	5,221	1.326	902	3066	0.23	0.77	67.3	0.916	0.914	0.812	0.544	0.918	8.2%	9.0%
1931	3,301	4,180	1.278	768	2543	0.23	0.77	63.9	0.934	0.874	0.823	0.292	0.920	8.0%	8.6%
1932	5,920	8,701	1.136	1,422	4498	0.24	0.76	67.3	0.876	0.915	0.775	0.620	0.885	11.5%	13.5%
1933	4,342	4,700	1.090	1,052	3290	0.24	0.76	63.9	0.912	0.865	0.802	0.319	0.900	10.0%	10.7%
1934	3,822	4,440	1.171	805	2917	0.24	0.76	63.9	0.923	0.869	0.812	0.305	0.910	9.0%	9.7%
1935	7,839	8,587	1.100	1,906	5933	0.24	0.76	66.0	0.832	0.907	0.741	0.640	0.851	14.9%	16.8%
1936	6,977	8,018	1.154	1,671	5306	0.24	0.76	66.0	0.851	0.906	0.758	0.611	0.864	13.6%	16.7%
1937	11,612	9,384	0.810	3,040	8572	0.26	0.74	66.0	0.753	0.891	0.661	0.680	0.789	21.1%	23.0%
1938	25,192	10,083	0.401	7,256	17936	0.29	0.71	64.2	0.472	0.751	0.361	0.611	0.553	44.7%	43.7%
1939	4,749	5,090	1.079	1,155	3594	0.24	0.76	67.3	0.903	0.905	0.794	0.537	0.903	9.7%	10.7%
1940	7,123	5,952	0.839	1,846	5277	0.26	0.74	66.6	0.852	0.883	0.745	0.540	0.860	14.0%	16.6%
1941	12,393	9,937	0.804	3,250	9143	0.26	0.74	64.2	0.736	0.859	0.646	0.603	0.768	23.2%	26.4%
1942	8,343	10,083	1.213	1,971	6373	0.24	0.76	64.2	0.819	0.897	0.736	0.611	0.838	16.2%	18.8%
1943	10,327	10,409	1.011	2,573	7755	0.25	0.75	64.2	0.778	0.886	0.694	0.627	0.805	19.5%	21.8%
1944	5,461	5,839	1.071	1,338	4143	0.24	0.76	67.3	0.886	0.907	0.781	0.576	0.891	10.9%	11.9%
1945	7,367	7,920	1.080	1,800	5566	0.24	0.76	66.0	0.843	0.901	0.749	0.606	0.857	14.3%	16.9%
1946	6,749	7,205	1.072	1,651	5099	0.24	0.76	66.0	0.857	0.896	0.759	0.589	0.867	13.3%	16.0%
1947	4,469	5,188	1.164	1,087	3421	0.24	0.76	67.3	0.906	0.909	0.801	0.542	0.908	9.2%	10.0%
1948	5,639	8,664	1.536	1,281	4577	0.22	0.78	66.0	0.873	0.926	0.787	0.654	0.885	11.5%	12.6%
1949	5,367	6,099	1.143	1,286	4061	0.24	0.76	67.3	0.888	0.912	0.785	0.589	0.894	10.6%	11.7%
1950	5,123	6,847	1.345	1,163	3960	0.23	0.77	66.0	0.892	0.907	0.794	0.551	0.895	10.5%	11.7%
1951	6,001	7,865	1.316	1,375	4626	0.23	0.77	66.6	0.872	0.920	0.779	0.638	0.883	11.7%	13.8%
1952	16,263	10,083	0.621	4,455	11808	0.27	0.73	64.2	0.656	0.829	0.560	0.611	0.703	29.7%	30.2%
1953	5,204	8,538	1.651	1,083	4122	0.21	0.79	64.2	0.867	0.906	0.799	0.532	0.891	10.9%	12.3%
1954	5,448	8,508	1.570	1,161	4287	0.21	0.79	66.6	0.882	0.932	0.794	0.671	0.893	10.7%	11.9%
1955	4,733	5,627	1.197	1,117	3616	0.24	0.76	67.3	0.902	0.912	0.797	0.565	0.904	9.6%	10.2%
1956	11,417	11,466	1.007	2,648	8568	0.25	0.75	64.2	0.753	0.896	0.674	0.681	0.789	21.1%	20.8%
1957	5,302	7,828	1.447	1,170	4132	0.22	0.78	66.6	0.886	0.923	0.793	0.626	0.894	10.6%	11.4%
1958	14,867	10,897	0.733	3,976	10921	0.27	0.73	64.2	0.683	0.859	0.594	0.652	0.730	27.0%	31.9%
1959	4,375	5,318	1.224	1,024	3351	0.23	0.77	66.0	0.910	0.897	0.804	0.473	0.907	9.3%	10.6%
1960	4,163	5,808	1.405	927	3237	0.22	0.78	67.3	0.913	0.919	0.811	0.574	0.915	8.8%	9.4%
1961	3,822	4,668	1.231	891	2931	0.23	0.77	67.3	0.923	0.910	0.813	0.516	0.919	8.1%	8.7%
1962	5,465	6,473	1.191	1,293	4171	0.24	0.76	66.0	0.885	0.899	0.785	0.532	0.889	11.1%	13.4%
1963	7,205	9,530	1.329	1,648	5567	0.23	0.77	64.2	0.844	0.900	0.759	0.583	0.857	14.3%	16.2%
1964	4,538	5,546	1.231	1,060	3477	0.23	0.77	67.3	0.906	0.913	0.801	0.561	0.906	9.2%	10.8%
1965	7,963	8,977	1.133	1,917	6036	0.24	0.76	64.2	0.829	0.884	0.740	0.554	0.843	16.7%	18.2%
1966	4,977	6,099	1.233	1,184	3813	0.23	0.77	66.0	0.896	0.900	0.794	0.513	0.897	10.3%	11.4%
1967	16,621	10,262	0.619	4,556	12065	0.27	0.73	64.2	0.649	0.830	0.553	0.820	0.666	34.2%	31.6%
1968	4,536	5,351	1.187	1,073	3465	0.24	0.76	66.0	0.907	0.895	0.800	0.475	0.904	9.6%	10.8%
1969	26,067	9,221	0.329	8,218	19869	0.29	0.71	66.4	0.414	0.785	0.293	0.695	0.523	47.7%	47.1%
1970	6,245	7,172	1.154	1,494	4751	0.24	0.76	61.2	0.866	0.836	0.770	0.267	0.860	14.0%	15.7%
1971	5,269	8,587	1.639	1,100	4169	0.21	0.79	64.2	0.865	0.906	0.798	0.534	0.890	11.0%	12.2%
1972	4,310	5,351	1.251	1,001	3309	0.23	0.77	66.0	0.911	0.896	0.805	0.475	0.906	9.2%	10.2%
1973	7,449	8,508	1.147	1,789	5660	0.24	0.76	66.3	0.841	0.913	0.749	0.653	0.858	14.2%	17.0%
1974	8,490	10,148	1.200	2,012	6477	0.24	0.76	66.1	0.816	0.927	0.733	0.725	0.842	16.8%	19.2%
1975	8,278	10,051	1.219	1,952	6326	0.24	0.76	61.5	0.821	0.858	0.738	0.451	0.829	17.1%	19.8%
1976	3,513	4,326	1.243	815	2696	0.23	0.77	65.8	0.930	0.893	0.818	0.411	0.921	7.9%	9.0%
1977	3,090	2,228	0.729	814	2276	0.26	0.74	62.3	0.942	0.837	0.819	0.099	0.914	8.6%	8.5%
1978	14,566	8,392	0.578	4,025	10531	0.28	0.72	66.9	0.695	0.870	0.591	0.682	0.743	26.7%	29.9%
1979	8,928	7,530	1.092	1,666	5242	0.24	0.76	66.0	0.853	0.899	0.757	0.586	0.864	13.6%	16.6%
1980	11,449	9,823	0.860	2,961	8466	0.26	0.74	66.6	0.756	0.912	0.666	0.738	0.798	20.4%	21.5%
1981	4,619	5,156	1.124	1,110	3509	0.24	0.76	68.7	0.905	0.924	0.798	0.623	0.910	9.0%	9.9%
1982	17,028	10,913	0.642	4,643	12385	0.27	0.73	65.1	0.639	0.867	0.547	0.706	0.701	29.9%	43.7%
1983	18,638	7,758	0.417	5,345	13292	0.29	0.71	61.3	0.612	0.659	0.497	0.323	0.625	37.5%	42.3%
1984	6,034	7,335	1.222	1,418	4616	0.24	0.76	66.0	0.872	0.905	0.776	0.576	0.880	12.0%	14.0%
1985	4,586	5,578	1.225	1,074	3513	0.23	0.77	65.1	0.905	0.887	0.800	0.434	0.901	9.9%	10.6%
1986	10,734	9,530	0.890	2,755	7979	0.26	0.74	65.8	0.771	0.897	0.681	0.676	0.803	19.7%	22.6%
1987	4,001	4,554	1.147	954	3047	0.24	0.76	66.6	0.919	0.921	0.809	0.586	0.919	8.1%	9.2%
1988	3,789	4,505	1.189	891	2899	0.24	0.76	63.7	0.923	0.869	0.813	0.297	0.911	8.9%	9.3%
1989	3,936	6,489	1.662	813	3123	0.21	0.79	66.7	0.917	0.923	0.819	0.574	0.918	8.2%	8.8%
1990	3,708	4,163	1.132	867	2821	0.24	0.76	63.9	0.926	0.868	0.813	0.291	0.912	8.8%	9.4%
1991	3,919	4,851	1.198	922	2997	0.24	0.76	63.9	0.921	0.871	0.811	0.316	0.909	9.1%	8.9%
1992	4,017	4,586	1.151	957	3060	0.24	0.76	63.9	0.919	0.868	0.808	0.313	0.907	9.3%	10.2%

Average: 16.12%

Formulas: San Joaquin River Fall Run Smolt Survival Model WITHOUT BARRIER

C7 ='Study 513 Flow Data'!AB7
D7 ='Study 513 Flow Data'!G7
E7 ='Study 513 Flow Data'!Q7
F7 =D7+E7
G7 =F7/(C7-0.03*$H$2)
H7 =IF((0.3137*C7-0.0156*$H$2-0.0625*F7)<0,0,(0.3137*C7-0.0156*$H$2-0.0625*F7))
I7 =C7-H7
J7 =H7/C7
K7 =I7/C7
M7 =(1.01045-0.00003*I7)
N7 =(O7+P7)-(O7*P7)
O7 =(0.87634-0 000071*H7)
P7 =IF((-3.65867+0.058492*L7+0.000051*F7)<0,0,(-3.65867+0.058492*L7+0.000051*F7))
Q7 =((K7*M7)+(J7*N7))
R7 =(1-Q7)

T7 ='Study 513 Flow Data'!AC7
U7 ='Study 513 Flow Data'!H7
V7 ='Study 513 Flow Data'!R7
W7 =U7+V7
X7 =W7/(T7-0.03*$H$3)
Y7 =IF((0.3137*T7-0.0156*$H$3-0.0625*W7)<0,0,(0.3137*T7-0.0156*$H$3-0.0625*W7))
Z7 =T7-Y7
AA7 =Y7/T7
AB7 =Z7/T7
AD7 =(1.01045-0.00003*Z7)
AE7 =(AF7+AG7)-(AF7*AG7)
AF7 =(0.87634-0.000071*Y7)
AG7 =IF((-3.65867+0.058492*AC7+0 000051*W7)<0,0,(-3.65867+0.058492*AC7+0 000051*W7))
AH7 =((AB7*AD7)+(AA7*AE7))
AI7 =(1-AH7)
AK7 =0.45*R7+0.55*AI7

C-032364

C-032364

STUDY: 1995C06H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97
CVP, TOTAL CVP EXPORT (TAF Converted to CFS)

Project: /1995C06H-SWRCB-513/CVP/EXPORT-TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4470	4342	4326	4357	4326	4706	4814	4874
1923	4487	4342	4326	4375	4326	4638	3887	4874
1924	4269	4342	4326	4172	1854	2067	1464	420
1925	2521	4375	4115	1206	3415	4269	3350	3126
1926	4470	4342	4326	4339	4326	4151	3025	3630
1927	4437	4342	4326	4069	3334	4706	4700	4874
1928	4470	4342	4326	4207	4326	4420	3204	4874
1929	4453	4342	4326	4339	4424	655	2277	4235
1930	2286	4375	4342	3493	2862	2823	2716	3798
1931	4437	4342	4326	3241	2065	2134	1822	1344
1932	2202	4375	4342	4259	3009	3664	3529	3664
1933	3613	4147	4342	3493	2017	2840	3074	3428
1934	2823	4375	4115	1404	2862	454	2407	4101
1935	2218	3676	4342	3457	4326	4689	3204	4874
1936	4453	4342	4326	4207	4326	4706	3204	4874
1937	4453	4342	4326	4339	4066	4437	4814	4874
1938	4470	4342	4326	4375	4326	4706	4635	4874
1939	4487	4342	4326	4357	3009	2991	2651	3865
1940	3395	2472	4326	4207	4326	4706	3204	4874
1941	4453	4342	4326	4393	4326	4706	4814	4874
1942	4487	4342	4326	4375	4326	4706	4814	4874
1943	4470	4342	4326	4375	4326	4706	4814	4874
1944	4470	4342	4326	4190	4326	3210	3025	3462
1945	4453	4342	4326	4339	4326	4420	4066	4874
1946	4470	4342	4326	4375	4326	3966	3708	4588
1947	4453	4342	4326	4339	4326	3109	2700	3815
1948	4453	4342	4326	3633	3903	4067	4538	4874
1949	4470	4342	4326	4339	4326	1378	3155	3328
1950	4453	4342	4326	4357	4326	3983	3529	4874
1951	4453	4342	4326	4375	4326	4033	4033	4874
1952	4470	4342	4326	4242	4326	4706	4814	4874
1953	4487	4342	4326	4375	4326	3580	4375	4874
1954	4453	4342	4326	4375	4180	4319	3204	4874
1955	4470	4342	4326	4357	4326	2807	2927	3580
1956	4437	4342	4326	4225	2667	4706	4814	4874
1957	4487	4342	4326	4339	4326	3748	3919	4874
1958	4453	4342	4326	4357	4326	4706	4814	4874
1959	4487	4342	4326	4357	4326	2907	2765	3748
1960	4437	4342	4326	4016	2862	2655	3009	3512
1961	4437	4342	4326	4339	2862	2487	2440	4084
1962	4437	4342	4326	4339	3448	3815	3350	4874
1963	4470	4342	4326	4375	4326	4672	4814	4874
1964	4453	4342	4326	3199	3090	2655	2879	4386
1965	4453	4342	4326	4357	4326	4638	3936	4874
1966	4470	4342	4326	4375	4326	3344	3155	3496
1967	4453	4342	4326	4393	4326	4706	4814	4874
1968	4487	4342	4326	4225	4326	3159	2781	4453
1969	4453	4342	4326	4393	2651	3462	4196	4874
1970	4487	4342	4326	3043	3236	4218	3692	4874
1971	4470	4342	4326	4393	4326	3949	4407	4874
1972	4453	4342	4326	4207	3155	3546	2781	3731
1973	4453	4342	4326	4375	4326	4706	4359	4840
1974	4453	4342	4326	4357	4326	4706	4814	4874
1975	4487	4342	4326	4357	4326	4706	4814	4874
1976	4470	4342	4326	4190	4424	1529	2277	4235
1977	3008	2537	3301	1116	1484	1849	1171	286
1978	1428	4228	2944	2143	2212	3546	4310	4874
1979	4487	4342	4326	4339	4326	4655	3871	2588
1980	4453	4342	4326	4207	2635	4336	4814	4874
1981	4470	4342	4326	4357	3952	3428	2683	3832
1982	4453	4342	4326	4375	4326	4353	4228	4874
1983	4487	4342	4326	4393	2830	3428	4163	4874
1984	3583	3139	1447	1686	3318	4269	3773	4874
1985	4470	4342	4326	4357	4326	3109	2895	3613
1986	4437	4342	4326	4357	1773	2622	3871	4874
1987	4453	4342	2423	1422	2505	437	2391	4134
1988	4437	4342	4326	2590	2635	2319	2358	4151
1989	4437	4342	4326	3457	4196	2050	3204	3462
1990	4437	4342	3708	1531	2700	1378	2196	4319
1991	2773	3594	3480	990	4424	3193	2521	2756
1992	3563	3708	3708	1008	2602	1563	2700	3815

STUDY: 1995C06H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97
SWP, SWP EXPORT AT BANKS PP (TAF Converted to CFS)

Project: /1995C06H-SWRCB-513/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4722	7123	7644	5348	4147	5159	5351	6672
1923	6672	3903	3610	2377	4017	4638	3676	3563
1924	3764	6164	7058	5285	2326	1899	2846	5714
1925	3294	5969	3789	7923	2261	4151	3334	639
1926	3697	3464	7140	7671	3985	4033	2814	2723
1927	6672	7026	6538	4105	4131	4907	4489	4319
1928	6672	6852	3643	4225	4424	4302	4277	3008
1929	6134	6928	7140	3709	3301	2840	2049	2571
1930	2571	6847	7156	4610	4098	2706	2505	2773
1931	3731	6245	6717	4159	2814	1966	2358	4722
1932	2638	7221	7855	5528	3562	3126	3171	1899
1933	2605	2407	6798	4375	3627	2672	1626	1126
1934	2134	6489	7156	5258	4050	4739	2033	2336
1935	3781	3545	7725	3583	7579	5428	5383	4000
1936	4218	5855	7140	3964	4131	5159	4814	3697
1937	3580	5855	7628	4177	4001	4958	4570	3918
1938	6672	7497	3464	3943	3968	4369	5448	6672
1939	4050	3741	3236	3961	4001	2874	2440	3395
1940	2605	2700	8018	8206	4619	5630	2749	3496
1941	6672	7221	8197	5204	3838	4706	5123	6672
1942	4269	3610	3236	3961	4001	5042	5269	6672
1943	5512	3773	3301	3997	4050	5058	5595	3865
1944	6672	6375	3269	3825	4001	3109	2814	3395
1945	6672	6993	6326	4105	4131	4302	3854	3613
1946	6672	7530	4066	4411	4440	3848	3497	3580
1947	6672	7056	6701	4195	4196	3008	2488	3159
1948	4823	3464	7075	2121	4310	4588	4326	5865
1949	6672	6928	7042	4051	4001	4000	2944	3395
1950	3580	3952	7237	7887	4489	3882	3318	3865
1951	6672	7595	6896	4682	4700	3933	3822	3596
1952	6672	7156	4440	3773	3936	4168	5269	6672
1953	4064	3741	3334	4051	4115	3462	4163	6672
1954	6672	3903	3854	4628	4684	4201	5302	3008
1955	6672	6961	5204	4087	3545	2706	2700	3210
1956	6016	7595	6083	4520	4700	5445	6652	6672
1957	6672	5416	3871	4646	4505	3630	3708	3748
1958	6672	6944	3919	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3919	2807	2553	3143
1960	3075	2797	7123	7128	4098	2554	2797	2672
1961	6672	6912	7140	7184	4163	2386	2228	3126
1962	5042	6896	5676	7671	4619	3714	3123	3428
1963	6672	6944	7319	8337	4456	5008	4716	4453
1964	6672	5627	3871	4155	4294	2538	2667	3008
1965	6672	7302	8294	5690	4424	5361	5042	4353
1966	6672	5058	3643	4375	4424	3243	2944	3025
1967	6672	7188	3789	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	3042	2570	3109
1969	6672	7026	3253	3133	3236	4168	5025	6638
1970	4084	3480	3334	4051	4115	3865	3480	3395
1971	6672	7107	5969	4682	4700	3848	4180	6336
1972	6672	6148	3887	4485	4489	3445	2570	3008
1973	6672	6961	4993	4429	4456	5512	4147	3865
1974	6672	7058	3773	4411	4440	5495	5334	6184
1975	4622	4245	3854	4628	4684	5781	5237	6672
1976	6672	4749	3871	4225	3919	3059	2049	2924
1977	3462	3155	2488	1513	1366	2067	1057	1008
1978	706	5643	7823	7815	3903	4067	4082	4319
1979	6672	3659	3269	3961	4001	4855	3659	5731
1980	6672	6977	3155	3633	3350	3949	5009	4521
1981	5445	4033	3350	4069	4115	3328	2472	3176
1982	6672	6993	6034	4628	4651	5563	6684	6672
1983	6218	4310	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	4151	3562	3613
1985	6672	4294	3871	4646	4684	3008	2683	2991
1986	4521	6961	7253	7454	4163	5193	5660	4453
1987	3748	6099	5757	4375	4310	3882	2168	3260
1988	1899	6896	7107	2643	2017	2319	2147	2790
1989	4554	5025	6083	1531	3529	4722	3285	2571
1990	4050	3627	7091	6914	4017	3311	1968	2118
1991	2118	3171	1626	918	7107	3008	2131	823
1992	1681	1659	5774	7284	6505	3781	1887	2487

STUDY: 1995C06H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97
CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (TAF to CFS)

Project: /1995C06H-SWRCB-513/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	3643	2571	2814	2911	7833	7579	9209	8896	8823
1923	4538	2622	3822	4326	5726	5025	7361	6522	5428
1924	3367	2286	1773	1578	2051	2700	3630	3269	2958
1925	3090	2084	1561	1382	3799	4472	6319	5643	4907
1926	3594	2286	1675	1464	3061	3806	5680	4895	4336
1927	3448	2773	2212	2000	6230	6115	7999	6538	5277
1928	3236	2706	2244	2163	3390	6375	6336	5481	4554
1929	3415	2252	1643	1431	2125	2879	4000	3643	3328
1930	3188	2067	1415	1464	2305	3318	4403	3968	3680
1931	3318	2050	1431	1317	1837	2423	3546	3301	3075
1932	3204	1949	3367	3562	8449	7091	7613	5920	4924
1933	3497	2319	1659	1756	2989	3643	4739	4342	3865
1934	3220	2118	1545	1464	2449	3058	4252	3822	3630
1935	3285	2218	1708	3204	5240	5969	8957	7839	5848
1936	3432	2319	1838	1984	12361	8083	9730	6977	5243
1937	3692	2437	2326	2830	12172	9677	12167	11612	6621
1938	4456	2521	4863	4977	22778	34890	19864	25192	17243
1939	10539	3143	2635	2765	4538	4391	5428	4749	4269
1940	3610	2336	1740	4017	7302	10783	9361	7123	5243
1941	3806	2638	3220	4554	14333	13580	13982	12393	9730
1942	5643	2907	5548	9254	11128	7888	9865	8343	6470
1943	8522	3580	3887	10913	11776	16898	11092	10327	6554
1944	3741	2655	2163	2244	4451	4830	6134	5481	4672
1945	3643	2672	2049	1789	6988	7888	9361	7367	5411
1946	3627	3092	5042	6749	7220	6310	7683	6749	5159
1947	3773	2739	2407	2017	3331	3838	4958	4489	4151
1948	3497	2185	1529	1252	2399	3464	6201	5839	5042
1949	3562	2302	1626	1415	2755	4391	5899	5367	4521
1950	3513	2286	1610	1724	3853	4294	5731	5123	4470
1951	3497	4504	9563	8327	8067	6083	7411	6001	5193
1952	3594	2538	2879	6717	8032	11319	14033	16263	12655
1953	9839	2991	3383	5204	6662	5302	5596	5204	4588
1954	3562	2353	1756	1594	3349	4342	5968	5448	4655
1955	3594	2286	1691	1789	3151	3757	4874	4733	4302
1956	3464	2286	8229	14393	15977	7937	9209	11417	7865
1957	7058	2773	2440	2326	4339	4554	5395	5302	4638
1958	3529	2386	1773	1887	5060	10457	16722	14897	14839
1959	8880	2790	2261	2570	5402	5318	4941	4375	4050
1960	3350	2168	1496	1366	2486	3318	4588	4163	3848
1961	3318	2185	1578	1415	2053	2781	4084	3822	3664
1962	3415	2134	1464	1317	6482	6392	7092	5465	4521
1963	3497	2269	1594	1952	5024	5237	8117	7205	5798
1964	3513	2504	1887	1756	2869	3676	4840	4538	4185
1965	3448	2504	3676	4847	6014	5204	9529	7953	5983
1966	4245	4386	5497	5969	7004	5367	5361	4977	4369
1967	3529	2403	2992	3171	4934	5790	15461	16621	17041
1968	10685	2538	2537	2521	4955	4472	5025	4538	4151
1969	3513	2319	2065	10392	32915	21923	21125	28087	19545
1970	10181	3176	3952	15743	10335	9108	7546	6245	4974
1971	3594	2588	2505	2586	4447	4163	5596	5269	4554
1972	3610	2302	1887	1659	3547	3562	4689	4310	4067
1973	3529	2235	1659	2228	6662	8278	9630	7449	5126
1974	3676	2403	2293	5221	8013	10035	10571	8490	5882
1975	4294	2941	2667	2846	7905	8717	9865	8278	6554
1976	4944	2672	2179	2049	2955	2848	3865	3513	3210
1977	4440	2907	1952	1366	1801	2212	3277	3090	2823
1978	2700	1933	1626	3415	8535	12084	17293	14556	9310
1979	5887	2454	2049	4017	7364	10620	8554	6928	5025
1980	3562	2487	1984	14019	24322	15580	10756	11449	8739
1981	6879	2655	2440	3220	3925	4407	5210	4619	4185
1982	3562	2470	1903	7367	20563	16768	27376	17028	13461
1983	14149	8604	15954	24737	36534	41895	21864	18638	37224
1984	12019	13713	21533	15385	12291	7920	7563	6034	5025
1985	3659	2638	2049	1691	4105	3985	5092	4586	4218
1986	3529	2437	1887	1724	18636	27323	12739	10734	9226
1987	4228	2403	1903	1724	2557	3204	4386	4001	3731
1988	3334	2118	1447	1285	1878	2667	4033	3789	3580
1989	3253	2033	1513	1350	1945	2862	4302	3936	3680
1990	3301	2084	1415	1285	1945	2749	4000	3708	3496
1991	3236	2050	1399	1203	1621	3269	4521	3919	3361
1992	3269	2101	1447	1317	2869	3367	4822	4017	3798

A2-25

C-032365

C-032365

Study 48. oaquin River Fall Run Salmon Smolt Survival Model WITH BARRIER

Barrier at head of Old River from Apr 15 to May 15

Old River Barrier Open above 7500.00 cfs

Consumptive Depletion for April 1053.00 cfs

Consumptive Depletion for May 1053.00 cfs

Year	Water Year Type	APRIL Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234
1922	A	8,184	8,369	1.360	3,936	2,248	0.64	0.36	60.2	0.943	0.714	0.597	0.269	0.797	20.3%
1923	B	5,327	7,986	1.504	3,367	1,980	0.63	0.37	59.7	0.952	0.724	0.637	0.240	0.808	19.2%
1924	C	1,983	2,790	1.430	1,254	729	0.63	0.37	60.6	0.969	0.793	0.787	0.028	0.865	13.5%
1925	D	3,986	6,924	1.760	2,476	1,490	0.62	0.38	63.4	0.966	0.821	0.701	0.403	0.876	12.4%
1926	D	3,684	6,420	1.766	2,286	1,378	0.62	0.38	63.4	0.969	0.822	0.714	0.377	0.877	12.3%
1927	W	5,327	8,087	1.523	3,364	1,983	0.63	0.37	57.1	0.952	0.671	0.637	0.093	0.774	22.6%
1928	A	4,487	7,630	1.712	2,808	1,679	0.63	0.37	60.2	0.960	0.758	0.677	0.252	0.834	16.6%
1929	C	2,000	2,958	1.503	1,260	740	0.63	0.37	60.6	0.968	0.795	0.787	0.037	0.868	13.4%
1930	D	2,403	3,868	1.644	1,508	887	0.63	0.37	63.4	0.984	0.827	0.769	0.249	0.885	11.5%
1931	C	1,983	2,958	1.516	1,249	734	0.63	0.37	60.6	0.968	0.795	0.788	0.037	0.867	13.3%
1932	D	4,504	5,378	1.202	2,865	1,618	0.64	0.36	63.4	0.962	0.778	0.671	0.324	0.844	15.6%
1933	C	2,790	4,117	1.493	1,761	1,029	0.63	0.37	60.6	0.960	0.775	0.751	0.098	0.851	14.9%
1934	C	1,986	3,563	1.842	1,220	747	0.62	0.38	60.6	0.968	0.804	0.790	0.058	0.874	12.6%
1935	B	7,228	9,075	1.261	4,621	2,605	0.64	0.36	59.7	0.932	0.682	0.548	0.298	0.772	22.8%
1936	B	6,420	8,369	1.310	4,095	2,324	0.64	0.36	58.7	0.941	0.693	0.586	0.280	0.783	21.7%
1937	B	7,932	7,986	1.008	1,974	5,958	0.25	0.75	59.7	0.832	0.759	0.736	0.240	0.834	17.6%
1938	W	18,049	7,714	0.426	5,163	12,886	0.29	0.71	57.1	0.624	0.546	0.510	0.075	0.602	39.8%
1939	D	2,891	4,134	1.446	1,829	1,062	0.63	0.37	63.4	0.979	0.813	0.746	0.281	0.874	12.6%
1940	A	6,151	8,504	1.380	3,909	2,242	0.64	0.36	60.2	0.943	0.718	0.599	0.286	0.800	20.0%
1941	W	10,083	9,310	0.926	2,565	7,519	0.25	0.75	57.1	0.785	0.742	0.694	0.156	0.774	22.6%
1942	W	8,907	8,907	1.295	4,410	2,497	0.64	0.36	57.1	0.936	0.622	0.563	0.136	0.736	26.4%
1943	W	7,915	9,125	1.157	1,896	6,019	0.24	0.76	57.1	0.830	0.780	0.742	0.147	0.818	18.2%
1944	D	3,445	4,235	1.241	2,202	1,243	0.64	0.36	63.4	0.973	0.794	0.720	0.266	0.869	14.1%
1945	B	8,016	8,420	1.073	3,879	2,137	0.64	0.36	59.7	0.946	0.665	0.601	0.161	0.765	23.5%
1946	B	5,344	5,949	1.120	3,436	1,906	0.64	0.36	59.7	0.953	0.683	0.632	0.157	0.779	22.1%
1947	D	3,684	4,941	1.360	2,329	1,336	0.64	0.36	63.4	0.970	0.798	0.711	0.302	0.861	13.9%
1948	B	3,983	6,789	1.716	2,491	1,492	0.63	0.37	59.7	0.966	0.753	0.699	0.180	0.833	16.7%
1949	D	3,983	5,075	1.264	2,541	1,442	0.64	0.36	63.4	0.967	0.790	0.696	0.309	0.854	14.6%
1950	B	3,983	6,184	1.565	2,509	1,474	0.63	0.37	59.7	0.966	0.743	0.698	0.149	0.826	17.4%
1951	A	5,327	6,353	1.200	3,415	1,913	0.64	0.36	60.2	0.953	0.702	0.634	0.187	0.792	20.8%
1952	W	10,840	7,848	0.726	2,893	7,946	0.27	0.73	57.1	0.772	0.698	0.671	0.081	0.752	24.8%
1953	W	3,983	5,647	1.429	2,525	1,458	0.63	0.37	57.1	0.967	0.697	0.697	0.000	0.798	20.4%
1954	A	3,986	7,361	1.871	2,463	1,503	0.62	0.38	60.2	0.965	0.773	0.701	0.236	0.846	15.4%
1955	D	2,790	3,684	1.328	1,775	1,015	0.64	0.36	63.4	0.960	0.809	0.750	0.237	0.871	12.9%
1956	W	6,184	7,986	1.295	3,948	2,237	0.64	0.36	57.1	0.943	0.631	0.596	0.087	0.744	25.6%
1957	A	3,983	6,453	1.633	2,501	1,482	0.63	0.37	60.2	0.966	0.757	0.699	0.192	0.834	16.6%
1958	W	14,907	9,478	0.637	4,087	10,839	0.27	0.73	57.1	0.665	0.655	0.586	0.186	0.677	32.3%
1959	B	2,790	3,764	1.365	1,772	1,018	0.64	0.36	59.7	0.960	0.757	0.751	0.025	0.838	16.2%
1960	D	2,420	4,050	1.698	1,513	907	0.63	0.37	63.4	0.963	0.828	0.769	0.256	0.866	11.4%
1961	D	1,983	3,529	1.808	1,232	751	0.62	0.38	63.4	0.968	0.837	0.789	0.230	0.884	10.8%
1962	B	4,201	4,840	1.161	2,896	1,505	0.64	0.36	59.7	0.965	0.710	0.665	0.080	0.802	19.8%
1963	W	5,361	8,100	1.520	3,386	1,975	0.63	0.37	57.1	0.951	0.670	0.636	0.094	0.774	22.6%
1964	D	2,790	3,486	1.267	1,779	1,010	0.64	0.36	63.4	0.960	0.807	0.750	0.228	0.870	13.0%
1965	W	6,958	8,957	1.293	4,442	2,515	0.64	0.36	57.1	0.935	0.622	0.561	0.136	0.735	26.5%
1966	B	3,986	5,613	1.427	2,514	1,452	0.63	0.37	59.7	0.967	0.734	0.698	0.120	0.819	18.1%
1967	W	13,613	8,487	0.625	3,723	9,889	0.27	0.73	57.1	0.714	0.656	0.612	0.114	0.698	30.2%
1968	B	3,647	5,243	1.450	2,309	1,338	0.63	0.37	59.7	0.970	0.741	0.712	0.101	0.825	17.5%
1969	W	20,923	7,512	0.360	6,078	14,845	0.29	0.71	57.1	0.585	0.481	0.445	0.084	0.541	45.9%
1970	W	5,327	6,588	1.244	3,408	1,920	0.64	0.36	57.1	0.953	0.641	0.634	0.017	0.753	24.7%
1971	W	3,983	6,554	1.650	2,498	1,485	0.63	0.37	57.1	0.966	0.704	0.698	0.015	0.801	19.9%
1972	B	3,684	4,739	1.305	2,335	1,329	0.64	0.36	58.9	0.971	0.719	0.711	0.028	0.810	19.0%
1973	A	6,571	8,100	1.239	4,208	2,365	0.64	0.36	59.2	0.939	0.669	0.578	0.217	0.787	23.3%
1974	W	7,663	9,327	1.222	1,805	5,859	0.24	0.76	56.9	0.835	0.785	0.748	0.145	0.823	17.7%
1975	W	6,821	8,773	1.331	4,220	2,401	0.64	0.36	53.7	0.938	0.577	0.577	0.000	0.708	29.2%
1976	C	1,983	3,008	1.542	1,247	736	0.63	0.37	57.8	0.968	0.786	0.788	0.000	0.862	13.8%
1977	C	1,983	2,991	1.533	1,248	735	0.63	0.37	62.0	0.968	0.813	0.788	0.120	0.878	12.2%
1978	A	14,923	7,512	0.504	4,198	10,728	0.28	0.72	61.4	0.869	0.712	0.578	0.316	0.895	30.5%
1979	B	5,663	7,092	1.259	3,621	2,043	0.64	0.36	60.5	0.949	0.711	0.619	0.242	0.797	20.3%
1980	A	6,759	6,873	1.025	4,356	2,383	0.65	0.35	60.1	0.939	0.657	0.567	0.207	0.757	24.3%
1981	D	3,684	5,445	1.499	2,314	1,349	0.63	0.37	64.6	0.970	0.827	0.712	0.398	0.879	12.1%
1982	W	27,023	8,941	0.331	7,902	19,121	0.29	0.71	52.8	0.437	0.315	0.315	0.000	0.401	59.9%
1983	W	20,736	8,958	0.336	6,054	14,684	0.29	0.71	57.2	0.570	0.470	0.446	0.042	0.541	45.9%
1984	W	5,344	6,857	1.291	3,411	1,933	0.64	0.36	60.7	0.952	0.722	0.634	0.241	0.808	19.4%
1985	D	2,790	4,101	1.487	1,782	1,026	0.63	0.37	62.5	0.980	0.803	0.751	0.209	0.868	13.2%
1986	W	9,814	9,680	0.989	2,457	7,357	0.25	0.75	61.3	0.790	0.827	0.702	0.421	0.799	20.1%
1987	D	2,033	3,479	1.738	1,268	766	0.62	0.38	62.3	0.967	0.821	0.786	0.163	0.884	11.6%
1988	C	1,983	2,857	1.464	1,252	731	0.63	0.37	62.1	0.969	0.813	0.787	0.119	0.878	12.2%
1989	D	2,420	5,647	2.364	1,466	954	0.61	0.39	64.1	0.962	0.858	0.772	0.379	0.957	9.3%
1990	C	1,983	3,529	1.808	1,232	751	0.62	0.38	60.6	0.968	0.803	0.789	0.086	0.873	12.7%
1991	C	2,437	4,252	1.768	1,518	919	0.62	0.38	60.6	0.963	0.792	0.769	0.103	0.864	13.6%
1992	C	2,252	3,731	1.660	1,408	844	0.63	0.37	60.6	0.965	0.793	0.776	0.078	0.865	13.5%

Year	MAY Vernalis Flows	CVP+SWP exports	exp/v-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234	Weighted (April + June) total survival
1922	5,920	8,685	1.475	3,516	2,403	0.59	0.41	66.6	0.938	0.880	0.627	0.880	0.904	9.6%	14.4%
1923	5,156	6,245	1.219	3,104	2,051	0.60	0.40	66.0	0.949	0.835	0.656	0.520	0.880	12.0%	15.2%
1924	1,854	2,867	1.464	1,097	757	0.59	0.41	63.9	0.968	0.842	0.798	0.215	0.901	9.9%	11.5%
1925	3,806	5,107	1.353	2,273	1,533	0.60	0.40	67.3	0.964	0.868	0.715	0.538	0.907	9.3%	10.7%
1926	3,529	4,944	1.414	2,100	1,429	0.60	0.40	67.3	0.968	0.872	0.727	0.530	0.911	8.9%	10.4%
1927	5,156	8,327	1.625	3,036	2,119	0.59	0.41	64.2	0.947	0.838	0.681	0.521	0.882	11.8%	16.6%
1928	3,822	5,375	1.662	2,242	1,580	0.59	0.41	66.6	0.963	0.876	0.717	0.562	0.912	8.8%	12.3%
1929	1,887	2,862	1.543	1,112	775	0.59	0.41	63.9	0.967	0.843	0.797	0.225	0.902	9.8%	11.4%
1930	1,870	3,480	1.863	1,081	789	0.58	0.42	67.3	0.967	0.891	0.800	0.455	0.931	6.9%	8.9%
1931	1,854	3,123	1.713	1,082	772	0.58	0.42	63.9	0.967	0.847	0.799	0.238	0.908	9.4%	11.2%
1932	3,871	4,847	1.262	2,323	1,547	0.60	0.40	67.3	0.964	0.863	0.711	0.525	0.903	9.7%	12.3%
1933	2,867	3,367	1.277	1,597	1,070	0.60	0.40	63.9	0.978	0.822	0.763	0.251	0.885	11.5%	13.1%
1934	1,854	2,944	1.615	1,088	766	0.59	0.41	63.9	0.967	0.845	0.799	0.229	0.904	9.6%	11.0%
1935	6,086	5,465	0.906	3,715	2,351	0.61	0.39	66.0	0.940	0.799	0.613	0.480	0.853	14.7%	18.3%
1936	5,156	6,375	1.244	3,100	2,056	0.60	0.40	66.0	0.949	0.837	0.656	0.527	0.882	11.8%	16.3%
1937	8,132	6,977	0.861	2,098	6,033	0.26	0.74	66.0	0.829	0.879	0.727	0.558	0.842	15.8%	16.6%
1938	24,265	9,433	0.389	7,006	17,259	0.29	0.71	64.2	0.493	0.736	0.379	0.578	0.563	43.7%	41.9%
1939	2,867	3,480	1.321	1,584	1,074	0.60	0.40	67.3	0.978	0.871	0.783	0.455	0.914	8.6%	10.4%
1940	5,156	6,944	1.355	3,081	2,074	0.60	0.40	66.6	0.948	0.860	0.658	0.591	0.895	10.5%	14.8%
1941	9,579	9,726	1.019	2,381	7,198	0.25	0.75	64.2	0.794	0.881	0.707	0.563	0.818	18.4%	20.3%
1942	5,936	8,685	1.471	3,527	2,409	0.59	0.41	64.2	0.938	0.826	0.626	0.539	0.873	12.7%	18.9%
1943	6,180	7,660	1.248	3,717	2,463	0.60	0.40	64.2	0.937	0.801	0.612	0.487	0.855	14.5%	19.2%
1944	2,980	3,741	1.277	1,774	1,186	0.60	0.40	67.3	0.975	0.867	0.750	0.469	0.910	9.0%	11.3%
1945	3,871	4,944	1.288	2,320	1,551	0.60	0.40	66.0	0.964	0.843	0.712	0.454	0.891	10.9%	16.6%
1946	3,864	5,289	1.378	2,299	1,555	0.60	0.40	66.0	0.964	0.848	0.713	0.471	0.895	10.5%	15.7%
1947	2,683	3,545	1.337	1,602	1,081	0.60	0.40	67.3	0.978	0.871	0.783	0.459	0.914	8.6%	11.0%
1948	3,822	7,091	1.871	2,219	1,603	0.58	0.42	66.0	0.962	0.877	0.719	0.563	0.913	8.7%	12.3%
1949	2,980	4,749	1.622	1,741	1,219	0.59	0.41	67.3	0.974	0.861	0.753	0.520	0.919	8.1%	11.0%
1950	3,822	5,302	1.399	2,277	1,545	0.60	0.40	66.0	0.964	0.849	0.715	0.472	0.896	10.4%	13.6%
1951	5,156	7,188	1.403	3,073	2,082	0.60	0.40	66.6	0.948	0.864	0.658	0.604	0.896	10.2%	14.9%
1952	15,450	9,221	0.596	4,254	11,196	0.28	0.72	64.2	0.675	0.816	0.574	0.567	0.713	28.7%	26.9%
1953	3,822	7,676	2.025	2,200	1,622	0.58	0.42	64.2	0.962	0.857	0.720	0.488	0.901	9.9%	14.6%
1954	3,822	7,416	1.957	2,208	1,614	0.58	0.42	66.6	0.962	0.892	0.720	0.615	0.922	7.8%	11.3%
1955	2,867	3,773	1.432	1,584	1,083	0.59	0.41	67.3	0.978	0.875	0.764	0.470	0.917	8.3%	10.4%
1956	6,131	8,782	1.440	3,649	2,482	0.60	0.40	64.2	0.936	0.826	0.617	0.544	0.870	13.0%	18.6%
1957	3,822	5,952	1.570	2,256	1,566	0.59	0.41	66.6	0.963	0.870	0.716	0.540	0.908	9.2%	12.5%
1958	13,190	10,636	0.806	3,456	9,733	0.26	0.74	64.2	0.718	0.867	0.631	0.639	0.757	24.3%	27.9%
1959	2,867	3,676	1.395	1,587	1,080	0.60	0.40	66.0	0.978	0.856	0.764	0.389	0.905	9.5%	12.5%
1960	1,919	3,363	1.792	1,116	803	0.58	0.42	67.3	0.986	0.888	0.797	0.450	0.929	7.1%	9.0%
1961	1,870	2,895	1.574	1,100	770	0.59	0.41	67.3	0.987	0.884	0.798	0.425	0.927	7.3%	8.8%
1962	2,960	4,847	1.655	1,738	1,222	0.59	0.41	66.0	0.974	0.864	0.753	0.449	0.909	9.1%	13.9%
1963	5,156	8,327	1.625	3,036	2,119	0.59	0.41	64.2	0.947	0.838	0.661	0.521	0.882	11.8%	16.6%
1964	2,867	3,708	1.407	1,586	1,081	0.59	0.41	67.3	0.978	0.874	0.784	0.467	0.916	8.4%	10.5%
1965	5,936	8,685	1.471	3,527	2,409	0.59	0.41	64.2	0.938	0.826	0.626	0.539	0.873	12.7%	16.9%
1966	2,980	4,664	1.569	1,743	1,217	0.59	0.41	66.0	0.974	0.862	0.753	0.441	0.908	9.2%	13.2%
1967	16,003	9,433	0.591	4,414	11,589	0.28	0.72	64.2	0.663	0.815	0.563	0.578	0.705	29.5%	29.8%
1968	2,867	3,643	1.382	1,586	1,079	0.60	0.40	66.0	0.978	0.855	0.764	0.388	0.905	9.5%	13.1%
1969	26,217	9,010	0.344	7,645	18,572	0.29	0.71	66.4	0.453	0.790	0.334	0.685	0.551	44.9%	45.3%
1970	5,156	5,920	1.155	3,115	2,041	0.60	0.40	61.2	0.949	0.732	0.655	0.223	0.818	18.2%	21.1%
1971	3,822	7,676	2.025	2,200	1,622	0.58	0.42	64.2	0.962	0.857	0.720	0.488	0.901	9.9%	14.4%
1972	2,683	3,903	1.472	1,590	1,093	0.59	0.41	66.0	0.978	0.858	0.763	0.401	0.907	9.3%	13.7%
1973	5,465	6,766	1.245	3,286	2,179	0.60	0.40	66.3	0.945	0.845	0.643	0.564	0.885	11.5%	16.8%
1974	5,920	8,685	1.475	3,516	2,403	0.59	0.41	66.1	0.938	0.870	0.627	0.651	0.897	10.3%	13.6%
1975	5,936	8,685	1.471	3,527	2,409	0.59	0.41	61.5	0.938	0.789	0.626	0.382	0.837	16.3%	22.1%
1976	1,870	3,155	1.718	1,092	779	0.58	0.42	65.8	0.987	0.869	0.799	0.351	0.918	8.2%	10.7%
1977	1,854	1,203	0.660	1,145	709	0.62	0.38	62.3	0.969	0.805	0.795	0.047	0.875	12.5%	12.3%
1978	10,831	8,213	0.760	2,868	7,963	0.26	0.74	66.9	0.772	0.893	0.673	0.673	0.804	19.6%	24.5%
1979	5,139	5,985	1.172	3,102	2,037	0.60	0.40	66.0	0.949	0.830	0.656	0.507	0.878	12.2%	16.9%
1980	6,619	7,481	1.136	4,005	2,614	0.61	0.39	66.6	0.932	0.844	0.592	0.618	0.879	12.1%	17.6%
1981	2,683	3,513	1.325	1,603	1,060	0.60	0.40	66.7	0.978	0.890	0.763	0.539	0.926	7.4%	9.6%
1982	15,158	10,701	0.707	4,070	11,088	0.27	0.73	65.1	0.678	0.874	0.587	0.695	0.731	26.9%	41.8%
1983	19,077	7,548	0.396	5,496	13,581	0.29	0.71	61.3	0.603	0.646	0.486	0.312	0.615	38.5%	41.8%
1984	5,156	6,115	1.193	3,108	2,047	0.60	0.40	66.0	0.949	0.833	0.656	0.514	0.879	12.1%	15.4%
1985	2,683	4,228	1.595	1,580	1,104	0.59	0.41	65.1	0.977	0.850	0.784	0.365	0.902	9.8%	11.3%
1986	8,083	8,132	1.010	2,011	6,072	0.25	0.75	65.8	0.828	0.895	0.734	0.605	0.845	15.5%	17.8%
1987	1,854	2,830	1.553	1,082	762	0.59	0.41	66.6	0.986	0.899	0.798	0.498	0.935	6.5%	8.8%
1988	1,870	3,074	1.672	1,094	776	0.59	0.41	63.7	0.967	0.844	0.799	0.224	0.903	9.7%	10.8%
1989	1,870	3,938	2.141	1,066	804	0.57	0.43	66.7	0.986	0.869	0.801	0.443	0.931	6.9%	8.0%
1990	1,870	2,700	1.468	1,107	764	0.59	0.41	63.9	0.986	0.842	0.798	0.217	0.901	9.9%	11.2%
1991	1,919	2,911	1.542	1,131	788	0.59	0.41	63.9	0.987	0.842	0.796	0.227	0.902	9.8%	11.5%
1992	1,870	2,944	1.601	1,099	772	0.59	0.41	63.9	0.987	0.845	0.798	0.229	0.903	9.7%	11.4%
														Average:	15.98%

Calculations- San Joaquin River Fall

Run Smolt Survival Model WITH BARRIER

C8 ='Study 485 Flow Data'!AB7
D8 ='Study 485 Flow Data'!G7
E8 ='Study 485 Flow Data'!Q7
F8 =D8+E8
G8 =F8/(C8-0.03*$R$2)
H8 =IF(C8<$R$1,(0.47*(0.3137*C8-0.0156*$R$2-0.0625*F8)+0.53*C8),(0.3137*C8-0.0156*$R$2-0.0625*F8))
I8 =C8-H8
J8 =H8/C8
K8 =I8/C8
M8 =(1.01045-0.00003*I8)
N8 =(O8+P8)-(O8*P8)
O8 =IF((0.87634-0.000071*H8)<0,0,(0.87634-0.000071*H8))
P8 =IF((-3.65867+0.058492*L8+0.000051*F8)<0,0,(-3.65867+0.058492*L8+0.000051*F8))
Q8 =((K8*M8)+(J8*N8))
R8 =(1-Q8)

T8 ='Study 485 Flow Data'!AC7
U8 ='Study 485 Flow Data'!H7
V8 ='Study 485 Flow Data'!R7
W8 =U8+V8
X8 =W8/(T8-0.03*$R$3)
Y8 =IF(T8<$R$1,(0.52*(0.3137*T8-0.0156*$R$3-0.0625*W8)+0.48*T8),(0.3137*T8-0.0156*$R$3-0.0625*W8))
Z8 =T8-Y8
AA8 =Y8/T8
AB8 =Z8/T8
AD8 =(1.01045-0.00003*Z8)
AE8 =(AF8+AG8)-(AF8*AG8)
AF8 =IF((0.87634-0.000071*Y8)<0,0,(0.87634-0.000071*Y8))
AG8 =IF((-3.65867+0.058492*AC8+0.000051*W8)<0,0,(-3.65867+0.058492*AC8+0.000051*W8))
AH8 =((AB8*AD8)+(AA8*AE8))
AI8 =(1-AH8)
AK8 =0.45*G94+0.55*AI8

A2-26

C-032366

C-032366

Study: n Joaquin River Fall Run Salmon Smolt Survival Model WITHOUT BARRIER AT HEAD OF OLD RIVER

Consumptive Depletion for April 1053.00 cfs
Consumptive Depletion for May 1053.00 cfs

San Joaquin River temperatures based on limited historical data from USGS

APRIL

Year	Water Year Type	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton Q	OldR Flo	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survivability s234
1922	A	6,184	8,589	1.360	1,401	4,784	0.23	0.77	60.2	0.867	0.841	0.777	0.289	0.861	13.9%
1923	B	5,327	7,986	1.504	1,157	4,170	0.22	0.78	59.7	0.886	0.844	0.794	0.240	0.876	12.4%
1924	C	1,983	2,790	1.430	431	1,552	0.22	0.78	60.6	0.964	0.850	0.846	0.028	0.939	6.1%
1925	D	3,966	6,824	1.760	795	3,171	0.20	0.80	63.4	0.915	0.862	0.820	0.403	0.911	8.9%
1926	D	3,664	6,420	1.768	732	2,932	0.20	0.80	63.4	0.922	0.891	0.824	0.377	0.916	8.4%
1927	W	5,327	8,067	1.523	1,151	4,177	0.22	0.78	57.1	0.886	0.814	0.786	0.083	0.870	13.0%
1928	A	4,487	7,630	1.712	914	3,573	0.20	0.80	60.2	0.903	0.859	0.811	0.252	0.884	10.6%
1929	C	2,000	2,958	1.503	426	1,574	0.21	0.79	60.6	0.963	0.852	0.846	0.037	0.939	6.1%
1930	D	2,403	3,809	1.644	494	1,909	0.21	0.79	63.4	0.953	0.861	0.841	0.249	0.938	6.2%
1931	C	1,983	2,958	1.516	421	1,562	0.21	0.79	60.6	0.964	0.852	0.846	0.037	0.940	6.0%
1932	D	4,504	5,376	1.202	1,060	3,444	0.24	0.76	63.4	0.907	0.886	0.801	0.324	0.897	10.3%
1933	C	2,790	4,117	1.493	601	2,189	0.22	0.78	60.6	0.945	0.850	0.834	0.096	0.924	7.6%
1934	C	1,986	3,563	1.842	378	1,589	0.19	0.81	60.6	0.963	0.860	0.850	0.068	0.943	5.7%
1935	B	7,226	9,075	1.261	1,683	5,543	0.23	0.77	59.7	0.844	0.829	0.767	0.296	0.841	15.9%
1936	B	6,420	8,369	1.310	1,474	4,946	0.23	0.77	59.7	0.862	0.831	0.772	0.280	0.855	14.6%
1937	B	7,932	7,966	1.006	1,974	5,958	0.25	0.75	59.7	0.832	0.799	0.736	0.240	0.824	17.6%
1938	W	18,049	7,714	0.428	5,163	12,886	0.29	0.71	57.1	0.624	0.546	0.510	0.075	0.602	39.8%
1939	D	2,891	4,134	1.446	632	2,259	0.22	0.78	63.4	0.943	0.875	0.831	0.261	0.928	7.2%
1940	A	6,151	8,504	1.390	1,382	4,769	0.22	0.78	60.2	0.867	0.844	0.778	0.296	0.882	13.3%
1941	W	10,083	9,310	0.926	2,586	7,519	0.25	0.75	57.1	0.785	0.742	0.694	0.156	0.774	22.6%
1942	W	6,907	8,907	1.295	1,594	5,313	0.23	0.77	57.1	0.851	0.795	0.763	0.135	0.838	16.2%
1943	W	7,915	9,125	1.157	1,896	6,019	0.24	0.76	57.1	0.830	0.780	0.742	0.147	0.818	18.2%
1944	D	3,445	4,236	1.241	800	2,646	0.23	0.77	63.4	0.931	0.888	0.820	0.286	0.916	8.4%
1945	B	6,016	6,420	1.073	1,470	4,547	0.24	0.76	59.7	0.874	0.809	0.772	0.161	0.858	14.2%
1946	B	5,344	5,949	1.120	1,288	4,056	0.24	0.76	59.7	0.889	0.814	0.785	0.137	0.871	12.9%
1947	D	3,664	4,941	1.380	824	2,840	0.22	0.78	63.4	0.925	0.873	0.818	0.302	0.913	8.7%
1948	B	3,983	6,789	1.718	809	3,174	0.20	0.80	59.7	0.915	0.861	0.819	0.180	0.902	9.8%
1949	D	3,983	5,075	1.284	916	3,067	0.23	0.77	63.4	0.918	0.870	0.811	0.309	0.907	9.3%
1950	B	3,983	6,184	1.565	846	3,136	0.21	0.79	59.7	0.916	0.844	0.816	0.149	0.901	9.9%
1951	A	5,327	6,363	1.200	1,258	4,070	0.24	0.76	60.2	0.888	0.827	0.787	0.187	0.874	12.6%
1952	W	10,840	7,848	0.726	2,883	7,946	0.27	0.73	57.1	0.772	0.696	0.671	0.081	0.752	24.9%
1953	W	3,983	5,647	1.429	880	3,103	0.22	0.78	57.1	0.917	0.814	0.814	0.000	0.894	10.6%
1954	A	3,966	7,361	1.671	766	3,198	0.19	0.81	60.2	0.914	0.864	0.822	0.236	0.905	9.5%
1955	D	2,790	3,664	1.328	630	2,160	0.23	0.77	63.4	0.946	0.871	0.832	0.237	0.929	7.1%
1956	W	6,184	7,966	1.285	1,426	4,759	0.23	0.77	57.1	0.888	0.795	0.776	0.067	0.851	14.9%
1957	A	3,983	6,463	1.633	830	3,153	0.21	0.79	60.2	0.918	0.852	0.817	0.192	0.903	9.7%
1958	W	14,907	9,478	0.637	4,067	10,839	0.27	0.73	57.1	0.685	0.656	0.586	0.166	0.677	32.3%
1959	B	2,790	3,764	1.365	623	2,166	0.22	0.78	59.7	0.945	0.836	0.832	0.025	0.921	7.9%
1960	D	2,420	4,050	1.696	490	1,930	0.20	0.80	63.4	0.953	0.862	0.842	0.256	0.938	6.2%
1961	D	1,983	3,529	1.808	385	1,598	0.19	0.81	63.4	0.963	0.864	0.849	0.230	0.947	5.3%
1962	B	4,201	4,840	1.161	999	3,202	0.24	0.76	59.7	0.914	0.821	0.806	0.080	0.892	10.9%
1963	W	5,381	8,100	1.520	1,159	4,202	0.22	0.78	57.1	0.884	0.813	0.784	0.094	0.869	13.1%
1964	D	2,790	3,466	1.267	640	2,149	0.23	0.77	63.4	0.946	0.869	0.831	0.226	0.928	7.2%
1965	W	6,958	8,957	1.293	1,806	5,361	0.23	0.77	57.1	0.850	0.766	0.762	0.138	0.837	16.3%
1966	B	3,966	5,613	1.427	677	3,089	0.22	0.78	59.7	0.918	0.836	0.814	0.120	0.900	10.0%
1967	W	13,613	8,487	0.625	3,723	9,889	0.27	0.73	57.1	0.714	0.656	0.612	0.114	0.698	30.2%
1968	B	3,647	5,243	1.460	800	2,847	0.22	0.78	59.7	0.925	0.836	0.820	0.101	0.906	9.4%
1969	W	20,923	7,512	0.360	6,078	14,845	0.29	0.71	57.1	0.565	0.461	0.445	0.064	0.541	46.9%
1970	W	5,327	6,588	1.244	1,243	4,084	0.23	0.77	57.1	0.868	0.792	0.788	0.017	0.865	13.5%
1971	W	3,983	6,564	1.659	823	3,160	0.21	0.79	57.1	0.916	0.821	0.818	0.015	0.896	10.4%
1972	B	3,664	4,739	1.305	837	2,827	0.23	0.77	56.9	0.926	0.822	0.817	0.026	0.902	9.8%
1973	A	6,571	8,100	1.239	1,539	5,032	0.23	0.77	59.2	0.859	0.818	0.767	0.217	0.850	16.8%
1974	W	7,663	9,327	1.222	1,805	5,859	0.24	0.76	56.9	0.835	0.785	0.748	0.145	0.823	17.7%
1975	W	6,621	8,773	1.331	1,512	5,109	0.23	0.77	53.7	0.857	0.769	0.769	0.000	0.837	16.3%
1976	C	1,983	3,006	1.542	418	1,565	0.21	0.79	57.6	0.963	0.847	0.847	0.000	0.939	6.1%
1977	C	1,983	2,991	1.533	419	1,564	0.21	0.79	62.0	0.964	0.865	0.847	0.120	0.943	5.7%
1978	A	14,923	7,512	0.504	4,186	10,728	0.28	0.72	61.4	0.689	0.712	0.578	0.316	0.695	30.5%
1979	B	5,863	7,082	1.259	1,317	4,347	0.23	0.77	60.5	0.880	0.836	0.783	0.242	0.870	13.0%
1980	A	6,739	6,873	1.025	1,866	5,071	0.25	0.75	60.1	0.858	0.808	0.758	0.207	0.846	16.4%
1981	D	3,664	5,446	1.499	793	2,871	0.22	0.78	64.6	0.924	0.892	0.820	0.398	0.917	8.3%
1982	W	27,023	8,941	0.331	7,902	19,121	0.29	0.71	52.8	0.437	0.315	0.315	0.000	0.401	59.9%
1983	W	20,738	6,958	0.336	6,054	14,684	0.29	0.71	57.2	0.570	0.470	0.446	0.042	0.541	46.9%
1984	W	5,344	6,867	1.291	1,231	4,113	0.23	0.77	60.7	0.887	0.840	0.789	0.241	0.876	12.4%
1985	D	2,790	4,101	1.467	602	2,187	0.22	0.78	62.5	0.945	0.868	0.834	0.206	0.928	7.2%
1986	W	9,614	9,680	0.989	2,457	7,357	0.25	0.75	61.3	0.790	0.827	0.702	0.421	0.799	26.1%
1987	D	2,033	3,479	1.738	404	1,629	0.20	0.80	62.3	0.962	0.872	0.846	0.163	0.944	5.6%
1988	C	1,983	2,867	1.464	427	1,556	0.22	0.78	62.1	0.964	0.864	0.846	0.119	0.942	5.8%
1989	D	2,420	5,847	2.364	390	2,030	0.18	0.84	64.1	0.950	0.906	0.849	0.379	0.943	5.7%
1990	C	1,983	3,529	1.808	385	1,598	0.19	0.81	60.6	0.963	0.859	0.849	0.086	0.942	5.8%
1991	C	2,437	4,252	1.768	482	1,955	0.20	0.80	60.6	0.952	0.858	0.842	0.103	0.933	6.7%
1992	C	2,252	3,731	1.680	457	1,796	0.20	0.80	60.6	0.957	0.858	0.844	0.078	0.936	6.4%

MAY

Year	Water Year Type	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton	OldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survivability s234	Weighted total survival
1922	A	6,020	8,685	1.475	1,298	4822	0.22	0.78	66.6	0.872	0.931	0.784	0.680	0.885	11.5%	12.8%
1923	B	5,168	6,246	1.219	1,211	3945	0.23	0.77	66.0	0.892	0.859	0.790	0.520	0.894	10.6%	11.4%
1924	C	1,854	2,667	1.464	398	1466	0.21	0.79	63.9	0.957	0.861	0.848	0.215	0.948	5.2%	5.6%
1925	D	3,606	5,107	1.353	858	2947	0.23	0.77	67.3	0.922	0.915	0.815	0.538	0.920	8.0%	8.4%
1926	D	3,529	4,944	1.414	782	2747	0.22	0.78	67.3	0.928	0.916	0.821	0.530	0.925	7.5%	7.9%
1927	W	5,158	8,327	1.625	1,080	4075	0.21	0.79	64.2	0.868	0.904	0.800	0.521	0.892	10.8%	11.8%
1928	A	3,522	6,375	1.682	784	3036	0.21	0.79	66.6	0.919	0.921	0.821	0.562	0.920	8.0%	9.2%
1929	C	1,867	2,862	1.543	398	1490	0.21	0.79	63.9	0.966	0.862	0.848	0.225	0.948	5.2%	5.6%
1930	D	1,870	3,480	1.863	353	1518	0.19	0.81	67.3	0.965	0.919	0.851	0.456	0.956	4.4%	5.2%
1931	C	1,854	3,123	1.713	370	1484	0.20	0.80	63.9	0.966	0.886	0.850	0.238	0.950	5.0%	5.5%
1932	D	3,671	4,847	1.282	895	2976	0.23	0.77	67.3	0.921	0.911	0.813	0.525	0.919	8.1%	9.1%
1933	C	2,867	3,367	1.277	610	2057	0.23	0.77	63.9	0.949	0.875	0.833	0.251	0.932	6.8%	7.2%
1934	C	1,854	2,944	1.615	361	1473	0.21	0.79	63.9	0.966	0.864	0.849	0.229	0.949	5.1%	5.4%
1935	B	6,066	5,495	0.906	1,545	4521	0.25	0.75	66.0	0.675	0.679	0.767	0.480	0.876	12.4%	14.0%
1936	B	5,156	6,375	1.244	1,202	3953	0.23	0.77	66.0	0.862	0.901	0.791	0.527	0.884	10.6%	12.4%
1937	B	8,132	6,977	0.861	2,096	6033	0.26	0.74	66.0	0.829	0.879	0.727	0.558	0.842	16.8%	16.6%
1938	W	24,265	9,433	0.389	7,006	17259	0.29	0.71	64.2	0.493	0.738	0.379	0.578	0.563	43.7%	41.9%
1939	D	2,867	3,480	1.321	603	2064	0.23	0.77	67.3	0.949	0.909	0.834	0.456	0.940	6.0%	6.6%
1940	A	5,156	6,944	1.355	1,167	3989	0.23	0.77	66.6	0.891	0.916	0.793	0.591	0.896	10.4%	11.9%
1941	W	9,579	9,728	1.019	2,381	7198	0.25	0.75	64.2	0.794	0.881	0.707	0.593	0.816	18.4%	20.3%
1942	W	5,938	8,885	1.471	1,303	4633	0.22	0.78	64.2	0.871	0.900	0.784	0.539	0.878	12.2%	14.0%
1943	W	6,180	7,660	1.246	1,444	4737	0.23	0.77	64.2	0.866	0.884	0.774	0.467	0.872	12.8%	16.2%
1944	D	2,960	3,741	1.277	678	2282	0.23	0.77	67.3	0.942	0.909	0.828	0.469	0.934	6.6%	7.4%
1945	B	3,871	4,944	1.286	889	2982	0.23	0.77	66.0	0.921	0.886	0.813	0.454	0.916	8.4%	11.0%
1946	B	3,854	5,269	1.376	863	2991	0.22	0.78	66.0	0.921	0.902	0.815	0.471	0.917	8.3%	10.4%
1947	D	2,863	3,546	1.337	604	2080	0.23	0.77	67.3	0.948	0.910	0.833	0.459	0.939	6.1%	7.2%
1948	B	3,822	7,091	1.871	739	3063	0.19	0.81	66.0	0.918	0.923	0.824	0.563	0.919	8.1%	8.9%
1949	D	2,960	4,749	1.622	615	2345	0.21	0.79	67.3	0.940	0.920	0.833	0.520	0.936	6.4%	7.7%
1950	B	3,822	5,302	1.389	851	2971	0.22	0.78	66.0	0.921	0.903	0.816	0.472	0.917	8.3%	9.9%
1951	A	5,156	7,186	1.403	1,152	4004	0.22	0.78	66.6	0.890	0.919	0.795	0.604	0.897	10.3%	11.4%
1952	W	15,460	9,221	0.596	4,254	11196	0.26	0.72	64.2	0.675	0.816	0.574	0.567	0.713	28.7%	26.9%
1953	W	3,822	7,676	2.025	703	3119	0.18	0.82	64.2	0.917	0.911	0.826	0.488	0.916	8.4%	9.4%
1954	A	3,822	7,416	1.957	719	3103	0.19	0.81	66.6	0.917	0.933	0.825	0.615	0.920	8.0%	8.7%
1955	D	2,867	3,773	1.432	584	2083	0.22	0.78	67.3	0.948	0.913	0.835	0.470	0.940	6.0%	6.5%
1956	W	6,131	8,782	1.440	1,358	4773	0.22	0.78	64.2	0.867	0.900	0.780	0.544	0.874	12.6%	13.8%
1957	A	3,822	5,952	1.570	810	3011	0.21	0.79	66.6	0.920	0.917	0.819	0.540	0.919	8.1%	8.8%
1958	W	13,190	10,636	0.808	3,456	9733	0.26	0.74	64.2	0.718	0.867	0.631	0.639	0.757	24.3%	27.9%
1959	B	2,867	3,676	1.395	591	2077	0.22	0.78	66.0	0.948	0.869	0.834	0.389	0.937	6.3%	7.0%
1960	D	1,919	3,383	1.792	374	1545	0.19	0.81	67.3	0.964	0.917	0.850	0.450	0.955	4.6%	5.3%
1961	D	1,870	2,895	1.574	369	1481	0.21	0.79	67.3	0.966	0.913	0.849	0.425	0.955	4.6%	4.9%
1962	B	2,960	4,847	1.665	609	2351	0.21	0.79	66.0	0.940	0.906	0.833	0.449	0.933	6.7%	8.8%
1963	W	5,158	8,327	1.625	1,080	4075	0.21	0.79	64.2	0.868	0.904	0.800	0.521	0.892	10.8%	11.9%
1964	D	2,867	3,708	1.407	589	2079	0.22	0.78	67.3	0.948	0.912	0.835	0.467	0.940	6.0%	6.5%
1965	W	5,938	8,885	1.471	1,303	4633	0.22	0.78	64.2	0.871	0.900	0.784	0.539	0.878	12.2%	14.0%
1966	B	2,960	4,884	1.599	519	2341	0.21	0.79	66.0	0.940	0.906	0.832	0.441	0.933	6.7%	8.2%
1967	W	16,003	9,433	0.591	4,414	11589	0.28	0.72	64.2	0.663	0.815	0.563	0.578	0.705	29.5%	29.8%
1968	B	2,867	3,643	1.382	593	2075	0.22	0.78	66.0	0.948	0.869	0.834	0.388	0.937	6.3%	7.7%
1969	W	26,217	9,010	0.344	7,645	18572	0.29	0.71	66.4	0.453	0.790	0.334	0.885	0.551	44.9%	46.3%
1970	W	5,158	5,920	1.155	1,231	3925	0.24	0.76	61.2	0.883	0.836	0.789	0.223	0.879	12.1%	12.7%
1971	W	3,822	7,676	2.025	703	3119	0.18	0.82	64.2	0.917	0.911	0.826	0.488	0.916	8.4%	9.3%
1972	B	2,863	3,903	1.472	581	2102	0.22	0.78	66.0	0.947	0.901	0.835	0.401	0.937	6.3%	7.9%
1973	A	5,465	6,768	1.245	1,275	4190	0.23	0.77	66.3	0.885	0.907	0.786	0.564	0.890	11.0%	12.8%
1974	W	5,920	8,885	1.475	1,298	4622	0.22	0.78	66.1	0.872	0.925	0.784	0.651	0.883	11.7%	14.4%
1975	W	5,936	8,885	1.471	1,303	4633	0.22	0.78	61.5	0.871	0.866	0.784	0.382	0.870	13.0%	14.9%
1976	C	1,870	3,156	1.716	373	1497	0.20	0.80	65.8	0.966	0.903	0.850	0.351	0.953	4.7%	5.3%
1977	C	1,854	1,203	0.650	490	1364	0.26	0.74	62.3	0.970	0.849	0.842	0.047	0.938	6.2%	6.0%
1978	A	10,831	8,213	0.760	2,888	7983	0.26	0.74	66.9	0.772	0.893	0.673	0.673	0.804	19.6%	24.5%
1979	B	5,139	5,985	1.172	1,222	3918	0.24	0.76	66.0	0.893	0.896	0.790	0.507	0.894	10.6%	11.7%
1980	A	6,619	7,461	1.136	1,882	5027	0.24	0.76	66.6	0.860	0.910	0.763	0.618	0.872	12.8%	14.0%
1981	D	2,888	3,513	1.325	606	2078	0.23	0.77	66.7	0.946	0.923	0.833	0.539	0.942	6.3%	6.9%
1982	W	15,158	10,701	0.707	4,070	11068	0.27	0.73	65.1	0.678	0.874	0.587	0.695	0.731	26.9%	41.8%
1983	W	19,077	7,546	0.396	5,496	13581	0.29	0.71	61.3	0.603	0.846	0.486	0.312	0.615	38.5%	41.8%
1984	W	5,156	6,115	1.183	1,219	3937	0.24	0.76	66.0	0.892	0.896	0.790	0.514	0.894	10.6%	11.4%
1985	D	2,863	4,226	1.565	561	2122	0.21	0.79	65.1	0.947	0.866	0.837	0.365	0.936	6.4%	6.7%
1986	W	8,063	8,132	1.010	2,011	6072	0.25	0.75	65.8	0.826	0.865	0.734	0.605	0.845	16.5%	17.6%
1987	D	1,854	2,830	1.553	388	1466	0.21	0.79	68.6	0.966	0.924	0.849	0.466	0.958	4.2%	4.9%
1988	C	1,870	3,074	1.672	378	1492	0.20	0.80	63.7	0.965	0.863	0.849	0.224	0.949	5.1%	5.4%
1989	D	1,870	3,936	2.141	324	1546	0.17	0.83	66.7	0.964	0.918	0.853	0.443	0.956	4.4%	5.0%
1990	C	1,870	2,700	1.466	402	1469	0.21	0.79	63.9	0.965	0.881	0.848	0.217	0.948	5.2%	5.5%
1991	C	1,919	2,911	1.542	404	1515	0.21	0.79	63.9	0.965	0.882	0.848	0.227	0.948	5.2%	5.9%
1992	C	1,870	2,944	1.601	366	1484	0.21	0.79	63.9	0.965	0.864	0.849	0.229	0.949	5.1%	5.7%

Average: 12.29%

Formulas: San Joaquin River Fall Run Smolt Survival Model WITHOUT BARRIER

C7 ='Study 485 Flow Data'!AB7
D7 ='Study 485 Flow Data'!G7
E7 ='Study 485 Flow Data'!Q7
F7 =D7+E7
G7 =F7/(C7-0.03*$H$2)
H7 =IF((0.3137*C7-0.0156*$H$2-0 0625*F7)<0,0,(0 3137*C7-0.0156*$H$2-0.0625*F7))
I7 =C7-H7
J7 =H7/C7
K7 =I7/C7
M7 =(1.01045-0.00003*I7)
N7 =(O7+P7)-(O7*P7)
O7 =(0.87634-0.000071*H7)
P7 =IF((-3.65867+0.058492*L7+0 000051*F7)<0,0,(-3.65867+0.058492*L7+0.000051*F7))
Q7 =((K7*M7)+(J7*N7))
R7 =(1-Q7)

T7 ='Study 467 Flow Data'!AC7
U7 ='Study 467 Flow Data'!H7
V7 ='Study 467 Flow Data'!R7
W7 =U7+V7
X7 =W7/(T7-0.03*$H$3)
Y7 =IF((0.3137*T7-0.0156*$H$3-0.0625*W7)<0,0,(0.3137*T7-0.0156*$H$3-0.0625*W7))
Z7 =T7-Y7
AA7 =Y7/T7
AB7 =Z7/T7
AD7 =(1.01045-0.00003*Z7)
AE7 =(AF7+AG7)-(AF7*AG7)
AF7 =(0.87634-0.000071*Y7)
AG7 =IF((-3.65867+0.058492*AC7+0.000051*W7)<0,0,(-3.65867+0.058492*AC7+0.000051*W7))
AH7 =((AB7*AD7)+(AA7*AE7))
AI7 =(1-AH7)
AK7 =0.45*R7+0.55*AI7

C-032367

C—032367

STUDY: 1995C06F-SWRCB-485 DWRSIM: recirc818-f, 18 Jun 97
CVP, CVP EXPORT AT TRACY PP (converted from TAF to CFS)

Project. /1995C06F-SWRCB-485/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	2830	4185	4342	4605
1923	4302	4212	4212	2539	4033	3983	3123	4605
1924	2403	2960	4212	4068	1399	1395	2196	1748
1925	1311	4212	3545	4213	4228	3462	2553	4605
1926	4285	4212	2537	954	2749	3210	2472	4605
1927	4252	4212	4212	2521	3480	4033	4163	4605
1928	4302	4212	4212	4120	3139	3815	3188	4605
1929	4285	4212	4212	3151	1870	1479	2749	2689
1930	2286	4212	4212	2791	2651	1949	1740	4605
1931	2655	2196	4212	3007	1610	1479	1578	2470
1932	1176	4212	4212	4085	927	2689	2423	4588
1933	3059	2017	4212	3835	293	2640	1903	1798
1934	1008	4163	4212	1621	2098	1781	2049	4605
1935	1210	3220	4212	684	4228	4437	2976	4117
1936	2470	3058	4212	4103	4228	4185	3188	4605
1937	4285	4212	4212	2773	2374	2958	2879	3378
1938	4285	4212	4212	1206	2065	3344	3985	4605
1939	4302	4212	2716	1531	2683	2067	1740	4605
1940	2807	1431	4212	4085	4228	4252	3708	4487
1941	4302	4212	4212	4285	4228	4605	4603	4605
1942	4302	4212	4212	1657	3432	4453	4342	4605
1943	4302	4212	4212	1999	1822	4067	3480	4605
1944	4285	4212	4212	2312	2960	2118	1870	4605
1945	4269	4212	4212	4231	3171	3210	2472	4336
1946	4285	4212	4212	2449	3448	2975	2635	4605
1947	4302	4212	4212	4231	2781	2470	1773	4605
1948	2790	2537	4212	4311	4228	3395	3545	4605
1949	4269	4212	4212	4249	4228	2538	2374	4605
1950	4285	4082	4212	1458	2635	3092	2651	4605
1951	4269	4212	4212	4285	3253	3176	3594	4605
1952	4302	4212	4212	4138	3204	3680	3952	4605
1953	4302	4212	2716	1999	3155	2823	3838	4605
1954	4285	4212	4212	3043	3171	3680	3708	4437
1955	4285	4212	4212	4249	4603	1832	1887	4605
1956	2554	4212	4212	4138	2065	3983	4391	4605
1957	4302	4212	4212	4249	3188	3227	2976	4605
1958	4285	4212	4212	3295	3464	4420	4554	4605
1959	4302	4212	2732	1801	2992	1882	1838	4605
1960	4285	2944	4212	2521	2293	471	1691	4588
1961	4269	4212	4212	2359	2785	1765	1447	4605
1962	4269	4212	2895	1080	3285	2420	2423	4605
1963	4302	4212	4212	4285	4603	4050	4163	4605
1964	4302	4212	4212	4451	4342	1748	1854	4605
1965	3815	4212	4212	4249	3253	4302	4342	4605
1966	4285	4212	4212	2035	3220	2807	2342	4605
1967	4285	4212	4212	4285	3204	3529	3985	4605
1968	4302	4212	2732	1895	2992	2622	1822	4605
1969	4285	4212	4212	1693	2049	3344	3985	4605
1970	4302	4212	2505	1170	3058	3294	2960	4605
1971	4285	4212	4212	4267	3220	3277	3838	4605
1972	4285	4212	4212	4451	3448	2370	1952	4605
1973	4285	4212	4212	4267	3480	4050	3383	2924
1974	4302	4212	4212	3799	3448	4605	4342	4605
1975	4302	4212	4212	1603	3448	4386	4342	4605
1976	4302	4212	4212	3547	2049	723	1578	4605
1977	2622	1789	2358	684	732	1496	764	353
1978	2470	4131	2423	1639	2114	3445	4115	4605
1979	4302	4212	4212	1422	3171	3546	2992	4605
1980	4285	4212	4212	852	1822	2924	3497	4605
1981	4285	4212	2537	1729	2992	2723	1756	4605
1982	4285	4212	4212	2791	2927	3378	4017	4605
1983	4302	4212	2895	1386	2049	3311	3952	4605
1984	3344	2992	1334	1408	3236	3428	3058	4605
1985	4302	4212	4212	3925	2992	2050	2114	4605
1986	2504	4212	4212	4249	4228	4470	2732	3647
1987	4252	3350	960	1278	2293	706	1415	4605
1988	2975	4212	4212	4103	1984	1428	1675	4605
1989	2386	2846	4050	900	4228	2823	1968	4605
1990	4252	4212	2992	1224	2212	1765	1350	4605
1991	2470	1626	1691	360	4228	2084	1496	1966
1992	3109	2960	4212	1217	2000	1865	1838	4185

STUDY: 1995C06F-SWRCB-485 DWRSIM: recirc818-f, 18 Jun 97
SWP, SWP EXPORT AT BANKS PP (converted from TAF to CFS)

Project. /1995C06F-SWRCB-485/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	5075	7107	7579	5564	4147	4185	4342	6672
1923	6672	4835	3643	2377	3497	3983	3123	3395
1924	3748	6928	5839	4190	1740	1395	472	622
1925	3210	4847	3155	7581	3952	3462	2553	2823
1926	3008	2879	7140	7635	3952	3210	2472	2487
1927	6672	7042	7270	8499	4147	4033	4163	3563
1928	6672	7075	3643	4259	4440	3815	3188	2672
1929	4958	5871	6635	5150	2797	1479	114	101
1930	1765	6294	7091	3997	4521	1949	1740	2672
1931	3260	2976	4733	1837	2196	1479	1545	1597
1932	1748	7188	7823	5894	2749	2689	2423	3865
1933	2605	2505	5416	2701	4342	1277	1464	101
1934	1630	5546	7156	4429	1724	1781	894	1176
1935	3210	3399	7660	3943	6977	4638	2488	3496
1936	3277	2976	7449	8206	7485	4185	3188	3361
1937	4689	6803	7579	3727	3871	5008	4098	4285
1938	6672	7530	3236	3943	3952	4369	5448	6672
1939	5277	3741	3236	3961	3985	2067	1740	3092
1940	1748	2683	8018	8206	4651	4252	3236	3092
1941	6050	7351	8164	6950	3838	4706	5123	6302
1942	6168	3610	3236	3961	4001	4453	4342	6672
1943	6521	3773	3301	3997	4050	5058	4180	3143
1944	6672	6424	3269	3825	4001	2118	1870	3176
1945	6605	6961	4928	4051	4147	3210	2472	3596
1946	6672	7595	3643	4393	4424	2975	2635	3479
1947	6605	7140	7123	3961	3887	2470	1773	2941
1948	3630	3204	6359	1669	3399	3395	3545	4386
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3412	3106	7172	7526	4424	3092	2651	3529
1951	6672	7595	7644	4682	4700	3176	3594	2823
1952	6672	7107	7205	3773	3938	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3854	4628	4684	3680	3708	2739
1955	6672	6912	7188	3439	3025	1832	1887	3075
1956	4235	7595	8034	4520	4700	3983	4391	6672
1957	6672	5806	3887	4646	4440	3227	2976	3482
1958	6672	6928	3529	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3139	1882	1838	3008
1960	3075	2797	6245	7041	4001	3580	1691	2689
1961	4907	6896	6099	7112	5156	1765	1447	3075
1962	3479	6879	5237	8211	4326	2420	2423	2891
1963	6672	6896	7253	8499	4651	4050	4163	4017
1964	6672	6993	3871	3512	3350	1748	1854	2857
1965	6353	7465	8506	5906	4375	4555	4342	3714
1966	6672	6424	3659	4375	4424	2807	2342	2605
1967	6672	7123	7676	3205	3285	4958	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2823
1969	5428	6977	7400	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3294	2960	2622
1971	6672	7042	6635	4321	4700	3277	3838	5025
1972	6672	6213	3887	4485	4424	2370	1952	2739
1973	6672	6896	7465	4429	4456	4050	3383	5042
1974	6672	7172	3773	4411	4440	4722	4342	4924
1975	5411	4245	3854	4628	4684	4386	4342	6672
1976	6672	4847	3838	4172	4294	2286	1578	2941
1977	3378	3106	2440	1368	1138	1496	439	387
1978	1714	5530	7774	6050	3903	4067	4098	3899
1979	6672	3676	3269	3961	4001	3546	2992	4033
1980	6672	6993	3155	3633	3350	3949	3985	4067
1981	5579	4115	3350	4069	4115	2723	1756	2891
1982	6672	7026	7758	4628	4651	5583	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	3428	3058	3361
1985	6672	6961	3871	4646	4684	2050	2114	2622
1986	4185	6944	7351	8031	4180	5210	6399	4033
1987	3496	6522	5692	4267	4163	2773	1415	3143
1988	1865	6879	7058	2486	1708	1428	1399	975
1989	3361	3562	4851	1801	6489	2823	1968	2487
1990	3059	4310	7058	6284	3350	1765	1350	2907
1991	2353	2765	1708	828	7075	2168	1415	1344
1992	1496	1610	4781	7197	6245	1865	1108	1462

STUDY: 1995C06F-SWRCB-485 DWRSIM: recirc818, 14 Apr 97
CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (TAF to CFS)

Project. /1995C06F-SWRCB-485/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	1984	1697	2488	2683	6752	5351	6184	5920	7294
1923	3968	2101	3741	4196	4267	3415	5327	5156	2185
1924	3123	1462	1496	1399	1617	1691	1983	1854	1428
1925	1740	1361	1252	1171	2701	2423	3966	3806	1949
1926	2000	1412	1382	1366	2863	2277	3664	3529	1697
1927	2000	1933	2179	1773	5474	3578	5327	5156	3412
1928	4375	1849	2326	2277	2590	3871	4487	3822	1765
1929	1887	1395	1317	1203	1458	1691	2000	1887	1395
1930	2000	1244	1138	1220	1549	1935	2403	1870	1361
1931	1952	1193	1138	1138	1350	1317	1983	1854	1344
1932	1317	1277	3058	3432	8536	4538	4504	3871	2151
1933	3513	1462	1317	1610	2017	2065	2790	2667	1580
1934	1805	1277	1203	1431	2449	1659	1966	1854	1344
1935	1822	1395	1350	2944	3223	3497	7226	6066	3933
1936	3188	1563	1578	2309	12396	5757	6420	5156	2588
1937	3058	1563	1870	2683	15017	10994	7932	8132	2655
1938	3155	1798	5074	6993	23714	33340	18049	24265	15764
1939	8864	2319	2293	2505	3637	2765	2891	2667	1681
1940	2000	1479	1399	4001	8049	10474	6151	5156	3412
1941	2440	1731	4001	4440	15647	11986	10083	9579	8285
1942	4912	2235	5139	9173	10371	5936	6907	5936	5647
1943	7058	3092	3562	11157	10894	17760	7915	6180	3412
1944	3415	1815	1919	1984	3268	3106	3445	2960	1865
1945	2000	1832	1691	1708	8985	7969	6016	3871	2252
1946	3854	2235	5611	6180	6212	4391	5344	3854	2134
1947	2293	2370	2732	2196	2665	2277	3664	2683	1597
1948	1903	1344	1203	1122	1373	1740	3983	3822	2269
1949	2000	1428	1285	1171	1458	2586	3983	2960	1748
1950	1984	1428	1285	1480	2539	2293	3983	3822	1731
1951	1984	6134	12881	12523	9903	6196	5327	5156	2118
1952	2000	1697	2521	7010	7962	12311	10840	15450	11226
1953	8343	2185	3058	4960	5744	3627	3983	3822	2286
1954	2000	1513	1415	1334	2269	2407	3966	3822	2286
1955	2000	1445	1350	1529	1639	2261	2790	2667	1714
1956	1984	1445	12376	22997	15264	6457	6184	6131	7546
1957	5936	1966	2082	2065	3313	3155	3983	3822	2286
1958	2000	1546	1447	1626	4177	10897	14907	13190	12923
1959	7563	2118	1903	2309	4538	3643	2790	2667	1563
1960	1854	1344	1171	1155	1773	1903	2420	1919	1529
1961	1805	1344	1236	1171	1278	1350	1983	1870	1412
1962	1382	1294	1155	1138	5942	4489	4201	2960	1714
1963	2000	1412	1269	1724	6248	3415	5361	5156	3412
1964	3058	2151	1805	1854	2191	2277	2790	2667	1580
1965	1952	1647	4684	11954	7905	4781	6958	5936	3412
1966	4603	3580	5090	5725	6086	3708	3966	2960	1697
1967	2000	1563	2651	2960	4105	6977	13613	16003	15024
1968	8929	2050	2196	2261	4051	2797	3647	2667	1613
1969	1984	1479	1724	14800	32285	21045	20923	26217	18368
1970	8327	2554	3594	17044	9507	7432	5327	5156	2118
1971	1984	1731	2147	2000	3349	4017	3983	3822	2269
1972	2000	1462	1545	1415	2191	2277	3664	2683	1479
1973	1935	1395	1317	2651	7977	9075	6571	5465	2336
1974	3432	2470	2895	8457	7094	8441	7663	5920	3412
1975	3545	2101	2423	2586	6590	8847	6621	5936	6285
1976	4115	1832	1805	1529	2243	1724	1983	1870	1395
1977	2830	2101	1610	1155	1242	1203	1983	1854	1344
1978	1269	1294	1350	3253	7202	10978	14923	10831	7075
1979	4245	1933	1691	4066	9381	8701	5663	5139	2118
1980	2895	1731	1870	15613	23974	14572	6739	6619	6184
1981	5090	2084	2098	2960	2773	2960	3664	2683	1613
1982	2000	1630	2000	9368	19266	15304	27023	15158	9865
1983	12442	8621	19044	24867	36534	41114	20738	19077	36451
1984	12116	13545	21500	15190	9718	6001	5344	5156	2134
1985	1984	1781	1691	1529	2683	2358	2790	2683	1664
1986	2000	1597	1545	1984	26289	26444	9814	8083	7613
1987	3464	1714	1545	1464	1855	1919	2033	1854	1445
1988	1789	1294	1138	1122	1182	1285	1983	1870	1395
1989	1301	1176	1171	1155	1260	1626	2420	1870	1361
1990	1334	1227	1138	1122	1260	1382	1983	1870	1311
1991	1285	1210	1122	1090	1152	2358	2437	1919	1428
1992	1334	1428	1138	1138	2243	2049	2252	1870	1496

C-032368

C—0 3 2 3 6 8

Study 519 Joaquin River Fall Run Salmon Smolt Survival Model WITH BARRIER

Barrier at head Grand River from Apr 15 to May 15

Old River Barrier Open above 7500.00 cfs

Consumptive Depletion for April 1053.00 cfs

Consumptive Depletion for May 1053.00 cfs

Year	Water Year Type	APRIL Vernalis Flows	CVP + SWP exports	exp/v-od	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234
1922	A	5,949	9,660	1.636	3.738	2,211	0.63	0.37	60.2	0.944	0.750	0.811	0.356	0.822	17.8%
1923	B	4,739	10,335	2.195	2,899	1,840	0.61	0.39	59.7	0.955	0.789	0.870	0.380	0.854	14.6%
1924	C	1,849	4,369	2.405	1,116	732	0.60	0.40	60.6	0.988	0.819	0.797	0.109	0.866	11.4%
1925	D	3,832	9,579	2.521	2,307	1,525	0.60	0.40	63.4	0.985	0.867	0.713	0.536	0.908	9.4%
1926	D	3,193	8,705	2.754	1,900	1,293	0.59	0.41	63.4	0.972	0.869	0.741	0.494	0.911	8.9%
1927	W	5,243	9,865	1.893	3,255	1,989	0.62	0.38	57.1	0.951	0.711	0.645	0.184	0.802	19.8%
1928	A	4,823	10,184	2.125	2,981	1,863	0.61	0.39	60.2	0.955	0.794	0.666	0.382	0.856	14.4%
1929	C	1,918	3,529	1.873	1,186	729	0.62	0.38	60.6	0.989	0.808	0.792	0.086	0.875	12.8%
1930	D	2,093	6,265	3.140	1,185	848	0.58	0.42	63.4	0.985	0.869	0.792	0.370	0.917	8.3%
1931	C	1,786	4,857	2.803	1,045	730	0.59	0.41	60.6	0.989	0.829	0.802	0.134	0.894	10.9%
1932	D	4,958	7,058	1.433	3,143	1,814	0.63	0.37	63.4	0.958	0.795	0.853	0.410	0.854	14.6%
1933	C	2,538	6,605	2.635	1,517	1,020	0.60	0.40	60.6	0.980	0.820	0.769	0.223	0.864	11.6%
1934	C	1,865	6,057	3.308	1,078	786	0.58	0.42	60.6	0.987	0.839	0.800	0.195	0.901	9.9%
1935	B	7,445	10,537	1.421	4,728	2,719	0.63	0.37	59.7	0.928	0.711	0.541	0.371	0.791	20.9%
1936	B	7,178	9,932	1.390	4,562	2,614	0.64	0.36	59.7	0.932	0.705	0.552	0.340	0.787	21.3%
1937	B	8,134	8,067	0.996	2,031	6,103	0.25	0.75	59.7	0.827	0.798	0.732	0.245	0.820	18.0%
1938	W	17,259	8,386	0.487	4,874	12,386	0.28	0.72	57.1	0.839	0.581	0.530	0.109	0.623	37.7%
1939	D	3,075	6,453	2.120	1,866	1,189	0.61	0.39	63.4	0.975	0.840	0.742	0.379	0.862	10.8%
1940	A	5,882	10,453	1.787	3,670	2,212	0.62	0.38	60.2	0.944	0.766	0.616	0.396	0.834	16.6%
1941	W	9,293	9,411	1.016	2,311	6,983	0.25	0.75	57.1	0.801	0.759	0.712	0.161	0.790	21.0%
1942	W	6,100	9,747	1.606	3,839	2,262	0.63	0.37	57.1	0.943	0.674	0.604	0.178	0.774	22.6%
1943	W	7,128	9,764	1.376	4,533	2,595	0.64	0.36	57.1	0.933	0.634	0.555	0.179	0.743	25.7%
1944	D	3,714	5,596	1.520	2,344	1,370	0.63	0.37	63.4	0.969	0.807	0.710	0.335	0.867	13.3%
1945	B	5,983	7,210	1.211	3,833	2,149	0.64	0.36	59.7	0.946	0.664	0.604	0.201	0.778	22.2%
1946	B	4,336	6,369	1.469	2,742	1,593	0.63	0.37	59.7	0.963	0.732	0.662	0.158	0.817	18.3%
1947	D	2,564	5,748	2.278	1,554	1,001	0.61	0.39	63.4	0.980	0.846	0.766	0.343	0.899	10.1%
1948	B	3,731	9,983	2.699	2,226	1,504	0.60	0.40	59.7	0.965	0.815	0.718	0.342	0.875	12.5%
1949	D	3,412	6,252	1.850	2,120	1,292	0.62	0.38	63.4	0.972	0.827	0.726	0.399	0.862	11.8%
1950	B	3,378	8,838	2.561	2,027	1,351	0.60	0.40	59.7	0.970	0.805	0.732	0.274	0.871	12.9%
1951	A	3,933	8,268	2.120	2,413	1,519	0.61	0.39	60.2	0.965	0.789	0.705	0.284	0.857	14.3%
1952	W	10,050	8,873	0.886	2,562	7,468	0.26	0.74	57.1	0.786	0.734	0.663	0.134	0.773	22.7%
1953	W	3,075	7,260	2.385	1,862	1,213	0.61	0.39	57.1	0.974	0.757	0.744	0.051	0.843	15.7%
1954	A	4,302	10,453	2.448	2,600	1,703	0.60	0.40	60.2	0.959	0.814	0.662	0.396	0.871	12.9%
1955	D	2,437	4,838	1.928	1,507	930	0.62	0.38	63.4	0.983	0.835	0.769	0.286	0.862	10.8%
1956	W	4,000	9,310	2.346	2,428	1,571	0.61	0.39	57.1	0.983	0.750	0.704	0.158	0.834	16.6%
1957	A	2,924	8,621	2.960	1,720	1,204	0.59	0.41	60.2	0.974	0.829	0.754	0.302	0.869	11.1%
1958	W	14,117	9,764	0.693	3,802	10,315	0.27	0.73	57.1	0.701	0.677	0.608	0.179	0.695	30.5%
1959	B	2,554	5,613	2.225	1,558	997	0.61	0.39	59.7	0.961	0.794	0.766	0.120	0.867	13.3%
1960	D	2,188	4,353	2.037	1,333	835	0.61	0.39	63.4	0.985	0.841	0.782	0.272	0.897	10.3%
1961	D	1,815	4,185	2.346	1,099	718	0.61	0.39	63.4	0.989	0.851	0.798	0.283	0.908	9.4%
1962	B	4,437	8,134	1.846	2,759	1,878	0.62	0.38	59.7	0.960	0.760	0.680	0.246	0.836	16.4%
1963	W	5,579	10,218	1.842	3,472	2,108	0.62	0.38	57.1	0.947	0.705	0.630	0.202	0.798	20.4%
1964	D	2,470	4,369	1.792	1,537	933	0.62	0.38	63.4	0.982	0.831	0.767	0.273	0.888	11.2%
1965	W	8,188	9,747	1.580	3,884	2,283	0.63	0.37	57.1	0.942	0.672	0.601	0.178	0.772	22.8%
1966	B	3,008	5,932	1.993	1,856	1,152	0.62	0.38	59.7	0.976	0.779	0.745	0.139	0.855	14.5%
1967	W	12,823	9,646	0.754	3,403	9,420	0.27	0.73	57.1	0.726	0.698	0.635	0.173	0.720	28.0%
1968	B	2,638	6,134	3.120	1,541	1,098	0.58	0.42	59.7	0.978	0.825	0.767	0.248	0.888	11.2%
1969	W	20,133	7,613	0.379	5,824	14,310	0.29	0.71	57.1	0.561	0.500	0.483	0.089	0.558	44.2%
1970	W	4,319	8,571	1.998	2,666	1,653	0.62	0.38	57.1	0.961	0.724	0.687	0.118	0.815	18.8%
1971	W	2,941	9,193	3.160	1,715	1,226	0.58	0.42	57.1	0.974	0.791	0.755	0.150	0.867	13.3%
1972	B	2,336	6,201	2.691	1,393	943	0.60	0.40	59.9	0.982	0.800	0.777	0.103	0.874	12.8%
1973	A	5,916	9,663	1.642	3,716	2,200	0.63	0.37	59.2	0.944	0.726	0.613	0.297	0.808	19.2%
1974	W	6,873	10,201	1.491	4,349	2,524	0.63	0.37	56.9	0.935	0.650	0.586	0.190	0.754	24.6%
1975	W	5,632	10,487	1.806	3,635	2,197	0.62	0.38	53.7	0.945	0.625	0.618	0.017	0.745	25.5%
1976	C	1,899	4,201	2.250	1,155	744	0.61	0.39	57.8	0.988	0.794	0.794	0.000	0.870	13.0%
1977	C	1,647	4,941	3.059	983	884	0.56	0.42	62.0	0.980	0.850	0.808	0.220	0.908	9.2%
1978	A	15,175	7,613	0.503	4,266	10,907	0.28	0.72	61.4	0.863	0.710	0.573	0.321	0.891	30.9%
1979	B	5,512	8,420	1.536	3,479	2,033	0.63	0.37	60.5	0.949	0.744	0.629	0.309	0.820	18.0%
1980	A	5,932	7,008	1.188	3,805	2,127	0.64	0.36	60.1	0.947	0.690	0.606	0.214	0.782	21.8%
1981	D	2,981	8,403	2.839	1,772	1,219	0.59	0.41	64.6	0.974	0.867	0.751	0.548	0.923	7.7%
1982	W	27,141	9,226	0.340	7,921	19,220	0.29	0.71	52.8	0.434	0.314	0.314	0.000	0.399	60.1%
1983	W	19,948	7,075	0.355	5,799	14,149	0.29	0.71	57.2	0.586	0.490	0.465	0.048	0.558	44.2%
1984	W	3,933	8,453	2.187	2,408	1,525	0.61	0.39	60.7	0.965	0.801	0.705	0.323	0.864	13.6%
1985	D	2,708	5,983	2.237	1,649	1,058	0.61	0.39	62.5	0.979	0.832	0.759	0.302	0.889	11.1%
1986	W	9,025	7,495	0.833	2,346	6,878	0.26	0.74	61.3	0.810	0.799	0.710	0.309	0.807	19.3%
1987	D	2,017	6,134	3.090	1,178	838	0.58	0.42	62.3	0.985	0.855	0.783	0.298	0.909	9.1%
1988	C	1,815	4,470	2.507	1,091	724	0.60	0.40	62.1	0.989	0.839	0.799	0.202	0.899	10.1%
1989	D	1,986	9,293	4.804	1,051	915	0.53	0.47	64.1	0.983	0.914	0.802	0.565	0.946	5.4%
1990	C	1,832	6,420	3.566	1,045	787	0.57	0.43	60.6	0.987	0.844	0.802	0.213	0.908	9.4%
1991	C	2,353	6,974	3.005	1,381	972	0.59	0.41	60.6	0.981	0.832	0.778	0.242	0.894	10.6%
1992	C	2,236	6,151	2.791	1,326	909	0.59	0.41	60.6	0.983	0.826	0.782	0.200	0.890	11.0%

Year	MAY Vernalis Flows	CVP+SWP exports	exp/v-od	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234	Weighted (April + June) total survival
1922	1,864	4,[illegible]	1.054	2,765	1,789	0.61	0.39	66.6	0.957	0.834	0.680	0.480	0.882	11.8%	14.8%
1923	1,721	4,017	1.089	2,298	1,491	0.61	0.39	66.0	0.988	0.830	0.713	0.407	0.883	11.7%	13.0%
1924	1,645	781	0.516	980	585	0.62	0.38	63.9	0.993	0.831	0.808	0.119	0.892	10.8%	11.0%
1925	3,058	3,269	1.080	1,852	1,208	0.61	0.39	67.3	0.974	0.858	0.745	0.445	0.904	9.6%	9.5%
1926	2,374	2,586	1.104	1,434	940	0.60	0.40	67.3	0.982	0.867	0.774	0.410	0.913	8.7%	8.8%
1927	3,741	3,952	1.066	2,269	1,472	0.61	0.39	64.2	0.966	0.800	0.715	0.298	0.866	13.4%	16.3%
1928	2,827	3,139	1.064	1,772	1,155	0.61	0.39	66.6	0.976	0.850	0.751	0.397	0.899	10.1%	12.9%
1929	1,643	1,870	1.181	987	656	0.60	0.40	63.9	0.991	0.840	0.808	0.174	0.900	10.0%	11.1%
1930	1,675	1,870	1.138	1,008	667	0.60	0.40	67.3	0.990	0.878	0.805	0.373	0.923	7.7%	8.0%
1931	1,513	1,740	1.175	908	605	0.60	0.40	63.9	0.992	0.843	0.812	0.188	0.903	9.7%	10.1%
1932	3,334	3,578	1.083	2,019	1,315	0.61	0.39	67.3	0.971	0.856	0.733	0.460	0.901	9.9%	12.0%
1933	2,163	2,163	1.015	1,312	851	0.61	0.39	63.9	0.985	0.824	0.783	0.189	0.887	11.3%	11.4%
1934	1,545	1,773	1.171	927	618	0.60	0.40	63.9	0.992	0.843	0.810	0.169	0.902	9.8%	9.8%
1935	6,424	5,741	0.898	3,936	2,488	0.61	0.39	66.0	0.936	0.796	0.597	0.495	0.850	15.0%	17.7%
1936	4,716	4,828	1.052	2,865	1,852	0.61	0.39	66.0	0.955	0.821	0.673	0.453	0.874	12.8%	16.5%
1937	8,508	7,237	0.854	2,200	6,308	0.26	0.74	66.0	0.821	0.880	0.720	0.571	0.836	16.4%	17.1%
1938	23,777	9,660	0.407	6,839	16,938	0.29	0.71	64.2	0.502	0.750	0.391	0.589	0.573	42.7%	40.4%
1939	2,277	2,488	1.108	1,375	902	0.60	0.40	67.3	0.983	0.868	0.779	0.405	0.914	8.6%	9.6%
1940	4,505	4,733	1.058	2,735	1,770	0.61	0.39	66.6	0.957	0.834	0.682	0.478	0.883	11.7%	13.9%
1941	9,351	9,563	1.026	2,319	7,032	0.25	0.75	64.2	0.799	0.880	0.712	0.584	0.819	18.1%	19.4%
1942	5,548	5,774	1.047	3,370	2,175	0.61	0.39	64.2	0.945	0.779	0.637	0.391	0.844	15.6%	18.7%
1943	5,952	6,164	1.041	3,619	2,333	0.61	0.39	64.2	0.940	0.776	0.619	0.411	0.840	16.0%	20.4%
1944	2,992	3,204	1.082	1,812	1,181	0.61	0.39	67.3	0.975	0.859	0.748	0.441	0.905	9.5%	11.2%
1945	4,066	4,277	1.060	2,467	1,599	0.61	0.39	66.0	0.962	0.827	0.701	0.420	0.880	12.0%	16.6%
1946	3,578	3,789	1.069	2,189	1,409	0.61	0.39	66.0	0.968	0.832	0.722	0.395	0.886	11.4%	14.5%
1947	2,147	2,358	1.115	1,295	851	0.60	0.40	67.3	0.985	0.870	0.784	0.398	0.916	8.4%	9.2%
1948	3,156	3,367	1.078	1,911	1,244	0.61	0.39	66.0	0.973	0.838	0.741	0.373	0.891	10.9%	11.6%
1949	2,814	3,008	1.082	1,703	1,110	0.61	0.39	67.3	0.977	0.861	0.755	0.431	0.907	9.3%	10.5%
1950	2,883	2,911	1.096	1,623	1,061	0.60	0.40	66.0	0.979	0.845	0.761	0.350	0.896	10.2%	11.4%
1951	3,383	3,594	1.073	2,050	1,333	0.61	0.39	66.6	0.970	0.844	0.731	0.420	0.894	10.6%	12.3%
1952	18,381	10,063	0.617	4,486	11,875	0.27	0.73	64.2	0.654	0.826	0.558	0.611	0.702	29.8%	26.6%
1953	2,700	2,911	1.091	1,633	1,067	0.60	0.40	64.2	0.978	0.819	0.760	0.245	0.882	11.8%	13.6%
1954	2,879	3,108	1.091	1,742	1,137	0.61	0.39	66.6	0.976	0.850	0.753	0.395	0.900	10.0%	11.3%
1955	2,293	2,505	1.107	1,365	908	0.60	0.40	67.3	0.983	0.868	0.778	0.405	0.914	8.6%	9.6%
1956	5,887	6,099	1.042	3,580	2,308	0.61	0.39	64.2	0.941	0.776	0.622	0.406	0.841	15.9%	16.2%
1957	2,814	3,025	1.087	1,703	1,111	0.61	0.39	66.6	0.977	0.851	0.755	0.391	0.901	9.9%	10.5%
1958	14,361	10,897	0.760	3,807	10,553	0.27	0.73	64.2	0.694	0.863	0.605	0.652	0.739	26.1%	28.1%
1959	2,082	2,293	1.119	1,256	826	0.60	0.40	66.0	0.986	0.855	0.787	0.319	0.907	9.3%	11.1%
1960	1,805	2,033	1.146	1,086	719	0.60	0.40	67.3	0.989	0.876	0.799	0.362	0.921	7.9%	9.0%
1961	1,984	1,805	1.158	956	636	0.60	0.40	67.3	0.991	0.879	0.808	0.370	0.924	7.6%	8.4%
1962	2,630	3,041	1.087	1,713	1,117	0.61	0.39	66.0	0.977	0.842	0.755	0.357	0.896	10.5%	13.2%
1963	4,521	4,733	1.054	2,745	1,776	0.61	0.39	64.2	0.957	0.789	0.681	0.338	0.855	14.5%	17.1%
1964	2,183	2,391	1.122	1,305	858	0.60	0.40	67.3	0.985	0.870	0.784	0.400	0.918	8.4%	9.7%
1965	4,082	4,277	1.056	2,478	1,604	0.61	0.39	64.2	0.962	0.795	0.700	0.315	0.861	13.9%	17.9%
1966	2,586	2,797	1.096	1,584	1,022	0.60	0.40	66.0	0.980	0.846	0.765	0.344	0.899	10.1%	12.1%
1967	15,759	10,262	0.652	4,286	11,473	0.27	0.73	64.2	0.666	0.837	0.572	0.620	0.713	28.7%	26.4%
1968	2,183	2,391	1.122	1,305	858	0.60	0.40	66.0	0.986	0.854	0.784	0.324	0.908	9.4%	10.2%
1969	27,386	9,221	0.337	7,999	19,389	0.29	0.71	66.4	0.429	0.789	0.308	0.695	0.534	46.6%	45.5%
1970	3,578	3,789	1.059	2,169	1,409	0.61	0.39	61.2	0.966	0.754	0.722	0.114	0.838	16.2%	17.2%
1971	2,883	2,879	1.000	1,624	1,060	0.61	0.39	64.2	0.979	0.819	0.761	0.243	0.862	11.8%	12.4%
1972	1,964	2,196	1.124	1,196	786	0.60	0.40	66.0	0.987	0.857	0.791	0.314	0.908	9.2%	10.7%
1973	5,286	5,481	1.043	3,213	2,073	0.61	0.39	66.3	0.948	0.824	0.648	0.499	0.873	12.7%	15.6%
1974	5,204	5,418	1.047	3,182	2,042	0.61	0.39	66.1	0.949	0.820	0.652	0.484	0.871	12.9%	18.2%
1975	4,407	4,695	1.059	2,675	1,732	0.61	0.39	61.5	0.958	0.741	0.686	0.175	0.827	17.3%	21.0%
1976	1,610	1,864	1.175	967	643	0.60	0.40	65.8	0.991	0.862	0.808	0.285	0.914	8.6%	10.6%
1977	1,613	818	0.417	944	588	0.62	0.38	62.3	0.993	0.813	0.809	0.017	0.881	11.9%	10.7%
1978	11,189	8,424	0.756	2,987	8,222	0.27	0.73	66.9	0.784	0.864	0.686	0.664	0.798	20.2%	26.9%
1979	4,424	4,635	1.055	2,686	1,738	0.61	0.39	66.0	0.958	0.823	0.686	0.438	0.876	12.4%	14.9%
1980	6,392	6,587	1.036	3,868	2,504	0.61	0.39	66.6	0.935	0.829	0.600	0.573	0.871	12.9%	16.9%
1981	2,147	2,358	1.115	1,295	851	0.60	0.40	68.7	0.965	0.888	0.784	0.480	0.926	7.4%	7.5%
1982	14,995	10,929	0.730	4,004	10,980	0.27	0.73	65.1	0.881	0.880	0.592	0.707	0.734	26.6%	41.7%
1983	18,849	7,758	0.412	5,412	13,436	0.29	0.71	61.3	0.607	0.656	0.492	0.323	0.821	37.9%	40.7%
1984	3,318	3,529	1.074	2,010	1,307	0.61	0.39	66.0	0.971	0.835	0.734	0.362	0.889	11.1%	12.2%
1985	2,212	2,423	1.111	1,335	877	0.60	0.40	65.1	0.984	0.841	0.782	0.273	0.898	10.2%	10.6%
1986	7,872	8,086	1.033	1,947	5,925	0.25	0.75	65.8	0.833	0.896	0.738	0.603	0.848	15.2%	17.0%
1987	1,891	1,903	1.146	1,017	674	0.60	0.40	68.6	0.990	0.892	0.804	0.451	0.931	6.9%	7.9%
1988	1,594	1,805	1.156	958	636	0.60	0.40	63.7	0.991	0.839	0.808	0.159	0.900	10.0%	10.1%
1989	1,626	1,838	1.152	978	649	0.60	0.40	66.7	0.981	0.872	0.807	0.336	0.919	8.1%	6.9%
1990	1,513	1,758	1.166	907	605	0.60	0.40	63.9	0.992	0.844	0.812	0.169	0.903	9.7%	9.6%
1991	1,822	2,065	1.154	1,096	726	0.60	0.40	63.9	0.989	0.836	0.799	0.184	0.897	10.3%	10.6%
1992	1,691	1,919	1.156	1,017	675	0.60	0.40	63.9	0.990	0.839	0.804	0.177	0.899	10.1%	10.5%
														Average:	15.15%

Calculations- San Joaquin River Fall

Run Smolt Survival Model WITH BARRIER

C8 ='Study 519A Flow Data'!AB7
D8 ='Study 519A Flow Data'!G7
E8 ='Study 519A Flow Data'!Q7
F8 =D8+E8
G8 =F8/(C8-0.03*$R$2)
H8 =IF(C8<$R$1,(0.47*(0.3137*C8-0.0156*$R$2-0.0625*F8)+0.53*C8),(0.3137*C8-0.0156*$R$2-0.0625*F8))
I8 =C8-H8
J8 =H8/C8
K8 =I8/C8
M8 =(1.01045-0.00003*I8)
N8 =(O8+P8)-(O8*P8)
O8 =IF((0.87634-0.000071*H8)<0,0,(0.87634-0.000071*H8))
P8 =IF((-3.65867+0.058492*L8+0.000051*F8)<0,0,(-3.65867+0.058492*L8+0.000051*F8))
Q8 =((K8*M8)+(J8*N8))
R8 =(1-Q8)

T8 ='Study 519A Flow Data'!AC7
U8 ='Study 519A Flow Data'!H7
V8 ='Study 519A Flow Data'!R7
W8 =U8+V8
X8 =W8/(T8-0.03*$R$3)
Y8 =IF(T8<$R$1,(0.52*(0.3137*T8-0.0156*$R$3-0.0625*W8)+0.48*T8),(0.3137*T8-0.0156*$R$3-0.0625*W8))
Z8 =T8-Y8
AA8 =Y8/T8
AB8 =Z8/T8
AD8 =(1.01045-0.00003*Z8)
AE8 =(AF8+AG8)-(AF8*AG8)
AF8 =IF((0.87634-0.000071*Y8)<0,0,(0.87634-0.000071*Y8))
AG8 =IF((-3.65867+0.058492*AC8+0.000051*W8)<0,0,(-3.65867+0.058492*AC8+0.000051*W8))
AH8 =((AB8*AD8)+(AA8*AE8))
AI8 =(1-AH8)
AK8 =0.45*G94+0.55*AI8

A2-29

C-032369

C—032369

Study: San Joaquin River Fall Run Salmon Smolt Survival Model WITHOUT BARRIER AT HEAD OF OLD RIVER

Consumptive Depletion for April 1053.00 cfs
Consumptive Depletion for May 1053.00 cfs

San Joaquin River temperatures based on limited historical data from USGR

APRIL Year	Water Year Type	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton Q	OldR Flo	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	Calculated Mortality m2	m34	m3	m4	m234	Calculated Survivability s234
1922	A	5,949	9,680	1.636	1,245	4,704	0.21	0.79	60.2	0.869	0.863	0.784	0.356	0.868	13.2%
1923	B	4,738	10,335	2.195	824	3,915	0.17	0.83	59.7	0.893	0.863	0.818	0.360	0.891	10.9%
1924	C	1,849	4,369	2.405	290	1,558	0.16	0.84	60.6	0.964	0.871	0.856	0.109	0.949	5.1%
1925	D	3,832	9,579	2.521	587	3,245	0.15	0.85	63.4	0.913	0.924	0.836	0.536	0.915	8.8%
1926	D	3,193	8,705	2.754	441	2,792	0.14	0.86	63.4	0.928	0.922	0.845	0.494	0.927	7.3%
1927	W	5,243	9,865	1.863	1,012	4,231	0.19	0.81	57.1	0.864	0.841	0.804	0.184	0.875	12.5%
1928	A	4,823	10,184	2.125	860	3,963	0.18	0.82	60.2	0.892	0.886	0.815	0.382	0.891	10.9%
1929	C	1,916	3,529	1.873	364	1,552	0.19	0.81	60.6	0.964	0.860	0.850	0.086	0.944	5.6%
1930	D	2,033	6,385	3.140	229	1,805	0.11	0.89	63.4	0.956	0.912	0.860	0.370	0.951	4.9%
1931	C	1,785	4,857	2.803	234	1,531	0.13	0.87	60.6	0.965	0.878	0.860	0.134	0.953	4.7%
1932	D	4,958	7,058	1.433	1,096	3,860	0.22	0.78	63.4	0.865	0.881	0.798	0.410	0.892	10.8%
1933	C	2,538	6,805	2.635	367	2,171	0.14	0.86	60.6	0.945	0.884	0.850	0.223	0.936	6.4%
1934	C	1,865	6,067	3.308	190	1,676	0.10	0.90	60.6	0.960	0.860	0.863	0.195	0.953	4.7%
1935	B	7,445	10,537	1.421	1,660	5,784	0.22	0.78	59.7	0.837	0.848	0.758	0.371	0.839	16.1%
1936	B	7,176	9,932	1.390	1,614	5,562	0.22	0.78	59.7	0.844	0.843	0.762	0.340	0.843	15.7%
1937	B	8,134	8,067	0.996	2,031	6,103	0.25	0.75	59.7	0.827	0.798	0.732	0.245	0.820	18.0%
1938	W	17,258	8,388	0.487	4,874	12,386	0.28	0.72	57.1	0.639	0.581	0.530	0.109	0.623	37.7%
1939	D	3,075	6,453	2.120	545	2,530	0.18	0.82	63.4	0.935	0.869	0.838	0.379	0.928	7.2%
1940	A	5,862	10,453	1.787	1,175	4,707	0.20	0.80	60.2	0.869	0.875	0.793	0.396	0.870	13.0%
1941	W	9,293	9,411	1.016	2,311	6,983	0.25	0.75	57.1	0.801	0.759	0.712	0.161	0.790	21.0%
1942	W	6,100	9,747	1.605	1,288	4,812	0.21	0.79	57.1	0.866	0.823	0.785	0.178	0.857	14.3%
1943	W	7,126	9,764	1.370	1,509	5,517	0.23	0.77	57.1	0.845	0.805	0.782	0.179	0.836	16.4%
1944	D	3,714	5,596	1.520	799	2,915	0.22	0.78	63.4	0.923	0.880	0.820	0.335	0.914	8.6%
1945	B	5,983	7,210	1.211	1,410	4,573	0.24	0.76	59.7	0.873	0.821	0.776	0.201	0.861	13.9%
1946	B	4,336	6,380	1.460	946	3,390	0.22	0.78	59.7	0.908	0.839	0.809	0.158	0.864	10.6%
1947	D	2,564	5,746	2.278	426	2,129	0.17	0.83	63.4	0.947	0.899	0.846	0.343	0.939	6.1%
1948	B	3,731	9,963	2.699	530	3,201	0.14	0.86	59.7	0.914	0.894	0.839	0.342	0.912	8.8%
1949	D	3,412	8,252	1.850	663	2,748	0.19	0.81	63.4	0.928	0.892	0.829	0.369	0.921	7.9%
1950	B	3,378	8,838	2.581	503	2,875	0.15	0.85	59.7	0.924	0.864	0.841	0.274	0.918	8.2%
1951	A	3,933	8,266	2.120	700	3,232	0.18	0.82	60.2	0.913	0.876	0.827	0.284	0.907	9.3%
1952	W	10,060	8,873	0.886	2,582	7,498	0.26	0.74	57.1	0.786	0.734	0.663	0.134	0.773	22.7%
1953	W	3,075	7,280	2.365	495	2,581	0.16	0.84	57.1	0.933	0.849	0.841	0.051	0.920	8.0%
1954	A	4,302	10,453	2.448	660	3,622	0.16	0.84	60.2	0.902	0.896	0.828	0.396	0.901	9.9%
1955	D	2,437	4,838	1.928	458	1,979	0.19	0.81	63.4	0.951	0.889	0.844	0.286	0.939	6.1%
1956	W	4,000	9,310	2.348	656	3,343	0.16	0.84	57.1	0.910	0.858	0.830	0.156	0.901	9.9%
1957	A	2,924	8,621	2.980	362	2,562	0.12	0.88	60.2	0.934	0.896	0.851	0.302	0.929	7.1%
1958	W	14,117	9,764	0.693	3,602	10,315	0.27	0.73	57.1	0.701	0.677	0.608	0.179	0.695	30.5%
1959	B	2,564	5,613	2.225	434	2,120	0.17	0.83	59.7	0.947	0.864	0.846	0.120	0.933	6.7%
1960	D	2,168	4,353	2.037	362	1,776	0.18	0.82	63.4	0.957	0.890	0.849	0.272	0.945	5.6%
1961	D	1,815	4,185	2.345	291	1,524	0.16	0.84	63.4	0.965	0.894	0.856	0.253	0.953	4.7%
1962	B	4,437	8,134	1.846	867	3,570	0.20	0.80	59.7	0.903	0.861	0.815	0.248	0.886	10.5%
1963	W	5,578	10,218	1.842	1,095	4,484	0.20	0.80	57.1	0.876	0.839	0.798	0.202	0.889	13.1%
1964	D	2,470	4,369	1.792	485	1,985	0.20	0.80	63.4	0.951	0.885	0.842	0.273	0.938	6.2%
1965	W	6,168	9,747	1.589	1,309	4,958	0.21	0.79	57.1	0.865	0.822	0.783	0.178	0.856	14.4%
1966	B	3,008	5,932	1.993	566	2,462	0.18	0.82	59.7	0.937	0.859	0.837	0.136	0.922	7.8%
1967	W	12,823	9,646	0.754	3,403	9,420	0.27	0.73	57.1	0.728	0.698	0.636	0.173	0.720	28.0%
1968	B	2,838	8,134	3.120	303	2,335	0.11	0.89	59.7	0.940	0.891	0.866	0.248	0.935	6.5%
1969	W	20,133	7,813	0.379	5,624	14,310	0.29	0.71	57.1	0.581	0.500	0.463	0.089	0.558	44.2%
1970	W	4,319	8,571	1.999	803	3,516	0.19	0.81	57.1	0.905	0.841	0.819	0.118	0.893	10.7%
1971	W	2,941	9,183	3.160	332	2,609	0.11	0.89	57.1	0.932	0.875	0.853	0.150	0.928	7.4%
1972	B	2,336	6,201	2.691	329	2,087	0.14	0.86	58.9	0.950	0.868	0.853	0.103	0.939	6.1%
1973	A	5,916	9,863	1.642	1,235	4,680	0.21	0.79	59.2	0.870	0.851	0.789	0.297	0.866	13.4%
1974	W	6,873	10,201	1.491	1,502	5,371	0.22	0.78	58.9	0.849	0.813	0.770	0.190	0.841	15.9%
1975	W	5,832	10,487	1.808	1,158	4,674	0.20	0.80	53.7	0.870	0.798	0.794	0.017	0.856	14.4%
1976	C	1,899	4,201	2.250	317	1,582	0.17	0.83	57.8	0.963	0.854	0.854	0.000	0.945	5.5%
1977	C	1,847	4,941	3.059	191	1,456	0.12	0.88	62.0	0.967	0.893	0.863	0.220	0.958	4.2%
1978	A	15,175	7,813	0.503	4,266	10,907	0.28	0.72	61.4	0.683	0.710	0.573	0.321	0.891	30.9%
1979	B	5,512	8,420	1.536	1,187	4,326	0.22	0.78	60.5	0.881	0.858	0.792	0.309	0.875	12.5%
1980	A	5,832	7,008	1.188	1,407	4,526	0.24	0.76	60.1	0.875	0.824	0.776	0.214	0.863	13.7%
1981	D	2,991	8,403	2.839	397	2,595	0.13	0.87	64.6	0.933	0.931	0.848	0.548	0.932	6.8%
1982	W	27,141	9,228	0.340	7,921	19,220	0.29	0.71	52.8	0.434	0.314	0.314	0.000	0.399	60.1%
1983	W	19,946	7,075	0.355	5,799	14,149	0.29	0.71	57.2	0.586	0.490	0.466	0.048	0.556	44.3%
1984	W	3,933	8,453	2.187	689	3,244	0.18	0.82	60.7	0.913	0.863	0.827	0.323	0.908	9.2%
1985	D	2,706	5,983	2.237	458	2,247	0.17	0.83	62.5	0.943	0.891	0.844	0.302	0.934	6.6%
1986	W	9,025	7,495	0.833	2,346	6,678	0.26	0.74	61.3	0.810	0.799	0.710	0.309	0.807	19.3%
1987	D	2,017	6,134	3.040	233	1,784	0.12	0.88	62.3	0.957	0.902	0.860	0.266	0.951	4.9%
1988	C	1,815	4,470	2.507	274	1,541	0.15	0.85	62.1	0.964	0.886	0.857	0.202	0.952	4.8%
1989	D	1,998	9,293	4.604	20	1,947	0.01	0.99	64.1	0.952	0.946	0.875	0.565	0.952	4.8%
1990	C	1,832	6,420	3.586	157	1,675	0.09	0.91	60.6	0.960	0.894	0.865	0.213	0.955	4.6%
1991	C	2,353	6,974	3.005	286	2,067	0.12	0.88	60.6	0.946	0.891	0.856	0.242	0.941	5.9%
1992	C	2,235	6,151	2.791	300	1,935	0.13	0.87	60.6	0.952	0.884	0.856	0.200	0.943	5.7%

MAY Year	Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt.	Calculated Mortality m2	m3	m4	m234	Calculated Survivability s234	Weighted total survival
1922	4,654	1,769	1.054	1,114	3439	0.24	0.76	66.6	0.907	0.895	0.797	0.460	0.904	9.8%	11.2%
1923	3,969	1,011	1.069	921	2868	0.24	0.76	66.0	0.924	0.888	0.811	0.407	0.918	8.4%	9.5%
1924	1,546	781	0.516	419	1126	0.27	0.73	63.9	0.977	0.865	0.847	0.119	0.946	5.4%	5.2%
1925	3,059	3,269	1.080	738	2319	0.24	0.76	67.3	0.941	0.902	0.824	0.445	0.932	6.8%	7.6%
1926	2,374	2,586	1.104	567	1808	0.24	0.76	67.3	0.956	0.903	0.836	0.410	0.944	5.8%	6.4%
1927	3,741	3,952	1.086	910	2831	0.24	0.76	64.2	0.926	0.858	0.812	0.298	0.911	8.9%	10.5%
1928	2,927	3,139	1.084	706	2222	0.24	0.76	66.6	0.944	0.895	0.826	0.397	0.932	6.8%	8.7%
1929	1,843	1,870	1.161	382	1261	0.23	0.77	63.9	0.973	0.876	0.849	0.174	0.950	5.0%	6.3%
1930	1,876	1,870	1.138	392	1263	0.23	0.77	67.3	0.972	0.905	0.848	0.373	0.956	4.4%	4.8%
1931	1,813	1,740	1.175	349	1163	0.23	0.77	63.9	0.976	0.878	0.852	0.188	0.953	4.7%	4.7%
1932	3,334	3,578	1.083	808	2528	0.24	0.76	67.3	0.935	0.902	0.819	0.480	0.927	7.3%	8.9%
1933	2,163	2,163	1.015	527	1636	0.24	0.76	63.9	0.961	0.869	0.838	0.189	0.939	6.1%	6.2%
1934	1,645	1,773	1.171	357	1188	0.23	0.77	63.9	0.975	0.878	0.851	0.189	0.952	4.8%	4.8%
1935	6,424	5,741	0.898	1,840	4784	0.26	0.74	66.0	0.867	0.879	0.760	0.495	0.870	13.9%	14.4%
1936	4,716	4,926	1.052	1,155	3561	0.24	0.76	66.0	0.904	0.868	0.794	0.453	0.900	10.9%	12.8%
1937	8,808	7,237	0.854	2,200	6306	0.26	0.74	66.0	0.821	0.860	0.720	0.571	0.836	16.4%	17.1%
1938	23,777	9,860	0.407	6,839	16938	0.29	0.71	64.2	0.502	0.750	0.391	0.589	0.573	42.7%	40.4%
1939	2,277	2,466	1.108	542	1735	0.24	0.76	67.3	0.958	0.903	0.838	0.405	0.945	5.5%	6.2%
1940	4,905	4,733	1.058	1,101	3404	0.24	0.76	66.6	0.908	0.895	0.798	0.478	0.905	9.5%	11.1%
1941	9,351	9,563	1.026	2,319	7032	0.25	0.75	64.2	0.798	0.860	0.712	0.584	0.819	18.1%	18.4%
1942	5,646	5,774	1.047	1,362	4183	0.25	0.75	64.2	0.885	0.866	0.780	0.391	0.880	12.0%	13.8%
1943	5,852	6,164	1.041	1,465	4487	0.25	0.75	64.2	0.876	0.866	0.772	0.411	0.873	12.7%	14.3%
1944	2,992	3,204	1.082	722	2270	0.24	0.76	67.3	0.942	0.902	0.825	0.441	0.933	6.7%	7.6%
1945	4,056	4,277	1.060	992	3074	0.24	0.76	66.0	0.918	0.887	0.806	0.420	0.911	8.9%	11.2%
1946	3,578	3,789	1.059	859	2709	0.24	0.76	66.0	0.929	0.885	0.815	0.395	0.919	8.1%	9.2%
1947	2,147	2,358	1.115	510	1637	0.24	0.76	67.3	0.961	0.904	0.840	0.398	0.948	5.2%	6.8%
1948	3,156	3,367	1.076	763	2392	0.24	0.76	66.0	0.939	0.889	0.822	0.373	0.927	7.3%	8.8%
1949	2,814	3,009	1.062	678	2135	0.24	0.76	67.3	0.946	0.902	0.828	0.431	0.936	6.4%	7.1%
1950	2,683	2,911	1.066	643	2040	0.24	0.76	66.0	0.949	0.890	0.831	0.350	0.935	6.6%	7.3%
1951	3,383	3,594	1.073	820	2563	0.24	0.76	66.6	0.934	0.895	0.818	0.420	0.924	7.6%	8.4%
1952	16,361	10,063	0.617	4,486	11875	0.27	0.73	64.2	0.654	0.828	0.558	0.611	0.702	29.8%	26.6%
1953	2,709	2,911	1.091	649	2051	0.24	0.76	64.2	0.949	0.872	0.830	0.245	0.930	7.0%	7.4%
1954	2,879	3,106	1.091	692	2186	0.24	0.76	66.6	0.945	0.895	0.827	0.365	0.933	6.7%	8.1%
1955	2,283	2,506	1.107	546	1747	0.24	0.76	67.3	0.958	0.903	0.836	0.405	0.946	5.6%	5.8%
1956	5,887	6,009	1.042	1,440	4438	0.25	0.75	64.2	0.877	0.866	0.773	0.408	0.874	12.6%	11.3%
1957	2,814	3,025	1.087	677	2136	0.24	0.76	66.6	0.946	0.895	0.828	0.391	0.934	6.6%	6.8%
1958	14,361	10,897	0.760	3,807	10553	0.27	0.73	64.2	0.664	0.863	0.606	0.652	0.739	28.1%	28.1%
1959	2,082	2,293	1.119	493	1586	0.24	0.76	66.0	0.963	0.892	0.841	0.319	0.946	5.4%	6.9%
1960	1,806	2,033	1.146	423	1382	0.23	0.77	67.3	0.969	0.905	0.846	0.382	0.954	4.6%	5.9%
1961	1,664	1,805	1.156	371	1223	0.23	0.77	67.3	0.974	0.905	0.850	0.370	0.956	4.3%	4.4%
1962	2,838	3,041	1.087	861	2149	0.24	0.76	66.0	0.946	0.889	0.828	0.357	0.932	6.8%	8.4%
1963	4,621	4,733	1.054	1,105	3415	0.24	0.76	64.2	0.906	0.866	0.798	0.338	0.898	10.2%	11.6%
1964	2,153	2,391	1.122	513	1650	0.24	0.76	67.3	0.961	0.904	0.840	0.400	0.947	5.3%	6.7%
1965	4,082	4,277	1.056	997	3085	0.24	0.76	64.2	0.918	0.867	0.808	0.315	0.905	9.6%	11.7%
1966	2,646	2,797	1.095	620	1966	0.24	0.76	66.0	0.951	0.890	0.832	0.344	0.937	6.3%	7.0%
1967	15,739	10,262	0.652	4,285	11473	0.27	0.73	64.2	0.666	0.837	0.572	0.620	0.713	28.7%	28.4%
1968	2,153	2,391	1.122	513	1650	0.24	0.76	66.0	0.961	0.892	0.840	0.324	0.945	5.8%	6.9%
1969	27,369	9,221	0.337	7,999	19389	0.29	0.71	66.4	0.429	0.789	0.308	0.695	0.534	46.6%	45.6%
1970	3,578	3,788	1.059	859	2709	0.24	0.76	61.2	0.929	0.836	0.815	0.114	0.907	9.3%	10.9%
1971	2,663	2,879	1.086	645	2036	0.24	0.76	64.2	0.949	0.872	0.831	0.243	0.931	6.9%	7.2%
1972	1,984	2,196	1.124	469	1515	0.24	0.76	66.0	0.965	0.892	0.843	0.314	0.948	5.2%	5.6%
1973	5,266	5,481	1.043	1,299	3966	0.25	0.75	66.3	0.891	0.892	0.784	0.499	0.891	10.9%	12.0%
1974	5,204	5,418	1.047	1,278	3927	0.25	0.75	66.1	0.893	0.889	0.786	0.484	0.892	10.8%	13.1%
1975	4,407	4,635	1.059	1,075	3331	0.24	0.76	61.5	0.911	0.835	0.800	0.175	0.892	10.8%	12.4%
1976	1,610	1,854	1.175	373	1237	0.23	0.77	65.8	0.973	0.893	0.850	0.285	0.955	4.5%	5.0%
1977	1,513	618	0.417	419	1093	0.26	0.72	62.3	0.978	0.849	0.847	0.017	0.942	5.8%	5.1%
1978	11,189	8,424	0.756	2,957	8222	0.27	0.73	66.9	0.764	0.894	0.666	0.684	0.798	29.2%	25.9%
1979	4,424	4,635	1.055	1,082	3342	0.24	0.76	66.0	0.910	0.867	0.800	0.438	0.905	9.5%	10.9%
1980	6,302	6,567	1.036	1,577	4815	0.25	0.75	66.6	0.866	0.869	0.764	0.573	0.874	12.6%	13.1%
1981	2,147	2,358	1.115	510	1637	0.24	0.76	66.7	0.961	0.917	0.840	0.480	0.951	4.9%	6.7%
1982	14,995	10,928	0.730	4,004	10960	0.27	0.73	65.1	0.661	0.880	0.592	0.707	0.734	26.6%	41.7%
1983	18,849	7,758	0.412	5,412	13438	0.29	0.71	61.3	0.607	0.656	0.492	0.323	0.621	37.9%	40.7%
1984	3,318	3,529	1.074	804	2514	0.24	0.76	66.0	0.935	0.888	0.819	0.382	0.924	7.6%	8.3%
1985	2,212	2,423	1.111	526	1686	0.24	0.76	65.1	0.960	0.883	0.839	0.273	0.942	5.8%	6.2%
1986	7,872	8,098	1.033	1,947	5925	0.25	0.75	65.8	0.833	0.866	0.736	0.603	0.846	16.2%	17.9%
1987	1,691	1,903	1.146	395	1298	0.23	0.77	66.6	0.972	0.917	0.846	0.451	0.959	4.1%	4.5%
1988	1,594	1,805	1.156	371	1223	0.23	0.77	63.7	0.974	0.874	0.850	0.159	0.951	4.9%	4.9%
1989	1,628	1,838	1.152	379	1247	0.23	0.77	66.7	0.973	0.900	0.849	0.336	0.956	4.4%	4.6%
1990	1,513	1,758	1.186	348	1184	0.23	0.77	63.9	0.976	0.877	0.852	0.189	0.953	4.7%	4.6%
1991	1,822	2,055	1.154	425	1396	0.23	0.77	63.9	0.969	0.874	0.846	0.184	0.947	5.3%	5.6%
1992	1,691	1,919	1.156	394	1297	0.23	0.77	63.9	0.972	0.875	0.846	0.177	0.949	5.1%	5.4%

Average: 11.39%

Formulas: San Joaquin River Fall Run Smolt Survival Model WITHOUT BARRIER

C7 ='Study 519A Flow Data'!AB7
D7 ='Study 519A Flow Data'!G7
E7 ='Study 519A Flow Data'!Q7
F7 =D7+E7
G7 =F7/(C7-0.03*$H$2)
H7 =IF((0.3137*C7-0.0156*$H$2-0.0625*F7)<0,0,(0.3137*C7-0.0156*$H$2-0.0625*F7))
I7 =C7-H7
J7 =H7/C7
K7 =I7/C7
M7 =(1.01045-0.00003*I7)
N7 =(O7+P7)-(O7*P7)
O7 =(0.87634-0.000071*H7)
P7 =IF((-3.65867+0.058492*L7+0.000051*F7)<0,0,(-3.65867+0.058492*L7+0.000051*F7))
Q7 =((K7*M7)+(J7*N7))
R7 =(1-Q7)

T7 ='Study 519A Flow Data'!AC7
U7 ='Study 519A Flow Data'!H7
V7 ='Study 519A Flow Data'!R7
W7 =U7+V7
X7 =W7/(T7-0.03*$H$3)
Y7 =IF((0.3137*T7-0.0156*$H$3-0.0625*W7)<0,0,(0.3137*T7-0.0156*$H$3-0.0625*W7))
Z7 =T7-Y7
AA7 =Y7/T7
AB7 =Z7/T7
AD7 =(1.01045-0.00003*Z7)
AE7 =(AF7+AG7)-(AF7*AG7)
AF7 =(0.87634-0.000071*Y7)
AG7 =IF((-3.65867+0.058492*AC7+0.000051*W7)<0,0,(-3.65867+0.058492*AC7+0.000051*W7))
AH7 =((AB7*AD7)+(AA7*AE7))
AI7 =(1-AH7)
AK7 =0.45*R7+0.55*AI7

STUDY: 1995C06F-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CVP, TOTAL CVP EXPORT (TAF Converted to CFS)

Project: /1995C06F-SWRCB-519A/CVP/EXPORT-TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4470	4342	4326	4339	3806	4521	2488	4874
1923	4487	4342	4326	4375	4326	4655	2114	4403
1924	3512	3627	4326	4172	1659	2151	309	420
1925	1529	4375	3757	4375	4147	4706	1740	4790
1926	4470	4342	4326	4321	4326	4403	1399	4806
1927	4420	4342	4326	2521	3350	4706	2082	4874
1928	4470	4342	4326	4207	4326	4689	1675	4857
1929	4453	4342	4326	4321	3318	1597	1740	2033
1930	2487	4375	4342	3529	4326	3159	1041	4874
1931	2840	2374	4326	3529	2114	2319	992	2084
1932	1865	4375	4342	4242	2586	3613	1903	4622
1933	3260	2700	4342	3799	1724	2857	1317	1378
1934	1681	4375	4342	1855	2358	3294	1008	4756
1935	2773	3464	4342	1296	4326	4588	3204	4437
1936	4453	4342	4326	4190	4326	4706	2570	4806
1937	4470	4342	4326	4339	3936	3092	3171	2857
1938	4470	4342	4326	4357	4326	4017	4212	4874
1939	4487	4342	4326	2683	2732	3277	1350	4874
1940	3025	1643	4326	4190	4326	4706	2472	4050
1941	4453	4342	4326	4393	4326	4706	4814	4874
1942	4487	4342	4326	4375	4326	4706	2992	4874
1943	4470	4342	4326	4375	4326	4706	3188	4874
1944	4470	4342	4326	4190	4326	2857	1708	4823
1945	4437	4342	4326	4339	4326	3664	2244	3865
1946	4470	4342	4326	4375	4326	3243	2000	4521
1947	4453	4342	4326	4339	4326	2033	1285	4874
1948	2975	2472	4326	4172	4326	4487	1789	4874
1949	4453	4342	4326	4339	3594	2521	1610	4874
1950	4470	4342	4326	4339	4326	4369	1561	4874
1951	4453	4342	4326	4375	4326	4185	1903	4874
1952	4453	4342	4326	4242	4326	4706	4814	4874
1953	4487	4342	4326	4375	3610	3680	1561	4874
1954	4470	4342	4326	4357	4326	4672	1659	4874
1955	4453	4342	4326	4357	4326	2370	1366	4874
1956	3025	4342	4326	4225	4212	4706	3155	4874
1957	4487	4342	4326	4339	4326	4672	1626	4874
1958	4453	4342	4326	4357	4326	4706	4814	4874
1959	4487	4342	4326	4357	4326	2857	1252	4874
1960	4453	4342	4326	4172	3301	487	1122	4874
1961	4437	4342	4326	4339	3578	403	1008	4874
1962	2874	4342	4326	4339	4326	4117	1626	4874
1963	4453	4342	4326	4375	4326	4689	2472	4874
1964	4453	4342	4326	4225	4326	2235	1301	4874
1965	4050	4342	4326	4357	4326	4638	2244	4874
1966	4470	4342	4326	4375	4326	3025	1513	4874
1967	4453	4342	4326	4375	4326	4706	4814	4874
1968	4487	4342	4326	2851	3090	4269	1301	4874
1969	4453	4342	4326	4393	3708	3445	4196	4874
1970	4487	4342	4277	1278	3139	4706	2000	4538
1971	4470	4342	4326	4393	4326	4706	1545	4874
1972	4453	4342	4326	4207	4326	3159	1203	4874
1973	4453	4342	4326	4357	4326	4706	2846	2655
1974	4470	4342	4326	4357	4326	4706	2814	4874
1975	4487	4342	4326	4339	4326	4706	2423	4874
1976	4470	4342	4326	4190	4424	521	1041	4672
1977	2891	1919	2277	792	813	992	260	286
1978	2689	4375	1545	1837	2212	3546	4326	4874
1979	4487	4342	4326	4339	4326	4672	2423	3916
1980	4453	4342	4326	4190	2781	3059	3399	4874
1981	4470	4342	4326	3259	3090	4538	1285	4874
1982	4453	4342	4326	4375	4326	3664	4245	4874
1983	4487	4342	4326	3565	2131	3428	4163	4874
1984	3512	3139	1447	1495	3301	4706	1870	4672
1985	4470	4342	4326	4357	4326	3042	1317	4874
1986	2723	4342	4326	4339	4326	2269	2814	4134
1987	4437	4342	1220	1314	2309	3126	1057	4874
1988	3159	4342	4326	3807	2049	2286	1008	4739
1989	2571	3025	4212	1026	4326	4538	1025	4823
1990	4420	4342	2765	1296	2326	3243	992	4756
1991	2706	1756	1822	468	4424	2218	1155	3075
1992	3328	3171	4342	2121	2196	3361	1073	4050

STUDY: 1995C06F-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
SWP, SWP EXPORT AT BANKS PP (TAF Converted to CFS)

Project: /1995C06F-SWRCB-519A/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4386	7123	7644	6176	4147	5159	2277	6672
1923	6672	5058	3643	2377	3367	5680	1903	3395
1924	3764	3139	6554	4659	2098	2218	472	622
1925	3227	4944	3204	7671	3562	4874	1529	1580
1926	2336	2700	7123	7599	3301	4302	1187	2504
1927	6672	7075	7335	6716	4147	5159	1870	3529
1928	6672	5839	3643	4225	4424	5495	1464	2672
1929	4991	5936	6701	4916	2830	1933	130	101
1930	1781	6619	7123	3655	4912	3126	829	2622
1931	3311	3025	4944	1963	1626	2538	748	1428
1932	1664	7221	7904	5859	2586	3445	1675	2756
1933	2605	2391	5839	3295	2976	3748	846	101
1934	1681	5578	7140	4375	2212	2773	764	1126
1935	4336	3464	7758	4033	7042	5949	2537	3496
1936	4017	5855	7530	8206	4196	5227	2358	3311
1937	3496	5676	7844	4844	4001	4974	4066	4857
1938	6672	7563	3562	3943	3968	4369	5448	6672
1939	6000	3741	3236	3961	3985	3176	1138	3042
1940	1781	2732	8115	8206	4586	5748	2261	3092
1941	6235	7481	8506	6194	3838	4706	4749	6168
1942	6487	3610	3236	3961	4001	5042	2781	6672
1943	6672	3773	3301	3997	4050	5058	2976	3042
1944	6655	6570	3269	3825	4001	2739	1496	3143
1945	6672	6993	4912	3997	4147	3546	2033	3596
1946	6672	7595	3643	4213	4424	3126	1789	3479
1947	6672	7205	6993	3943	3952	3714	1073	2689
1948	3647	3025	6392	1756	3415	5495	1578	4353
1949	6268	6912	6896	4213	7140	3731	1399	3159
1950	3395	3090	7253	7599	4895	4269	1350	3529
1951	6672	7595	7026	4682	4700	4084	1691	2807
1952	6672	7156	8132	3773	3938	4168	5269	6672
1953	4084	3741	3334	4051	4115	3580	1350	5445
1954	6672	4651	3838	4646	4684	5781	1447	2739
1955	6672	6928	7270	3673	3108	2269	1138	3025
1956	4269	7595	8164	4520	4700	4605	2944	6672
1957	6672	6519	3887	4646	4342	3949	1399	3445
1958	6672	6944	4098	4051	4066	5058	6063	6672
1959	4185	3854	3334	4051	3058	2756	1041	2874
1960	3075	2797	5822	7110	4001	3865	911	2638
1961	5764	6912	6652	7130	4538	3781	797	2739
1962	3376	6896	3985	8499	3545	4017	1415	2874
1963	6672	6912	7319	8499	4342	5529	2261	3983
1964	6672	6229	3822	3529	3253	2134	1090	2605
1965	6353	7465	8506	5456	4245	5109	2033	3546
1966	6672	6180	3659	4375	4424	2907	1285	2622
1967	6672	7156	7758	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	3865	1090	2672
1969	5916	7010	7888	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3865	1789	2622
1971	6672	7075	6473	4357	4700	4487	1334	4689
1972	6672	7107	3887	4433	4310	3042	992	2723
1973	6672	6928	6245	4429	4456	4958	2635	5512
1974	6672	7400	3643	4375	4424	5495	2602	4538
1975	6672	4310	3854	4628	4684	5781	2212	6672
1976	6672	6164	3806	4068	3643	3680	813	2941
1977	3277	2992	2472	1404	1285	3949	358	387
1978	1714	5562	7855	6680	3903	4067	4098	3899
1979	6672	3676	3269	3961	4001	3748	2212	4403
1980	6672	7010	3155	3668	3350	3949	3188	4000
1981	5579	4668	3350	4069	4115	3865	1073	2790
1982	6672	7026	8506	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	3748	1659	3361
1985	6672	7026	3871	4574	4245	2941	1106	2638
1986	4218	6977	7319	7202	4180	5227	5286	3764
1987	3796	6099	6457	4213	4131	3008	846	3143
1988	1882	6879	7075	2364	1773	2185	797	992
1989	3378	3594	4684	1837	6977	4756	813	2487
1990	3344	6196	7091	6554	3659	3176	764	2907
1991	2386	3155	1706	954	7091	4756	911	1059
1992	1412	1643	4668	7267	6131	2790	846	1681

STUDY: 1995C06F-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (TAF to CFS)

Project: /1995C06F-SWRCB-519A/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	2082	1781	2683	2862	7022	5497	5949	4554	7243
1923	4147	2202	4017	4440	4501	2716	4739	3789	2168
1924	3188	1479	1594	1496	1721	1789	1849	1545	1378
1925	1464	1412	1382	1301	2953	2521	3832	3058	1949
1926	1708	1462	1464	1334	2773	1870	3193	2374	1684
1927	1838	2067	2342	1968	5744	3724	5243	3741	2050
1928	4521	1899	2456	2391	2764	4212	4823	2927	1748
1929	1594	1428	1415	1301	1603	1789	1916	1643	1311
1930	1447	1277	1187	1317	1693	2017	2033	1675	1344
1931	1643	1227	1203	1220	1476	1415	1765	1513	1260
1932	1529	1361	3220	3643	8414	4684	4958	3334	1933
1933	3676	1496	1431	1756	2161	2179	2538	2163	1445
1934	1480	1294	1334	1350	2539	1724	1865	1545	1277
1935	1578	1479	1513	3204	3421	3643	7445	6424	3865
1936	3367	1630	1724	2553	12656	5904	7176	4716	2807
1937	3236	1630	2017	2879	15287	11140	8134	8506	2638
1938	3334	1882	5286	7188	22706	31177	17259	23777	15192
1939	10100	2319	2293	2505	3637	2862	3075	2277	1630
1940	1789	1563	1545	4277	8258	10571	5882	4505	2050
1941	2716	2033	4798	5497	16385	12051	9293	9351	8252
1942	7351	2437	5334	9173	10371	5920	6100	5546	6319
1943	9351	3092	3562	11157	10894	17825	7126	5952	2622
1944	5237	2017	2147	2228	3564	3204	3714	2992	1865
1945	1935	1949	1870	1708	9183	8083	5963	4066	2202
1946	4196	2874	7270	6766	6212	4391	4336	3578	2017
1947	1984	2487	3139	2553	3277	2017	2554	2147	1529
1948	1610	1395	1317	1155	1269	1838	3731	3155	2017
1949	1724	1479	1399	1301	1621	2700	3412	2814	1731
1950	1740	1479	1399	1691	2773	2391	3378	2683	1714
1951	1740	5126	16166	12523	9921	6261	3933	3383	1882
1952	2033	1748	2781	7563	7980	12376	10050	16361	11848
1953	9417	2185	3058	4960	5744	3708	3075	2700	1798
1954	1756	1513	1513	1626	2665	2570	4302	2879	1798
1955	1724	1479	1496	1756	2179	1838	2437	2293	1681
1956	1740	1529	11986	24525	15264	6538	4000	5887	7630
1957	8636	1983	2082	2065	3313	3253	2924	2814	1865
1958	1870	1613	1594	1838	4808	11921	14117	14361	13276
1959	8620	2118	1903	2309	4538	3757	2554	2082	1462
1960	1578	1361	1269	1252	1965	2000	2168	1805	1529
1961	1513	1361	1334	1269	1368	1447	1815	1594	1378
1962	1545	1328	1252	1203	6194	4586	4437	2830	1681
1963	1724	1496	1415	1887	5474	2846	5579	4521	2571
1964	3204	2218	1919	2033	2312	2277	2470	2163	1496
1965	1691	1731	4651	12246	8103	4765	6168	4082	2807
1966	4619	3546	4944	5058	6086	3806	3008	2586	1647
1967	1854	1630	2879	3236	3781	6896	12823	15759	18301
1968	9547	2067	2196	2261	4068	2911	2638	2163	1563
1969	1822	1563	1919	14735	33959	21110	20133	27388	18705
1970	9579	2554	3594	17044	9507	7497	4319	3578	1899
1971	1952	1765	2391	2635	3277	4082	2941	2683	1798
1972	1724	1496	2537	2244	2312	2017	2336	1984	1395
1973	1675	1479	1480	2228	8607	9742	5916	5286	2252
1974	3448	3025	4261	9140	7076	8506	6873	5204	2487
1975	6294	2101	2423	2586	6572	8945	5832	4407	6268
1976	5465	2319	2228	1789	2417	1805	1899	1610	1328
1977	2976	2134	1708	1236	1242	1285	1647	1513	1227
1978	1382	1328	1496	3513	7490	11124	15175	11189	7025
1979	4424	2017	1854	4456	9651	8799	5512	4424	2017
1980	3009	1781	1984	16085	24026	14637	5932	6392	6168
1981	8067	2084	2098	2976	2791	3074	2991	2147	1563
1982	1822	1681	2065	9969	20617	15369	27141	14995	10688
1983	13369	8638	19044	24867	36534	41179	19948	18849	38233
1984	12181	13562	21500	15190	9718	6083	3933	3318	1916
1985	1935	1781	2049	1935	2953	2374	2706	2212	1613
1986	1822	1697	1708	1919	28053	26493	9025	7872	7563
1987	4570	2101	1919	1561	2125	2017	2017	1691	1412
1988	1513	1311	1203	1155	1200	1382	1815	1594	1311
1989	1464	1210	1269	1236	1332	1724	1966	1626	1328
1990	1464	1260	1220	1203	1386	1480	1832	1513	1244
1991	1431	1227	1171	1073	1062	2456	2353	1822	1395
1992	1496	1479	1203	1203	2469	2147	2235	1691	1462

A2-31
C-032371
C—032371

Study 46 — oaquin River Fall Run Salmon Smolt Survival Model WITH BARRIER

Barrier at head-of-old River from Apr 15 to May 15

Old River Barrier Open above 7500.00 cfs

Consumptive Depletion for April 1053.00 cfs

Consumptive Depletion for May 1053.00 cfs

Year	Water Year Type	APRIL Vernalis Flows	CVP + SWP exports	exp/v-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234
1922	A	8,201	8,487	1.376	3,944	2,257	0.64	0.36	60.2	0.943	0.716	0.566	0.295	0.798	20.2%
1923	B	5,344	8,033	1.512	3,377	1,968	0.63	0.37	59.7	0.951	0.725	0.637	0.243	0.806	19.2%
1924	C	1,983	2,956	1.516	1,249	734	0.63	0.37	60.6	0.968	0.795	0.788	0.037	0.867	13.3%
1925	D	3,983	7,058	1.786	2,483	1,500	0.62	0.38	63.4	0.965	0.823	0.700	0.410	0.877	12.3%
1926	D	3,664	6,789	1.869	2,275	1,369	0.62	0.38	63.4	0.969	0.826	0.715	0.398	0.881	11.9%
1927	W	5,344	8,201	1.544	3,372	1,972	0.63	0.37	57.1	0.951	0.673	0.637	0.099	0.776	22.4%
1928	A	3,983	7,462	1.888	2,471	1,512	0.62	0.38	60.2	0.965	0.774	0.701	0.243	0.846	15.4%
1929	C	2,017	2,855	1.338	1,280	736	0.63	0.37	60.6	0.968	0.790	0.785	0.021	0.862	13.8%
1930	D	2,420	4,017	1.662	1,514	908	0.63	0.37	63.4	0.963	0.828	0.789	0.255	0.886	11.4%
1931	C	1,983	3,143	1.610	1,243	740	0.63	0.37	60.6	0.968	0.798	0.786	0.046	0.869	13.1%
1932	D	4,504	5,546	1.240	2,880	1,823	0.64	0.36	63.4	0.952	0.781	0.672	0.333	0.846	15.4%
1933	C	2,807	4,302	1.550	1,767	1,039	0.63	0.37	60.6	0.979	0.777	0.751	0.105	0.852	14.8%
1934	C	1,983	3,748	1.920	1,226	757	0.62	0.38	60.6	0.966	0.806	0.789	0.077	0.875	12.5%
1935	B	6,369	8,739	1.379	4,050	2,319	0.64	0.36	59.7	0.941	0.703	0.589	0.279	0.790	21.0%
1936	B	6,403	8,470	1.329	4,081	2,322	0.64	0.36	59.7	0.941	0.698	0.587	0.265	0.785	21.5%
1937	B	7,932	8,117	1.027	1,985	5,968	0.25	0.75	59.7	0.831	0.802	0.737	0.247	0.824	17.6%
1938	W	18,049	8,504	0.472	5,114	12,935	0.28	0.72	57.1	0.822	0.569	0.513	0.115	0.607	39.3%
1939	D	2,891	4,252	1.487	1,826	1,065	0.63	0.37	63.4	0.979	0.814	0.747	0.267	0.875	12.5%
1940	A	5,697	8,386	1.480	3,605	2,092	0.63	0.37	60.2	0.948	0.731	0.620	0.290	0.810	19.0%
1941	W	10,083	9,411	0.936	2,559	7,525	0.25	0.75	57.1	0.785	0.744	0.695	0.181	0.774	22.6%
1942	W	8,907	9,025	1.313	4,406	2,501	0.64	0.36	57.1	0.935	0.825	0.583	0.141	0.738	26.2%
1943	W	7,915	9,562	1.213	1,809	6,048	0.24	0.76	57.1	0.829	0.787	0.744	0.169	0.818	18.1%
1944	D	3,428	4,353	1.281	2,187	1,241	0.64	0.36	63.4	0.973	0.797	0.721	0.272	0.861	13.9%
1945	B	5,781	8,369	1.108	3,722	2,060	0.64	0.36	59.7	0.949	0.673	0.612	0.158	0.771	22.9%
1946	B	5,344	8,067	1.142	3,434	1,910	0.64	0.36	59.7	0.953	0.685	0.632	0.143	0.781	21.9%
1947	D	3,664	5,008	1.379	2,327	1,337	0.64	0.36	63.4	0.970	0.799	0.711	0.305	0.862	13.8%
1948	B	3,983	6,924	1.752	2,487	1,496	0.62	0.38	59.7	0.966	0.758	0.700	0.186	0.835	16.5%
1949	D	3,983	5,193	1.314	2,538	1,445	0.64	0.36	63.4	0.967	0.792	0.696	0.315	0.855	14.5%
1950	B	3,983	6,353	1.608	2,504	1,479	0.63	0.37	59.7	0.966	0.746	0.689	0.157	0.828	17.2%
1951	A	5,344	6,487	1.221	3,422	1,922	0.64	0.36	60.2	0.953	0.704	0.633	0.193	0.794	20.6%
1952	W	10,840	8,873	0.821	2,829	8,010	0.26	0.74	57.1	0.770	0.719	0.675	0.134	0.757	24.3%
1953	W	3,983	5,748	1.455	2,522	1,461	0.63	0.37	57.1	0.987	0.697	0.697	0.000	0.796	20.4%
1954	A	3,983	7,462	1.888	2,471	1,512	0.62	0.38	60.2	0.965	0.774	0.701	0.243	0.846	15.4%
1955	D	2,807	3,781	1.363	1,782	1,024	0.64	0.36	63.4	0.960	0.810	0.750	0.243	0.872	12.8%
1956	W	6,201	8,083	1.310	3,956	2,245	0.64	0.36	57.1	0.943	0.633	0.595	0.093	0.745	25.5%
1957	A	3,983	6,554	1.659	2,496	1,465	0.63	0.37	60.2	0.966	0.758	0.699	0.197	0.836	16.4%
1958	W	14,907	9,784	0.656	4,049	10,857	0.27	0.73	57.1	0.685	0.663	0.589	0.179	0.679	32.1%
1959	B	2,807	3,899	1.405	1,779	1,028	0.63	0.37	59.7	0.960	0.758	0.750	0.032	0.839	16.1%
1960	D	2,420	4,134	1.731	1,510	910	0.62	0.38	63.4	0.963	0.829	0.769	0.261	0.887	11.3%
1961	D	1,983	3,647	1.869	1,229	755	0.62	0.38	63.4	0.968	0.839	0.789	0.236	0.896	10.4%
1962	B	4,201	5,897	1.366	2,671	1,530	0.64	0.36	59.7	0.965	0.725	0.687	0.124	0.813	18.7%
1963	W	5,344	8,201	1.544	3,372	1,972	0.63	0.37	57.1	0.951	0.673	0.637	0.099	0.776	22.4%
1964	D	2,807	3,613	1.302	1,787	1,019	0.64	0.36	63.4	0.960	0.808	0.749	0.234	0.870	13.0%
1965	W	6,201	8,638	1.400	3,940	2,262	0.64	0.36	57.1	0.943	0.646	0.597	0.122	0.754	24.6%
1966	B	3,983	5,075	1.284	2,541	1,442	0.64	0.36	59.7	0.967	0.724	0.696	0.092	0.812	18.8%
1967	W	13,613	9,648	0.710	3,651	9,962	0.27	0.73	57.1	0.712	0.683	0.617	0.173	0.704	29.6%
1968	B	3,664	5,361	1.476	2,317	1,347	0.63	0.37	59.7	0.970	0.743	0.712	0.107	0.826	17.4%
1969	W	20,923	7,613	0.364	6,071	14,852	0.29	0.71	57.1	0.585	0.484	0.445	0.089	0.541	45.9%
1970	W	5,344	6,705	1.262	3,416	1,929	0.64	0.36	57.1	0.953	0.642	0.634	0.023	0.754	24.6%
1971	W	3,983	6,705	1.687	2,493	1,489	0.63	0.37	57.1	0.986	0.706	0.699	0.023	0.803	19.7%
1972	B	3,664	4,806	1.323	2,333	1,331	0.64	0.36	58.9	0.971	0.720	0.711	0.032	0.811	18.9%
1973	A	5,680	7,548	1.336	3,619	2,052	0.64	0.36	59.2	0.949	0.691	0.619	0.189	0.785	21.5%
1974	W	7,663	9,428	1.235	1,798	5,865	0.23	0.77	56.9	0.834	0.786	0.749	0.150	0.823	17.7%
1975	W	6,621	8,873	1.347	4,217	2,404	0.64	0.36	53.7	0.938	0.577	0.577	0.000	0.708	29.2%
1976	C	1,983	3,176	1.626	1,242	741	0.63	0.37	57.8	0.988	0.788	0.788	0.000	0.863	13.7%
1977	C	1,983	3,159	1.619	1,243	740	0.63	0.37	62.0	0.988	0.815	0.788	0.129	0.880	12.0%
1978	A	14,923	7,613	0.511	4,189	10,734	0.28	0.72	61.4	0.888	0.714	0.579	0.321	0.886	30.4%
1979	B	5,344	8,958	1.310	3,408	1,936	0.64	0.36	60.5	0.952	0.720	0.634	0.235	0.804	19.9%
1980	A	8,722	7,058	1.055	4,339	2,383	0.65	0.35	60.1	0.939	0.662	0.568	0.217	0.760	24.0%
1981	D	3,664	5,563	1.532	2,311	1,353	0.63	0.37	64.6	0.970	0.828	0.712	0.404	0.881	11.9%
1982	W	27,023	9,277	0.344	7,881	19,142	0.29	0.71	52.8	0.436	0.317	0.317	0.000	0.401	59.9%
1983	W	20,736	7,075	0.342	6,047	14,691	0.29	0.71	57.2	0.570	0.474	0.447	0.048	0.542	45.8%
1984	W	5,344	8,958	1.310	3,408	1,936	0.64	0.36	60.7	0.952	0.725	0.634	0.247	0.807	19.3%
1985	D	2,807	4,353	1.569	1,766	1,041	0.63	0.37	62.5	0.979	0.806	0.751	0.219	0.870	13.0%
1986	W	9,814	7,663	0.783	2,583	7,231	0.26	0.74	61.3	0.794	0.790	0.693	0.318	0.793	20.7%
1987	D	2,033	3,613	1.805	1,264	770	0.62	0.38	62.3	0.987	0.823	0.787	0.170	0.885	11.5%
1988	C	1,983	2,956	1.516	1,249	734	0.63	0.37	62.1	0.986	0.814	0.786	0.125	0.879	12.1%
1989	D	2,420	5,764	2.413	1,482	958	0.60	0.40	64.1	0.982	0.860	0.773	0.385	0.908	9.2%
1990	C	1,983	3,897	1.895	1,227	758	0.62	0.38	60.6	0.986	0.805	0.789	0.075	0.875	12.5%
1991	C	2,437	4,420	1.838	1,513	924	0.62	0.38	60.6	0.983	0.795	0.789	0.111	0.866	13.4%
1992	C	2,252	3,899	1.756	1,403	849	0.62	0.38	60.6	0.985	0.796	0.777	0.085	0.867	13.3%

Year	MAY Vernalis Flows	CVP+SWP exports	exp/v-cd	Calculated Stockton Q	UOldR Flow	p3 Stkn	p2 UOld	Temp @ Jersey Pt	m2	Calculated Mortality m34	m3	m4	m234	Calculated Survival s234	Weighted (April + June) total survival
1922	5,936	8,896	1.507	3,520	2,416	0.59	0.41	66.6	0.938	0.884	0.826	0.691	0.908	9.4%	14.2%
1923	5,156	6,457	1.260	3,097	2,058	0.60	0.40	66.0	0.949	0.839	0.858	0.531	0.883	11.7%	15.1%
1924	1,870	1,073	0.584	1,159	711	0.62	0.38	63.9	0.989	0.822	0.794	0.134	0.885	11.5%	12.3%
1925	3,822	5,253	1.398	2,279	1,543	0.60	0.40	67.3	0.964	0.870	0.715	0.546	0.908	9.2%	10.6%
1926	3,545	5,090	1.449	2,106	1,439	0.59	0.41	67.3	0.967	0.874	0.727	0.537	0.912	8.8%	10.2%
1927	5,156	8,538	1.666	3,030	2,126	0.59	0.41	64.2	0.947	0.841	0.661	0.532	0.885	11.5%	16.4%
1928	3,822	6,587	1.738	2,235	1,567	0.58	0.42	66.6	0.963	0.879	0.718	0.573	0.914	8.6%	11.6%
1929	1,887	3,334	1.797	1,098	790	0.58	0.42	63.9	0.987	0.849	0.798	0.249	0.907	9.3%	11.3%
1930	1,952	3,757	1.957	1,124	827	0.58	0.42	67.3	0.986	0.892	0.797	0.469	0.932	6.8%	8.9%
1931	1,984	3,432	1.757	1,156	828	0.58	0.42	63.9	0.986	0.847	0.794	0.254	0.905	9.5%	11.1%
1932	3,871	5,074	1.322	2,316	1,555	0.60	0.40	67.3	0.964	0.867	0.712	0.537	0.908	9.4%	12.1%
1933	2,883	3,171	1.198	1,614	1,089	0.60	0.40	63.9	0.978	0.819	0.762	0.241	0.883	11.7%	13.1%
1934	1,984	3,253	1.666	1,162	822	0.59	0.41	63.9	0.986	0.844	0.794	0.245	0.903	9.7%	11.0%
1935	6,050	5,936	0.986	3,689	2,361	0.61	0.39	66.0	0.940	0.809	0.614	0.505	0.860	14.0%	17.2%
1936	5,156	6,522	1.273	3,095	2,080	0.60	0.40	66.0	0.949	0.840	0.657	0.534	0.883	11.7%	16.1%
1937	8,132	6,961	0.859	2,099	6,032	0.26	0.74	66.0	0.829	0.879	0.727	0.557	0.842	15.8%	16.6%
1938	22,972	9,660	0.404	6,900	17,072	0.29	0.71	64.2	0.498	0.748	0.386	0.589	0.570	43.0%	41.3%
1939	2,883	3,992	1.392	1,597	1,086	0.60	0.40	67.3	0.978	0.873	0.763	0.466	0.916	8.4%	10.3%
1940	5,156	6,473	1.263	3,097	2,059	0.60	0.40	66.6	0.949	0.851	0.656	0.567	0.890	11.0%	14.6%
1941	8,579	9,937	1.041	2,367	7,212	0.25	0.75	64.2	0.794	0.884	0.708	0.803	0.816	18.4%	20.3%
1942	8,936	8,896	1.507	3,520	2,416	0.59	0.41	64.2	0.938	0.832	0.626	0.550	0.875	12.5%	18.7%
1943	6,180	8,555	1.391	3,888	2,492	0.60	0.40	64.2	0.936	0.820	0.614	0.533	0.867	13.3%	15.5%
1944	2,978	3,952	1.342	1,777	1,199	0.60	0.40	67.3	0.974	0.870	0.750	0.479	0.912	8.8%	11.1%
1945	3,871	5,448	1.419	2,304	1,567	0.60	0.40	66.0	0.963	0.851	0.713	0.480	0.898	10.4%	16.0%
1946	3,871	5,481	1.428	2,303	1,568	0.59	0.41	66.0	0.963	0.851	0.713	0.481	0.897	10.3%	15.6%
1947	2,883	3,992	1.392	1,597	1,086	0.60	0.40	67.3	0.978	0.873	0.763	0.466	0.916	8.4%	10.9%
1948	3,822	7,888	2.061	2,193	1,629	0.57	0.43	66.0	0.962	0.889	0.721	0.604	0.920	8.0%	11.8%
1949	2,976	4,980	1.685	1,744	1,232	0.59	0.41	67.3	0.973	0.884	0.752	0.531	0.921	7.9%	10.9%
1950	3,822	5,461	1.446	2,271	1,551	0.59	0.41	66.0	0.964	0.852	0.715	0.481	0.898	10.2%	13.4%
1951	5,156	7,335	1.431	3,069	2,087	0.60	0.40	66.6	0.948	0.867	0.658	0.611	0.900	10.0%	14.8%
1952	15,450	9,921	0.643	4,210	11,240	0.27	0.73	64.2	0.673	0.832	0.577	0.602	0.717	28.3%	26.5%
1953	3,822	7,888	2.061	2,193	1,629	0.57	0.43	64.2	0.962	0.860	0.721	0.499	0.903	9.7%	14.5%
1954	3,822	7,644	2.017	2,201	1,621	0.58	0.42	66.6	0.962	0.896	0.720	0.627	0.924	7.6%	11.1%
1955	2,883	4,180	1.576	1,581	1,102	0.59	0.41	67.3	0.977	0.880	0.764	0.491	0.920	8.0%	10.2%
1956	6,017	8,981	1.497	3,570	2,447	0.59	0.41	64.2	0.937	0.832	0.623	0.554	0.874	12.6%	18.4%
1957	3,822	6,164	1.626	2,249	1,573	0.59	0.41	66.6	0.963	0.873	0.717	0.551	0.910	9.0%	12.3%
1958	13,173	10,897	0.829	3,435	9,738	0.26	0.74	64.2	0.718	0.872	0.632	0.652	0.758	24.2%	27.7%
1959	2,883	3,887	1.466	1,591	1,093	0.59	0.41	66.0	0.978	0.858	0.763	0.400	0.907	9.3%	12.4%
1960	1,870	3,562	1.937	1,079	782	0.58	0.42	67.3	0.987	0.892	0.800	0.459	0.932	6.8%	8.8%
1961	1,903	3,204	1.712	1,111	792	0.58	0.42	67.3	0.987	0.887	0.797	0.441	0.928	7.2%	8.6%
1962	3,822	5,546	1.463	2,269	1,553	0.59	0.41	66.0	0.964	0.853	0.715	0.485	0.898	10.2%	14.0%
1963	5,156	8,538	1.666	3,030	2,126	0.59	0.41	64.2	0.947	0.841	0.661	0.532	0.885	11.5%	16.4%
1964	2,883	3,952	1.490	1,589	1,095	0.59	0.41	67.3	0.978	0.877	0.764	0.479	0.918	8.2%	10.3%
1965	5,936	7,953	1.347	3,551	2,385	0.60	0.40	64.2	0.939	0.813	0.624	0.502	0.864	13.6%	18.8%
1966	2,976	4,983	1.696	1,743	1,233	0.59	0.41	66.0	0.973	0.866	0.753	0.456	0.910	9.0%	13.4%
1967	18,003	10,262	0.643	4,362	11,641	0.27	0.73	64.2	0.661	0.835	0.567	0.620	0.709	29.1%	29.3%
1968	2,883	3,854	1.453	1,592	1,091	0.59	0.41	66.0	0.978	0.858	0.763	0.398	0.906	9.4%	13.0%
1969	26,135	9,221	0.353	7,606	18,529	0.29	0.71	66.4	0.455	0.798	0.336	0.695	0.554	44.6%	45.1%
1970	5,156	6,131	1.197	3,108	2,048	0.60	0.40	61.2	0.949	0.736	0.656	0.234	0.821	17.9%	20.9%
1971	3,822	7,888	2.061	2,193	1,629	0.57	0.43	64.2	0.962	0.860	0.721	0.499	0.903	9.7%	14.2%
1972	2,883	4,098	1.545	1,584	1,099	0.59	0.41	66.0	0.977	0.861	0.764	0.411	0.909	9.1%	13.5%
1973	5,156	6,717	1.311	3,069	2,067	0.60	0.40	66.3	0.948	0.850	0.657	0.562	0.889	11.1%	15.8%
1974	5,936	8,896	1.507	3,520	2,416	0.59	0.41	66.1	0.938	0.873	0.626	0.661	0.900	10.0%	13.5%
1975	5,936	8,896	1.507	3,520	2,416	0.59	0.41	61.5	0.938	0.773	0.626	0.392	0.840	16.0%	21.9%
1976	1,870	3,367	1.831	1,085	785	0.58	0.42	65.8	0.987	0.872	0.799	0.362	0.920	8.0%	10.8%
1977	1,870	980	0.522	1,163	707	0.62	0.38	62.3	0.989	0.801	0.794	0.034	0.872	12.8%	12.4%
1978	10,831	8,408	0.779	2,856	7,976	0.26	0.74	66.9	0.771	0.897	0.674	0.683	0.804	19.6%	24.5%
1979	5,156	6,213	1.212	3,105	2,050	0.60	0.40	66.0	0.949	0.834	0.656	0.519	0.880	12.0%	15.4%
1980	6,619	7,693	1.168	3,998	2,621	0.60	0.40	66.6	0.932	0.849	0.592	0.629	0.882	11.8%	17.3%
1981	2,883	3,724	1.404	1,596	1,087	0.59	0.41	68.7	0.978	0.893	0.763	0.550	0.928	7.2%	9.4%
1982	15,158	10,913	0.721	4,056	11,101	0.27	0.73	65.1	0.677	0.879	0.588	0.706	0.731	26.9%	41.7%
1983	19,077	7,758	0.407	5,483	13,594	0.29	0.71	61.3	0.603	0.652	0.487	0.323	0.617	38.3%	41.7%
1984	5,156	6,359	1.241	3,100	2,055	0.60	0.40	66.0	0.949	0.837	0.656	0.526	0.882	11.8%	15.2%
1985	2,883	4,456	1.680	1,572	1,111	0.59	0.41	65.1	0.977	0.853	0.765	0.376	0.905	9.5%	11.1%
1986	8,067	8,343	1.038	1,993	6,074	0.25	0.75	65.8	0.828	0.898	0.735	0.616	0.845	15.5%	17.8%
1987	1,870	3,041	1.654	1,095	775	0.59	0.41	66.6	0.987	0.901	0.799	0.509	0.937	6.3%	8.6%
1988	1,870	3,269	1.778	1,088	782	0.58	0.42	63.7	0.987	0.846	0.799	0.234	0.905	9.5%	10.7%
1989	1,887	4,147	2.236	1,070	817	0.57	0.43	66.7	0.986	0.891	0.800	0.454	0.932	6.8%	7.9%
1990	1,952	2,976	1.550	1,150	802	0.59	0.41	63.9	0.986	0.842	0.795	0.231	0.901	9.9%	11.1%
1991	1,984	3,171	1.624	1,164	820	0.59	0.41	63.9	0.986	0.843	0.794	0.241	0.902	9.8%	11.4%
1992	1,984	3,236	1.658	1,162	822	0.59	0.41	63.9	0.986	0.844	0.794	0.244	0.903	9.7%	11.3%
														Average:	15.80%

Calculations- San Joaquin River Fall

Run Smolt Survival Model WITH BARRIER

C8 ='Study 469 Flow Data'!AB7
D8 ='Study 469 Flow Data'!G7 (HIDDEN)
E8 ='Study 469 Flow Data'!Q7 (HIDDEN)
F8 =D8+E8
G8 =F8/(C8-0.03*$R$2)
H8 =IF(C8<$R$1,(0.47*(0.3137*C8-0.0156*$R$2-0.0625*F8)+0.53*C8),(0.3137*C8-0.0156*$R$2-0.0625*F8))
I8 =C8-H8
J8 =H8/C8
K8 =I8/C8
M8 =(1.01045-0.00003*I8)
N8 =(O8+P8)-(O8*P8)
O8 =IF((0.87634-0.000071*H8)<0,0,(0.87634-0.000071*H8))
P8 =IF((-3.65867+0.058492*L8+0.000051*F8)<0,0,(-3.65867+0.058492*L8+0.000051*F8))
Q8 =((K8*M8)+(J8*N8))
R8 =(1-Q8)

T8 ='Study 469 Flow Data'!AC7
U8 ='Study 469 Flow Data'!H7 (HIDDEN)
V8 ='Study 469 Flow Data'!R7 (HIDDEN)
W8 =U8+V8
X8 =W8/(T8-0.03*$R$3)
Y8 =IF(T8<$R$1,(0.52*(0.3137*T8-0.0156*$R$3-0.0625*W8)+0.48*T8),(0.3137*T8-0.0156*$R$3-0.0625*W8))
Z8 =T8-Y8
AA8 =Y8/T8
AB8 =Z8/T8
AD8 =(1.01045-0.00003*Z8)
AE8 =(AF8+AG8)-(AF8*AG8)
AF8 =IF((0.87634-0.000071*Y8)<0,0,(0.87634-0.000071*Y8))
AG8 =IF((-3.65867+0.058492*AC8+0.000051*W8)<0,0,(-3.65867+0.058492*AC8+0.000051*W8))
AH8 =((AB8*AD8)+(AA8*AE8))
AI8 =(1-AH8)
AK8 =0.45*G94+0.55*AI8

C-032372

	A		C	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Study		n Joaquin River Fall Run Salmon Smolt Survival Model WITHOUT BARRIER AT HEAD OF OLD RIVER													
2			Consumptive Depletion for April		1053.00 cfs				San Joaquin River temperatures based on limited historical data from USBR							
3			Consumptive Depletion for May		1053.00 cfs											
4	APRIL	Water														Calculated
5		Year	Vernalis	CVP + SWP		Calculated				Temp @		Calculated Mortality				Survivability
6	Year	Type	Flows	exports	exp/v-cd	Stockton Q	OldR Flo	p3 Stkn	p2 UOld	Jersey Pt.	m2	m34	m3	m4	m234	s234
7	1922	A	6,201	8,487	1.376	1,396	4,803	0.23	0.77	60.2	0.866	0.843	0.777	0.295	0.861	13.9%
8	1923	B	5,344	8,033	1.512	1,158	4,186	0.22	0.78	59.7	0.885	0.844	0.794	0.243	0.876	12.4%
9	1924	C	1,963	2,958	1.516	421	1,562	0.21	0.79	60.6	0.964	0.852	0.846	0.037	0.940	6.0%
10	1925	D	3,963	7,058	1.786	792	3,191	0.20	0.80	63.4	0.915	0.894	0.820	0.410	0.911	8.9%
11	1926	D	3,664	6,789	1.869	709	2,956	0.19	0.81	63.4	0.922	0.895	0.826	0.398	0.917	8.3%
12	1927	W	5,344	8,201	1.544	1,147	4,197	0.21	0.79	57.1	0.885	0.815	0.795	0.099	0.870	13.0%
13	1928	A	3,963	7,462	1.888	767	3,216	0.19	0.81	60.2	0.914	0.865	0.822	0.243	0.905	9.5%
14	1929	C	2,017	2,665	1.338	450	1,566	0.22	0.78	60.6	0.963	0.848	0.844	0.021	0.938	6.2%
15	1930	D	2,420	4,017	1.662	492	1,928	0.20	0.80	63.4	0.953	0.862	0.841	0.255	0.938	6.2%
16	1931	C	1,963	3,143	1.610	409	1,574	0.21	0.79	60.6	0.963	0.854	0.847	0.046	0.941	5.9%
17	1932	D	4,504	5,546	1.240	1,050	3,464	0.23	0.77	63.4	0.907	0.868	0.802	0.333	0.898	10.2%
18	1933	C	2,807	4,302	1.550	595	2,211	0.21	0.79	60.6	0.944	0.852	0.834	0.105	0.924	7.6%
19	1934	C	1,963	3,748	1.920	371	1,612	0.19	0.81	60.6	0.962	0.862	0.850	0.077	0.943	5.7%
20	1935	B	6,369	8,739	1.379	1,435	4,934	0.23	0.77	59.7	0.862	0.837	0.774	0.279	0.857	14.3%
21	1936	B	6,403	8,470	1.329	1,463	4,940	0.23	0.77	59.7	0.862	0.833	0.772	0.265	0.856	14.4%
22	1937	B	7,932	8,117	1.027	1,965	5,968	0.25	0.75	59.7	0.831	0.802	0.737	0.247	0.824	17.6%
23	1938	W	18,049	8,504	0.472	5,114	12,935	0.28	0.72	57.1	0.622	0.569	0.513	0.115	0.607	39.3%
24	1939	D	2,891	4,252	1.487	625	2,266	0.22	0.78	63.4	0.942	0.877	0.832	0.267	0.928	7.2%
25	1940	A	5,697	8,366	1.480	1,247	4,450	0.22	0.78	60.2	0.877	0.849	0.788	0.290	0.871	12.9%
26	1941	W	10,083	9,411	0.936	2,559	7,525	0.25	0.75	57.1	0.785	0.744	0.695	0.161	0.774	22.6%
27	1942	W	6,907	9,025	1.313	1,586	5,321	0.23	0.77	57.1	0.851	0.797	0.764	0.141	0.838	16.2%
28	1943	W	7,915	9,562	1.213	1,869	6,046	0.24	0.76	57.1	0.829	0.787	0.744	0.169	0.819	18.1%
29	1944	D	3,428	4,353	1.281	787	2,641	0.23	0.77	63.4	0.931	0.869	0.820	0.272	0.917	8.3%
30	1945	B	5,781	6,369	1.108	1,399	4,382	0.24	0.76	59.7	0.879	0.812	0.777	0.158	0.863	13.7%
31	1946	B	5,344	6,067	1.142	1,261	4,083	0.24	0.76	59.7	0.869	0.818	0.785	0.143	0.871	12.9%
32	1947	D	3,664	5,008	1.379	820	2,844	0.22	0.78	63.4	0.925	0.874	0.818	0.305	0.914	8.6%
33	1948	B	3,963	6,924	1.752	800	3,183	0.20	0.80	59.7	0.915	0.853	0.820	0.186	0.903	9.7%
34	1949	D	3,963	5,193	1.314	908	3,074	0.23	0.77	63.4	0.918	0.871	0.812	0.315	0.907	9.3%
35	1950	B	3,963	6,353	1.608	836	3,147	0.21	0.79	59.7	0.916	0.846	0.817	0.157	0.901	9.9%
36	1951	A	5,344	6,487	1.221	1,255	4,090	0.23	0.77	60.2	0.886	0.828	0.787	0.193	0.874	12.6%
37	1952	W	10,840	8,873	0.821	2,829	8,010	0.26	0.74	57.1	0.770	0.719	0.675	0.134	0.757	24.3%
38	1953	W	3,963	5,746	1.455	874	3,109	0.22	0.78	57.1	0.917	0.814	0.814	0.000	0.895	10.5%
39	1954	A	3,963	7,462	1.888	767	3,216	0.19	0.81	60.2	0.914	0.865	0.822	0.243	0.905	9.5%
40	1955	D	2,807	3,781	1.363	628	2,179	0.22	0.78	63.4	0.945	0.873	0.832	0.243	0.929	7.1%
41	1956	W	6,201	6,063	1.310	1,424	4,778	0.23	0.77	57.1	0.867	0.796	0.775	0.093	0.851	14.9%
42	1957	A	3,963	6,554	1.659	823	3,160	0.21	0.79	60.2	0.916	0.854	0.818	0.197	0.903	9.7%
43	1958	W	14,907	9,764	0.656	4,049	10,857	0.27	0.73	57.1	0.685	0.663	0.589	0.179	0.679	32.1%
44	1959	B	2,807	3,899	1.405	620	2,186	0.22	0.78	59.7	0.945	0.836	0.832	0.032	0.921	7.9%
45	1960	D	2,420	4,134	1.731	484	1,936	0.20	0.80	63.4	0.952	0.883	0.842	0.261	0.939	6.1%
46	1961	D	1,963	3,847	1.869	378	1,605	0.19	0.81	63.4	0.962	0.885	0.850	0.236	0.946	5.2%
47	1962	B	4,201	5,887	1.366	946	3,256	0.23	0.77	59.7	0.913	0.833	0.809	0.124	0.895	10.5%
48	1963	W	5,344	8,201	1.544	1,147	4,197	0.21	0.79	57.1	0.886	0.815	0.796	0.099	0.870	13.0%
49	1964	D	2,807	3,613	1.302	636	2,168	0.23	0.77	63.4	0.945	0.871	0.831	0.234	0.928	7.2%
50	1965	W	6,201	8,636	1.400	1,369	4,812	0.22	0.78	57.1	0.866	0.806	0.778	0.122	0.852	14.8%
51	1966	B	3,983	5,075	1.284	916	3,067	0.23	0.77	59.7	0.918	0.829	0.811	0.082	0.898	10.2%
52	1967	W	13,613	9,646	0.710	3,651	9,962	0.27	0.73	57.1	0.712	0.683	0.617	0.173	0.704	29.6%
53	1968	B	3,664	5,361	1.476	798	2,866	0.22	0.78	59.7	0.924	0.839	0.820	0.107	0.908	9.4%
54	1969	W	20,923	7,613	0.364	6,071	14,852	0.29	0.71	57.1	0.565	0.464	0.446	0.069	0.541	45.9%
55	1970	W	5,344	6,705	1.262	1,241	4,103	0.23	0.77	57.1	0.867	0.793	0.788	0.023	0.865	13.5%
56	1971	W	3,963	6,705	1.697	814	3,169	0.20	0.80	57.1	0.915	0.823	0.819	0.023	0.896	10.4%
57	1972	B	3,664	4,606	1.323	832	2,831	0.23	0.77	58.9	0.926	0.823	0.817	0.032	0.902	9.8%
58	1973	A	5,680	7,546	1.336	1,294	4,386	0.23	0.77	59.2	0.879	0.825	0.784	0.189	0.867	13.3%
59	1974	W	7,663	9,428	1.235	1,798	5,865	0.23	0.77	56.9	0.834	0.786	0.749	0.150	0.823	17.7%
60	1975	W	6,621	8,873	1.347	1,506	5,115	0.23	0.77	53.7	0.857	0.769	0.769	0.000	0.837	16.3%
61	1976	C	1,963	3,176	1.628	407	1,576	0.21	0.79	57.8	0.963	0.847	0.847	0.000	0.939	6.1%
62	1977	C	1,963	3,159	1.619	408	1,575	0.21	0.79	62.0	0.963	0.867	0.847	0.129	0.943	5.7%
63	1978	A	14,923	7,613	0.511	4,189	10,734	0.28	0.72	61.4	0.686	0.714	0.579	0.321	0.696	30.4%
64	1979	B	5,344	6,958	1.310	1,225	4,119	0.23	0.77	60.5	0.887	0.839	0.789	0.235	0.876	12.4%
65	1980	A	6,722	7,058	1.055	1,651	5,071	0.25	0.75	60.1	0.858	0.811	0.759	0.217	0.847	15.3%
66	1981	D	3,664	5,563	1.532	785	2,878	0.21	0.79	64.6	0.924	0.893	0.821	0.404	0.917	8.3%
67	1982	W	27,023	9,277	0.344	7,881	19,142	0.29	0.71	52.8	0.436	0.317	0.317	0.000	0.401	59.9%
68	1983	W	20,738	7,075	0.342	6,047	14,691	0.29	0.71	57.2	0.570	0.474	0.447	0.046	0.542	45.8%
69	1984	W	5,344	6,958	1.310	1,225	4,119	0.23	0.77	60.7	0.887	0.841	0.789	0.247	0.876	12.4%
70	1985	D	2,807	4,353	1.569	592	2,215	0.21	0.79	62.5	0.944	0.871	0.834	0.219	0.929	7.1%
71	1986	W	9,814	7,663	0.783	2,583	7,231	0.26	0.74	61.3	0.794	0.790	0.693	0.318	0.793	20.7%
72	1987	D	2,033	3,613	1.805	396	1,638	0.19	0.81	62.3	0.961	0.874	0.848	0.170	0.944	5.6%
73	1988	C	1,963	2,958	1.516	421	1,562	0.21	0.79	62.1	0.964	0.866	0.846	0.125	0.943	5.7%
74	1989	D	2,420	5,764	2.413	382	2,038	0.16	0.84	64.1	0.949	0.907	0.849	0.385	0.943	5.7%
75	1990	C	1,963	3,697	1.895	375	1,608	0.19	0.81	60.6	0.962	0.861	0.850	0.075	0.943	5.7%
76	1991	C	2,437	4,420	1.838	472	1,965	0.19	0.81	60.6	0.951	0.860	0.843	0.111	0.934	6.6%
77	1992	C	2,252	3,899	1.756	446	1,806	0.20	0.80	60.6	0.956	0.858	0.845	0.085	0.937	6.3%

	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AK
	MAY												Calculated	
	Vernalis	CVP + SWP		Calculated				Temp @	Calculated Mortality				Survivability	Weighted
Year	Flows	exports	exp/v-cd	Stockton	UOldR Flow	p3 Stkn	p2 UOld	Jersey Pt.	m2	m34	m3	m4	m234	s234	total survival
1922	5,936	8,896	1.507	1,290	4646	0.22	0.78	66.6	0.871	0.933	0.785	0.691	0.885	11.5%	12.6%
1923	5,156	6,457	1.260	1,197	3958	0.23	0.77	66.0	0.892	0.902	0.791	0.531	0.894	10.6%	11.4%
1924	1,870	1,073	0.584	503	1367	0.27	0.73	63.9	0.969	0.862	0.841	0.134	0.941	5.9%	6.0%
1925	3,822	5,253	1.386	854	2968	0.22	0.78	67.3	0.921	0.916	0.816	0.546	0.920	8.0%	8.4%
1926	3,546	5,090	1.449	778	2768	0.22	0.78	67.3	0.927	0.917	0.821	0.537	0.925	7.5%	7.9%
1927	5,156	8,538	1.666	1,067	4088	0.21	0.79	64.2	0.888	0.907	0.801	0.532	0.892	10.8%	11.8%
1928	3,822	6,587	1.738	771	3051	0.20	0.80	66.6	0.919	0.924	0.822	0.573	0.920	8.0%	8.7%
1929	1,887	3,334	1.797	367	1520	0.19	0.81	63.9	0.965	0.886	0.850	0.249	0.950	5.0%	5.6%
1930	1,952	3,757	1.967	361	1591	0.18	0.82	67.3	0.963	0.921	0.851	0.469	0.955	4.5%	5.3%
1931	1,984	3,432	1.757	392	1593	0.20	0.80	63.9	0.963	0.887	0.849	0.254	0.948	5.2%	5.5%
1932	3,871	5,074	1.322	861	2990	0.23	0.77	67.3	0.921	0.914	0.814	0.537	0.919	8.1%	9.0%
1933	2,683	3,171	1.196	627	2056	0.23	0.77	63.9	0.949	0.872	0.832	0.241	0.931	6.9%	7.2%
1934	1,984	3,253	1.666	403	1581	0.20	0.80	63.9	0.963	0.885	0.848	0.245	0.947	5.3%	5.5%
1935	6,050	5,936	0.986	1,510	4540	0.25	0.75	66.0	0.874	0.886	0.769	0.505	0.877	12.3%	13.2%
1936	5,156	6,522	1.273	1,193	3962	0.23	0.77	66.0	0.892	0.903	0.792	0.534	0.894	10.6%	12.3%
1937	8,132	6,961	0.859	2,099	6032	0.26	0.74	66.0	0.829	0.879	0.727	0.557	0.842	15.8%	16.6%
1938	23,972	9,660	0.404	6,900	17072	0.29	0.71	64.2	0.496	0.748	0.386	0.589	0.570	43.0%	41.3%
1939	2,683	3,692	1.392	595	2089	0.22	0.78	67.3	0.946	0.911	0.834	0.466	0.940	6.0%	6.5%
1940	5,156	6,473	1.263	1,196	3959	0.23	0.77	66.6	0.892	0.910	0.791	0.567	0.896	10.4%	11.6%
1941	9,579	9,937	1.041	2,367	7212	0.25	0.75	64.2	0.794	0.884	0.706	0.603	0.816	18.4%	20.3%
1942	5,936	8,896	1.507	1,290	4646	0.22	0.78	64.2	0.871	0.903	0.785	0.550	0.878	12.2%	14.0%
1943	6,180	8,555	1.391	1,388	4792	0.22	0.78	64.2	0.867	0.896	0.778	0.533	0.873	12.7%	15.1%
1944	2,976	3,952	1.342	670	2306	0.23	0.77	67.3	0.941	0.911	0.829	0.479	0.934	6.6%	7.3%
1945	3,671	5,448	1.419	857	3013	0.22	0.78	66.0	0.920	0.904	0.815	0.480	0.916	8.4%	10.8%
1946	3,671	5,481	1.428	856	3015	0.22	0.78	66.0	0.920	0.904	0.816	0.481	0.917	8.3%	10.4%
1947	2,683	3,692	1.392	595	2089	0.22	0.78	67.3	0.946	0.911	0.834	0.466	0.940	6.0%	7.2%
1948	3,822	7,886	2.061	690	3132	0.18	0.82	66.0	0.916	0.932	0.827	0.604	0.919	8.1%	8.9%
1949	2,976	4,960	1.665	607	2369	0.20	0.80	67.3	0.939	0.922	0.833	0.531	0.936	6.4%	7.7%
1950	3,822	5,481	1.446	840	2982	0.22	0.78	66.0	0.921	0.905	0.817	0.481	0.917	8.3%	9.0%
1951	5,156	7,335	1.431	1,142	4013	0.22	0.78	66.6	0.890	0.920	0.795	0.611	0.897	10.3%	11.4%
1952	15,450	9,921	0.643	4,210	11240	0.27	0.73	64.2	0.673	0.832	0.577	0.602	0.717	28.3%	26.5%
1953	3,822	7,886	2.061	690	3132	0.18	0.82	64.2	0.916	0.913	0.827	0.499	0.916	8.4%	9.4%
1954	3,822	7,644	2.017	705	3117	0.18	0.82	66.6	0.917	0.935	0.826	0.627	0.920	8.0%	8.7%
1955	2,683	4,180	1.576	564	2119	0.21	0.79	67.3	0.947	0.917	0.836	0.491	0.941	5.9%	6.6%
1956	6,017	8,961	1.497	1,311	4706	0.22	0.78	64.2	0.869	0.903	0.783	0.554	0.877	12.3%	13.6%
1957	3,822	6,164	1.626	797	3025	0.21	0.79	66.6	0.920	0.919	0.820	0.551	0.920	8.0%	8.8%
1958	13,173	10,897	0.829	3,435	9738	0.26	0.74	64.2	0.718	0.872	0.632	0.652	0.758	24.2%	27.7%
1959	2,683	3,867	1.466	582	2101	0.22	0.78	66.0	0.947	0.901	0.835	0.400	0.937	6.3%	7.0%
1960	1,870	3,562	1.937	348	1523	0.19	0.81	67.3	0.965	0.920	0.852	0.459	0.956	4.4%	5.2%
1961	1,903	3,204	1.712	380	1523	0.20	0.80	67.3	0.965	0.916	0.849	0.441	0.956	4.5%	4.9%
1962	3,822	5,546	1.463	836	2986	0.22	0.78	66.0	0.921	0.906	0.817	0.465	0.918	8.2%	9.3%
1963	5,156	8,536	1.666	1,067	4088	0.21	0.79	64.2	0.888	0.907	0.801	0.532	0.892	10.8%	11.8%
1964	2,683	3,952	1.490	578	2105	0.22	0.78	67.3	0.947	0.914	0.835	0.479	0.940	6.0%	6.5%
1965	5,936	7,953	1.347	1,349	4587	0.23	0.77	64.2	0.873	0.891	0.781	0.502	0.877	12.3%	13.4%
1966	2,976	4,983	1.696	605	2371	0.20	0.80	66.0	0.939	0.909	0.833	0.456	0.933	6.7%	8.3%
1967	16,003	10,262	0.643	4,362	11641	0.27	0.73	64.2	0.661	0.835	0.567	0.620	0.709	29.1%	29.3%
1968	2,683	3,864	1.453	584	2099	0.22	0.78	66.0	0.947	0.901	0.835	0.398	0.937	6.3%	7.7%
1969	26,135	9,221	0.353	7,606	18529	0.29	0.71	66.4	0.455	0.796	0.336	0.695	0.554	44.6%	45.1%
1970	5,156	6,131	1.197	1,218	3938	0.24	0.76	61.2	0.892	0.839	0.790	0.234	0.880	12.0%	12.7%
1971	3,822	7,888	2.061	690	3132	0.18	0.82	64.2	0.916	0.913	0.827	0.499	0.916	8.4%	9.3%
1972	2,683	4,096	1.545	569	2114	0.21	0.79	66.0	0.947	0.903	0.836	0.411	0.938	6.2%	7.8%
1973	5,156	6,717	1.311	1,181	3974	0.23	0.77	66.3	0.891	0.909	0.792	0.562	0.895	10.5%	11.8%
1974	5,936	8,896	1.507	1,290	4646	0.22	0.78	66.1	0.871	0.927	0.785	0.661	0.883	11.7%	14.4%
1975	5,936	8,896	1.507	1,290	4646	0.22	0.78	61.5	0.871	0.869	0.785	0.392	0.871	12.9%	14.4%
1976	1,870	3,367	1.831	360	1510	0.19	0.81	65.8	0.965	0.905	0.851	0.362	0.954	4.6%	5.3%
1977	1,870	980	0.522	510	1360	0.27	0.73	62.3	0.970	0.846	0.840	0.034	0.936	6.4%	6.1%
1978	10,631	8,406	0.779	2,856	7976	0.26	0.74	66.9	0.771	0.897	0.674	0.683	0.804	19.6%	24.6%
1979	5,156	6,213	1.212	1,213	3943	0.24	0.76	66.0	0.892	0.899	0.790	0.519	0.894	10.6%	11.4%
1980	6,619	7,893	1.168	1,579	5040	0.24	0.76	66.6	0.869	0.913	0.764	0.629	0.872	12.8%	13.9%
1981	2,683	3,724	1.404	593	2091	0.22	0.78	66.7	0.948	0.925	0.834	0.550	0.943	5.7%	6.9%
1982	15,158	10,913	0.721	4,056	11101	0.27	0.73	65.1	0.677	0.879	0.588	0.706	0.731	26.9%	41.7%
1983	19,077	7,758	0.407	5,463	13594	0.29	0.71	61.3	0.603	0.652	0.487	0.323	0.617	38.3%	41.7%
1984	5,156	6,359	1.241	1,203	3952	0.23	0.77	66.0	0.892	0.901	0.791	0.526	0.894	10.6%	11.4%
1985	2,683	4,456	1.660	547	2137	0.20	0.80	65.1	0.946	0.899	0.838	0.378	0.937	6.3%	6.7%
1986	8,067	8,343	1.038	1,993	6074	0.25	0.75	65.8	0.826	0.898	0.735	0.616	0.845	15.5%	17.8%
1987	1,870	3,041	1.654	380	1490	0.20	0.80	68.6	0.966	0.926	0.849	0.509	0.958	4.2%	4.8%
1988	1,870	3,269	1.778	386	1504	0.20	0.80	63.7	0.965	0.885	0.850	0.234	0.950	5.0%	5.3%
1989	1,887	4,147	2.236	316	1570	0.17	0.83	66.7	0.963	0.920	0.854	0.454	0.956	4.4%	5.0%
1990	1,952	2,976	1.550	410	1542	0.21	0.79	63.9	0.964	0.882	0.847	0.231	0.947	5.3%	5.5%
1991	1,984	3,171	1.624	408	1576	0.21	0.79	63.9	0.963	0.884	0.847	0.241	0.947	5.3%	5.9%
1992	1,984	3,236	1.668	404	1580	0.20	0.80	63.9	0.963	0.885	0.848	0.244	0.947	5.3%	5.8%

Average: 12.22%

78 Formulas: San Joaquin River Fall Run Smolt Survival Model WITHOUT BARRIER

79 C7 ='Study 469 Flow Data'!AB7 — T7 ='Study 469 Flow Data'!AC7
80 D7 ='Study 469 Flow Data'!G7 (HIDDEN) — U7 ='Study 469 Flow Data'!H7 (HIDDEN)
81 E7 ='Study 469 Flow Data'!Q7 (HIDDEN) — V7 ='Study 469 Flow Data'!R7 (HIDDEN)
82 F7 =D7+E7 — W7 =U7+V7
83 G7 =F7/(C7-0.03*$H$2) — X7 =W7/(T7-0.03*$H$3)
84 H7 =IF((0.3137*C7-0.0156*$H$2-0.0625*F7)<0,0,(0.3137*C7-0.0156*$H$2-0.0625*F7)) — Y7 =IF((0.3137*T7-0.0156*$H$3-0.0625*W7)<0,0,(0.3137*T7-0.0156*$H$3-0.0625*W7))
85 I7 =C7-H7 — Z7 =T7-Y7
86 J7 =H7/C7 — AA7 =Y7/T7
87 K7 =I7/C7 — AB7 =Z7/T7
88 M7 =(1.01045-0.00003*I7) — AD7 =(1.01045-0.00003*Z7)
89 N7 =(O7+P7)-(O7*P7) — AE7 =(AF7+AG7)-(AF7*AG7)
90 O7 =(0.87634-0.000071*H7) — AF7 =(0.87634-0.000071*Y7)
91 P7 =IF((-3.65867+0.058492*L7+0.000051*F7)<0,0,(-3.65867+0.058492*L7+0.000051*F7)) — AG7 =IF((-3.65867+0.058492*AC7+0.000051*W7)<0,0,(-3.65867+0.058492*AC7+0.000051*W7))
92 Q7 =((K7*M7)+(J7*N7)) — AH7 =((AB7*AD7)+(AA7*AE7))
93 R7 =(1-Q7) — AI7 =(1-AH7)
94 AK7 =0.45*R7+0.55*AI7

A2-33

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C-032373

STUDY: 1995C06F-SWRCB-469 — DWRSIM: recirc818-f, 17 Jun 97
CVP, TOTAL CVP EXPORT (TAF to CFS)

Project: /1995C06F-SWRCB-469/CVP/EXPORT-TOTAL//1MON/OUTPUT/

YEAR	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	4470	4342	4326	4339	3871	4302	4554	4874
1923	4487	4342	4326	4375	4326	4067	3334	4504
1924	4000	4066	4326	4172	1691	1563	699	739
1925	1498	4375	3692	4375	3871	3580	2732	3748
1926	4470	4342	4326	4321	4326	3445	2651	3848
1927	4420	4342	4326	3133	3334	4151	4375	4874
1928	4470	4342	4326	4207	4326	3781	3204	3294
1929	4453	4342	4326	4339	4245	823	3220	3260
1930	2470	4375	4342	2935	3025	2067	1984	4554
1931	2823	2326	4326	3439	1887	1664	2065	2386
1932	1378	4375	4342	4242	2667	2655	2651	3848
1933	3243	2196	4342	3997	488	2235	2098	2185
1934	1681	4342	4342	1404	2423	1966	2228	4269
1935	2723	3383	4342	1314	4326	4420	3204	4369
1936	4453	4342	4326	4207	4326	4285	3367	4874
1937	4470	4342	4326	4339	4196	3143	2895	3311
1938	4470	4342	4326	4375	4326	4134	4212	4874
1939	4487	4342	4326	2701	2781	2185	1952	4588
1940	2975	1578	4326	4190	4326	4252	3204	4353
1941	4453	4342	4326	4393	4326	4706	4814	4874
1942	4487	4342	4326	4375	4326	4571	4554	4874
1943	4487	4342	4326	4375	4326	4706	4391	4874
1944	4470	4342	4326	4190	4326	2235	2082	4437
1945	4453	4342	4326	4339	4326	3243	2830	3664
1946	4470	4342	4326	4375	4326	3092	2846	3647
1947	4453	4342	4326	4339	4326	2554	1952	4571
1948	3210	2423	4326	4190	4326	3512	4050	4874
1949	4453	4342	4326	4339	3871	2655	2586	3916
1950	4470	4342	4326	4339	4326	3227	2846	4874
1951	4453	4342	4326	4375	4326	3294	3773	4874
1952	4453	4342	4326	4242	4326	4706	4651	4874
1953	4487	4342	4326	4375	3529	2924	4050	4874
1954	4470	4342	4326	4375	4326	3781	3204	3563
1955	4453	4342	4326	4357	4326	1949	2196	4319
1956	4437	4342	4326	4225	2586	4101	4586	4874
1957	4487	4342	4326	4339	4326	3328	3188	4773
1958	4453	4342	4326	4357	4326	4706	4814	4874
1959	4487	4342	4326	4357	4326	2000	2049	4470
1960	4453	4342	4326	4190	3562	403	1887	4638
1961	4437	4342	4326	4339	3594	403	1708	4823
1962	2857	4342	4326	4339	4326	2907	2879	4218
1963	4453	4342	4326	4375	4326	4151	4375	4874
1964	4453	4342	4326	4225	3741	1865	2082	4437
1965	4252	4342	4326	4357	4326	4369	3204	4874
1966	4470	4342	4326	4375	4326	2588	2602	3899
1967	4453	4342	4326	4393	4326	4706	4814	4874
1968	4487	4342	4326	2782	3090	2739	2033	4487
1969	4453	4342	4326	4393	3741	3445	4196	4874
1970	4487	4342	4277	1314	3204	3412	3171	4453
1971	4470	4342	4326	4393	4326	3412	4050	4874
1972	4453	4342	4326	4207	3838	2454	2163	4369
1973	4453	4342	4326	4375	4326	3832	3464	2739
1974	4453	4342	4326	4357	4326	4706	4554	4874
1975	4487	4342	4326	4339	4326	4487	4554	4874
1976	4470	4342	4326	4190	4424	807	1805	4689
1977	2874	1870	2244	810	976	1210	520	286
1978	2655	4310	2667	1855	2212	3546	4310	4874
1979	4487	4342	4326	4339	4326	3529	3220	3092
1980	4453	4342	4326	4207	3854	3109	3806	4874
1981	4470	4342	4326	2935	3090	2840	1968	4571
1982	4453	4342	4326	4375	4326	3714	4228	4874
1983	4487	4342	4326	3511	2131	3428	4163	4874
1984	3512	3139	1447	1547	3301	3529	3285	4672
1985	4470	4342	4326	4357	4326	2235	2342	4168
1986	2672	4342	4326	4339	4326	2454	2879	4252
1987	4437	4342	1350	1368	2440	437	1626	4874
1988	3143	4342	4326	4085	2114	1529	1740	4756
1989	2554	2618	4310	1062	4326	2941	2179	4336
1990	4420	4342	2651	1332	2423	1933	1610	4773
1991	2689	1822	1838	558	4424	2252	1756	2151
1992	3294	3139	4342	1147	2212	2033	2228	4067

STUDY: 1995C06F-SWRCB-469 — DWRSIM: recirc818-f, 17 Jun 97
SWP, SWP EXPORT AT BANKS PP (TAF converted to CFS)

Project: /1995C06F-SWRCB-469/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

YEAR	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	4319	7107	7579	6356	4147	4185	4342	6672
1923	6672	4505	3643	2377	3367	3966	3123	3395
1924	3748	6424	6652	4624	1675	1395	374	487
1925	3210	4847	3155	7581	4115	3479	2521	2840
1926	3109	3822	7091	7508	3497	3344	2440	2487
1927	6672	6993	7270	8463	4147	4050	4163	3748
1928	6672	5969	3643	4225	4424	3680	3383	2672
1929	5462	6180	7091	3745	2765	1832	114	101
1930	1765	6294	7091	3997	4066	1949	1773	2672
1931	3260	2976	4895	1891	1643	1479	1366	1395
1932	1664	7188	7823	5685	2732	2891	2423	4050
1933	2605	2505	5416	2701	4342	2067	1073	269
1934	1580	5546	7091	4538	2293	1781	1025	1328
1935	4285	3399	7660	3943	6977	4319	2732	3731
1936	3445	3285	7449	8206	7042	4185	3155	3361
1937	3664	5741	7579	5024	4001	4974	4066	4622
1938	6672	7530	3936	3943	3968	4369	5448	6672
1939	5277	3741	3236	3961	3985	2067	1740	3075
1940	1748	2683	8018	8206	4651	4134	3269	3092
1941	6100	7335	8148	6878	3838	4706	5123	6302
1942	6168	3610	3236	3961	4001	4453	4342	6672
1943	6521	3773	3301	3997	4050	4857	4163	3143
1944	6672	6424	3269	3825	4001	2118	1870	3176
1945	6605	6961	5058	3997	4131	3126	2618	3798
1946	6672	7595	3643	3979	4424	2975	2635	3596
1947	6621	7140	6684	3997	3968	2454	1740	2958
1948	3630	3106	6522	1756	3432	3412	3838	4521
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3395	3448	7172	7526	4619	3126	2635	3529
1951	6672	7595	7172	4682	4700	3193	3562	2823
1952	6672	7107	6863	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3838	4628	4684	3680	4440	2739
1955	6672	6912	6017	3889	3025	1832	1984	3025
1956	4218	7595	8018	4520	4700	3983	4375	6672
1957	6672	5806	3887	4646	4391	3227	2976	3462
1958	6672	6928	3383	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3041	1899	1838	2991
1960	3075	2797	6408	7041	4033	3731	1675	2689
1961	6235	6896	7075	7112	4554	3243	1496	3008
1962	3395	6879	3919	8499	3497	2790	2667	2874
1963	6672	6896	7253	8265	4586	4050	4163	4017
1964	6672	6050	3871	3512	3350	1748	1870	2840
1965	6252	7335	8506	5762	4294	4269	4749	3714
1966	6672	5887	3659	4375	4424	2487	2391	2622
1967	6672	7123	7676	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2807
1969	6353	6977	5286	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3294	2960	2622
1971	6672	7042	5465	4285	4700	3294	3838	5042
1972	6672	6196	3887	4485	4359	2353	1935	2706
1973	6672	6896	6473	4429	4456	3714	3253	5579
1974	6672	7140	3643	4375	4424	4722	4342	4924
1975	5411	4245	3854	4628	4684	4386	4342	6672
1976	6672	4651	3789	4103	3627	2370	1561	2941
1977	3328	3025	2440	1422	1252	1949	439	387
1978	1697	5530	7774	7346	3903	4067	4098	3899
1979	6571	3692	3269	3961	4001	3428	2992	5227
1980	6672	6993	3155	3633	3350	3949	3887	4067
1981	5579	4115	3350	4069	4115	2723	1756	2891
1982	6672	7010	7644	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	3428	3074	3361
1985	6672	6619	3871	4646	4619	2118	2114	2622
1986	4168	6944	7335	7364	4180	5210	5465	3848
1987	3496	6099	6375	4213	4131	3176	1415	3143
1988	1865	6879	7058	2538	1756	1428	1529	1311
1989	3361	3269	4521	1765	6961	2823	1968	2487
1990	3563	6196	7058	6554	3627	1765	1366	2907
1991	2370	3188	1708	828	7075	2168	1415	1210
1992	1462	1610	4781	7197	6229	1865	1008	1328

STUDY: 1995C06F-SWRCB-469 — DWRSIM: recirc818-f, 17 Jun 97
CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (TAF to CFS)

Project: /1995C06F-SWRCB-469/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	2000	1697	2488	2683	6752	5351	6201	5936	7243
1923	3968	2101	3741	4196	4267	3415	5344	5156	2168
1924	3106	1462	1496	1399	1617	1708	1983	1870	1378
1925	1870	1361	1252	1171	2701	2423	3983	3822	1949
1926	1887	1412	1334	1203	2467	2277	3664	3545	1731
1927	1919	1899	1854	1740	5366	3578	5344	5156	3428
1928	4359	1849	2309	2277	2590	2960	3983	3822	1748
1929	1903	1395	1301	1203	1458	1691	2017	1887	1328
1930	1838	1244	1138	1220	1549	1935	2420	1952	1344
1931	1513	1210	1138	1138	1350	1317	1983	1984	1260
1932	1334	1294	3058	3432	7980	4538	4504	3871	2151
1933	3220	1462	1317	1610	2035	2065	2807	2683	1781
1934	1870	1277	1203	1220	1747	1859	1983	1984	1294
1935	1838	1395	1350	2944	3223	3513	6369	6050	3916
1936	3171	1546	1561	2309	12413	5757	6403	5156	2134
1937	2667	1563	1870	2683	12838	9856	7932	8132	2672
1938	3155	1798	5074	6993	22417	31047	18049	23972	13831
1939	8864	2319	2293	2505	3637	2765	2891	2683	1630
1940	2000	1479	1399	4001	7980	10425	5697	5156	3428
1941	2326	1714	3919	4375	14549	11482	10083	9579	8285
1942	4912	2235	4456	8408	10353	5936	6907	5936	5647
1943	6879	3092	3562	11157	10894	17760	7915	6180	3428
1944	3415	1815	1919	1984	3112	3106	3428	2976	1865
1945	2000	1832	1691	1708	8967	7937	5781	3871	2252
1946	3806	2202	5595	5448	5888	4391	5344	3871	2134
1947	2261	2336	2716	2179	2683	2277	3664	2683	1529
1948	1919	1344	1203	1122	1373	1740	3983	3822	2286
1949	2000	1428	1285	1171	1476	2586	3983	2976	1748
1950	2000	1428	1285	1480	2557	2293	3983	3822	1731
1951	2000	4790	9660	10230	9201	6180	5344	5156	2134
1952	2000	1681	2521	6847	6102	11368	10840	15450	9378
1953	8343	2185	3058	4960	5744	3627	3983	3822	2286
1954	2000	1513	1415	1334	2287	2407	3983	3822	1798
1955	2000	1428	1334	1529	2287	2277	2807	2683	1714
1956	2000	1445	11889	20866	12917	6050	6201	6017	7546
1957	4733	1630	1708	1610	2431	3139	3983	3822	2286
1958	2000	1529	1447	1626	4123	10604	14907	13173	10184
1959	4830	1798	1903	2309	4519	3643	2807	2683	1462
1960	1887	1328	1171	1155	1791	1919	2420	1870	1529
1961	1822	1344	1236	1171	1278	1350	1983	1903	1378
1962	1382	1294	1155	1138	5942	4489	4201	3822	1765
1963	2000	1412	1252	1691	4736	3415	5344	5156	3428
1964	2309	2134	1789	1854	2208	2277	2807	2683	1664
1965	1968	1647	3887	9400	7905	4619	6201	5936	3428
1966	4424	3479	4798	4847	5186	3708	3983	2976	1647
1967	2000	1546	2635	2960	3997	6879	13613	16003	13797
1968	4863	1748	1854	2017	4051	2797	3664	2683	1563
1969	2000	1479	1724	14702	30556	19695	20923	26135	18368
1970	8327	2554	3594	17044	9489	7432	5344	5156	2134
1971	2000	1731	2147	2000	2611	3968	3983	3822	2286
1972	2000	1412	1480	1366	2208	2277	3664	2683	1445
1973	1952	1395	1317	2309	7653	8945	5680	5156	2302
1974	3253	2386	2749	7026	5366	7237	7663	5936	3428
1975	3545	1731	1935	2033	6032	8831	6621	5936	6285
1976	4098	1832	1805	1529	1965	1708	1983	1870	1328
1977	2814	2101	1610	1155	1242	1203	1983	1870	1260
1978	1252	1277	1350	3253	7202	10978	14923	10831	7075
1979	4245	1933	1691	3968	9381	8652	5344	5156	2134
1980	2830	1697	1805	13450	24009	14572	6722	6619	6184
1981	5090	2084	2098	2960	2773	2960	3664	2683	1563
1982	2000	1630	1968	9335	16493	15304	27023	15158	9865
1983	12442	8821	19044	24867	36534	41114	20738	19077	36451
1984	12116	13545	21500	15190	9718	8001	5344	5156	2134
1985	2000	1781	1691	1529	2359	2358	2807	2683	1613
1986	2000	1597	1545	1935	22309	26265	9814	8067	7613
1987	3464	1714	1545	1464	1855	1919	2033	1870	1412
1988	1805	1294	1138	1122	1182	1285	1983	1870	1311
1989	1301	1176	1171	1155	1260	1626	2420	1887	1328
1990	1334	1227	1138	1122	1260	1382	1983	1952	1260
1991	1285	1210	1122	1090	1152	2358	2437	1984	1395
1992	1334	1428	1138	1138	2243	2049	2252	1984	1462

C-032374

C—032374

C-032375

C—032375

D1485 Sacramento River Fall Run Salmon Smolt Survival Model

Cross Channel Closed when Sac River flow exceeds 25,000 cfs

Cross Channel closed from April 1 - April 15 when DOI > 12 000 cfs and closed half time in May

Temperatures based on limited historical data from USBR

APRIL

Year	Water Year Type	Sac River Flow	Total Delta Outflow	CVP+SWP exports	Steamboat & Sutter Slough Q	percent	xchannel closed	observed temp f	m1	m2 (Calculated Mortality)	m3	m23	m123	Calculated Survival s123
1922	A	22,622	19,528	9,546	7,586	58%	0.25	58.5	0.002	0.874	0.256	0.512	0.513	48.7%
1923	B	24,418	21,175	10,100	8,183	57%	0.25	58.3	0.000	0.894	0.250	0.514	0.514	48.6%
1924	C	7,630	7,394	571	1,904	76%	0.32	61.5	0.128	0.538	0.352	0.493	0.558	44.2%
1925	D	22,906	17,864	11,226	7,617	58%	0.25	59.1	0.027	0.958	0.275	0.558	0.570	43.0%
1926	D	18,268	14,265	10,739	5,862	60%	0.26	61.6	0.133	0.981	0.355	0.626	0.675	32.5%
1927	W	46,215	47,022	9,764	17,082	23%	0.23	56.8	0.000	0.853	0.202	0.363	0.363	64.7%
1928	A	29,206	24,771	10,083	9,974	25%	0.25	58.7	0.011	0.901	0.262	0.419	0.425	57.5%
1929	C	7,075	2,604	5,386	1,896	77%	0.33	56.3	0.000	0.854	0.186	0.548	0.548	45.2%
1930	D	13,713	6,235	9,344	4,179	64%	0.26	59.6	0.046	0.885	0.291	0.671	0.687	31.3%
1931	C	13,377	9,310	4,268	4,053	64%	0.26	62.8	0.183	0.722	0.383	0.605	0.678	32.2%
1932	D	10,890	13,861	538	3,123	68%	0.29	58.9	0.019	0.400	0.269	0.376	0.388	61.2%
1933	C	10,083	9,260	1,765	2,821	69%	0.30	60.1	0.069	0.565	0.307	0.466	0.522	47.8%
1934	C	8,087	7,949	689	2,087	74%	0.32	63.6	0.217	0.581	0.419	0.539	0.639	36.1%
1935	B	23,696	36,720	11,142	7,912	57%	0.25	58.9	0.019	0.950	0.269	0.550	0.558	44.2%
1936	B	22,032	20,066	9,781	7,290	58%	0.26	59.7	0.053	0.908	0.294	0.549	0.573	42.7%
1937	B	22,503	22,234	9,579	7,466	58%	0.25	58.8	0.015	0.881	0.266	0.521	0.528	47.2%
1938	W	47,173	78,633	7,714	16,693	23%	0.23	56.3	0.000	0.755	0.186	0.318	0.318	68.2%
1939	D	10,571	4,463	7,983	3,003	69%	0.30	63.3	0.204	0.892	0.409	0.740	0.793	20.7%
1940	A	41,980	66,029	10,266	14,751	24%	0.24	57.4	0.000	0.866	0.221	0.378	0.378	62.2%
1941	W	42,367	77,541	9,310	14,895	24%	0.24	56.9	0.000	0.836	0.205	0.353	0.353	64.7%
1942	W	43,308	48,719	9,646	15,247	23%	0.23	56.5	0.000	0.842	0.192	0.346	0.346	65.6%
1943	W	29,410	29,964	9,663	10,049	24%	0.24	58.8	0.015	0.864	0.266	0.417	0.426	57.4%
1944	D	10,806	4,824	9,579	3,091	68%	0.29	58.4	0.000	0.873	0.253	0.676	0.676	32.4%
1945	B	12,167	9,243	9,764	3,801	69%	0.29	60.6	0.080	0.821	0.323	0.718	0.743	25.7%
1946	B	13,159	7,731	10,100	3,971	65%	0.28	60.7	0.095	0.937	0.326	0.722	0.748	25.2%
1947	D	13,310	4,463	10,134	4,026	65%	0.26	62.5	0.170	0.971	0.364	0.763	0.803	19.7%
1948	B	22,990	16,570	11,092	7,648	58%	0.25	56.6	0.000	0.907	0.195	0.480	0.480	51.0%
1949	D	13,461	5,899	9,814	4,065	64%	0.26	61.7	0.137	0.943	0.358	0.735	0.771	22.9%
1950	B	19,276	12,789	10,067	6,259	59%	0.26	61.3	0.120	0.947	0.346	0.603	0.650	35.0%
1951	A	15,496	9,999	9,092	4,845	62%	0.27	59.9	0.061	0.879	0.301	0.661	0.682	31.8%
1952	W	56,652	68,180	8,773	20,238	23%	0.23	55.5	0.000	0.786	0.160	0.304	0.304	69.6%
1953	W	16,621	9,899	9,764	5,266	61%	0.27	58.6	0.015	0.869	0.266	0.646	0.653	34.7%
1954	A	38,863	35,258	10,366	13,958	24%	0.24	56.4	0.000	0.906	0.253	0.408	0.408	59.2%
1955	D	12,722	6,302	9,008	3,808	65%	0.26	56.4	0.000	0.813	0.189	0.596	0.596	40.4%
1956	W	20,436	15,780	10,386	6,693	59%	0.26	59.7	0.053	0.932	0.294	0.564	0.587	41.3%
1957	A	13,596	6,100	10,184	4,135	64%	0.26	60.5	0.086	0.937	0.320	0.716	0.741	25.9%
1958	W	52,262	103,018	9,663	18,603	23%	0.23	57.4	0.000	0.869	0.221	0.368	0.368	63.2%
1959	B	11,680	4,453	8,470	3,418	67%	0.29	63	0.191	0.906	0.400	0.739	0.789	21.1%
1960	D	9,730	4,453	6,857	2,699	70%	0.30	59.5	0.044	0.775	0.286	0.630	0.646	35.4%
1961	D	11,781	4,453	7,932	3,456	67%	0.29	60.1	0.069	0.833	0.307	0.657	0.681	31.9%
1962	B	12,403	5,327	10,487	3,699	66%	0.28	61.8	0.141	0.974	0.362	0.764	0.797	20.3%
1963	W	69,457	88,750	10,117	25,027	23%	0.23	53.7	0.000	0.812	0.103	0.263	0.263	73.7%
1964	D	13,697	5,663	9,008	4,173	64%	0.28	58.3	0.036	0.866	0.262	0.655	0.668	33.2%
1965	W	46,173	45,509	9,932	15,945	23%	0.23	58.9	0.000	0.862	0.205	0.369	0.369	64.1%
1966	B	12,806	4,453	9,966	3,839	65%	0.28	61.9	0.145	0.953	0.365	0.748	0.785	21.6%
1967	W	39,930	56,870	8,722	13,984	24%	0.24	53.8	0.000	0.754	0.108	0.259	0.259	74.1%
1968	B	11,293	4,453	8,470	3,274	67%	0.29	61.5	0.128	0.861	0.352	0.708	0.746	25.4%
1969	W	44,787	62,130	7,496	15,800	23%	0.23	56.4	0.000	0.747	0.189	0.320	0.320	68.0%
1970	W	15,106	9,999	8,470	4,700	63%	0.27	58.8	0.015	0.833	0.266	0.621	0.626	37.4%
1971	W	20,755	13,176	10,388	6,812	59%	0.26	58.7	0.011	0.914	0.262	0.537	0.542	45.8%
1972	B	12,890	4,453	9,646	3,671	65%	0.28	58.5	0.002	0.878	0.256	0.661	0.661	33.9%
1973	A	19,511	16,402	10,117	6,347	59%	0.26	61.3	0.120	0.949	0.346	0.603	0.651	34.9%
1974	W	33,208	67,390	10,100	11,470	24%	0.24	56.8	0.000	0.867	0.202	0.362	0.362	63.8%
1975	W	25,783	23,812	10,386	8,685	25%	0.25	56.8	0.000	0.880	0.202	0.371	0.371	62.9%
1976	C	9,428	2,504	7,613	2,576	71%	0.30	58.9	0.019	0.797	0.269	0.643	0.650	35.0%
1977	C	16,890	8,403	9,008	5,404	61%	0.27	64.3	0.246	0.956	0.441	0.756	0.815	18.5%
1978	A	38,703	48,249	8,672	13,525	24%	0.24	56.9	0.000	0.807	0.205	0.348	0.348	65.2%
1979	B	17,696	13,478	9,646	5,668	60%	0.26	59.6	0.057	0.902	0.298	0.560	0.585	41.5%
1980	A	19,614	18,016	6,554	6,460	59%	0.26	57.1	0.000	0.806	0.211	0.464	0.464	53.6%
1981	D	16,990	9,226	9,764	5,404	61%	0.27	61.5	0.128	0.837	0.352	0.709	0.746	25.4%
1982	W	75,843	141,049	8,974	27,415	23%	0.23	54.1	0.000	0.770	0.115	0.263	0.263	73.7%
1983	W	68,298	101,892	6,958	24,593	23%	0.23	55	0.000	0.699	0.144	0.270	0.270	73.0%
1984	W	16,301	9,999	9,646	5,147	62%	0.27	59.7	0.053	0.900	0.294	0.667	0.685	31.5%
1985	D	13,327	4,623	10,335	4,034	65%	0.28	60.8	0.099	0.949	0.330	0.729	0.756	24.4%
1986	W	20,772	24,250	7,714	6,819	59%	0.26	60.4	0.082	0.828	0.317	0.533	0.571	42.9%
1987	D	8,789	4,453	5,092	2,337	72%	0.31	65.7	0.305	0.810	0.466	0.720	0.806	19.4%
1988	C	10,016	8,773	2,067	2,796	70%	0.30	58.9	0.061	0.574	0.301	0.491	0.522	47.8%
1989	D	24,133	14,049	11,075	8,076	57%	0.25	61.4	0.124	0.982	0.349	0.613	0.661	33.9%
1990	C	8,420	2,504	6,621	2,199	73%	0.31	61.6	0.133	0.803	0.355	0.683	0.725	27.5%
1991	C	16,033	6,184	10,991	5,046	62%	0.27	60.8	0.099	0.978	0.330	0.730	0.757	24.3%
1992	C	11,730	3,462	9,898	3,437	67%	0.29	61.2	0.116	0.938	0.342	0.739	0.769	23.1%

MAY

Year	Sac River Flow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	observed temp f	m1	m2 (Calculated Mortality)	m3	m23	m123	Calculated Survival s123
1922	46,530	5,985	16,452	0.23	0.23	61.2	0.156	0.788	0.342	0.442	0.506	49.4%
1923	15,434	5,985	4,822	0.62	0.33	62.4	0.186	0.789	0.381	0.575	0.646	35.4%
1924	8,392	4,017	2,189	0.73	0.38	69.2	0.462	0.826	0.596	0.725	0.849	15.1%
1925	14,818	5,985	4,591	0.63	0.33	63.2	0.200	0.804	0.406	0.597	0.678	32.2%
1926	10,441	5,985	2,965	0.69	0.36	65.7	0.305	0.849	0.486	0.676	0.775	22.5%
1927	26,786	5,985	9,068	0.25	0.25	62.6	0.175	0.793	0.367	0.488	0.577	42.3%
1928	12,881	5,985	3,867	0.65	0.34	66.6	0.343	0.865	0.515	0.686	0.795	20.5%
1929	8,733	4,375	2,316	0.72	0.38	66.1	0.322	0.786	0.499	0.657	0.767	23.3%
1930	13,417	5,985	4,098	0.64	0.34	63.1	0.196	0.802	0.403	0.599	0.677	32.3%
1931	8,164	4,326	2,103	0.74	0.38	70.5	0.507	0.863	0.640	0.765	0.884	11.6%
1932	10,718	5,985	3,058	0.68	0.36	65.5	0.297	0.845	0.460	0.670	0.768	23.2%
1933	7,839	4,472	1,982	0.75	0.39	63.7	0.221	0.747	0.422	0.607	0.694	30.6%
1934	9,091	4,977	2,450	0.72	0.37	68.3	0.414	0.852	0.569	0.723	0.838	16.2%
1935	18,134	5,985	5,832	0.60	0.32	64	0.234	0.818	0.432	0.609	0.701	29.9%
1936	15,092	5,985	4,695	0.63	0.33	64.9	0.271	0.834	0.461	0.639	0.737	26.3%
1937	15,044	5,985	4,676	0.63	0.33	64.5	0.256	0.827	0.448	0.629	0.724	27.6%
1938	57,426	5,985	20,527	0.23	0.23	62.5	0.170	0.791	0.364	0.477	0.566	43.4%
1939	8,002	4,993	2,043	0.74	0.39	68	0.402	0.847	0.560	0.722	0.834	16.6%
1940	15,806	5,985	4,982	0.62	0.33	66.6	0.301	0.847	0.463	0.655	0.759	24.1%
1941	39,488	5,985	13,818	0.24	0.24	61.6	0.133	0.775	0.356	0.455	0.527	47.3%
1942	36,040	5,985	12,529	0.24	0.24	60.1	0.069	0.748	0.307	0.413	0.453	54.7%
1943	20,134	5,985	6,580	0.59	0.31	65.4	0.292	0.843	0.477	0.642	0.747	25.3%
1944	15,857	4,993	4,980	0.62	0.33	65.9	0.313	0.809	0.493	0.642	0.754	24.6%
1945	13,905	5,855	4,251	0.64	0.34	63.1	0.196	0.796	0.403	0.595	0.674	32.6%
1946	15,759	5,582	4,944	0.62	0.33	63.9	0.229	0.798	0.429	0.603	0.694	30.6%
1947	14,982	4,993	4,646	0.63	0.33	68.7	0.431	0.859	0.582	0.715	0.838	16.2%
1948	31,014	5,985	10,649	0.24	0.24	62.3	0.162	0.786	0.378	0.477	0.562	43.8%
1949	13,856	5,985	4,232	0.64	0.34	65.2	0.284	0.840	0.470	0.650	0.750	25.0%
1950	15,694	5,985	4,920	0.62	0.33	64.3	0.246	0.823	0.441	0.622	0.715	28.5%
1951	19,028	5,985	6,167	0.60	0.31	64.4	0.250	0.825	0.445	0.618	0.714	28.6%
1952	59,557	5,985	21,324	0.23	0.23	61.7	0.137	0.777	0.358	0.454	0.529	47.1%
1953	26,558	5,985	8,983	0.25	0.25	60.9	0.103	0.762	0.333	0.439	0.497	50.3%
1954	16,304	5,822	5,161	0.61	0.32	65.9	0.313	0.845	0.493	0.658	0.765	23.5%
1955	14,279	4,993	4,390	0.63	0.33	66.9	0.356	0.827	0.525	0.671	0.788	21.2%
1956	39,000	5,985	13,636	0.24	0.24	61.4	0.124	0.771	0.349	0.449	0.517	48.3%
1957	20,590	5,985	6,750	0.59	0.31	64	0.234	0.818	0.432	0.605	0.697	30.3%
1958	43,468	5,985	15,315	0.23	0.23	62.9	0.187	0.798	0.397	0.491	0.586	41.4%
1959	14,995	4,993	4,658	0.63	0.33	65.9	0.313	0.809	0.493	0.644	0.756	24.4%
1960	15,987	4,993	5,029	0.62	0.33	65.9	0.313	0.809	0.493	0.642	0.754	24.6%
1961	13,629	4,993	4,147	0.64	0.34	64.3	0.246	0.780	0.441	0.607	0.704	29.6%
1962	16,280	4,993	5,139	0.62	0.32	64.8	0.267	0.789	0.457	0.613	0.717	28.3%
1963	29,095	5,985	9,932	0.25	0.25	62.5	0.170	0.791	0.364	0.484	0.572	42.8%
1964	16,800	4,993	5,333	0.61	0.32	65.2	0.284	0.797	0.470	0.623	0.730	27.0%
1965	19,581	5,985	6,373	0.59	0.31	63.6	0.217	0.811	0.419	0.597	0.684	31.6%
1966	14,052	4,993	4,305	0.64	0.33	67.3	0.372	0.834	0.537	0.682	0.800	20.0%
1967	44,790	5,985	15,801	0.23	0.23	62.1	0.154	0.784	0.371	0.468	0.550	45.0%
1968	14,426	4,993	4,445	0.63	0.33	66.1	0.322	0.813	0.499	0.650	0.763	23.7%
1969	45,538	5,985	16,061	0.23	0.23	63.2	0.200	0.804	0.406	0.499	0.599	40.1%
1970	12,149	5,985	3,594	0.66	0.35	68.6	0.427	0.901	0.579	0.741	0.851	14.9%
1971	30,266	5,985	10,370	0.24	0.24	61	0.107	0.764	0.336	0.440	0.500	50.0%
1972	14,540	4,993	4,488	0.63	0.33	67.3	0.372	0.834	0.537	0.680	0.799	20.1%
1973	15,743	5,985	4,938	0.62	0.33	66.9	0.356	0.870	0.525	0.686	0.799	20.1%
1974	26,949	5,985	9,129	0.25	0.25	63.4	0.208	0.807	0.413	0.510	0.612	38.8%
1975	28,542	5,985	9,725	0.25	0.25	63.8	0.225	0.815	0.425	0.521	0.629	37.1%
1976	9,059	4,359	2,438	0.72	0.37	69.6	0.469	0.848	0.611	0.740	0.862	13.8%
1977	6,993	3,867	1,866	0.78	0.40	64	0.234	0.727	0.432	0.608	0.698	30.2%
1978	21,061	5,985	6,927	0.58	0.31	63	0.191	0.800	0.400	0.579	0.659	34.1%
1979	13,564	5,985	4,123	0.64	0.34	63.8	0.225	0.815	0.425	0.616	0.702	29.8%
1980	14,783	5,985	4,579	0.63	0.33	63.6	0.217	0.811	0.419	0.607	0.692	30.8%
1981	9,953	5,497	2,773	0.70	0.36	66.7	0.347	0.845	0.518	0.692	0.799	20.1%
1982	38,431	5,985	13,423	0.24	0.24	61.1	0.112	0.766	0.339	0.441	0.503	49.7%
1983	54,515	5,985	19,439	0.23	0.23	60.1	0.069	0.748	0.307	0.409	0.450	55.0%
1984	14,897	5,985	4,622	0.63	0.33	66.5	0.339	0.863	0.512	0.680	0.788	21.2%
1985	13,450	4,993	4,080	0.64	0.34	66.6	0.309	0.807	0.489	0.645	0.755	24.5%
1986	13,125	5,985	3,959	0.65	0.34	66.2	0.326	0.868	0.502	0.678	0.783	21.7%
1987	8,912	4,993	2,363	0.72	0.37	70.5	0.507	0.892	0.640	0.778	0.890	11.0%
1988	8,701	4,977	2,304	0.73	0.38	65.8	0.309	0.807	0.489	0.664	0.768	23.2%
1989	11,384	5,985	3,306	0.67	0.35	64.7	0.263	0.831	0.454	0.647	0.740	26.0%
1990	9,189	5,009	2,487	0.71	0.37	66.4	0.335	0.819	0.509	0.677	0.785	21.5%
1991	8,685	5,204	2,298	0.73	0.38	65.7	0.305	0.815	0.486	0.667	0.769	23.1%
1992	8,050	4,131	2,061	0.74	0.39	66	0.318	0.774	0.496	0.652	0.763	23.7%

JUNE

Year	Sac River Flow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	observed temp f	m1	m2 (Calculated Mortality)	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	34,720	6,016	12,035	24%	0.24	65.9	0.313	0.854	0.493	0.579	0.711	28.9%	45.6%
1923	14,957	5,008	4,644	63%	0.53	65.3	0.288	0.799	0.473	0.678	0.771	22.9%	36.4%
1924	9,327	3,897	2,536	71%	0.60	70.6	0.511	0.837	0.643	0.781	0.893	10.7%	19.2%
1925	16,671	5,008	5,265	61%	0.52	68.3	0.414	0.853	0.569	0.743	0.850	15.0%	31.8%
1926	13,528	4,991	4,110	64%	0.54	71.2	0.536	0.904	0.662	0.818	0.916	8.4%	21.7%
1927	19,007	5,008	6,159	60%	0.51	68.1	0.406	0.849	0.563	0.734	0.842	15.8%	41.3%
1928	12,520	5,008	3,733	66%	0.55	69.7	0.473	0.878	0.614	0.787	0.888	11.2%	26.1%
1929	9,478	4,470	2,595	71%	0.60	70.1	0.490	0.862	0.627	0.793	0.895	10.5%	24.7%
1930	12,890	5,008	3,871	65%	0.55	69.6	0.469	0.876	0.611	0.784	0.886	11.4%	28.4%
1931	9,041	3,412	2,431	72%	0.61	70.7	0.515	0.827	0.646	0.776	0.891	10.9%	16.8%
1932	12,470	5,159	3,714	66%	0.56	69.5	0.465	0.881	0.606	0.787	0.886	11.4%	27.8%
1933	10,184	4,554	2,859	69%	0.59	69.6	0.478	0.860	0.617	0.786	0.888	11.2%	30.0%
1934	10,621	5,008	3,022	68%	0.58	70.7	0.515	0.896	0.646	0.817	0.911	8.9%	18.3%
1935	15,310	5,008	4,778	62%	0.53	71	0.528	0.901	0.656	0.809	0.910	9.0%	26.8%
1936	15,142	5,008	4,713	63%	0.53	69.2	0.452	0.869	0.596	0.768	0.873	12.7%	26.6%
1937	14,402	5,008	4,435	63%	0.54	69.7	0.473	0.878	0.614	0.781	0.885	11.5%	28.1%
1938	35,510	6,016	12,331	24%	0.24	67.7	0.389	0.886	0.550	0.631	0.774	22.6%	43.8%
1939	10,067	5,008	2,815	69%	0.59	71	0.528	0.901	0.656	0.826	0.918	8.2%	16.8%
1940	16,167	4,991	5,096	62%	0.52	71.5	0.549	0.910	0.672	0.818	0.918	8.2%	27.7%
1941	20,805	6,016	6,831	59%	0.50	69	0.444	0.909	0.592	0.778	0.876	12.4%	44.0%
1942	27,124	6,016	9,194	25%	0.25	67.8	0.393	0.888	0.553	0.636	0.779	22.1%	50.8%
1943	16,285	2,470	5,140	62%	0.52	66.6	0.343	0.712	0.515	0.636	0.761	23.9%	30.5%
1944	10,063	5,008	2,821	69%	0.59	67.8	0.393	0.844	0.553	0.755	0.852	14.8%	24.2%
1945	14,806	5,008	4,567	63%	0.53	70.6	0.511	0.894	0.643	0.801	0.903	9.7%	27.3%
1946	16,520	5,008	5,228	61%	0.52	68.1	0.406	0.849	0.563	0.739	0.845	15.5%	26.8%
1947	11,529	5,008	3,362	67%	0.57	70	0.486	0.864	0.624	0.798	0.896	10.4%	15.8%
1948	22,301	6,016	7,391	58%	0.49	69	0.444	0.909	0.592	0.775	0.875	12.5%	38.4%
1949	12,201	5,008	3,613	66%	0.56	70.9	0.524	0.900	0.652	0.816	0.912	8.8%	21.8%
1950	16,638	5,764	5,272	61%	0.52	68.9	0.440	0.897	0.588	0.777	0.875	12.5%	26.7%
1951	12,487	6,016	3,720	66%	0.56	70.3	0.499	0.933	0.633	0.830	0.915	8.5%	25.8%
1952	38,972	6,016	13,626	24%	0.24	65	0.276	0.837	0.464	0.552	0.676	32.4%	48.3%
1953	25,881	6,016	8,729	25%	0.25	66.2	0.326	0.859	0.502	0.591	0.724	27.6%	43.6%
1954	17,091	5,008	5,442	61%	0.52	68.7	0.431	0.860	0.582	0.751	0.859	14.1%	27.9%
1955	11,327	5,008	3,286	67%	0.57	70.1	0.490	0.865	0.627	0.801	0.898	10.2%	22.6%
1956	22,301	6,016	7,391	58%	0.49	68.7	0.431	0.904	0.582	0.766	0.868	13.2%	40.8%
1957	15,394	4,941	4,807	62%	0.53	72	0.570	0.917	0.688	0.830	0.927	7.3%	25.4%
1958	33,930	6,016	11,740	24%	0.24	67.7	0.389	0.886	0.550	0.631	0.775	22.5%	41.7%
1959	11,361	5,008	3,299	67%	0.57	72.1	0.574	0.921	0.691	0.846	0.934	6.6%	20.7%
1960	12,839	5,008	3,862	65%	0.55	72.7	0.600	0.932	0.710	0.855	0.942	5.8%	23.9%
1961	13,159	5,008	3,971	65%	0.55	73.2	0.621	0.941	0.726	0.865	0.949	5.1%	25.6%
1962	16,755	5,008	5,316	61%	0.52	70.4	0.503	0.891	0.636	0.792	0.897	10.3%	23.7%
1963	18,804	5,008	6,006	60%	0.51	69	0.444	0.866	0.592	0.756	0.864	13.6%	42.8%
1964	10,873	5,008	3,117	68%	0.58	69.5	0.465	0.875	0.606	0.789	0.887	11.3%	25.2%
1965	17,377	4,269	5,549	61%	0.51	67.1	0.364	0.799	0.531	0.694	0.806	19.5%	35.9%
1966	12,907	5,008	3,877	65%	0.55	70.4	0.503	0.891	0.636	0.802	0.901	9.9%	18.4%
1967	39,342	6,016	13,764	24%	0.24	66.5	0.339	0.864	0.512	0.595	0.732	26.8%	46.7%
1968	12,503	5,008	3,726	66%	0.58	72	0.570	0.919	0.688	0.840	0.931	6.9%	21.8%
1969	24,133	6,016	8,076	57%	0.48	68.3	0.414	0.897	0.569	0.756	0.857	14.3%	40.2%
1970	13,545	5,008	4,116	64%	0.54	70.7	0.515	0.896	0.646	0.807	0.906	9.4%	17.7%
1971	23,629	6,016	7,667	57%	0.49	68.1	0.406	0.893	0.563	0.752	0.853	14.7%	42.9%
1972	12,520	5,008	3,733	66%	0.55	70.7	0.515	0.896	0.646	0.810	0.908	9.2%	20.5%
1973	18,100	4,017	5,819	60%	0.51	70.1	0.490	0.842	0.627	0.757	0.876	12.4%	21.2%
1974	21,629	6,016	7,139	58%	0.49	69.7	0.473	0.922	0.614	0.793	0.891	10.9%	38.8%
1975	24,788	6,016	8,321	57%	0.48	69.1	0.448	0.911	0.595	0.774	0.876	12.4%	37.1%
1976	9,896	4,453	2,752	70%	0.59	71.8	0.562	0.892	0.681	0.828	0.925	7.5%	16.3%
1977	10,151	471	2,846	69%	0.59	73.9	0.650	0.757	0.748	0.754	0.914	8.6%	24.3%
1978	13,965	4,101	4,273	64%	0.54	70	0.486	0.844	0.624	0.764	0.879	12.1%	36.4%
1979	10,352	5,848	2,922	69%	0.58	69.2	0.452	0.906	0.596	0.810	0.896	10.4%	28.3%
1980	14,755	5,126	4,566	63%	0.53	66.9	0.356	0.833	0.525	0.719	0.819	18.1%	32.4%
1981	13,896	5,008	4,246	64%	0.54	71.9	0.566	0.918	0.684	0.833	0.928	7.2%	18.7%
1982	24,418	6,016	8,183	57%	0.48	66	0.318	0.855	0.496	0.701	0.796	20.4%	48.6%
1983	55,576	6,016	19,835	23%	0.23	63.6	0.217	0.812	0.419	0.510	0.616	38.4%	56.1%
1984	11,730	5,411	3,437	67%	0.56	68.4	0.419	0.872	0.572	0.772	0.868	13.2%	21.5%
1985	12,234	5,008	3,626	66%	0.56	69.4	0.461	0.873	0.604	0.781	0.882	11.8%	22.2%
1986	12,419	6,016	3,695	66%	0.56	71.6	0.553	0.956	0.675	0.859	0.937	6.3%	22.5%
1987	10,554	5,008	2,997	69%	0.58	73.2	0.621	0.941	0.726	0.873	0.952	4.8%	11.3%
1988	10,386	5,008	2,934	69%	0.58	69.4	0.461	0.873	0.604	0.789	0.886	11.4%	26.2%
1989	13,092	4,773	3,946	65%	0.55	68.6	0.427	0.848	0.579	0.753	0.859	14.1%	25.2%
1990	10,369	4,756	2,928	69%	0.58	68.5	0.423	0.846	0.576	0.762	0.862	13.8%	21.1%
1991	9,056	4,117	2,436	72%	0.61	69.4	0.461	0.834	0.604	0.769	0.875	12.5%	21.4%
1992	10,268	4,722	2,890	69%	0.58	69	0.444	0.853	0.592	0.772	0.873	12.7%	21.8%
												Average:	29.12%

Formulas: D1485 Sacramento River Fall Run Smolt Survival Model

C8 ='Study 467 Flow Data'!G8
D8 ='Study 467 Flow Data'!AL8
E8 ='Study 467 Flow Data'!Q8 (HIDDEN)
F8 ='Study 467 Flow Data'!AA8 (HIDDEN)
G8 =(E8+F8)
H8 =0.374*C8-950
I8 =IF(C8>$I$2,(0.133*C8+829)/(C8-H8),(0.293*C8+2090)/(C8-H8))
J8 =(0.133*C8+829)/(C8-H8)
L8 =IF((-2.45925+(0.0420748*K8))<0,0,(-2.45925+(0.0420748*K8)))
M8 =(-0.5916024)+(0.017968*K8)+(0.0000434*G8)
N8 =-1.613493+(0.0319584*K8)
O8 =IF(D8>=$I$3,((M8*J8)+(N8*(1-J8))+(M8*I8)+(N8*(1-I8)))/2,(M8*I8)+(N8*(1-I8)))
P8 =L8+O8-(L8*O8)
Q8 =1-P8

S8 ='Study 467 Flow Data'!H8
T8 ='Study 467 Flow Data'!R8 (HIDDEN)
U8 ='Study 467 Flow Data'!AB8 (HIDDEN)
V8 =(T8+U8)
W8 =0.374*S8-950
X8 =IF(S8>$I$2,(0.133*S8+829)/(S8-W8),(0.293*S8+2090)/(S8-W8))
Y8 =(0.84*(0.133*S8+829)/(S8-W8))+(0.16*X8)
AA8 =(-2.45925+(0.0420748*Z8))
AB8 =(-0.5916024)+(0.017968*Z8)+(0.0000434*V8)
AC8 =-1.613493+(0.0319584*Z8)
AD8 =((AB8*Y8)+(AC8*(1-Y8))+(AB8*X8)+(AC8*(1-X8)))/2
AE8 =AA8+AD8-(AA8*AD8)
AF8 =1-AE8

AH8 ='Study 467 Flow Data'!I8
AI8 ='Study 467 Flow Data'!S8 (HIDDEN)
AJ8 ='Study 467 Flow Data'!AC8 (HIDDEN)
AK8 =(AI8+AJ8)
AL8 =0.374*AH8-950
AM8 =IF(AH8>$I$2,(0.133*AH8+829)/(AH8-AL8),(0.293*AH8+2090)/(AH8-AL8))
AN8 =(0.27*(0.133*AH8+829)/(AH8-AL8))+(0.73*AM8)
AP8 =(-2.45925+(0.0420748*AO8))
AQ8 =IF(((-0.5916024)+(0.017968*AO8)+(0.0000434*AK8))>1,1,((-0.5916024)+(0.017968*AO8)+(0.0000434*AK8)))
AR8 =-1.613493+(0.0319584*AO8)
AS8 =(AQ8*AM8)+(AR8*(1-AM8))
AT8 =AP8+AS8-(AP8*AS8)
AU8 =1-AT8
AW8 =(Q8*0.17)+(AF8*0.65)+(AU8*0.18)

D1485 Sacramento ate Fall Run Smolt Survival Model

(Modifies m2 by cheng e to 0.000054)

Cro nnel Closed above 25,000 cfs

Cross Channel closed when DOI is greater than 12,000 cfs in January

November Sac River Temperature 53 degrees F

December Sac River Temperature 47 degrees F

January Sac River Temperature 47 degrees F

NOVEMBER

Row	Year	WY Typ	Sac River Flows	CVP+SWP exports	Calculated Steamboat & Sutter Slough	percent	xchannel closed	m1	m2	m3	m23	m123	Calculated Survival s123
10	1922	A	11,008	7,512	3,167	68%	0.29		0.77	0.08	0.55	0.55	45.6%
11	1923	B	16,940	10,974	5,386	61%	0.27		0.95	0.08	0.61	0.61	38.7%
12	1924	C	10,991	9,008	3,161	68%	0.29		0.86	0.08	0.60	0.60	40.0%
13	1925	D	8,941	5,546	1,646	78%	0.33		0.66	0.08	0.53	0.53	46.8%
14	1926	D	9,344	6,907	2,545	71%	0.30		0.73	0.08	0.54	0.54	45.6%
15	1927	W	21,478	10,924	7,083	58%	0.26		0.95	0.08	0.59	0.59	41.3%
16	1928	A	21,629	10,974	7,139	58%	0.26		0.96	0.08	0.59	0.59	41.2%
17	1929	C	13,108	10,957	3,953	66%	0.28		0.95	0.08	0.65	0.65	35.5%
18	1930	D	8,151	5,294	2,098	74%	0.32		0.85	0.08	0.50	0.50	50.1%
19	1931	C	11,041	9,361	3,179	68%	0.29		0.87	0.08	0.61	0.61	38.7%
20	1932	D	7,075	4,521	1,698	77%	0.33		0.80	0.08	0.49	0.49	51.4%
21	1933	C	7,495	5,697	1,853	76%	0.32		0.67	0.08	0.53	0.53	47.3%
22	1934	C	6,487	4,188	1,476	80%	0.34		0.59	0.08	0.48	0.48	51.7%
23	1935	B	9,209	7,680	2,494	71%	0.31		0.78	0.08	0.58	0.58	42.4%
24	1936	B	12,369	9,781	3,676	66%	0.28		0.89	0.08	0.61	0.61	38.8%
25	1937	B	10,907	8,252	3,129	68%	0.29		0.81	0.08	0.57	0.57	42.6%
26	1938	W	22,958	10,974	7,636	58%	0.25		0.95	0.08	0.58	0.58	41.7%
27	1939	D	19,444	10,974	6,322	59%	0.26		0.95	0.08	0.60	0.60	40.2%
28	1940	A	7,915	5,832	2,010	75%	0.32		0.68	0.08	0.52	0.52	47.5%
29	1941	W	13,411	10,974	4,068	64%	0.28		0.95	0.08	0.64	0.64	35.7%
30	1942	W	18,164	10,974	5,851	60%	0.26		0.95	0.08	0.61	0.61	38.5%
31	1943	W	21,326	10,974	7,028	58%	0.26		0.95	0.08	0.59	0.59	41.1%
32	1944	D	12,823	10,806	3,846	65%	0.28		0.94	0.08	0.64	0.64	35.7%
33	1945	B	15,175	10,940	4,726	63%	0.27		0.95	0.08	0.63	0.63	37.5%
34	1946	B	17,293	10,974	5,518	61%	0.27		0.95	0.08	0.61	0.61	38.9%
35	1947	D	13,276	10,974	4,015	65%	0.28		0.95	0.08	0.64	0.64	35.6%
36	1948	B	11,108	9,411	3,205	68%	0.29		0.87	0.08	0.61	0.61	38.6%
37	1949	D	13,680	10,957	4,166	64%	0.28		0.96	0.08	0.64	0.64	36.1%
38	1950	B	12,050	10,369	3,567	66%	0.29		0.92	0.08	0.64	0.64	36.4%
39	1951	A	40,922	10,957	14,355	24%	0.24		0.95	0.08	0.29	0.29	71.4%
40	1952	W	16,822	10,974	5,342	61%	0.27		0.95	0.08	0.61	0.61	38.6%
41	1953	W	16,537	10,858	5,235	61%	0.27		0.95	0.08	0.61	0.61	38.8%
42	1954	A	21,007	10,974	6,907	58%	0.26		0.95	0.08	0.59	0.59	40.9%
43	1955	D	19,999	10,957	6,529	59%	0.26		0.95	0.08	0.60	0.60	40.5%
44	1956	W	12,134	10,487	3,588	66%	0.29		0.93	0.08	0.64	0.64	36.0%
45	1957	A	15,478	10,974	4,839	62%	0.27		0.96	0.08	0.62	0.62	37.6%
46	1958	W	19,259	10,957	6,253	59%	0.26		0.95	0.08	0.60	0.60	40.1%
47	1959	B	16,133	10,974	5,084	62%	0.27		0.96	0.08	0.62	0.62	38.1%
48	1960	D	10,184	8,252	2,859	69%	0.30		0.81	0.08	0.58	0.58	41.7%
49	1961	D	14,251	10,940	4,380	63%	0.28		0.95	0.08	0.63	0.63	36.7%
50	1962	B	10,403	8,789	2,941	69%	0.30		0.84	0.08	0.60	0.60	40.0%
51	1963	V.	21,730	10,974	7,177	58%	0.26		0.96	0.08	0.59	0.59	41.2%
52	1964	[	26,805	10,974	9,823	25%	0.25		0.95	0.08	0.29	0.29	70.5%
53	1965	V'	14,554	10,940	4,483	63%	0.27		0.95	0.08	0.63	0.63	36.9%
54	1966	E	29,628	10,974	10,131	24%	0.24		0.96	0.08	0.29	0.29	70.6%
55	1967	V'	18,301	10,957	5,895	60%	0.26		0.95	0.08	0.60	0.60	38.6%
56	1968	I	16,234	8,537	5,122	62%	0.27		0.82	0.08	0.54	0.54	46.3%
57	1969	VJ	14,638	10,957	4,524	63%	0.27		0.96	0.08	0.63	0.63	37.0%
58	1970	VJ	17,646	10,974	5,650	61%	0.26		0.96	0.08	0.61	0.61	39.1%
59	1971	VJ	23,141	10,974	7,705	57%	0.25		0.96	0.08	0.58	0.58	41.6%
60	1972	I·	16,756	10,957	5,316	61%	0.27		0.95	0.08	0.61	0.61	38.8%
61	1973	A	25,862	10,957	8,648	25%	0.25		0.96	0.08	0.30	0.30	70.2%
62	1974	W	58,920	10,974	21,088	23%	0.23		0.95	0.08	0.28	0.28	72.0%
63	1975	W	17,579	10,957	5,624	61%	0.26		0.95	0.08	0.61	0.61	39.1%
64	1976	C	19,226	10,974	6,240	59%	0.26		0.96	0.08	0.60	0.60	40.9%
65	1977	C	8,016	6,100	2,048	74%	0.32		0.69	0.08	0.53	0.53	46.6%
66	1978	A	5,243	3,042	1,011	86%	0.36		0.52	0.08	0.46	0.46	53.9%
67	1979	B	15,125	10,957	4,707	63%	0.27		0.95	0.08	0.63	0.63	37.4%
68	1980	A	16,301	10,974	5,147	62%	0.27		0.95	0.08	0.62	0.62	38.2%
69	1981	D	13,024	10,974	3,921	65%	0.28		0.95	0.08	0.65	0.65	35.3%
70	1982	W	37,897	10,957	13,223	24%	0.24		0.95	0.08	0.29	0.29	71.2%
71	1983	W	39,107	10,974	13,676	24%	0.24		0.95	0.08	0.29	0.29	71.3%
72	1984	W	62,802	7,932	22,538	23%	0.23		0.79	0.08	0.24	0.24	75.8%
73	1985	D	35,813	10,974	12,444	24%	0.24		0.95	0.08	0.29	0.29	71.1%
74	1986	W	9,949	9,075	2,771	70%	0.30		0.85	0.08	0.62	0.62	38.2%
75	1987	D	11,125	8,420	3,211	68%	0.29		0.82	0.08	0.58	0.58	42.3%
76	1988	C	8,686	6,941	2,299	73%	0.31		0.74	0.08	0.56	0.56	44.4%
77	1989	D	9,730	7,848	2,689	70%	0.30		0.78	0.08	0.57	0.57	42.6%
78	1990	C	12,251	10,487	3,632	66%	0.29		0.83	0.08	0.64	0.64	36.2%
79	1991	C	7,512	5,178	1,860	76%	0.32		0.64	0.08	0.51	0.51	48.5%
80	1992	C	7,714	4,588	1,935	75%	0.32		0.61	0.08	0.48	0.48	52.2%

DECEMBER

Row	Year	Sac River Flows	CVP+SWP exports	Steamboat & Sutter Slough Q	percent	xchannel closed	m1	m2	m3	m23	m123	Calculated Survival s123
10	1922	17,142	11,319	5,461	61%	0.27		0.86		0.53	0.53	47.4%
11	1923	34,202	11,303	11,842	24%	0.24		0.88		0.21	0.21	79.2%
12	1924	15,353	11,157	4,792	62%	0.27		0.86		0.53	0.53	46.6%
13	1925	11,271	8,508	3,285	67%	0.29		0.71		0.48	0.48	52.0%
14	1926	10,620	7,026	3,022	68%	0.30		0.63		0.43	0.43	56.7%
15	1927	15,641	11,254	4,974	62%	0.27		0.86		0.53	0.53	46.7%
16	1928	16,572	11,287	5,248	61%	0.27		0.86		0.53	0.53	47.1%
17	1929	13,954	11,140	4,289	64%	0.28		0.86		0.55	0.55	45.5%
18	1930	14,767	10,994	4,573	63%	0.27		0.85		0.53	0.53	46.7%
19	1931	11,449	6,489	3,332	67%	0.29		0.60		0.40	0.40	59.5%
20	1932	14,653	11,401	4,530	63%	0.27		0.87		0.55	0.55	45.2%
21	1933	9,904	5,399	2,754	70%	0.30		0.54		0.38	0.38	62.0%
22	1934	12,474	9,319	3,715	66%	0.28		0.76		0.50	0.50	50.4%
23	1935	8,522	4,895	2,237	73%	0.31		0.52		0.38	0.38	62.2%
24	1936	14,767	11,157	4,573	63%	0.27		0.88		0.54	0.54	46.2%
25	1937	14,052	11,206	4,305	64%	0.28.		0.86		0.56	0.55	45.4%
26	1938	51,246	11,742	18,216	23%	0.23		0.89		0.21	0.21	79.5%
27	1939	18,687	8,750	6,039	60%	0.26		0.73		0.43	0.43	56.6%
28	1940	9,579	5,090	2,633	70%	0.30		0.53		0.37	0.37	62.8%
29	1941	32,413	11,563	11,172	24%	0.24		0.88		0.21	0.21	78.8%
30	1942	65,623	9,368	23,593	23%	0.23		0.76		0.17	0.17	82.7%
31	1943	28,803	10,036	9,822	25%	0.25		0.79		0.20	0.20	80.5%
32	1944	13,775	10,474	4,202	64%	0.28		0.82		0.52	0.52	47.6%
33	1945	17,272	11,173	5,510	61%	0.27		0.86		0.52	0.52	47.9%
34	1946	56,109	11,807	20,036	23%	0.23		0.89		0.20	0.20	79.5%
35	1947	17,630	11,352	5,643	61%	0.26		0.87		0.52	0.52	47.6%
36	1948	12,149	7,335	3,594	66%	0.29		0.65		0.43	0.43	57.1%
37	1949	15,564	11,140	4,871	62%	0.27		0.85		0.53	0.53	46.9%
38	1950	12,263	7,644	3,636	66%	0.29		0.67		0.44	0.44	56.1%
39	1951	66,631	11,807	23,970	23%	0.23		0.89		0.20	0.20	79.8%
40	1952	51,982	11,319	18,484	23%	0.23		0.88		0.20	0.20	80.0%
41	1953	42,334	7,953	14,863	24%	0.24		0.68		0.16	0.16	83.9%
42	1954	14,914	11,092	4,628	63%	0.27		0.85		0.53	0.53	46.5%
43	1955	25,517	11,140	8,593	25%	0.25		0.86		0.21	0.21	78.7%
44	1956	32,933	11,807	11,367	24%	0.24		0.89		0.22	0.22	78.5%
45	1957	14,149	11,238	4,342	64%	0.28		0.88		0.56	0.55	45.3%
46	1958	23,745	11,140	7,930	57%	0.25		0.85		0.49	0.49	51.1%
47	1959	14,621	9,937	4,518	63%	0.27		0.79		0.50	0.50	50.2%
48	1960	11,856	7,010	3,484	66%	0.29		0.63		0.42	0.42	58.0%
49	1961	19,711	11,124	6,422	59%	0.26		0.86		0.51	0.51	48.5%
50	1962	18,004	11,124	5,783	60%	0.28		0.85		0.51	0.51	48.6%
51	1963	28,054	11,140	9,542	25%	0.25		0.85		0.21	0.21	79.0%
52	1964	14,849	11,206	4,803	63%	0.27		0.86		0.54	0.54	46.1%
53	1965	27,371	11,677	9,287	25%	0.25		0.88		0.22	0.22	78.2%
54	1966	16,995	11,726	5,408	61%	0.27		0.89		0.54	0.54	45.9%
55	1967	39,699	11,338	13,897	24%	0.24		0.87		0.20	0.20	79.5%
56	1968	16,686	7,953	5,291	61%	0.27		0.66		0.42	0.42	58.2%
57	1969	27,144	11,169	9,202	25%	0.25		0.86		0.21	0.21	78.8%
58	1970	50,156	7,693	17,809	23%	0.23		0.67		0.15	0.15	84.5%
59	1971	57,101	11,254	20,408	23%	0.23		0.86		0.20	0.20	80.2%
60	1972	22,053	11,157	7,298	58%	0.25		0.86		0.50	0.50	50.4%
61	1973	26,753	11,140	9,058	25%	0.25		0.85		0.21	0.21	78.8%
62	1974	61,590	11,384	22,085	23%	0.23		0.87		0.20	0.20	80.2%
63	1975	17,613	11,303	5,637	61%	0.26		0.88		0.52	0.52	47.7%
64	1976	16,768	11,206	5,321	61%	0.27		0.86		0.52	0.52	47.5%
65	1977	9,205	5,058	2,493	71%	0.31		0.53		0.38	0.38	62.5%
66	1978	12,296	9,660	3,648	66%	0.28		0.77		0.51	0.51	49.0%
67	1979	12,794	9,758	3,819	65%	0.28		0.78		0.51	0.51	49.1%
68	1980	21,842	11,206	7,219	58%	0.26		0.86		0.50	0.50	50.2%
69	1981	15,618	9,254	4,889	62%	0.27		0.75		0.47	0.47	53.2%
70	1982	66,599	11,238	24,708	23%	0.23		0.88		0.19	0.19	80.5%
71	1983	56,410	11,807	19,773	23%	0.23		0.89		0.20	0.20	79.5%
72	1984	82,944	7,319	30,071	22%	0.22		0.65		0.15	0.15	85.5%
73	1985	23,875	11,173	7,979	57%	0.25		0.86		0.49	0.49	51.1%
74	1986	16,166	11,157	5,096	62%	0.27		0.86		0.53	0.53	47.3%
75	1987	12,864	9,364	3,861	65%	0.28		0.78		0.49	0.49	50.6%
76	1988	16,346	11,124	5,163	62%	0.27		0.85		0.53	0.53	47.5%
77	1989	10,083	6,017	2,821	69%	0.30		0.58		0.40	0.40	58.9%
78	1990	16,119	11,124	5,078	62%	0.27		0.85		0.53	0.53	47.3%
79	1991	10,360	5,578	2,925	69%	0.30		0.55		0.38	0.38	61.8%
80	1992	8,164	4,440	2,103	74%	0.32		0.49		0.36	0.36	63.8%

JANUARY

Row	Year	Sac River Flow	Total Delta Outflow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
10	1922	17,499	11,401	11,791	5,595	61%	0.27		0.89		0.54	0.54	46%	46.6%
11	1923	32,283	33,356	7,855	11,124	24%	0.24		0.88		0.16	0.16	84%	70.2%
12	1924	18,036	9,726	10,522	5,798	60%	0.26		0.82		0.49	0.49	51%	45.9%
13	1925	10,213	9,758	3,171	2,870	69%	0.30		0.42		0.29	0.29	71%	55.4%
14	1926	18,065	9,986	10,848	5,814	60%	0.26		0.84		0.50	0.50	50%	52.1%
15	1927	30,606	23,810	11,496	10,497	24%	0.24		0.87		0.21	0.21	79%	53.3%
16	1928	25,206	21,533	7,855	8,478	25%	0.25		0.68		0.17	0.17	83%	54.6%
17	1929	15,776	9,400	8,701	4,950	62%	0.27		0.72		0.45	0.45	55%	45.4%
18	1930	21,077	13,694	11,368	6,933	58%	0.26		0.87		0.22	0.22	78%	55.3%
19	1931	13,775	9,726	6,928	4,202	64%	0.28		0.63		0.40	0.40	60%	54.4%
20	1932	17,256	11,075	12,035	5,504	61%	0.27		0.90		0.55	0.55	45%	46.7%
21	1933	13,905	9,726	8,002	4,251	64%	0.28		0.68		0.44	0.44	56%	56.9%
22	1934	16,101	10,002	9,693	5,072	62%	0.27		0.78		0.48	0.48	52%	51.2%
23	1935	25,469	21,760	11,872	8,575	25%	0.25		0.89		0.22	0.22	78%	61.1%
24	1936	32,966	27,599	11,661	11,379	24%	0.24		0.88		0.21	0.21	79%	52.5%
25	1937	15,223	9,953	9,904	4,743	63%	0.27		0.79		0.49	0.49	51%	46.0%
26	1938	31,437	31,275	11,106	10,806	24%	0.24		0.85		0.21	0.21	79%	70.0%
27	1939	18,410	14,312	7,481	5,935	60%	0.26		0.66		0.17	0.17	83%	59.0%
28	1940	23,696	21,368	12,230	7,912	57%	0.25		0.91		0.23	0.23	77%	62.5%
29	1941	73,885	103,387	12,393	26,683	23%	0.23		0.92		0.21	0.21	79%	68.1%
30	1942	63,265	86,700	7,481	22,711	23%	0.23		0.66		0.15	0.15	85%	72.5%
31	1943	58,060	88,506	7,546	20,765	23%	0.23		0.66		0.15	0.15	85%	71.7%
32	1944	17,678	11,384	9,530	5,662	60%	0.26		0.77		0.46	0.46	54%	48.1%
33	1945	13,856	5,107	11,466	4,232	64%	0.28		0.87		0.56	0.56	44%	44.4%
34	1946	43,228	51,132	9,937	15,217	23%	0.23		0.79		0.19	0.19	81%	69.9%
35	1947	14,474	5,595	11,626	4,463	63%	0.28		0.88		0.56	0.56	44%	43.8%
36	1948	18,312	9,742	8,294	5,151	62%	0.27		0.70		0.43	0.43	57%	52.4%
37	1949	15,906	7,042	11,352	4,999	62%	0.27		0.87		0.54	0.54	46%	44.0%
38	1950	22,183	15,141	11,401	7,347	58%	0.25		0.87		0.22	0.22	78%	56.6%
39	1951	62,208	72,681	12,279	22,316	23%	0.23		0.92		0.21	0.21	79%	77.5%
40	1952	67,347	91,173	12,718	24,238	23%	0.23		0.94		0.21	0.21	79%	69.3%
41	1953	64,078	100,492	7,546	23,015	23%	0.23		0.66		0.15	0.15	85%	72.9%
42	1954	33,421	27,908	8,083	11,550	24%	0.24		0.69		0.17	0.17	83%	54.3%
43	1955	22,004	16,426	11,401	7,280	58%	0.26		0.87		0.22	0.22	78%	68.9%
44	1956	84,716	174,458	12,718	30,734	22%	0.22		0.94		0.21	0.21	79%	68.0%
45	1957	18,638	9,791	11,580	6,021	60%	0.26		0.88		0.53	0.53	47%	43.9%
46	1958	43,179	36,967	11,433	15,199	23%	0.23		0.87		0.20	0.20	80%	55.5%
47	1959	36,162	31,486	7,563	12,200	24%	0.24		0.66		0.16	0.16	84%	55.7%
48	1960	15,776	9,742	8,556	4,950	62%	0.27		0.71		0.44	0.44	56%	53.4%
49	1961	15,255	7,676	11,352	4,755	62%	0.27		0.87		0.54	0.54	46%	45.4%
50	1962	13,710	4,050	11,336	4,178	64%	0.28		0.87		0.55	0.55	45%	45.4%
51	1963	18,313	11,092	11,466	5,899	60%	0.26		0.87		0.52	0.52	48%	51.7%
52	1964	27,046	21,256	10,766	9,165	25%	0.25		0.83		0.21	0.21	79%	60.5%
53	1965	81,236	120,528	12,718	28,432	22%	0.22		0.94		0.21	0.21	79%	68.0%
54	1966	29,632	26,184	11,742	10,132	24%	0.24		0.89		0.22	0.22	78%	60.2%
55	1967	36,637	49,555	11,889	12,827	24%	0.24		0.69		0.21	0.21	79%	69.3%
56	1968	30,640	26,006	7,546	10,509	24%	0.24		0.66		0.16	0.16	84%	61.7%
57	1969	71,868	125,944	12,718	25,929	23%	0.23		0.94		0.21	0.21	79%	68.3%
58	1970	92,669	206,107	7,546	33,708	22%	0.22		0.66		0.15	0.15	85%	73.4%
59	1971	47,538	46,286	11,677	16,829	23%	0.23		0.88		0.21	0.21	79%	70.4%
60	1972	20,394	11,206	11,384	6,677	59%	0.26		0.87		0.51	0.51	49%	47.1%
61	1973	48,400	75,283	11,775	17,152	23%	0.23		0.89		0.21	0.21	79%	76.8%
62	1974	78,422	129,977	12,555	28,380	22%	0.22		0.93		0.21	0.21	79%	77.9%
63	1975	18,670	11,840	9,969	6,033	60%	0.26		0.79		0.47	0.47	53%	46.8%
64	1976	16,768	7,253	11,498	5,321	61%	0.27		0.87		0.53	0.53	47%	45.4%
65	1977	10,701	10,181	2,131	3,052	68%	0.29		0.37		0.25	0.25	75%	61.8%
66	1978	47,868	61,378	11,986	16,878	23%	0.23		0.90		0.21	0.21	79%	57.7%
67	1979	27,241	28,201	7,481	9,238	25%	0.25		0.66		0.16	0.16	84%	54.9%
68	1980	69,884	118,382	9,563	25,187	23%	0.23		0.77		0.17	0.17	83%	55.3%
69	1981	26,185	25,615	7,563	9,591	25%	0.25		0.66		0.16	0.16	84%	56.4%
70	1982	51,185	79,366	12,718	18,186	23%	0.23		0.94		0.22	0.22	78%	77.6%
71	1983	59,150	106,987	10,132	21,172	23%	0.23		0.80		0.18	0.18	82%	78.0%
72	1984	47,359	76,422	4,505	16,762	23%	0.23		0.50		0.12	0.12	88%	83.8%
73	1985	17,646	12,019	8,083	5,650	61%	0.26		0.69		0.18	0.18	82%	63.7%
74	1986	21,712	14,670	11,563	7,170	58%	0.26		0.88		0.22	0.22	78%	52.6%
75	1987	16,735	10,132	8,620	5,309	61%	0.27		0.72		0.44	0.44	56%	49.9%
76	1988	26,022	19,240	11,336	8,782	25%	0.25		0.87		0.22	0.22	78%	54.5%
77	1989	12,994	9,937	4,749	3,910	65%	0.28		0.51		0.33	0.33	67%	57.3%
78	1990	22,395	14,866	9,888	7,426	58%	0.25		0.79		0.20	0.20	80%	52.7%
79	1991	10,653	9,937	1,968	3,034	68%	0.29		0.38		0.25	0.25	75%	62.1%
80	1992	12,149	10,295	3,773	3,594	66%	0.29		0.46		0.30	0.30	70%	62.3%
													Average:	58.97%

Formulas: D1485 Sacramento River Late Fall Run Smolt Survival Model

C10 ='Study 467 Flow Data'!B8
D10 ='Study 467 Flow Data'!L8 (HIDDEN)
E10 ='Study 467 Flow Data'!V8 (HIDDEN)
F10 =(D10+E10)
G10 =0.374*C10-950
H10 =IF(C10>$H$3,(0.133*C10+829)/(C10-G10),(0.293*C10+2090)/(C10-G10))
I10 =(0.133*C10+829)/(C10-G10)
K10 =(-0.5916024)+(0.017968*$Q$1)+(0.000054*F10)
L10 =-1.613493+(0.0319584*$Q$1)
M10 =(K10*H10)+(L10*(1-H10))
N10 =J10+M10-(J10*M10)
O10

Q10 ='Study 467 Flow Data'!C8
R10 ='Study 467 Flow Data'!M8 (HIDDEN)
S10 ='Study 467 Flow Data'!W8 (HIDDEN)
T10 =(R10+S10)
U10 =0.374*Q10-950
V10 =IF(Q10>$H$3,(0.133*Q10+829)/(Q10-U10),(0.293*Q10+2090)/(Q10-U10))
W10 =(0.133*Q10+829)/(Q10-U10)
Y10 =(-0.5916024)+(0.017968*$Q$2)+(0.000054*T10)
AA1 =(Y10*V10)
AB1 =X10+AA10-(X10*AA10)
AC1 =1-AB10

AE10 ='Study 467 Flow Data'!D8
AF10 ='Study 467 Flow Data'!AI8
AG10 ='Study 467 Flow Data'!N8 (HIDDEN)
AH10 ='Study 467 Flow Data'!X8 (HIDDEN)
AI10 =(AG10+AH10)
AJ10 =0.374*AE10-950
AK10 =IF(AE10>$H$3,(0.133*AE10+829)/(AE10-AJ10),(0.293*AE10+2090)/(AE10-AJ10))
AL10 =(0.133*AE10+829)/(AE10-AJ10)
AN10 =(-0.5916024)+(0.017968*$Q$3)+(0.000054*AI10)
AP10 =IF(AF10>=$H$4,(AN10*AL10),(AN10*AK10))
AQ10 =AM10+AP10-(AM10*AP10)
AR10 =1-AQ10
AT10 =(O10*0.25)+(AC10*0.5)+(AR10*0.25)

C-032376

C-032376

C-032377

D1485 Winter Run Sa... Smolt Survival Model — February Sac R Temp 50 degrees F — April Sacramento river temperatures based on limited historical data fro...

Cross Channel Closed. 25,000 cfs — March Sac R Temp 55 degrees F

Cross Channel Closed from Feb to Apr when DOI greater than 12,000 cfs

FEBRUARY

Row	Year	Water Year Type	Sac River Flows	Total Delta Outflow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	x channel closed	m1	m2	m3	m23	m123	Calculated Survival s123
9	1922	A	35,436	40,297	11,470	12,303	24%	0.24		0.93		0.22	0.22	77.8%
10	1923	B	19,050	16,007	8,661	6,175	60%	0.26		0.77		0.20	0.20	79.8%
11	1924	C	16,655	7,823	11,074	5,279	61%	0.27		0.90		0.55	0.55	44.8%
12	1925	D	45,105	52,974	11,812	15,919	23%	0.23		0.94		0.22	0.22	77.9%
13	1926	D	35,274	32,735	11,866	12,242	24%	0.24		0.95		0.23	0.23	77.3%
14	1927	W	88,337	135,315	11,776	32,088	22%	0.22		0.94		0.21	0.21	78.9%
15	1928	A	25,469	22,270	8,327	8,575	25%	0.25		0.76		0.19	0.19	81.1%
16	1929	C	18,780	9,921	11,470	6,074	60%	0.26		0.93		0.55	0.55	44.7%
17	1930	D	17,582	9,525	11,466	5,629	61%	0.26		0.93		0.56	0.56	43.9%
18	1931	C	12,640	3,671	10,864	3,777	66%	0.28		0.90		0.59	0.59	41.2%
19	1932	D	15,403	16,916	12,309	4,811	62%	0.27		0.97		0.26	0.26	73.8%
20	1933	C	13,324	3,907	11,596	4,033	65%	0.26		0.93		0.60	0.60	39.8%
21	1934	C	13,018	6,518	11,740	3,919	66%	0.28		0.94		0.61	0.61	39.0%
22	1935	B	13,000	11,992	5,060	3,912	66%	0.28		0.58		0.38	0.38	62.4%
23	1936	B	53,442	90,420	11,631	19,037	23%	0.23		0.93		0.22	0.22	78.4%
24	1937	B	32,033	44,421	12,586	11,030	24%	0.24		0.99		0.24	0.24	76.1%
25	1938	W	82,359	151,662	8,229	29,852	22%	0.22		0.75		0.17	0.17	83.1%
26	1939	D	19,032	15,071	8,211	6,166	60%	0.26		0.75		0.20	0.20	80.4%
27	1940	A	47,722	56,396	12,309	16,898	23%	0.23		0.97		0.23	0.23	77.4%
28	1941	W	75,031	127,104	10,085	27,112	23%	0.23		0.86		0.19	0.19	80.8%
29	1942	W	78,344	144,966	8,247	28,361	23%	0.23		0.75		0.17	0.17	83.1%
30	1943	W	52,253	61,706	8,301	18,593	23%	0.23		0.76		0.17	0.17	82.6%
31	1944	D	27,451	27,190	7,962	9,317	25%	0.25		0.74		0.18	0.18	81.8%
32	1945	B	39,451	49,156	8,643	13,805	24%	0.24		0.77		0.18	0.18	81.7%
33	1946	B	23,586	21,931	8,867	7,872	57%	0.25		0.78		0.20	0.20	80.4%
34	1947	D	20,563	13,378	11,002	6,740	59%	0.26		0.90		0.23	0.23	76.8%
35	1948	B	11,109	2,417	10,031	3,205	66%	0.29		0.86		0.57	0.57	42.6%
36	1949	D	18,133	7,202	11,470	5,084	62%	0.27		0.93		0.57	0.57	42.9%
37	1950	B	36,372	30,610	11,794	12,653	24%	0.24		0.94		0.23	0.23	77.5%
38	1951	A	60,572	70,331	8,967	21,704	23%	0.23		0.79		0.18	0.18	81.9%
39	1952	W	62,499	79,241	8,762	22,425	23%	0.23		0.78		0.18	0.18	82.2%
40	1953	W	28,341	27,441	8,337	9,650	25%	0.25		0.78		0.19	0.19	81.4%
41	1954	A	57,151	57,475	8,931	20,424	23%	0.23		0.79		0.18	0.18	81.9%
42	1955	D	16,295	7,326	11,506	5,144	62%	0.27		0.93		0.57	0.57	42.9%
43	1956	W	61,543	90,559	8,658	22,067	23%	0.23		0.77		0.18	0.18	82.3%
44	1957	A	33,149	29,620	9,057	11,448	24%	0.24		0.80		0.19	0.19	80.8%
45	1958	W	65,740	158,236	9,327	23,637	23%	0.23		0.81		0.18	0.18	81.6%
46	1959	B	50,075	52,541	8,337	17,778	23%	0.23		0.76		0.18	0.18	82.4%
47	1960	D	27,061	22,879	11,144	9,167	25%	0.25		0.91		0.22	0.22	77.5%
48	1961	D	33,347	26,217	9,631	11,522	24%	0.24		0.84		0.20	0.20	79.8%
49	1962	B	46,707	56,899	11,164	16,519	23%	0.23		0.91		0.21	0.21	78.9%
50	1963	W	54,846	69,143	12,694	19,582	23%	0.23		0.99		0.23	0.23	77.2%
51	1964	D	17,248	10,483	8,640	5,500	61%	0.27		0.77		0.47	0.47	53.0%
52	1965	W	33,329	31,781	12,206	11,515	24%	0.24		0.97		0.23	0.23	76.7%
53	1966	B	26,775	26,379	8,897	9,064	25%	0.25		0.78		0.19	0.19	80.8%
54	1967	W	43,108	56,683	8,896	15,172	23%	0.23		0.79		0.18	0.18	81.5%
55	1968	B	54,520	58,327	8,049	19,440	23%	0.23		0.74		0.17	0.17	82.9%
56	1969	W	67,486	148,367	7,454	24,290	23%	0.23		0.71		0.16	0.16	83.9%
57	1970	W	57,566	91,254	7,851	20,579	23%	0.23		0.73		0.17	0.17	83.2%
58	1971	W	28,521	24,308	8,967	9,717	25%	0.25		0.79		0.19	0.19	80.6%
59	1972	B	24,217	17,872	9,075	8,107	57%	0.25		0.80		0.20	0.20	80.0%
60	1973	A	70,961	95,864	8,889	25,560	23%	0.23		0.83		0.19	0.19	81.2%
61	1974	W	41,918	46,005	8,679	14,727	24%	0.24		0.78		0.18	0.18	81.7%
62	1975	W	56,807	63,345	8,931	21,044	23%	0.23		0.79		0.18	0.18	81.9%
63	1976	G	19,523	13,389	8,536	8,352	58%	0.26		0.77		0.20	0.20	80.0%
64	1977	C	7,258	2,503	5,796	1,764	77%	0.33		0.62		0.48	0.48	52.4%
65	1978	A	51,371	56,827	12,406	18,263	23%	0.23		0.98		0.23	0.23	77.4%
66	1979	B	42,044	49,570	8,211	14,774	24%	0.24		0.75		0.18	0.18	82.3%
67	1980	A	69,453	138,696	7,771	25,026	23%	0.23		0.73		0.16	0.16	83.5%
68	1981	D	29,674	24,956	8,337	10,148	24%	0.24		0.76		0.19	0.19	81.5%
69	1982	W	65,650	106,613	9,417	23,603	23%	0.23		0.82		0.19	0.19	81.6%
70	1983	W	82,917	165,029	7,112	30,061	22%	0.22		0.69		0.15	0.15	84.5%
71	1984	W	36,004	44,036	5,265	12,516	24%	0.24		0.59		0.14	0.14	85.8%
72	1985	D	22,381	18,078	8,895	7,421	58%	0.25		0.79		0.20	0.20	80.0%
73	1986	W	99,825	227,055	12,748	36,385	22%	0.22		1.00		0.22	0.22	77.9%
74	1987	D	23,030	20,563	5,852	7,863	58%	0.25		0.62		0.16	0.16	84.2%
75	1988	C	11,248	2,417	10,205	3,257	67%	0.29		0.88		0.58	0.58	42.2%
76	1989	D	9,093	2,503	6,355	2,451	72%	0.31		0.76		0.54	0.54	45.7%
77	1990	C	17,754	11,956	8,715	5,890	60%	0.26		0.78		0.47	0.47	53.0%
78	1991	C	8,211	2,503	6,932	2,121	74%	0.32		0.86		0.50	0.50	49.7%
79	1992	C	31,415	26,999	11,300	10,799	24%	0.24		0.92		0.22	0.22	77.7%

MARCH

Row	Sac River Flows	Total Delta Outflow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	x channel closed	m1	m2	m3	m23	m123	Calculated Survival s123
9	31,551	31,112	8,034	10,850	24%	0.24		0.850	0.144	0.311	0.311	68.9%
10	17,337	11,319	8,852	5,534	61%	0.27		0.894	0.144	0.581	0.581	41.9%
11	8,603	2,506	7,286	2,268	73%	0.31		0.790	0.144	0.614	0.614	38.6%
12	18,557	12,002	10,083	5,980	60%	0.26		0.941	0.144	0.353	0.353	64.7%
13	16,019	6,473	11,206	6,041	62%	0.27		1.000	0.144	0.673	0.673	32.7%
14	43,863	42,822	7,811	15,455	23%	0.23		0.806	0.144	0.300	0.300	70.0%
15	86,229	98,126	8,852	31,300	22%	0.22		0.894	0.144	0.305	0.305	69.5%
16	14,670	9,042	7,579	4,536	63%	0.27		0.806	0.144	0.561	0.561	43.9%
17	30,852	26,067	8,945	10,568	24%	0.24		0.890	0.144	0.323	0.323	67.7%
18	9,319	2,506	7,709	2,535	71%	0.30		0.813	0.144	0.619	0.619	38.1%
19	10,116	6,066	8,620	2,833	69%	0.30		0.862	0.144	0.642	0.642	35.8%
20	10,994	2,506	10,946	3,162	68%	0.29		0.988	0.144	0.716	0.716	28.4%
21	12,214	2,506	10,864	3,618	66%	0.29		0.983	0.144	0.698	0.698	30.2%
22	24,916	21,256	11,498	8,368	57%	0.25		1.000	0.144	0.358	0.358	64.2%
23	34,202	32,999	8,392	11,842	24%	0.24		0.860	0.144	0.314	0.314	68.6%
24	37,260	48,522	8,228	12,985	24%	0.24		0.841	0.144	0.310	0.310	69.0%
25	78,634	176,279	7,596	28,459	22%	0.22		0.807	0.144	0.293	0.293	70.7%
26	16,394	12,230	7,811	5,181	61%	0.27		0.806	0.144	0.322	0.322	67.8%
27	63,606	108,672	9,872	22,839	23%	0.23		0.930	0.144	0.323	0.323	67.7%
28	56,581	96,361	8,067	20,959	23%	0.23		0.832	0.144	0.302	0.302	69.8%
29	27,095	29,681	8,229	9,183	25%	0.25		0.841	0.144	0.317	0.317	68.3%
30	64,598	90,262	8,278	23,210	23%	0.23		0.844	0.144	0.303	0.303	69.7%
31	25,094	21,874	8,248	8,436	25%	0.25		0.842	0.144	0.319	0.319	68.1%
32	27,030	31,372	7,497	9,159	25%	0.25		0.801	0.144	0.307	0.307	69.3%
33	23,533	20,459	8,666	7,851	57%	0.25		0.866	0.144	0.326	0.326	67.4%
34	21,874	16,556	8,408	7,231	58%	0.26		0.861	0.144	0.325	0.325	67.5%
35	16,735	12,002	7,237	5,309	61%	0.27		0.787	0.144	0.316	0.316	68.4%
36	41,813	40,577	9,319	14,668	24%	0.24		0.900	0.144	0.322	0.322	67.8%
37	23,615	18,052	8,665	7,662	57%	0.25		0.866	0.144	0.326	0.326	67.4%
38	29,323	30,039	8,929	10,017	24%	0.24		0.879	0.144	0.324	0.324	67.6%
39	57,524	71,673	8,181	20,564	23%	0.23		0.836	0.144	0.303	0.303	69.7%
40	24,899	20,636	8,343	8,362	57%	0.25		0.847	0.144	0.320	0.320	68.0%
41	49,536	46,400	8,912	17,577	23%	0.23		0.878	0.144	0.314	0.314	68.6%
42	15,158	8,490	8,473	4,719	63%	0.27		0.864	0.144	0.588	0.588	41.2%
43	36,674	38,935	8,278	12,766	24%	0.24		0.844	0.144	0.311	0.311	68.9%
44	44,363	43,423	8,615	15,649	23%	0.23		0.873	0.144	0.315	0.315	68.5%
45	93,612	127,977	8,311	34,061	22%	0.22		0.845	0.144	0.301	0.301	69.9%
46	21,760	17,304	8,343	7,166	58%	0.26		0.847	0.144	0.324	0.324	67.6%
47	21,809	13,824	10,620	7,207	58%	0.26		0.970	0.144	0.355	0.355	64.5%
48	21,336	15,092	8,148	7,030	58%	0.26		0.837	0.144	0.322	0.322	67.8%
49	27,014	25,046	8,571	9,153	25%	0.25		0.859	0.144	0.321	0.321	67.9%
50	32,641	29,258	8,665	11,256	24%	0.24		0.866	0.144	0.319	0.319	68.1%
51	16,345	9,156	8,929	5,183	62%	0.27		0.879	0.144	0.596	0.596	40.4%
52	21,366	18,703	8,083	7,049	58%	0.26		0.833	0.144	0.321	0.321	67.9%
53	26,669	24,265	8,668	9,780	25%	0.25		0.866	0.144	0.321	0.321	67.9%
54	54,483	61,915	7,530	19,426	23%	0.23		0.803	0.144	0.296	0.296	70.4%
55	36,786	35,649	7,741	12,809	24%	0.24		0.815	0.144	0.304	0.304	69.6%
56	45,326	71,250	6,733	16,002	23%	0.23		0.760	0.144	0.288	0.288	71.2%
57	35,812	40,870	7,336	12,444	24%	0.24		0.793	0.144	0.299	0.299	70.1%
58	51,506	49,063	8,929	18,313	23%	0.23		0.879	0.144	0.314	0.314	68.6%
59	32,933	25,615	8,799	11,367	24%	0.24		0.872	0.144	0.320	0.320	68.0%
60	47,554	62,712	8,701	16,836	23%	0.23		0.866	0.144	0.312	0.312	68.8%
61	100,199	113,047	8,668	36,524	22%	0.22		0.866	0.144	0.304	0.304	69.6%
62	75,999	90,665	8,929	27,474	23%	0.23		0.879	0.144	0.310	0.310	69.0%
63	18,361	10,663	8,852	5,917	60%	0.26		0.894	0.144	0.576	0.576	42.4%
64	6,863	3,952	3,708	1,617	78%	0.33		0.597	0.144	0.498	0.498	50.2%
65	46,485	70,616	8,116	16,428	23%	0.23		0.836	0.144	0.305	0.305	69.5%
66	32,592	35,958	8,229	11,239	24%	0.24		0.841	0.144	0.313	0.313	68.7%
67	36,479	61,020	7,579	12,693	24%	0.24		0.806	0.144	0.302	0.302	69.8%
68	32,494	29,258	8,343	11,203	24%	0.24		0.847	0.144	0.314	0.314	68.6%
69	69,087	89,790	8,898	24,888	23%	0.23		0.877	0.144	0.310	0.310	69.0%
70	81,935	251,823	4,684	29,684	22%	0.22		0.650	0.144	0.258	0.258	74.2%
71	36,495	36,674	7,418	12,699	24%	0.24		0.797	0.144	0.300	0.300	70.0%
72	21,809	16,816	8,912	7,207	58%	0.26		0.878	0.144	0.332	0.332	66.8%
73	72,535	157,479	8,245	26,178	23%	0.23		0.734	0.144	0.277	0.277	72.3%
74	29,876	26,591	6,863	10,224	24%	0.24		0.767	0.144	0.296	0.296	70.4%
75	7,075	2,506	5,351	1,898	77%	0.33		0.666	0.144	0.563	0.563	43.7%
76	46,611	39,081	11,189	16,483	23%	0.23		1.000	0.144	0.344	0.344	65.6%
77	15,483	9,872	6,603	4,841	62%	0.27		0.753	0.144	0.523	0.523	47.7%
78	30,429	24,249	11,319	10,430	24%	0.24		1.000	0.144	0.353	0.353	64.7%
79	20,102	12,669	10,913	8,566	59%	0.26		0.966	0.144	0.362	0.362	63.8%

APRIL

Row	Sac River Flows	Total Delta Outflow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	x channel closed	temp f	m1	m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
9	22,822	19,528	9,546	7,585	0.58	0.25	58.5	0.002	0.975	0.256	0.554	0.555	44.5%	62.7%
10	24,418	21,175	10,100	8,183	0.57	0.25	58.3	0.000	1.000	0.250	0.557	0.557	44.3%	47.5%
11	7,630	7,394	571	1,904	0.76	0.32	61.5	0.128	0.544	0.362	0.497	0.562	43.8%	40.9%
12	22,906	17,664	11,226	7,617	0.58	0.25	59.1	0.027	1.000	0.275	0.576	0.587	41.3%	58.4%
13	18,268	14,285	10,739	5,862	0.60	0.26	61.6	0.133	1.000	0.365	0.634	0.682	31.8%	38.2%
14	48,215	47,022	9,784	17,062	0.23	0.23	56.8	0.000	0.956	0.202	0.377	0.377	62.3%	68.9%
15	29,208	24,771	10,063	9,974	0.25	0.25	58.7	0.011	1.000	0.262	0.443	0.449	55.1%	66.7%
16	7,075	2,504	5,395	1,898	0.77	0.33	58.3	0.000	0.711	0.186	0.592	0.592	40.8%	43.0%
17	13,713	6,235	9,344	4,179	0.64	0.28	59.6	0.048	0.984	0.291	0.735	0.748	25.2%	51.9%
18	13,377	9,310	4,269	4,053	0.64	0.28	62.8	0.183	0.767	0.393	0.634	0.701	29.9%	36.9%
19	10,890	13,881	538	3,123	0.68	0.29	58.9	0.019	0.498	0.269	0.379	0.391	60.9%	48.2%
20	10,063	9,260	1,765	2,821	0.69	0.30	60.1	0.069	0.584	0.307	0.499	0.534	46.6%	35.3%
21	8,067	7,949	689	2,067	0.74	0.32	63.6	0.217	0.586	0.419	0.545	0.643	35.7%	33.0%
22	23,696	38,720	11,142	7,912	0.57	0.25	58.9	0.019	1.000	0.289	0.570	0.578	42.2%	57.3%
23	22,032	20,066	9,781	7,290	0.58	0.26	59.7	0.063	1.000	0.294	0.589	0.611	38.9%	61.0%
24	22,503	22,234	9,579	7,466	0.56	0.25	58.8	0.015	0.962	0.266	0.564	0.570	43.0%	62.1%
25	47,173	78,633	7,714	16,693	0.23	0.23	56.3	0.000	0.837	0.186	0.337	0.337	66.3%	71.0%
26	10,571	4,453	7,983	3,003	0.69	0.30	63.3	0.204	0.977	0.409	0.798	0.840	16.0%	53.9%
27	41,980	66,029	10,286	14,751	0.24	0.24	57.4	0.000	0.996	0.221	0.403	0.403	59.7%	66.5%
28	42,367	77,541	9,310	14,895	0.24	0.24	56.9	0.000	0.934	0.205	0.376	0.376	62.4%	69.0%
29	43,306	48,719	9,646	15,247	0.23	0.23	56.5	0.000	0.944	0.192	0.369	0.369	63.1%	68.7%
30	29,410	29,964	9,663	10,049	0.24	0.24	58.8	0.015	0.967	0.268	0.442	0.450	55.0%	66.9%
31	10,806	4,924	9,579	3,091	0.68	0.29	58.4	0.000	0.975	0.253	0.745	0.745	25.5%	57.1%
32	12,167	9,243	9,784	3,601	0.66	0.29	60.6	0.090	1.000	0.323	0.770	0.791	20.9%	56.4%
33	13,159	7,731	10,100	3,971	0.65	0.28	60.7	0.095	1.000	0.326	0.762	0.785	21.5%	55.3%
34	13,310	4,453	10,134	4,026	0.65	0.28	62.5	0.170	1.000	0.384	0.781	0.819	18.1%	53.9%
35	22,990	16,570	11,092	7,648	0.58	0.25	56.6	0.000	1.000	0.195	0.529	0.529	47.1%	56.7%
36	13,461	5,699	9,614	4,085	0.64	0.28	61.7	0.137	1.000	0.358	0.771	0.803	19.7%	50.1%
37	19,276	12,789	10,067	6,259	0.59	0.26	61.3	0.120	1.000	0.346	0.625	0.670	33.0%	58.4%
38	15,495	9,999	9,092	4,845	0.62	0.27	59.9	0.061	0.976	0.301	0.721	0.738	26.2%	57.0%
39	56,652	66,180	8,773	20,238	0.23	0.23	55.5	0.000	0.879	0.180	0.325	0.325	67.5%	70.8%
40	16,621	9,999	9,784	5,266	0.61	0.27	58.8	0.015	0.992	0.266	0.711	0.715	28.5%	57.9%
41	39,863	35,258	10,366	13,959	0.24	0.24	58.4	0.000	1.000	0.253	0.430	0.430	57.0%	66.8%
42	12,722	6,302	9,008	3,806	0.65	0.28	58.4	0.000	0.908	0.188	0.658	0.658	34.2%	39.3%
43	20,436	15,780	10,366	6,693	0.59	0.26	59.7	0.053	1.000	0.294	0.583	0.614	38.6%	61.6%
44	13,566	6,100	10,164	4,135	0.64	0.28	60.5	0.066	1.000	0.320	0.757	0.778	22.2%	56.2%
45	52,282	103,018	9,663	18,603	0.23	0.23	57.4	0.000	0.962	0.221	0.392	0.392	60.8%	68.7%
46	11,680	4,453	8,470	3,418	0.67	0.29	63	0.191	0.996	0.400	0.799	0.837	16.3%	54.1%
47	9,730	4,453	6,867	2,669	0.70	0.30	59.5	0.044	0.848	0.266	0.681	0.695	30.5%	56.0%
48	11,761	4,453	7,832	3,456	0.67	0.29	60.1	0.069	0.917	0.307	0.713	0.733	26.7%	57.1%
49	12,403	5,327	10,467	3,699	0.66	0.28	61.8	0.141	1.000	0.362	0.781	0.812	18.8%	54.6%
50	69,457	86,750	10,117	25,027	0.23	0.23	53.7	0.000	0.920	0.103	0.268	0.268	71.2%	79.2%
51	13,697	5,663	9,008	4,173	0.64	0.28	59.3	0.036	0.960	0.262	0.717	0.727	27.3%	38.1%
52	45,173	45,509	9,932	15,945	0.23	0.23	56.9	0.000	0.967	0.205	0.363	0.363	61.7%	67.2%
53	12,806	4,453	9,966	3,839	0.65	0.28	61.9	0.145	1.000	0.365	0.779	0.811	18.9%	54.9%
54	39,930	56,870	8,722	13,984	0.24	0.24	53.8	0.000	0.846	0.106	0.261	0.261	71.9%	72.3%
55	11,293	4,453	8,470	3,274	0.67	0.29	61.5	0.128	0.971	0.352	0.769	0.796	20.2%	56.5%
56	44,787	82,130	7,495	15,800	0.23	0.23	56.4	0.000	0.827	0.189	0.338	0.338	66.2%	71.3%
57	15,106	9,999	8,470	4,700	0.63	0.27	58.8	0.015	0.922	0.266	0.677	0.682	31.8%	60.3%
58	20,755	13,176	10,366	6,812	0.59	0.26	58.7	0.011	1.000	0.262	0.574	0.578	42.2%	62.2%
59	12,890	4,453	9,646	3,671	0.65	0.28	58.5	0.002	0.960	0.256	0.727	0.728	27.2%	57.3%
60	19,511	16,402	10,117	6,347	0.59	0.26	61.3	0.120	1.000	0.346	0.625	0.670	33.0%	59.7%
61	33,208	67,390	10,100	11,470	0.24	0.24	56.8	0.000	0.974	0.202	0.388	0.388	61.2%	68.6%
62	25,763	23,612	10,386	8,665	0.25	0.25	56.8	0.000	0.960	0.202	0.398	0.398	60.2%	68.0%
63	9,428	2,504	7,613	2,578	0.71	0.30	58.9	0.019	0.878	0.269	0.700	0.706	29.4%	43.4%
64	16,990	8,403	9,008	5,404	0.61	0.27	64.3	0.246	1.000	0.441	0.782	0.836	16.4%	40.4%
65	38,703	48,249	8,672	13,525	0.24	0.24	56.9	0.000	0.899	0.205	0.370	0.370	63.0%	68.6%
66	17,696	13,478	9,646	5,668	0.60	0.26	59.8	0.057	1.000	0.298	0.603	0.626	37.4%	61.1%
67	19,814	18,016	8,554	6,460	0.59	0.26	57.1	0.000	0.898	0.211	0.503	0.503	49.7%	65.6%
68	16,990	9,226	9,764	5,404	0.61	0.27	61.5	0.128	1.000	0.362	0.747	0.780	22.0%	56.3%
69	75,843	141,049	8,974	27,415	0.23	0.23	54.1	0.000	0.865	0.115	0.284	0.284	71.6%	71.4%
70	68,296	101,892	6,956	24,593	0.23	0.23	55	0.000	0.772	0.144	0.287	0.287	71.3%	74.7%
71	16,301	9,999	9,646	5,147	0.62	0.27	59.7	0.053	1.000	0.294	0.729	0.743	25.7%	56.8%
72	13,327	4,823	10,335	4,034	0.65	0.28	60.8	0.099	1.000	0.330	0.762	0.786	21.4%	54.9%
73	20,772	24,250	7,714	6,819	0.59	0.26	60.4	0.082	0.910	0.317	0.567	0.603	39.7%	63.2%
74	8,789	4,453	5,092	2,337	0.72	0.31	65.7	0.305	0.864	0.486	0.759	0.833	16.7%	56.1%
75	10,018	8,773	2,067	2,796	0.70	0.30	59.9	0.061	0.598	0.301	0.506	0.537	46.3%	44.3%
76	24,133	14,049	11,075	8,076	0.57	0.25	61.4	0.124	1.000	0.349	0.616	0.664	33.6%	53.4%
77	8,420	2,504	6,621	2,199	0.73	0.31	61.8	0.133	0.873	0.365	0.734	0.770	23.0%	41.0%
78	18,033	6,184	10,991	5,046	0.62	0.27	60.8	0.099	1.000	0.330	0.744	0.769	23.1%	50.3%
79	11,730	3,462	9,898	3,437	0.67	0.29	61.2	0.118	1.000	0.342	0.781	0.806	19.4%	52.3%
80													Average:	57.19%

ormulas D1485 Sacramento River Winter Run Smolt Survival

```
C9 ='Study 467 Flow Data'!E8
D9 ='Study 467 Flow Data'!AJ8
E9 ='Study 467 Flow Data'!O8        (HIDDEN)
F9 ='Study 467 Flow Data'!Y8        (HIDDEN)
G9 =(E9+F9)
H9 =0.374*C9-950
I9 =IF(C9>$D$2,(0.133*C9+829)/(C9-H9),(0.293*C9+2090)/(C9-H9))
J9 =(0.133*C9+829)/(C9-H9)
L9 =(-0.5916024)+(0.017968*$M$1)+(0.000054*G9)
N9 =IF(D9>=$J$3,(L9*J9),(L9*I9))
O9 =K9+N9-(K9*N9)
P9 1-O9

R9 ='Study 467 Flow Data'!F8
S9 ='Study 467 Flow Data'!AK8
T9 ='Study 467 Flow Data'!P8        (HIDDEN)
U9 ='Study 467 Flow Data'!Z8        (HIDDEN)
V9 =(T9+U9)
W9 =0.374*R9-950
X9 =IF(R9>$D$2,(0.133*R9+829)/(R9-W9),(0.293*R9+2090)/(R9-W9))
Y9 =(0.133*R9+829)/(R9-W9)
AA9 =IF(((-0.5916024)+(0.017968*$M$2)+(0.000054*V9))>1,1,((-0.5916024)+(0.017968*$M$2)+(0.000054*V9)))
AB9 =-1.613493+(0.0319584*$M$2)
AC9 =IF(S9>=$J$3,(AA9*Y9)+(AB9*(1-Y9)),(AA9*X9)+(AB9*(1-X9)))
AD9 =Z9+AC9-(Z9*AC9)
AE9 =1-AD9

AG9 ='Study 467 Flow Data'!G8
AH9 ='Study 467 Flow Data'!AL8
AI9 ='Study 467 Flow Data'!Q8       (HIDDEN)
AJ9 ='Study 467 Flow Data'!AA8      (HIDDEN)
AK9 =AI9+AJ9
AL9 =0.374*AG9-950
AM9 =IF(AG9>$D$2,(0.133*AG9+829)/(AG9-AL9),(0.293*AG9+2090)/(AG9-AL9))
AN9 =(0.133*AG9+829)/(AG9-AL9)
AP9 =IF((-2.45925+(0.0420748*AO9))<0,0,(-2.45925+(0.0420748*AO9)))
AQ9 =IF(((-0.5916024)+(0.017968*AO9)+(0.000054*AK9))>1,1,((-0.5916024)+(0.017968*AO9)+(0.000054*AK9)))
AR9 =-1.613493+(0.0319584*AO9)
AS9 =IF(AH9>=$J$3,((AQ9*AN9)+(AR9*(1-AN9))+(AQ9*AM9)+(AR9*(1-AM9)))/2,(AQ9*AM9)+(AR9*(1-AM9)))
AT9 =AP9+AS9-(AP9*AS9)
AU9 =1-AT9
AW9 =(0.13*P9)+(0.57*AE9)+(0.3*AU9)
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C-032377

C-032378

STUDY: 1995C8F-SWRCB-467
CP # 137, SACRAMENTO RIVER AT FREEPORT
DWRSIM 8.18, 27 Nov 96
(converted from TAF to CFS)

Project: /1995C8F-SWRCB-467/137/FLOW-DOWNSTREAM//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	11008	17142	17469	35436	31551	22822	46530	34720
1923	18840	34202	32283	19050	17337	24418	15434	14957
1924	10991	15353	18036	18655	8603	7630	8392	9327
1925	8941	11271	10213	45105	18557	22908	14816	16571
1926	9344	10820	18065	35274	18019	18268	10441	13528
1927	21478	15841	30808	86337	43863	48215	26786	19007
1928	21829	18572	25208	25489	86229	29208	12881	12520
1929	13108	13954	15776	18780	14670	7075	8733	9478
1930	8151	14787	21077	17562	30852	13713	13417	12890
1931	11041	11449	13775	12840	9319	13377	8184	9241
1932	7075	14853	17258	15403	10116	10890	10718	12470
1933	7495	9904	13605	13324	10994	10083	7839	10184
1934	6487	12474	16101	13018	12214	8087	9091	10621
1935	9209	8522	25469	13000	24918	23686	18134	15310
1936	12389	14787	32998	53442	34202	22032	15092	15142
1937	10907	14052	15223	32033	37280	22503	15044	14402
1938	22858	51246	31437	82359	78634	47173	57426	35510
1939	19444	18687	18410	19032	16394	10571	8002	10087
1940	7915	9579	23696	47722	63606	41980	15808	18187
1941	13411	32413	73885	75031	58581	42367	39488	20805
1942	18184	65623	83285	78344	27095	43308	36040	27124
1943	21328	28803	58080	52253	64598	29410	20134	18285
1944	12623	13775	17678	27451	25094	10806	15857	10083
1945	15175	17272	13856	39451	27030	12167	13905	14805
1946	17293	56109	43228	23588	23533	13159	15759	16520
1947	13276	17830	14474	20563	21874	13310	14962	11529
1948	11108	12149	16312	11109	18735	22990	31014	22301
1949	13680	15664	15908	18133	41813	13461	13856	12201
1950	12050	12283	22183	36372	23815	19276	15894	18838
1951	40922	68631	82208	60572	29323	15495	19028	12487
1952	16822	51962	67347	62469	57524	56852	59557	38972
1953	16537	42334	84078	28341	24899	18621	26558	25861
1954	21007	14914	33421	57151	49538	39863	16394	17081
1955	19999	25517	22004	18295	15158	12722	14279	11327
1956	12134	32933	84716	61543	38874	20436	36000	22301
1957	15478	14149	18838	33149	44363	13596	20590	15394
1958	19258	23745	43179	85740	93612	52282	43488	33930
1959	18133	14821	35182	50075	21780	11680	14995	11381
1960	10184	11856	15778	27051	21809	9730	15987	12839
1961	14251	19711	15255	33347	21338	11781	13629	13159
1962	10403	18004	13710	48707	27014	12403	16260	18755
1963	21730	28054	18313	54848	32641	68457	29095	18604
1964	28805	14849	27046	17248	16345	13697	16800	10873
1965	14554	27371	61238	33329	21386	46173	19581	17377
1966	29828	18995	29932	26775	28889	12606	14052	12807
1967	18301	39699	36837	43106	54483	39930	44790	39342
1968	16234	16686	30640	54520	36788	11283	14428	12503
1969	14638	27144	71868	67486	45329	44787	45538	24133
1970	17848	50158	92869	57565	35812	15108	12149	13545
1971	23141	57101	47538	28521	51506	20755	30266	23629
1972	16755	22053	20364	24217	32933	12860	14540	12520
1973	25892	26753	48400	70981	47554	19511	15743	18100
1974	56920	61580	78422	41918	100199	33208	26949	21629
1975	17579	17613	18670	56807	75999	25763	26542	24788
1976	19226	16768	16768	19523	18361	9428	9059	9898
1977	8016	9205	10701	7256	6863	16990	6893	10151
1978	5243	12296	47668	51371	46465	38703	21061	13965
1979	15125	12751	27241	42044	32592	17686	13564	10352
1980	18301	21842	69884	69453	38479	19814	14783	14755
1981	13024	15613	28185	29674	32494	16690	9953	13898
1982	37897	68599	51165	65650	69087	75843	38431	24418
1983	39107	55410	59150	82917	81935	68298	54515	55576
1984	62802	82944	47359	38004	36495	18301	14897	11730
1985	35813	23875	17848	22381	21809	13327	13450	12234
1986	9949	16168	21712	99825	72535	20772	13125	12419
1987	11125	12864	18735	23030	29878	8789	8912	10554
1988	8688	16345	26022	11248	7075	10016	8701	10388
1989	9730	10083	12994	9093	48611	24133	11384	13092
1990	12251	16117	22395	17754	15483	8420	9189	10369
1991	7512	10360	10853	8211	30429	18033	8685	9058
1992	7714	8184	12149	31415	20102	11730	8050	10268

STUDY: 1995C8F-SWRCB-467
CVP, CVP EXPORT AT TRACY PP
DWRSIM recirc818-f, 17 Jun 97
(converted from TAF to CFS)

Project: /1995C8F-SWRCB-467/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	3887	4366	2992	3008
1923	4302	4212	4212	4285	4228	4605	2992	3008
1924	4302	4212	4212	4085	4228	403	2147	1897
1925	1832	3871	1610	4231	4228	4605	2992	3008
1926	3832	4212	4212	4231	4228	4470	2992	2991
1927	4252	4212	4212	3277	3464	4605	2992	3008
1928	4302	4212	4212	4103	4228	4588	2992	3008
1929	4285	4212	4212	4249	3220	2101	2374	2470
1930	2470	4212	4212	4249	4228	4218	2992	3008
1931	4269	3432	4212	3781	1984	2840	2326	1412
1932	1881	4212	4212	4103	4228	319	2992	3008
1933	3092	2992	4212	4231	3919	891	2456	2554
1934	1684	3334	3936	4231	4228	269	2976	3008
1935	3008	2281	4212	1386	4228	4521	2992	3008
1936	4285	4212	4212	4103	4228	4605	2992	3008
1937	4302	4212	4212	4231	4228	4605	2992	3008
1938	4302	4212	4212	4285	3827	3344	2992	3008
1939	4302	4212	4212	4249	3610	4235	2992	3008
1940	2907	2423	4212	4103	4228	4605	2992	2991
1941	4302	4212	4212	4285	4228	4605	2992	3008
1942	4302	4212	4212	4285	4228	4605	2992	3008
1943	4302	4212	4212	4285	4228	4605	2992	823
1944	4302	4212	4212	4103	4228	4538	2992	3008
1945	4269	4212	4212	4231	3350	4605	2992	3008
1946	4302	4212	4212	4285	4228	4605	2976	3008
1947	4302	4212	4212	4249	4228	4554	2992	3008
1948	4269	3919	2797	4085	3188	4470	2992	3008
1949	4285	4212	4212	4249	4228	4605	2992	3008
1950	4285	4212	4212	4249	4228	4605	2992	3008
1951	4285	4212	4212	4285	4228	4605	2992	3008
1952	4302	4212	4212	4138	4228	4605	2992	3008
1953	4285	4212	4212	4285	4228	4605	2992	3008
1954	4302	4212	4212	4285	4228	4605	2992	3008
1955	4285	4212	4212	4287	4228	4605	2992	3008
1956	4285	4212	4212	4138	3578	4605	2992	3008
1957	4302	4212	4212	4249	4228	4605	2992	3008
1958	4285	4212	4212	4287	4228	4605	2992	3008
1959	4302	4212	4212	4287	4228	4605	2992	3008
1960	4285	4212	4212	4085	3810	4151	2992	3008
1961	4269	4212	4212	2647	2879	4235	2992	3008
1962	4269	4212	4212	4249	4228	4605	2992	3008
1963	4302	4212	4212	4285	4228	4605	2992	3008
1964	4302	4212	4212	4120	4228	4521	2992	3008
1965	4269	4212	4212	4287	3810	4521	2992	3008
1966	4302	4212	4212	4285	4228	4588	2992	3008
1967	4285	4212	4212	4285	4228	3781	2992	3008
1968	4302	4212	4212	4138	3827	4605	2992	3008
1969	4285	4212	4212	4285	3480	3328	2992	3008
1970	4302	4212	4212	3799	3220	4605	2992	3008
1971	4302	4212	4212	4285	4228	4605	2992	3008
1972	4285	4212	4212	4120	4228	4605	2992	3008
1973	4285	4212	4212	4287	4228	4605	2992	2017
1974	4302	4212	4212	4287	4228	4605	2992	3008
1975	4285	4212	4212	4249	4228	4605	2992	3008
1976	4302	4212	4212	4103	4228	2807	2358	2454
1977	2822	1870	797	3133	1984	2941	2391	101
1978	1227	2732	4212	4287	4228	4605	2992	3008
1979	4285	4212	4212	4249	4228	4605	2992	3008
1980	4302	4212	4212	4103	4228	4605	2992	3008
1981	4302	4212	4212	4287	4228	4605	2992	3008
1982	4285	4212	4212	4285	4228	3412	2992	3008
1983	4302	4212	4212	4285	2049	3311	2992	3008
1984	4302	4212	1828	1585	3415	4605	2992	3008
1985	4302	4212	4212	4249	4228	4554	2992	3008
1986	4000	4212	4212	4249	2098	2538	2992	3008
1987	4269	4212	2179	1494	2586	1178	2992	3008
1988	4235	4212	4212	4103	2883	605	2976	3008
1989	4087	3188	2342	4231	4228	4453	2992	2773
1990	4252	4212	2765	1531	2602	3445	2851	2758
1991	2388	2781	978	3981	4228	4389	2992	3008
1992	2504	2505	2440	4085	3887	3815	2651	2758

STUDY: 1995C8F-SWRCB-467
SWP, SWP EXPORT AT BANKS PP
DWRSIM: recirc818-f, 17 Jun 97
(converted from TAF to CFS)

Project: /1995C8F-SWRCB-467/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	3227	7107	7579	7220	4147	5159	2992	3008
1923	6872	7091	3843	4375	4424	5495	2992	2000
1924	4706	6944	6310	6989	3058	168	1870	2000
1925	3714	4635	1561	7581	5855	6621	2992	2000
1926	3075	2614	6635	7635	6977	6268	2992	2000
1927	6872	7042	7266	8499	4147	5159	2992	2000
1928	6872	7075	3643	4225	4424	5495	2992	2000
1929	6872	6926	4489	7220	4359	3294	2000	2000
1930	2823	6782	7156	7238	4716	5126	2992	2000
1931	5092	3058	2716	7202	5725	1426	2000	2000
1932	2840	7188	7823	8206	4391	218	2992	2151
1933	2805	2407	3789	7364	7026	874	2017	2000
1934	2504	5985	5757	7508	6635	420	2000	2000
1935	4872	2635	7660	3673	7270	6621	2992	2000
1936	5495	6944	7449	7528	4163	5176	2992	2000
1937	3949	6993	5892	8355	4001	4974	2992	2000
1938	6872	7530	6896	3943	3968	4369	2992	3008
1939	6872	4538	3269	3961	4001	3748	2000	2000
1940	2924	2687	6018	8208	5643	5680	2992	2000
1941	6872	7351	6181	5780	3838	4706	2992	3008
1942	6872	5156	3269	3961	4001	5042	2992	3008
1943	6872	5822	3334	4015	4050	5056	2992	1847
1944	6504	6261	5318	3859	4017	5042	2000	2000
1945	6872	6861	7253	4411	4147	5159	2662	2000
1946	6872	7505	5725	4411	4440	5495	2586	2000
1947	6872	7140	7416	6752	4180	5579	2000	2000
1948	5143	3415	5497	5946	4050	6621	2992	3008
1949	6872	6926	7140	7220	5090	5210	2992	2000
1950	6084	3432	7188	7544	4456	5482	2992	2756
1951	6872	7585	8087	4682	4700	4487	2992	3008
1952	6872	7107	8508	4824	3952	4168	2992	3008
1953	6571	3741	3334	4051	4115	5159	2992	3008
1954	6872	6879	3871	4846	4684	5781	2830	2000
1955	6872	6926	7188	7238	4245	4403	2000	2000
1956	6201	7595	8506	4520	4700	5781	2992	3008
1957	6872	7026	7367	4808	4586	5579	2992	1933
1958	6872	6926	7221	5080	4082	5058	2992	3008
1959	6872	5725	3350	4089	4115	3865	2000	2000
1960	3966	2797	4342	7056	7010	2708	2000	2000
1961	6872	6912	7140	7184	5269	3697	2000	2000
1962	4521	6912	7123	6914	4342	5682	2000	2000
1963	6872	6926	7253	8409	4456	5512	2992	2000
1964	6872	6993	6654	4520	4700	4487	2000	2000
1965	6872	7485	8506	7941	4472	5411	2992	1260
1966	6872	7514	7530	4411	4440	5378	2000	2000
1967	6872	7123	7876	4610	3301	4941	2992	3008
1968	4235	3741	3334	3912	4115	3865	2000	2000
1969	6872	6677	8506	3169	3253	4168	2992	3008
1970	6872	3480	3334	4051	4115	3865	2992	2000
1971	6872	7042	7485	4682	4700	5781	2992	3008
1972	6872	6944	7172	4955	4570	5042	2000	2000
1973	6872	6928	7563	5402	4472	5512	2992	2000
1974	6872	7172	8343	4411	4440	5495	2992	3008
1975	6872	7091	5757	4882	4700	5781	2992	3008
1976	6872	6993	7266	4433	4424	4806	2000	2000
1977	3479	3186	1334	2685	1724	6067	1496	370
1978	1815	6926	7774	8139	3867	4067	2992	1092
1979	6872	5648	3269	3961	4001	5042	2992	2840
1980	6872	6993	5351	3668	3350	3949	2992	2118
1981	6872	5042	3350	4089	4115	5159	2505	2000
1982	6872	7026	8506	5132	4688	5563	2992	3008
1983	6872	7595	5920	2827	2635	3647	2992	3008
1984	3630	3108	2879	3720	4001	5042	2992	2403
1985	6872	6861	3871	4846	4684	5781	2000	2000
1986	6075	6944	7351	8499	4147	5176	2992	3008
1987	4151	5172	8440	4357	4277	3916	2000	2000
1988	2706	6912	7123	6102	2667	1462	2000	2000
1989	3781	2830	2407	4123	6961	6821	2992	2000
1990	6235	6912	7123	7184	4001	3178	2358	2000
1991	2790	2797	992	2971	7091	6621	2212	1109
1992	2064	1835	1334	7215	7026	6084	1480	1968

STUDY: 1995C8F-SWRCB-467
DELTA, TOTAL OUTFLOW
DWRSIM recirc818-f, 17 Jun 97
(Converted from TAF to CFS)

Project: /1995C8F-SWRCB-467/DELTA/FLOW-OUTFLOW//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	3399	4790	9823	11401	40297	31112	19526	46418	34922
1923	5399	8453	34218	33366	18007	11319	21175	11877	9495
1924	5855	2874	5204	9726	7823	2505	7394	3171	3092
1925	8440	2504	5481	9758	52974	12002	17864	12149	10705
1926	5090	3498	4718	9986	32735	6473	14285	4733	8302
1927	6392	13730	8311	23810	135315	42822	47022	23631	13999
1928	5497	12503	8620	21533	22270	99126	24771	7709	5983
1929	4895	3630	4847	9400	9921	9042	2504	3773	3092
1930	5188	3395	4798	13664	9525	26087	6235	7026	5294
1931	6375	2504	5497	9726	3871	2505	9310	3171	3092
1932	5172	3395	10165	11075	18916	8068	13881	5578	5949
1933	6408	2504	5481	9726	3907	2505	9260	3171	3092
1934	5855	2674	5204	10002	8518	2505	7949	3171	3092
1935	8068	2723	5334	21760	11992	21258	38720	16898	10705
1936	5107	3445	4749	27598	90420	32999	20068	13222	10705
1937	5090	3462	4733	9953	44421	49522	22234	16507	9495
1938	5887	14520	86924	31275	151682	178279	78633	78032	44367
1939	19451	10235	11775	14312	15071	12230	4453	3171	3092
1940	8050	2723	5334	21368	58398	108672	66029	14344	10705
1941	5107	3596	42204	103387	127104	96361	77541	45603	21041
1942	13808	9092	65184	86700	144966	29681	48719	38349	25278
1943	12295	13814	23793	88509	61706	90262	29964	20248	14167
1944	5334	3277	4895	11384	27190	21874	4924	12100	3598
1945	6408	6403	8636	5107	49156	31372	9243	11336	9495
1946	5839	8487	68398	51132	21931	20459	7731	12783	10705
1947	5090	4470	9042	5595	13378	18556	4453	9839	4672
1948	6408	2504	5481	9742	2417	12002	16570	27420	15041
1949	5204	3378	5839	7042	7202	40577	5899	8115	5193
1950	6424	2504	5481	15141	30810	18052	12789	10799	9495
1951	5839	47156	98199	72661	70331	30039	9999	15271	5395
1952	4879	7310	47701	91173	79241	71673	68180	71331	42552
1953	18751	7394	41521	100492	27441	20638	9999	22135	18923
1954	8587	11008	4884	27908	57475	48400	35258	12149	10705
1955	5090	10285	18995	18426	7328	8490	6302	10165	4487
1956	6408	2504	88538	174458	90558	38935	15780	40594	22503
1957	15808	5714	4294	9791	29620	43423	6100	17499	9495
1958	13336	9075	14003	36967	158236	127977	103018	53604	39997
1959	17044	6537	5985	31486	52541	17304	4453	9888	4521
1960	6408	2504	5481	9742	22878	13824	4453	11010	5395
1961	5465	4605	9530	7678	26217	15092	4453	7808	5512
1962	6408	2504	7741	4050	56899	25048	5327	11710	9495
1963	24558	11478	18605	11092	69143	29258	88750	26786	13999
1964	8213	20671	5090	21256	10483	9156	5683	11336	3764
1965	6392	4958	69087	120528	31781	18703	45509	18020	13999
1966	5692	22587	11287	26184	28379	24265	4453	9189	6184
1967	5446	9512	33974	49555	59683	61915	56870	58695	48652
1968	17857	9209	10522	28008	58327	35649	4453	9579	5714
1969	5465	4840	18475	125944	148387	71250	62130	68274	35008
1970	16345	8672	52905	208107	91254	40870	9999	8148	7882
1971	4716	15665	61866	46286	24308	49083	13176	28265	16587
1972	7595	6889	13352	11206	17872	25615	4453	9417	5949
1973	5448	17948	18329	75283	95864	62712	16402	14231	13999
1974	5363	61542	86583	129977	46005	113047	67390	26152	18301
1975	12994	8352	8847	11840	63345	90585	23612	27095	23024
1976	16572	9411	6717	7253	13368	10653	2504	3545	3092
1977	5448	3193	4960	10181	2503	3952	8403	3171	7310
1978	5530	3126	5009	81378	56827	70616	48249	24834	13999
1979	7465	5596	3903	28201	49570	35958	13478	10815	3598
1980	6424	6537	14084	118382	138698	61020	18016	15288	13999
1981	9319	3395	7985	25615	24956	29258	9226	4472	6857
1982	8440	32603	84993	78368	105613	86790	141049	49457	26469
1983	26526	42535	81317	106997	185029	251823	101892	75188	87305
1984	26006	79591	155169	76422	44036	36674	9999	10636	5395
1985	8750	28208	14946	12019	18078	18816	4823	8508	5327
1986	6424	2504	7530	14670	227055	157479	24250	14979	11798
1987	4684	3764	4505	10132	20563	28591	4453	3171	3092
1988	5652	2790	7416	19240	2417	2505	8773	3171	3092
1989	6034	2739	5318	9937	2503	36081	14049	4733	5882
1990	6408	2504	5497	14885	11956	9872	2504	4342	3092
1991	6017	2739	5318	9937	2503	24249	6184	3171	3092
1992	4749	3731	4538	10295	26999	12669	3462	3171	3092

C-032378

Study 468 Sacramento River Fall Run Smolt Survival Model

Cross Channel closed over 25,000 cfs

Cross Channel Closed Apr to May 20. 14 d May 21-Jun 15

Sacramento River temperatures based on limited historical data from USBR

A2-39

APRIL

Year	Water Year Type	APRIL Sac River Flows	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channe Closed	observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123
1922	A	22,822	8,369	7,585	58%	0.25	56.5	0.002	0.823	0.256	0.400	0.401	59.9%
1923	B	22,721	7,932	7,548	58%	0.25	56.3	0.000	0.800	0.250	0.389	0.389	61.1%
1924	C	8,067	2,790	2,067	74%	0.32	61.5	0.128	0.636	0.362	0.442	0.513	48.7%
1925	D	22,854	6,958	7,523	58%	0.25	59.1	0.027	0.772	0.275	0.401	0.418	58.2%
1926	D	21,427	6,665	7,064	58%	0.26	61.6	0.133	0.804	0.355	0.470	0.540	46.0%
1927	W	46,215	8,100	17,082	23%	0.23	56.8	0.000	0.781	0.202	0.336	0.336	66.4%
1928	A	29,208	7,630	9,974	25%	0.25	58.7	0.011	0.794	0.262	0.393	0.399	60.1%
1929	C	8,436	2,353	2,205	73%	0.31	56.3	0.000	0.522	0.186	0.291	0.291	70.9%
1930	D	12,838	3,899	3,777	66%	0.28	59.6	0.048	0.649	0.291	0.392	0.422	57.8%
1931	C	9,193	2,958	2,488	71%	0.31	62.8	0.183	0.695	0.393	0.477	0.572	42.8%
1932	D	13,075	5,378	3,940	65%	0.28	58.9	0.019	0.700	0.289	0.390	0.402	59.8%
1933	C	12,739	4,134	3,814	66%	0.28	60.1	0.069	0.688	0.307	0.409	0.450	55.0%
1934	C	12,839	3,563	3,852	66%	0.28	63.6	0.217	0.708	0.419	0.500	0.608	39.2%
1935	B	24,837	9,092	8,264	57%	0.25	58.9	0.019	0.861	0.269	0.417	0.428	57.2%
1936	B	21,276	8,369	7,007	58%	0.26	59.7	0.053	0.844	0.294	0.435	0.465	53.5%
1937	B	23,511	8,050	7,843	57%	0.25	58.8	0.015	0.814	0.266	0.404	0.413	58.7%
1938	W	47,173	8,420	16,893	23%	0.23	56.3	0.000	0.785	0.186	0.326	0.326	67.4%
1939	D	12,234	4,134	3,626	68%	0.29	63.3	0.204	0.725	0.409	0.500	0.602	39.8%
1940	A	41,726	8,288	14,856	24%	0.24	57.4	0.000	0.789	0.221	0.357	0.357	64.3%
1941	W	42,367	9,310	14,895	24%	0.24	56.9	0.000	0.836	0.205	0.363	0.363	63.7%
1942	W	43,308	8,907	15,247	23%	0.23	56.5	0.000	0.810	0.192	0.337	0.337	66.3%
1943	W	29,410	9,462	10,049	24%	0.24	58.8	0.015	0.876	0.266	0.415	0.424	57.6%
1944	D	9,814	4,236	2,721	70%	0.30	58.4	0.000	0.642	0.253	0.370	0.370	63.0%
1945	B	11,747	6,252	3,443	67%	0.29	60.6	0.080	0.769	0.323	0.451	0.501	49.9%
1946	B	12,218	5,949	3,619	66%	0.29	60.7	0.095	0.757	0.326	0.449	0.501	49.9%
1947	D	13,797	4,907	4,210	64%	0.28	62.5	0.170	0.744	0.364	0.464	0.572	42.8%
1948	B	23,040	6,823	7,667	58%	0.25	56.6	0.000	0.722	0.195	0.329	0.329	67.1%
1949	D	13,209	5,075	3,990	66%	0.28	61.7	0.137	0.737	0.358	0.465	0.538	46.2%
1950	B	19,276	6,252	6,259	59%	0.26	61.3	0.120	0.781	0.346	0.459	0.524	47.6%
1951	A	14,866	6,386	4,606	63%	0.27	59.9	0.061	0.782	0.301	0.427	0.462	53.8%
1952	W	56,652	8,773	20,238	23%	0.23	55.5	0.000	0.786	0.160	0.304	0.304	69.6%
1953	W	16,184	5,647	5,103	62%	0.27	58.8	0.015	0.710	0.266	0.386	0.394	60.6%
1954	A	39,863	7,361	13,959	24%	0.24	58.4	0.000	0.777	0.253	0.377	0.377	62.3%
1955	D	9,478	3,664	2,595	71%	0.30	56.4	0.000	0.581	0.189	0.308	0.308	69.2%
1956	W	20,436	7,966	6,693	59%	0.26	59.7	0.053	0.827	0.294	0.432	0.462	53.8%
1957	A	21,209	6,453	6,952	58%	0.26	60.5	0.086	0.776	0.320	0.437	0.485	51.5%
1958	W	52,282	9,863	18,603	23%	0.23	57.4	0.000	0.859	0.221	0.368	0.368	63.2%
1959	B	10,487	3,798	2,972	69%	0.30	63	0.191	0.705	0.400	0.490	0.588	41.2%
1960	D	13,546	4,033	4,116	64%	0.28	59.5	0.044	0.663	0.288	0.390	0.417	58.3%
1961	D	12,789	3,546	3,833	65%	0.28	60.1	0.099	0.642	0.307	0.402	0.443	55.7%
1962	B	15,411	5,579	4,814	62%	0.27	61.8	0.141	0.761	0.362	0.470	0.546	45.4%
1963	W	69,467	8,100	25,027	23%	0.23	53.7	0.000	0.725	0.103	0.244	0.244	75.6%
1964	D	8,957	3,496	2,400	72%	0.31	59.3	0.036	0.626	0.282	0.386	0.410	59.0%
1965	W	46,173	8,537	15,946	23%	0.23	56.9	0.000	0.801	0.205	0.344	0.344	65.6%
1966	B	12,806	4,974	3,839	65%	0.28	61.9	0.146	0.737	0.366	0.470	0.547	45.3%
1967	W	39,930	9,546	13,984	24%	0.24	53.8	0.000	0.789	0.106	0.268	0.268	73.2%
1968	B	15,646	5,243	4,902	62%	0.27	61.5	0.128	0.741	0.362	0.457	0.527	47.3%
1969	W	44,787	7,512	15,800	23%	0.23	56.4	0.000	0.746	0.189	0.320	0.320	68.0%
1970	W	16,604	6,588	5,260	61%	0.27	58.6	0.015	0.761	0.266	0.396	0.404	59.6%
1971	W	21,948	6,586	7,259	58%	0.26	58.7	0.011	0.749	0.262	0.387	0.393	60.7%
1972	B	12,453	4,706	3,707	66%	0.28	58.5	0.002	0.664	0.256	0.372	0.373	62.7%
1973	A	19,511	7,428	6,347	59%	0.26	61.3	0.120	0.832	0.346	0.472	0.535	46.5%
1974	W	33,208	9,327	11,470	24%	0.24	56.8	0.000	0.834	0.202	0.354	0.354	64.6%
1975	W	25,763	8,773	8,665	25%	0.25	56.8	0.000	0.810	0.202	0.363	0.363	63.7%
1976	C	9,428	3,006	2,576	71%	0.30	58.9	0.019	0.597	0.269	0.369	0.381	61.9%
1977	C	9,142	3,006	2,469	71%	0.31	64.3	0.246	0.694	0.441	0.519	0.637	36.3%
1978	A	38,703	7,512	13,525	24%	0.24	56.9	0.000	0.787	0.205	0.336	0.336	66.4%
1979	B	17,606	6,857	5,668	60%	0.26	59.8	0.057	0.780	0.298	0.425	0.458	54.2%
1980	A	19,814	6,958	6,460	59%	0.26	57.1	0.000	0.736	0.211	0.348	0.348	65.2%
1981	D	16,990	5,445	5,404	61%	0.27	61.5	0.128	0.750	0.352	0.458	0.528	47.2%
1982	W	75,843	9,159	27,415	23%	0.23	54.1	0.000	0.778	0.115	0.265	0.265	73.5%
1983	W	66,298	6,958	24,583	23%	0.23	55	0.000	0.699	0.144	0.270	0.270	73.0%
1984	W	17,864	6,857	5,731	60%	0.26	59.7	0.053	0.779	0.294	0.422	0.453	54.7%
1985	D	13,327	4,235	4,034	65%	0.28	60.8	0.099	0.685	0.330	0.429	0.485	51.5%
1986	W	20,772	7,512	6,819	59%	0.26	60.4	0.082	0.820	0.317	0.446	0.492	50.8%
1987	D	12,369	3,496	3,676	66%	0.28	65.7	0.305	0.741	0.466	0.559	0.693	30.7%
1988	C	8,621	2,857	2,274	73%	0.31	59.9	0.061	0.609	0.301	0.397	0.433	56.7%
1989	D	23,629	5,647	7,887	57%	0.25	61.4	0.124	0.767	0.349	0.452	0.520	48.0%
1990	C	12,436	3,529	3,701	66%	0.28	61.6	0.133	0.686	0.355	0.444	0.518	48.2%
1991	C	15,276	4,252	4,763	62%	0.27	60.8	0.099	0.695	0.330	0.426	0.483	51.7%
1992	C	12,470	3,731	3,714	66%	0.28	61.2	0.116	0.670	0.342	0.435	0.501	49.9%

MAY

Year	MAY Sac River Flows	CVP + SWP Exports	Calculated Steamboat & Sutter Slough Q	Percent	X-chenn Closed	USBR observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123
1922	46,530	8,665	16,452	0.23	0.23	61.2	0.116	0.886	0.342	0.469	0.530	47.0%
1923	14,214	6,245	4,366	0.64	0.33	62.4	0.166	0.801	0.381	0.521	0.600	40.0%
1924	8,278	781	2,146	0.74	0.38	69.2	0.452	0.686	0.596	0.632	0.798	20.2%
1925	12,067	5,042	3,563	0.66	0.35	63.2	0.200	0.763	0.408	0.530	0.624	37.6%
1926	13,613	4,879	4,141	0.64	0.34	65.7	0.308	0.801	0.466	0.592	0.717	28.3%
1927	26,786	8,327	9,068	0.25	0.25	62.6	0.175	0.895	0.387	0.513	0.598	40.2%
1928	20,606	6,375	6,757	0.59	0.31	66.6	0.343	0.882	0.515	0.629	0.756	24.4%
1929	9,807	3,058	2,718	0.70	0.36	66.1	0.322	0.729	0.499	0.583	0.717	28.3%
1930	12,067	3,513	3,563	0.66	0.35	63.1	0.196	0.695	0.403	0.504	0.601	39.9%
1931	9,807	2,797	2,718	0.70	0.36	70.5	0.507	0.797	0.640	0.697	0.851	14.9%
1932	12,019	4,847	3,546	0.66	0.35	65.5	0.297	0.798	0.460	0.589	0.711	28.9%
1933	7,741	2,700	1,945	0.75	0.39	63.7	0.221	0.670	0.422	0.519	0.625	37.5%
1934	8,912	2,944	2,383	0.72	0.37	68.3	0.414	0.763	0.569	0.642	0.790	21.0%
1935	28,624	5,465	9,755	0.25	0.25	64	0.234	0.796	0.432	0.521	0.633	36.7%
1936	14,100	6,310	4,324	0.64	0.33	64.9	0.271	0.848	0.461	0.590	0.701	29.9%
1937	16,182	8,733	5,102	0.62	0.32	64.5	0.256	0.860	0.448	0.581	0.688	31.2%
1938	57,426	9,449	20,527	0.23	0.23	62.5	0.170	0.941	0.384	0.512	0.595	40.5%
1939	8,571	3,460	2,256	0.73	0.38	68	0.402	0.781	0.560	0.644	0.787	21.3%
1940	18,260	6,278	5,867	0.60	0.32	65.6	0.301	0.860	0.483	0.602	0.722	27.8%
1941	39,488	9,726	13,818	0.24	0.24	61.6	0.133	0.937	0.355	0.493	0.560	44.0%
1942	36,040	8,665	12,529	0.24	0.24	60.1	0.069	0.866	0.307	0.441	0.479	52.1%
1943	21,077	8,327	6,933	0.58	0.31	65.4	0.292	0.945	0.477	0.621	0.732	26.8%
1944	8,912	3,741	2,383	0.72	0.37	65.9	0.313	0.758	0.493	0.591	0.719	28.1%
1945	13,222	5,237	3,995	0.65	0.34	63.1	0.198	0.769	0.403	0.527	0.620	38.0%
1946	13,694	5,269	4,171	0.64	0.34	63.9	0.229	0.786	0.429	0.549	0.652	34.8%
1947	8,864	3,460	2,366	0.72	0.37	68.7	0.431	0.794	0.582	0.661	0.807	19.3%
1948	28,836	7,676	9,834	0.25	0.25	62.3	0.162	0.861	0.378	0.498	0.578	42.2%
1949	14,914	4,749	4,628	0.63	0.33	65.2	0.284	0.786	0.470	0.574	0.695	30.5%
1950	13,873	5,269	4,236	0.64	0.34	64.3	0.246	0.792	0.441	0.559	0.668	33.2%
1951	18,784	7,123	6,075	0.60	0.32	64.4	0.250	0.875	0.446	0.580	0.685	31.5%
1952	59,557	9,709	21,324	0.23	0.23	61.7	0.137	0.938	0.358	0.491	0.561	43.9%
1953	26,667	7,678	9,098	0.25	0.25	60.9	0.103	0.836	0.333	0.457	0.513	48.7%
1954	25,403	7,432	8,551	0.25	0.25	65.9	0.313	0.915	0.493	0.598	0.724	27.6%
1955	11,271	3,968	3,265	0.67	0.35	66.9	0.356	0.783	0.525	0.615	0.752	24.8%
1956	39,000	8,665	13,636	0.24	0.24	61.4	0.124	0.889	0.349	0.477	0.542	45.8%
1957	18,616	5,952	5,339	0.61	0.32	64	0.234	0.817	0.432	0.556	0.660	34.0%
1958	43,468	10,665	15,315	0.23	0.23	62.9	0.187	1.002	0.397	0.539	0.625	37.5%
1959	9,417	3,676	2,572	0.71	0.37	65.9	0.313	0.752	0.498	0.586	0.717	28.3%
1960	10,913	3,350	3,131	0.68	0.35	65.9	0.313	0.738	0.493	0.580	0.711	28.9%
1961	9,238	2,992	2,505	0.71	0.37	64.3	0.246	0.694	0.441	0.535	0.649	35.1%
1962	14,735	5,334	4,561	0.63	0.33	64.8	0.267	0.804	0.457	0.572	0.687	31.3%
1963	29,095	8,327	9,932	0.25	0.25	62.5	0.170	0.893	0.384	0.509	0.592	40.8%
1964	10,295	3,741	2,900	0.69	0.36	65.2	0.284	0.742	0.470	0.568	0.691	30.9%
1965	24,851	7,725	8,344	0.57	0.30	63.6	0.217	0.886	0.419	0.560	0.655	34.5%
1966	14,930	4,781	4,634	0.63	0.33	67.3	0.372	0.825	0.537	0.632	0.769	23.1%
1967	44,790	10,051	15,801	0.23	0.23	62.1	0.154	0.960	0.371	0.509	0.584	41.6%
1968	9,384	3,643	2,560	0.71	0.37	66.1	0.322	0.754	0.498	0.593	0.724	27.6%
1969	45,536	9,010	16,081	0.23	0.23	63.2	0.200	0.935	0.408	0.530	0.624	37.6%
1970	12,149	5,920	3,594	0.66	0.35	66.6	0.427	0.866	0.579	0.689	0.822	17.8%
1971	29,404	7,676	10,047	0.24	0.24	61	0.107	0.838	0.338	0.459	0.517	48.3%
1972	10,799	3,871	3,089	0.68	0.36	67.3	0.372	0.786	0.537	0.626	0.765	23.5%
1973	15,743	6,505	4,936	0.62	0.33	66.9	0.356	0.893	0.525	0.645	0.771	22.9%
1974	26,949	8,665	9,129	0.25	0.25	63.4	0.208	0.924	0.413	0.539	0.635	36.5%
1975	26,542	8,665	9,725	0.25	0.25	63.8	0.225	0.932	0.425	0.550	0.651	34.9%
1976	10,067	3,123	2,815	0.69	0.36	69.6	0.469	0.794	0.611	0.677	0.829	17.1%
1977	6,903	732	1,666	0.78	0.40	64	0.234	0.590	0.432	0.495	0.613	38.7%
1978	21,061	8,197	6,927	0.58	0.31	63	0.191	0.896	0.400	0.553	0.639	36.1%
1979	12,572	5,965	3,752	0.66	0.34	63.8	0.225	0.815	0.425	0.559	0.658	34.2%
1980	14,763	7,465	4,579	0.63	0.33	63.6	0.217	0.875	0.419	0.570	0.663	33.7%
1981	8,750	3,513	2,322	0.72	0.38	66.7	0.347	0.750	0.518	0.609	0.745	25.5%
1982	36,431	10,701	13,423	0.24	0.24	61.1	0.112	0.971	0.339	0.489	0.546	45.4%
1983	54,518	7,546	19,439	0.23	0.23	60.1	0.069	0.816	0.307	0.424	0.464	53.6%
1984	13,417	6,148	4,068	0.64	0.34	66.5	0.339	0.870	0.512	0.633	0.757	24.3%
1985	13,141	4,226	3,965	0.65	0.34	65.6	0.309	0.774	0.489	0.586	0.714	28.6%
1986	13,126	8,132	3,959	0.65	0.34	66.2	0.326	0.951	0.502	0.654	0.767	23.3%
1987	8,457	2,830	2,213	0.73	0.38	70.5	0.507	0.796	0.640	0.700	0.852	14.8%
1988	9,774	3,058	2,706	0.70	0.37	65.8	0.309	0.723	0.489	0.575	0.706	29.4%
1989	14,328	3,936	4,409	0.63	0.33	64.7	0.263	0.742	0.454	0.550	0.668	33.2%
1990	7,709	2,700	1,933	0.75	0.39	66.4	0.336	0.719	0.509	0.591	0.727	27.3%
1991	8,665	2,862	2,298	0.73	0.38	65.7	0.305	0.713	0.486	0.572	0.702	29.8%
1992	9,026	2,927	2,426	0.72	0.37	66	0.318	0.721	0.496	0.580	0.713	28.7%

JUNE

Year	JUNE Sac River Flow	CVP + SWP exports	Caculated Steamboat & Sutter Slough Q	percent	X-chann closed	USBR observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	34,720	11,277	12,036	24%	0.24	65.9	0.313	1.000	0.493	0.614	0.735	26.5%	45.5%
1923	18,150	7,613	5,838	60%	0.51	65.3	0.288	0.912	0.473	0.697	0.785	21.5%	40.2%
1924	10,151	924	2,846	69%	0.59	70.6	0.511	0.717	0.643	0.686	0.847	15.3%	24.2%
1925	18,352	6,420	5,166	62%	0.52	68.3	0.414	0.914	0.569	0.749	0.853	14.7%	37.0%
1926	15,276	6,067	4,763	62%	0.53	71.2	0.536	0.951	0.662	0.815	0.914	8.6%	27.3%
1927	18,889	8,352	6,115	60%	0.51	68.1	0.406	0.995	0.563	0.781	0.870	13.0%	38.8%
1928	14,100	5,697	4,323	64%	0.54	69.7	0.473	0.908	0.614	0.773	0.880	12.0%	28.2%
1929	11,411	3,126	3,318	67%	0.57	70.1	0.490	0.804	0.627	0.727	0.861	13.9%	32.8%
1930	18,621	6,974	6,014	60%	0.51	68.6	0.469	0.962	0.611	0.789	0.888	11.2%	37.5%
1931	12,487	2,891	3,720	66%	0.58	70.7	0.515	0.804	0.646	0.734	0.871	12.9%	19.3%
1932	19,058	7,394	6,178	60%	0.51	69.5	0.465	0.978	0.608	0.795	0.890	11.0%	30.9%
1933	11,041	1,781	3,179	68%	0.57	69.8	0.478	0.740	0.617	0.688	0.837	16.3%	36.7%
1934	14,991	5,411	4,658	63%	0.53	70.7	0.515	0.914	0.646	0.788	0.897	10.3%	22.1%
1935	17,683	7,613	5,656	61%	0.51	71	0.528	1.000	0.656	0.832	0.921	7.9%	35.9%
1936	18,587	7,966	6,002	60%	0.51	69.2	0.452	0.906	0.596	0.801	0.891	10.9%	30.5%
1937	18,133	7,647	5,832	60%	0.51	69.7	0.473	0.993	0.614	0.807	0.899	10.1%	32.1%
1938	35,510	11,277	12,331	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	41.9%
1939	18,587	7,378	6,002	60%	0.51	71	0.528	1.000	0.656	0.831	0.920	8.0%	22.1%
1940	15,343	7,176	4,766	62%	0.53	71.5	0.549	1.000	0.672	0.845	0.930	7.0%	30.3%
1941	20,805	10,907	6,831	59%	0.50	69	0.444	1.000	0.592	0.795	0.886	11.4%	41.6%
1942	27,124	11,277	9,194	25%	0.25	67.8	0.393	1.000	0.553	0.664	0.796	20.4%	48.8%
1943	16,856	7,747	5,364	61%	0.52	66.6	0.343	0.941	0.515	0.736	0.826	17.4%	30.3%
1944	18,217	7,344	5,863	60%	0.51	67.8	0.393	0.945	0.553	0.753	0.850	15.0%	31.7%
1945	16,671	7,176	5,285	61%	0.52	70.6	0.511	0.988	0.643	0.822	0.913	8.7%	34.8%
1946	18,285	6,958	5,140	62%	0.52	68.1	0.406	0.934	0.563	0.757	0.855	14.5%	33.7%
1947	18,822	7,260	6,090	60%	0.51	70	0.486	0.981	0.624	0.805	0.900	10.0%	21.8%
1948	23,259	9,125	7,749	57%	0.49	69	0.444	1.000	0.592	0.791	0.884	11.6%	41.9%
1949	17,091	6,789	5,442	61%	0.52	70.9	0.524	0.977	0.652	0.820	0.914	8.6%	29.2%
1950	20,301	8,134	6,643	59%	0.50	68.9	0.440	0.989	0.588	0.794	0.884	11.6%	31.8%
1951	17,646	7,428	5,650	61%	0.51	70.3	0.499	0.994	0.633	0.818	0.909	9.1%	31.2%
1952	38,972	11,277	13,626	24%	0.24	65	0.276	1.000	0.464	0.591	0.704	29.6%	45.7%
1953	25,881	10,386	8,729	25%	0.25	66.2	0.326	1.000	0.502	0.626	0.748	25.2%	46.8%
1954	14,234	6,016	4,374	63%	0.54	66.7	0.431	0.904	0.582	0.755	0.861	13.9%	31.8%
1955	18,133	7,075	5,832	60%	0.51	70.1	0.490	0.975	0.627	0.805	0.900	10.0%	29.7%
1956	22,301	11,277	7,391	58%	0.49	68.7	0.431	1.000	0.582	0.787	0.879	12.1%	41.1%
1957	19,106	7,966	6,196	60%	0.51	72	0.570	1.000	0.688	0.845	0.934	6.6%	32.1%
1958	33,930	11,277	11,740	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	38.9%
1959	17,915	7,193	5,750	60%	0.51	72.1	0.574	1.000	0.691	0.849	0.936	6.4%	26.5%
1960	18,217	7,042	5,863	60%	0.51	72.7	0.600	1.000	0.710	0.858	0.943	5.7%	29.7%
1961	19,814	7,563	6,460	59%	0.50	73.2	0.621	1.000	0.726	0.863	0.948	5.2%	33.2%
1962	17,243	6,823	5,499	61%	0.52	70.4	0.503	0.989	0.636	0.808	0.905	9.5%	29.8%
1963	19,562	8,621	6,366	59%	0.50	69	0.444	1.000	0.592	0.797	0.887	11.3%	41.4%
1964	18,150	7,008	5,838	60%	0.51	69.5	0.465	0.961	0.608	0.788	0.887	11.3%	32.2%
1965	18,402	8,236	5,932	60%	0.51	67.1	0.364	0.971	0.531	0.755	0.844	15.6%	36.4%
1966	15,562	6,252	4,870	62%	0.53	70.4	0.503	0.945	0.636	0.799	0.900	10.0%	24.8%
1967	39,342	11,277	13,764	24%	0.24	66.5	0.339	1.000	0.512	0.627	0.754	24.6%	43.9%
1968	17,394	7,025	5,555	61%	0.51	72	0.570	1.000	0.688	0.848	0.935	6.5%	27.1%
1969	24,133	11,243	8,076	57%	0.48	68.3	0.414	1.000	0.569	0.778	0.870	13.0%	34.4%
1970	15,512	6,806	4,851	62%	0.53	70.7	0.515	0.974	0.646	0.819	0.912	8.8%	23.3%
1971	23,629	9,646	7,887	57%	0.49	68.1	0.406	1.000	0.563	0.775	0.867	13.3%	44.1%
1972	17,142	6,806	5,461	61%	0.52	70.7	0.515	0.974	0.646	0.815	0.911	8.9%	27.5%
1973	19,427	8,033	6,316	59%	0.50	70.1	0.490	1.000	0.627	0.815	0.906	9.4%	24.5%
1974	21,629	9,529	7,139	58%	0.49	69.7	0.473	1.000	0.614	0.805	0.897	10.3%	36.5%
1975	24,766	11,277	8,321	57%	0.48	69.1	0.448	1.000	0.595	0.790	0.884	11.6%	35.8%
1976	19,360	7,394	6,291	59%	0.50	71.8	0.562	1.000	0.681	0.842	0.931	6.9%	22.9%
1977	9,579	437	2,633	70%	0.60	73.9	0.650	0.755	0.748	0.752	0.913	8.7%	32.9%
1978	16,469	8,504	5,210	61%	0.52	70	0.486	1.000	0.624	0.820	0.907	9.3%	36.4%
1979	19,427	8,050	6,316	59%	0.50	69.2	0.452	1.000	0.598	0.800	0.891	10.9%	33.4%
1980	16,268	8,672	5,134	62%	0.52	66.9	0.356	0.987	0.525	0.766	0.849	15.1%	35.7%
1981	18,066	7,193	5,807	60%	0.51	71.9	0.566	1.000	0.684	0.846	0.933	6.7%	26.8%
1982	24,418	11,277	8,183	57%	0.48	66	0.318	1.000	0.496	0.740	0.822	17.8%	48.2%
1983	55,576	9,293	19,836	23%	0.23	63.6	0.217	0.954	0.419	0.542	0.641	35.9%	53.7%
1984	18,436	7,764	5,945	60%	0.51	68.4	0.419	0.974	0.572	0.777	0.870	13.0%	27.4%
1985	16,638	6,521	5,272	61%	0.52	69.4	0.461	0.938	0.604	0.778	0.880	12.0%	29.9%
1986	12,666	7,781	3,795	65%	0.56	71.6	0.553	1.000	0.675	0.855	0.935	6.5%	24.9%
1987	20,318	7,747	6,649	59%	0.50	73.2	0.621	1.000	0.726	0.863	0.948	5.2%	16.8%
1988	15,058	5,848	4,662	63%	0.53	69.4	0.461	0.909	0.604	0.766	0.874	12.6%	31.0%
1989	16,873	6,554	5,360	61%	0.52	68.6	0.427	0.925	0.579	0.758	0.862	13.8%	32.2%
1990	19,629	7,446	6,391	59%	0.50	68.5	0.423	0.962	0.576	0.770	0.867	13.3%	28.3%
1991	10,974	3,025	3,154	68%	0.57	69.4	0.461	0.787	0.604	0.709	0.843	15.7%	31.0%
1992	14,470	5,143	4,462	63%	0.54	69	0.444	0.871	0.592	0.742	0.856	14.4%	28.7%
												Average	33.03%

Formulas — Sacramento River Fall Run Smolt Survival

C8 ='Study 468 Flow Data'!G7
D8 ='Study 468 Flow Data'!Q7 (HIDDEN)
E8 ='Study 468 Flow Data'!AA7 (HIDDEN)
F8 =(D8+E8)
G8 =0.374*C8-950
H8 =IF(C8>25000,(0.133*C8+829)/(C8-G8),(0.293*C8+2090)/(C8-G8))
I8 =(0.133*C8+829)/(C8-G8)
K8 =IF((-2.45925+(0.0420748*J8))<0,0,(-2.45925+(0.0420748*J8)))
L8 =(-0.5916024)+(0.017968*J8)+(0.0000434*F8)
M8 =-1.613493+(0.0319584*J8)
N8 =(L8*I8)+(M8*(1-I8))
O8 =K8+N8-(K8*N8)
P8 =1-O8

R8 ='Study 468 Flow Data'!H7
S8 ='Study 468 Flow Data'!R7 (HIDDEN)
T8 ='Study 468 Flow Data'!AB7 (HIDDEN)
U8 =(S8+T8)
V8 =0.374*R8-950
W8 =IF(R8>25000,(0.133*R8+829)/(R8-V8),(0.293*R8+2090)/(R8-V8))
X8 =(0.84*(0.133*R8+829)/(R8-V8))+(0.16*W8)
Z8 =(-2.45925+(0.0420748*Y8))
AA8 =(-0.5916024)+(0.017968*Y8)+(0.0000434*U8)
AB8 =-1.613493+(0.0319584*Y8)
AC8 =(AA8*X8)+(AB8*(1-X8))
AD8 =Z8+AC8-(Z8*AC8)
AE8 =1-AD8

AG8 ='Study 468 Flow Data'!I7
AH8 ='Study 468 Flow Data'!S7 (HIDDEN)
AI8 ='Study 468 Flow Data'!AC7 (HIDDEN)
AJ8 =(AH8+AI8)
AK8 =0.374*AG8-950
AL8 =IF(AG8>25000,(0.133*AG8+829)/(AG8-AK8),(0.293*AG8+2090)/(AG8-AK8))
AM8 =(0.27*(0.133*AG8+829)/(AG8-AK8))+(0.73*AL8)
AO8 =(-2.45925+(0.0420748*AN8))
AP8 =IF(((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8))>1,1,((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8)))
AQ8 =-1.613493+(0.0319584*AN8)
AR8 =(AP8*AM8)+(AQ8*(1-AM8))
AS8 =AO8+AR8-(AO8*AR8)
AT8 =1-AS8
AV8 =(P8*0.17)+(AE8*0.65)+(AT8*0.18)

C-032379

Study 468 Sacramento River Late Fall Run Smolt Survival Model

Modified m2 by changing the slope to 0.000054
Cross Channel closed for 45 consecutive days, Dec 18-Jan 31
Cross Channel Closed when Sacramento River flow exceeds 25,000 cfs

November Sacramento River Temp 53 degrees F
December Sacramento River Temp 47 degrees F
January Sacramento River Temp 47 degrees F

NOVEMBER

Year	Water Year Type	Sac River Flow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	A	11,814	8,604	3,469	67%	0.29		0.825	0.080	0.576	0.576	42.4%
1923	B	18,133	10,974	5,832	60%	0.26		0.953	0.080	0.606	0.606	39.4%
1924	C	11,243	7,579	3,255	67%	0.29		0.770	0.080	0.545	0.545	45.5%
1925	D	7,025	4,521	1,677	78%	0.33		0.606	0.080	0.487	0.487	51.3%
1926	D	10,924	7,411	3,135	68%	0.29		0.761	0.080	0.543	0.543	45.7%
1927	W	20,284	10,924	6,836	59%	0.28		0.951	0.080	0.593	0.593	40.7%
1928	A	22,940	10,957	7,629	58%	0.28		0.952	0.080	0.582	0.582	41.8%
1929	C	12,856	9,730	3,858	65%	0.28		0.886	0.080	0.605	0.605	39.5%
1930	D	7,159	4,050	1,728	77%	0.33		0.579	0.080	0.465	0.465	53.5%
1931	C	9,796	5,932	2,714	70%	0.30		0.661	0.080	0.501	0.501	49.9%
1932	D	8,050	2,823	2,061	74%	0.32		0.513	0.080	0.402	0.402	59.8%
1933	C	9,512	5,663	2,607	71%	0.30		0.667	0.080	0.494	0.494	50.6%
1934	C	8,063	2,554	2,073	74%	0.32		0.499	0.080	0.391	0.391	60.9%
1935	B	9,209	6,823	2,494	71%	0.31		0.729	0.080	0.543	0.543	45.7%
1936	B	11,361	7,731	3,299	67%	0.29		0.778	0.080	0.549	0.549	45.1%
1937	B	11,663	7,949	3,412	67%	0.29		0.790	0.080	0.554	0.554	44.6%
1938	W	23,696	10,957	7,912	57%	0.26		0.952	0.080	0.579	0.579	42.1%
1939	D	18,444	9,579	6,322	59%	0.28		0.878	0.080	0.554	0.554	44.6%
1940	A	8,436	4,554	2,205	73%	0.31		0.607	0.080	0.466	0.466	53.4%
1941	W	13,781	10,369	4,204	64%	0.28		0.921	0.080	0.618	0.618	38.2%
1942	W	18,184	10,470	5,851	60%	0.28		0.926	0.080	0.589	0.589	41.1%
1943	W	21,814	10,823	7,246	58%	0.28		0.945	0.080	0.582	0.582	41.8%
1944	D	14,890	10,957	4,619	63%	0.27		0.952	0.080	0.628	0.628	37.2%
1945	B	13,764	10,873	4,198	64%	0.28		0.948	0.080	0.636	0.636	36.4%
1946	B	20,637	10,957	6,768	59%	0.28		0.952	0.080	0.592	0.592	40.8%
1947	D	13,781	10,890	4,204	64%	0.28		0.949	0.080	0.636	0.636	36.4%
1948	B	10,453	6,655	2,959	69%	0.30		0.720	0.080	0.520	0.520	48.0%
1949	D	14,453	10,503	4,456	63%	0.28		0.926	0.080	0.617	0.617	38.3%
1950	B	11,411	7,663	3,318	67%	0.29		0.775	0.080	0.546	0.546	45.4%
1951	A	41,863	10,940	14,707	24%	0.24		0.951	0.080	0.286	0.286	71.4%
1952	W	16,789	10,957	5,329	61%	0.27		0.952	0.080	0.614	0.614	38.6%
1953	W	16,537	8,366	5,235	61%	0.27		0.814	0.080	0.530	0.530	47.0%
1954	A	20,923	10,957	6,875	59%	0.28		0.952	0.080	0.591	0.591	40.9%
1955	D	20,856	10,957	6,850	59%	0.26		0.952	0.080	0.591	0.591	40.9%
1956	W	12,184	8,487	3,607	66%	0.29		0.819	0.080	0.568	0.568	43.2%
1957	A	15,478	10,974	4,839	62%	0.27		0.953	0.080	0.624	0.624	37.6%
1958	W	19,259	10,957	6,253	59%	0.28		0.952	0.080	0.599	0.599	40.1%
1959	B	16,133	8,487	5,084	62%	0.27		0.819	0.080	0.536	0.536	46.4%
1960	D	11,411	7,344	3,318	67%	0.29		0.757	0.080	0.535	0.535	46.5%
1961	D	14,251	10,503	4,380	63%	0.28		0.926	0.080	0.618	0.618	38.2%
1962	B	9,814	6,050	2,721	70%	0.30		0.687	0.080	0.505	0.505	49.5%
1963	W	21,242	10,957	6,995	58%	0.28		0.952	0.080	0.589	0.589	41.1%
1964	D	28,653	10,940	9,766	25%	0.25		0.951	0.080	0.294	0.294	70.6%
1965	W	13,646	10,319	4,154	64%	0.28		0.918	0.080	0.618	0.618	38.2%
1966	B	25,662	10,974	8,648	25%	0.25		0.953	0.080	0.298	0.298	70.2%
1967	W	16,066	10,940	5,059	62%	0.27		0.951	0.080	0.618	0.618	38.2%
1968	B	16,234	8,352	5,122	62%	0.27		0.812	0.080	0.531	0.531	46.9%
1969	W	14,318	10,636	4,405	63%	0.28		0.936	0.080	0.622	0.622	37.8%
1970	W	17,646	8,366	5,650	61%	0.28		0.814	0.080	0.524	0.524	47.6%
1971	W	23,511	10,957	7,843	57%	0.25		0.952	0.080	0.580	0.580	42.0%
1972	B	15,343	10,940	4,788	62%	0.27		0.951	0.080	0.624	0.624	37.6%
1973	A	23,494	10,940	7,837	57%	0.26		0.951	0.080	0.580	0.580	42.0%
1974	W	54,299	10,957	19,358	23%	0.23		0.952	0.080	0.281	0.281	71.9%
1975	W	17,579	9,714	5,624	61%	0.28		0.866	0.080	0.568	0.568	43.2%
1976	C	19,226	10,974	6,240	59%	0.28		0.953	0.080	0.600	0.600	40.0%
1977	C	8,265	6,000	2,149	74%	0.31		0.685	0.080	0.525	0.525	47.5%
1978	A	6,924	4,185	1,640	78%	0.33		0.587	0.080	0.475	0.475	52.5%
1979	B	14,402	10,890	4,436	63%	0.28		0.949	0.080	0.630	0.630	37.0%
1980	A	18,940	10,940	5,386	61%	0.27		0.951	0.080	0.612	0.612	38.8%
1981	D	13,024	9,865	3,921	65%	0.28		0.893	0.080	0.608	0.608	39.2%
1982	W	33,258	10,957	11,489	24%	0.24		0.952	0.080	0.291	0.291	70.9%
1983	W	39,107	10,974	13,676	24%	0.24		0.953	0.080	0.287	0.287	71.3%
1984	W	62,802	6,956	22,536	23%	0.23		0.736	0.080	0.230	0.230	77.0%
1985	D	33,996	10,957	11,765	24%	0.24		0.952	0.080	0.290	0.290	71.0%
1986	W	9,546	6,655	2,620	71%	0.30		0.720	0.080	0.532	0.532	46.8%
1987	D	11,226	7,764	3,249	67%	0.29		0.780	0.080	0.552	0.552	44.8%
1988	C	8,453	4,840	2,211	73%	0.31		0.622	0.080	0.477	0.477	52.3%
1989	D	8,586	5,748	2,262	73%	0.31		0.671	0.080	0.510	0.510	49.0%
1990	C	11,764	7,815	3,450	67%	0.29		0.783	0.080	0.548	0.548	45.2%
1991	C	8,134	4,857	2,092	74%	0.32		0.623	0.080	0.482	0.482	51.8%
1992	C	7,512	4,554	1,860	76%	0.32		0.607	0.080	0.480	0.480	52.0%

DECEMBER

Year	Sac River Flows	SWP+CVP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	17,142	11,319	5,461	61%	0.45		0.864		0.393	0.393	60.7%
1923	34,544	8,717	11,989	24%	0.24		0.724		0.174	0.174	82.6%
1924	13,873	10,344	4,238	64%	0.48		0.811		0.386	0.386	61.4%
1925	11,254	9,059	3,259	67%	0.50		0.742		0.372	0.372	62.8%
1926	11,547	8,083	3,369	67%	0.50		[illegible]		0.343	0.343	65.7%
1927	14,312	11,254	4,403	63%	0.47		0.861		0.407	0.407	59.3%
1928	16,572	9,726	5,248	61%	0.46		0.776		0.356	0.356	64.4%
1929	13,710	10,392	4,178	64%	0.48		0.814		0.389	0.389	61.1%
1930	14,442	10,490	4,451	63%	0.47		0.819		0.387	0.387	61.3%
1931	9,368	5,172	2,554	71%	0.53		0.632		0.281	0.281	71.9%
1932	14,653	11,401	4,530	63%	0.47		0.869		0.408	0.408	59.2%
1933	8,181	4,505	2,110	74%	0.55		0.496		0.272	0.272	72.8%
1934	12,474	9,709	3,715	66%	0.49		0.777		0.380	0.380	62.0%
1935	8,506	6,819	2,231	73%	0.54		0.610		0.331	0.331	66.9%
1936	10,860	7,497	3,119	68%	0.51		0.656		0.333	0.333	66.7%
1937	12,702	9,953	3,800	65%	0.49		0.790		0.384	0.384	61.6%
1938	48,367	11,742	17,139	23%	0.23		0.887		0.206	0.206	79.4%
1939	18,687	7,953	6,039	60%	0.45		0.682		0.305	0.305	69.5%
1940	7,639	4,096	1,962	75%	0.56		0.474		0.264	0.264	73.6%
1941	35,975	11,547	12,505	24%	0.24		0.878		0.210	0.210	79.0%
1942	65,623	7,823	23,593	23%	0.23		0.875		0.154	0.154	84.6%
1943	26,803	7,985	9,822	25%	0.25		0.864		0.168	0.168	83.2%
1944	13,776	10,636	4,202	64%	0.48		0.827		0.395	0.395	60.5%
1945	15,824	11,173	4,968	62%	0.46		0.856		0.396	0.396	60.4%
1946	54,840	11,807	19,560	23%	0.23		0.890		0.205	0.205	79.5%
1947	18,134	11,352	5,832	60%	0.45		0.866		0.389	0.389	61.1%
1948	9,364	5,383	2,560	71%	0.53		0.544		0.286	0.286	71.4%
1949	15,564	11,108	4,871	62%	0.46		0.863		0.396	0.396	60.4%
1950	11,449	7,680	3,332	67%	0.50		0.667		0.333	0.333	66.7%
1951	68,096	11,807	24,518	23%	0.23		0.890		0.202	0.202	79.8%
1952	46,709	11,319	16,519	23%	0.23		0.864		0.202	0.202	79.8%
1953	42,334	7,953	14,883	24%	0.24		0.682		0.161	0.161	83.9%
1954	14,914	8,115	4,628	63%	0.47		0.691		0.324	0.324	67.6%
1955	26,022	11,124	8,762	25%	0.25		0.854		0.212	0.212	78.8%
1956	25,290	11,807	8,508	25%	0.25		0.890		0.222	0.222	77.8%
1957	14,149	10,018	4,342	64%	0.47		0.794		0.376	0.376	62.4%
1958	23,745	11,140	7,930	57%	0.43		0.854		0.366	0.366	63.4%
1959	14,621	8,067	4,518	63%	0.47		0.686		0.324	0.324	67.6%
1960	11,075	7,010	3,192	68%	0.50		0.631		0.318	0.318	68.2%
1961	18,280	11,108	5,867	60%	0.45		0.853		0.383	0.383	61.7%
1962	16,703	11,092	5,297	61%	0.46		0.852		0.389	0.389	61.1%
1963	27,550	11,108	9,354	25%	0.25		0.863		0.211	0.211	78.9%
1964	14,849	10,262	4,603	63%	0.47		0.807		0.378	0.378	62.2%
1965	27,989	11,677	9,518	25%	0.25		0.883		0.218	0.218	78.2%
1966	16,995	10,392	5,408	61%	0.46		0.814		0.371	0.371	62.9%
1967	39,748	11,336	13,916	24%	0.24		0.865		0.205	0.205	79.5%
1968	16,686	7,953	5,291	61%	0.46		0.662		0.312	0.312	68.8%
1969	24,961	11,189	8,393	57%	0.42		0.857		0.364	0.364	63.6%
1970	50,158	7,693	17,809	23%	0.23		0.668		0.155	0.155	84.5%
1971	54,126	11,254	19,293	23%	0.23		0.881		0.198	0.198	80.2%
1972	20,004	10,409	6,532	59%	0.44		0.815		0.360	0.360	64.0%
1973	26,200	11,108	8,849	25%	0.25		0.853		0.212	0.212	78.8%
1974	81,590	11,362	22,085	23%	0.23		0.886		0.198	0.198	80.2%
1975	17,613	8,457	5,637	61%	0.45		0.710		0.321	0.321	67.9%
1976	16,768	8,864	5,321	61%	0.46		0.732		0.334	0.334	66.6%
1977	8,115	4,716	2,085	74%	0.56		0.508		0.279	0.279	72.1%
1978	12,279	9,660	3,642	66%	0.49		0.775		0.380	0.380	62.0%
1979	12,751	7,868	3,819	65%	0.49		0.679		0.330	0.330	67.0%
1980	20,833	11,206	6,842	59%	0.44		0.858		0.376	0.376	62.4%
1981	15,613	8,327	4,889	62%	0.46		0.703		0.326	0.326	67.4%
1982	68,599	11,236	24,706	23%	0.23		0.860		0.195	0.195	80.5%
1983	55,410	8,636	19,773	23%	0.23		0.719		0.165	0.165	83.5%
1984	82,944	6,099	30,071	22%	0.22		0.582		0.131	0.131	86.9%
1985	23,875	10,631	7,979	57%	0.43		0.836		0.358	0.358	64.2%
1986	15,727	11,157	4,932	62%	0.46		0.855		0.396	0.396	60.4%
1987	13,791	10,311	4,206	64%	0.48		0.810		0.386	0.386	61.4%
1988	15,841	11,092	4,974	62%	0.46		0.852		0.394	0.394	60.6%
1989	8,847	5,725	2,359	72%	0.54		0.562		0.301	0.301	69.9%
1990	14,637	10,409	4,524	63%	0.47		0.816		0.383	0.383	61.7%
1991	8,766	4,830	2,328	72%	0.54		0.514		0.276	0.276	72.4%
1992	7,465	4,570	1,842	76%	0.56		0.500		0.282	0.282	71.8%

JANUARY

Year	Sac River Flows	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	17,499	11,791	5,595	61%	0.27		0.890		0.236	0.236	76.4%	60.1%
1923	32,263	7,856	11,124	24%	0.24		0.677		0.164	0.164	83.6%	72.1%
1924	14,621	10,864	4,518	63%	0.27		0.840		0.230	0.230	77.0%	61.3%
1925	10,213	6,701	2,870	69%	0.30		0.615		0.183	0.183	81.7%	64.6%
1926	19,776	11,352	6,446	59%	0.26		0.866		0.225	0.225	77.5%	63.6%
1927	29,661	11,498	10,151	24%	0.24		0.874		0.214	0.214	78.6%	59.5%
1928	26,103	7,856	8,812	25%	0.25		0.677		0.168	0.168	83.2%	63.4%
1929	15,515	11,303	4,853	62%	0.27		0.863		0.234	0.234	76.6%	59.6%
1930	20,768	11,303	6,617	59%	0.28		0.863		0.222	0.222	77.8%	63.5%
1931	11,970	9,091	3,527	66%	0.29		0.744		0.213	0.213	78.7%	68.1%
1932	17,256	12,035	5,504	61%	0.27		0.903		0.240	0.240	76.0%	63.5%
1933	12,100	9,626	3,575	66%	0.29		0.773		0.221	0.221	77.9%	68.5%
1934	16,101	11,368	5,072	62%	0.27		0.867		0.233	0.233	76.7%	65.4%
1935	25,469	11,872	8,575	25%	0.25		0.894		0.223	0.223	77.7%	64.3%
1936	32,039	11,661	11,033	24%	0.24		0.883		0.214	0.214	78.6%	64.3%
1937	18,215	11,791	5,114	62%	0.27		0.890		0.239	0.239	76.1%	60.9%
1938	31,437	8,148	10,808	24%	0.24		0.893		0.168	0.168	83.2%	71.0%
1939	18,410	7,449	5,935	60%	0.26		0.655		0.172	0.172	82.8%	66.6%
1940	23,452	12,230	7,821	57%	0.25		0.913		0.231	0.231	76.9%	69.4%
1941	72,291	12,344	26,067	23%	0.23		0.919		0.208	0.208	79.2%	68.9%
1942	63,265	7,449	22,711	23%	0.23		0.655		0.149	0.149	85.1%	73.9%
1943	58,080	7,514	20,765	23%	0.23		0.659		0.151	0.151	84.9%	73.3%
1944	17,678	7,461	5,662	60%	0.26		0.657		0.174	0.174	82.6%	60.2%
1945	12,685	9,400	3,794	65%	0.28		0.761		0.215	0.215	78.5%	58.9%
1946	43,228	7,856	15,217	23%	0.23		0.677		0.159	0.159	84.1%	71.0%
1947	15,223	10,697	4,743	63%	0.27		0.841		0.229	0.229	77.1%	58.9%
1948	14,697	10,734	4,622	63%	0.27		0.833		0.228	0.228	77.2%	67.0%
1949	14,930	11,027	4,634	63%	0.27		0.848		0.232	0.232	76.8%	59.0%
1950	20,931	11,384	6,878	59%	0.26		0.868		0.223	0.223	77.7%	64.1%
1951	62,208	11,531	22,316	23%	0.23		0.876		0.200	0.200	80.0%	77.8%
1952	67,347	11,059	24,238	23%	0.23		0.850		0.193	0.193	80.7%	69.8%
1953	64,078	7,546	23,015	23%	0.23		0.660		0.150	0.150	85.0%	75.0%
1954	33,421	8,067	11,550	24%	0.24		0.688		0.166	0.166	83.4%	64.9%
1955	22,265	10,230	7,377	58%	0.25		0.805		0.205	0.205	79.5%	69.5%
1956	83,724	12,230	30,363	22%	0.22		0.913		0.205	0.205	79.5%	69.6%
1957	18,636	8,099	6,021	60%	0.26		0.690		0.181	0.181	81.9%	61.1%
1958	36,463	7,579	12,687	24%	0.24		0.662		0.158	0.158	84.2%	62.8%
1959	35,162	7,546	12,200	24%	0.24		0.660		0.158	0.158	84.2%	66.4%
1960	14,523	10,620	4,482	63%	0.27		0.826		0.227	0.227	77.3%	65.1%
1961	15,011	11,287	4,664	63%	0.27		0.862		0.235	0.235	76.5%	59.5%
1962	12,853	8,132	3,762	66%	0.28		0.892		0.196	0.196	80.4%	63.0%
1963	18,280	11,468	5,887	60%	0.26		0.872		0.229	0.229	77.1%	69.0%
1964	25,534	8,083	8,600	25%	0.25		0.689		0.172	0.172	82.8%	69.4%
1965	81,236	12,718	29,432	22%	0.22		0.940		0.211	0.211	78.9%	68.4%
1966	29,632	7,872	10,132	24%	0.24		0.678		0.166	0.166	83.4%	69.9%
1967	34,625	11,889	12,000	24%	0.24		0.895		0.215	0.215	78.5%	68.9%
1968	30,640	7,546	10,509	24%	0.24		0.660		0.161	0.161	83.9%	67.1%
1969	68,502	9,498	24,670	23%	0.23		0.766		0.174	0.174	82.6%	61.9%
1970	92,669	7,497	33,706	22%	0.22		0.658		0.147	0.147	85.3%	75.5%
1971	46,868	9,677	16,586	23%	0.23		0.775		0.181	0.181	81.9%	71.1%
1972	20,394	8,099	6,677	59%	0.26		0.690		0.178	0.178	82.2%	62.0%
1973	49,376	10,620	17,517	23%	0.23		0.826		0.192	0.192	80.8%	70.1%
1974	78,422	7,856	28,380	22%	0.22		0.677		0.152	0.152	84.8%	79.3%
1975	18,670	8,067	6,033	60%	0.26		0.688		0.180	0.180	82.0%	65.3%
1976	18,766	8,018	5,321	61%	0.27		0.686		0.183	0.183	81.7%	63.7%
1977	7,660	4,536	1,915	75%	0.32		0.498		0.160	0.160	84.0%	68.9%
1978	43,066	10,295	15,157	23%	0.23		0.809		0.190	0.190	81.0%	64.4%
1979	27,241	7,481	9,238	25%	0.25		0.857		0.162	0.162	83.8%	63.7%
1980	63,623	7,367	22,845	23%	0.23		0.851		0.148	0.148	85.2%	62.2%
1981	28,807	7,563	9,749	25%	0.25		0.861		0.162	0.162	83.8%	64.5%
1982	51,165	11,856	18,186	23%	0.23		0.893		0.207	0.207	79.3%	77.8%
1983	59,150	6,863	21,172	23%	0.23		0.624		0.143	0.143	85.7%	81.0%
1984	47,359	4,212	16,762	23%	0.23		0.480		0.112	0.112	88.8%	84.9%
1985	16,800	8,063	5,333	61%	0.27		0.669		0.184	0.184	81.6%	70.2%
1986	21,500	11,563	7,091	58%	0.26		0.877		0.225	0.225	77.5%	61.3%
1987	16,735	7,465	5,309	61%	0.27		0.656		0.175	0.175	82.5%	62.5%
1988	25,534	11,271	8,600	25%	0.25		0.862		0.215	0.215	78.5%	63.0%
1989	12,002	8,717	3,539	66%	0.29		0.724		0.207	0.207	79.3%	67.0%
1990	21,582	9,612	7,122	58%	0.26		0.772		0.197	0.197	80.3%	62.2%
1991	6,847	3,399	1,611	78%	0.33		0.436		0.145	0.145	85.5%	70.5%
1992	12,133	8,994	3,588	66%	0.29		0.739		0.211	0.211	78.9%	68.6%
											Average:	66.81%

Formulas: Sacramento River Late Fall Run Smolt Survival Model

C10 ='Study 468 Flow Data'!B7
D10 ='Study 468 Flow Data'!L7 (HIDDEN)
E10 ='Study 468 Flow Data'!V7 (HIDDEN)
F10 =(D10+E10)
G10 =0.374*C10-950
H10 =IF(C10>$K$4,(0.133*C10+829)/(C10-G10),(0.293*C10+2090)/(C10-G10))
I10 =(0.133*C10+829)/(C10-G10)
K10 =(-0.5916024)+(0.017968*$T$1)+(0.000054*F10)
L10 =-1.613493+(0.0319584*$T$1)
M10 =(K10*H10)+(L10*(1-H10))
N10 =J10+M10-(J10*M10)
O10 =1-N10

Q10 ='Study 468 Flow Data'!C7
R10 ='Study 468 Flow Data'!M7 (HIDDEN)
S10 ='Study 468 Flow Data'!W7 (HIDDEN)
T10 =(R10+S10)
U10 =0.374*Q10-950
V10 =IF(Q10>$K$4,(0.133*Q10+829)/(Q10-U10),(0.293*Q10+2090)/(Q10-U10))
W10 =(0.45*(0.133*Q10+829)/(Q10-U10))+(0.55*V10)
Y10 =(-0.5916024)+(0.017968*$T$2)+(0.000054*T10)
AA10 =(Y10*W10)+(Z10*(1-W10))
AB10 =X10+AA10-(X10*AA10)
AC10 =1-AB10

AE10 ='Study 468 Flow Data'!D7
AF10 ='Study 468 Flow Data'!N7 (HIDDEN)
AG10 ='Study 468 Flow Data'!X7 (HIDDEN)
AH10 =(AF10+AG10)
AI10 =0.374*AE10-950
AJ10 =IF(AE10>$K$4,(0.133*AE10+829)/(AE10-AI10),(0.293*AE10+2090)/(AE10-AI10))
AK10 =(0.133*AE10+829)/(AE10-AI10)
AM10 =(-0.5916024)+(0.017968*$T$3)+(0.000054*AH10)
AO10 =(AM10*AK10)+(AN10*(1-AK10))
AP10 =AL10+AO10-(AL10*AO10)
AQ10 =1-AP10
AS10 =(O10*0.25)+(AC10*0.5)+(AQ10*0.25)

Study 468 Win[illegible] Smolt Survival Model — February Water Temp 50 F — April Water Temperatures based on limited historical data [illegible]
Cross Ch[illegible]ad Over 25000 cfs — March Water Temp 55 F
Cross Channel Clos[illegible] to Apr when DOI greater than 12,000 cfs

C-032381

Year	Water Year Type	FEBRUARY Sac River Flow	CVP + SWP Exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channel Closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123
1922	A	34,409	10,606	11,919	24%	0.24		0.879		0.211	0.211	78.9%
1923	B	24,326	6,662	8,148	57%	0.25		0.867		0.167	0.167	83.3%
1924	C	16,898	8,693	5,370	61%	0.27		0.776		0.207	0.207	79.3%
1925	D	44,583	11,794	15,724	23%	0.23		0.844		0.221	0.221	77.9%
1926	D	36,714	11,866	12,781	24%	0.24		0.848		0.226	0.226	77.4%
1927	W	88,121	11,326	32,007	22%	0.22		0.918		0.205	0.205	79.5%
1928	A	27,364	8,327	9,284	25%	0.25		0.756		0.187	0.187	81.3%
1929	C	18,526	8,085	5,980	60%	0.26		0.743		0.195	0.195	80.5%
1930	D	15,683	6,786	4,916	62%	0.27		0.673		0.182	0.182	81.8%
1931	C	11,092	5,222	3,196	68%	0.29		0.589		0.172	0.172	82.8%
1932	D	13,995	9,979	4,264	64%	0.26		0.846		0.234	0.234	76.6%
1933	C	11,974	6,536	3,526	66%	0.29		0.660		0.189	0.189	81.1%
1934	C	12,748	8,032	3,818	65%	0.28		0.633		0.179	0.179	82.1%
1935	B	11,974	4,626	3,526	66%	0.29		0.557		0.160	0.160	84.0%
1936	B	47,548	12,309	16,833	23%	0.23		0.971		0.226	0.226	77.4%
1937	B	33,465	8,767	11,562	24%	0.24		0.781		0.188	0.188	81.2%
1938	W	82,369	8,211	29,852	22%	0.22		0.750		0.168	0.168	83.2%
1939	D	19,032	8,564	6,168	60%	0.26		0.861		0.173	0.173	82.7%
1940	A	42,646	12,291	14,999	24%	0.24		0.971		0.228	0.228	77.2%
1941	W	75,031	11,164	27,112	23%	0.23		0.910		0.205	0.205	79.5%
1942	W	78,344	8,247	28,351	23%	0.23		0.752		0.169	0.169	83.1%
1943	W	52,253	8,265	18,593	23%	0.23		0.753		0.174	0.174	82.6%
1944	D	29,937	7,926	10,246	24%	0.24		0.736		0.180	0.180	82.0%
1945	B	40,621	8,247	14,242	24%	0.24		0.752		0.178	0.178	82.2%
1946	B	24,362	8,247	8,161	57%	0.25		0.752		0.189	0.189	81.1%
1947	D	21,571	8,247	7,118	58%	0.26		0.752		0.192	0.192	80.8%
1948	B	15,594	5,876	4,882	62%	0.27		0.624		0.169	0.169	83.1%
1949	D	16,277	8,427	5,136	62%	0.27		0.762		0.205	0.205	79.5%
1950	B	35,186	11,776	12,202	24%	0.24		0.943		0.226	0.226	77.4%
1951	A	60,572	8,987	21,704	23%	0.23		0.791		0.181	0.181	81.9%
1952	W	62,499	7,910	22,425	23%	0.23		0.734		0.167	0.167	83.3%
1953	W	28,341	8,337	9,650	25%	0.25		0.757		0.186	0.186	81.4%
1954	A	57,151	8,895	20,424	23%	0.23		0.787		0.181	0.181	81.9%
1955	D	16,295	8,139	5,144	62%	0.27		0.746		0.201	0.201	79.9%
1956	W	61,543	8,656	22,087	23%	0.23		0.774		0.177	0.177	82.3%
1957	A	33,149	8,896	11,448	24%	0.24		0.787		0.190	0.190	81.0%
1958	W	63,003	8,301	22,613	23%	0.23		0.755		0.172	0.172	82.8%
1959	B	50,075	8,301	17,778	23%	0.23		0.756		0.175	0.175	82.5%
1960	D	26,217	11,126	8,856	25%	0.25		0.906		0.226	0.226	77.4%
1961	D	32,843	11,362	11,333	24%	0.24		0.920		0.222	0.222	77.8%
1962	B	45,177	12,712	15,946	23%	0.23		0.993		0.232	0.232	76.8%
1963	W	58,699	12,784	21,004	23%	0.23		0.987		0.228	0.228	77.2%
1964	D	19,019	7,632	6,163	60%	0.26		0.719		0.188	0.188	81.2%
1965	W	33,329	9,867	11,515	24%	0.24		0.840		0.203	0.203	79.7%
1966	B	26,775	8,861	9,084	25%	0.25		0.774		0.192	0.192	80.8%
1967	W	43,106	7,490	15,172	23%	0.23		0.711		0.167	0.167	83.3%
1968	B	54,520	6,589	19,440	23%	0.23		0.663		0.153	0.153	84.7%
1969	W	67,486	7,454	24,290	23%	0.23		0.709		0.161	0.161	83.9%
1970	W	57,585	5,258	20,579	23%	0.23		0.591		0.136	0.136	86.4%
1971	W	29,206	8,571	9,973	25%	0.25		0.770		0.189	0.189	81.1%
1972	B	24,217	8,588	8,107	57%	0.25		0.771		0.194	0.194	80.6%
1973	A	70,961	8,697	25,590	23%	0.23		0.776		0.176	0.176	82.4%
1974	W	41,918	8,643	14,727	24%	0.24		0.774		0.182	0.182	81.8%
1975	W	58,807	8,877	21,044	23%	0.23		0.786		0.180	0.180	82.0%
1976	C	19,523	8,171	6,352	59%	0.26		0.748		0.195	0.195	80.5%
1977	C	12,172	2,071	3,602	66%	0.29		0.419		0.120	0.120	88.0%
1978	A	50,129	9,129	17,798	23%	0.23		0.800		0.185	0.185	81.5%
1979	B	42,044	8,211	14,774	24%	0.24		0.750		0.177	0.177	82.3%
1980	A	69,453	7,736	25,026	23%	0.23		0.725		0.164	0.164	83.6%
1981	D	29,674	6,968	10,148	24%	0.24		0.683		0.167	0.167	83.3%
1982	W	65,650	8,913	23,603	23%	0.23		0.788		0.179	0.179	82.1%
1983	W	82,917	6,212	30,061	22%	0.22		0.642		0.144	0.144	85.6%
1984	W	36,004	5,163	12,516	24%	0.24		0.586		0.140	0.140	86.0%
1985	D	20,131	8,895	6,579	59%	0.26		0.787		0.204	0.204	79.6%
1986	W	95,486	11,578	34,762	22%	0.22		0.932		0.208	0.208	79.2%
1987	D	23,030	5,474	7,663	58%	0.25		0.602		0.153	0.153	84.7%
1988	C	17,072	6,519	5,435	61%	0.27		0.659		0.175	0.175	82.5%
1989	D	11,830	2,719	3,474	66%	0.29		0.454		0.130	0.130	87.0%
1990	C	16,944	7,797	5,387	61%	0.27		0.728		0.194	0.194	80.6%
1991	C	11,002	1,242	3,185	68%	0.29		0.374		0.109	0.109	89.1%
1992	C	31,415	8,762	10,799	24%	0.24		0.780		0.189	0.189	81.1%

Year	MARCH Sac River Flow	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	percent	X-Channel Closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123
1922	31,551	7,920	10,850	0.24	0.24		0.824	0.144	0.309	0.309	69.1%
1923	17,174	7,596	5,473	0.61	0.27		0.807	0.144	0.320	0.320	68.0%
1924	12,100	3,155	3,575	0.66	0.29		0.567	0.144	0.265	0.265	73.5%
1925	18,557	7,872	5,990	0.60	0.26		0.822	0.144	0.322	0.322	67.8%
1926	18,947	7,725	6,136	0.60	0.26		0.814	0.144	0.319	0.319	68.1%
1927	43,863	7,384	15,455	0.23	0.23		0.795	0.144	0.297	0.297	70.3%
1928	86,229	8,652	31,300	0.22	0.22		0.864	0.144	0.305	0.305	69.5%
1929	16,930	6,831	5,382	0.61	0.27		0.785	0.144	0.310	0.310	69.0%
1930	30,087	7,042	10,303	0.24	0.24		0.777	0.144	0.299	0.299	70.1%
1931	8,701	3,265	2,304	0.73	0.31		0.574	0.144	0.278	0.278	72.2%
1932	10,522	3,659	2,985	0.69	0.30		0.594	0.144	0.277	0.277	72.3%
1933	10,392	4,635	2,937	0.69	0.30		0.647	0.144	0.293	0.293	70.7%
1934	14,735	4,456	4,561	0.63	0.27		0.637	0.144	0.279	0.279	72.1%
1935	24,916	11,206	8,368	0.57	0.25		1.000	0.144	0.358	0.358	64.2%
1936	33,454	11,267	11,562	0.24	0.24		1.000	0.144	0.351	0.351	64.9%
1937	36,463	8,229	13,436	0.24	0.24		0.841	0.144	0.310	0.310	69.0%
1938	78,634	6,197	28,459	0.22	0.22		0.839	0.144	0.301	0.301	69.9%
1939	16,394	8,652	5,181	0.61	0.27		0.758	0.144	0.308	0.308	69.2%
1940	59,134	6,880	21,166	0.23	0.23		0.876	0.144	0.312	0.312	68.8%
1941	58,581	8,067	20,959	0.23	0.23		0.832	0.144	0.302	0.302	69.8%
1942	27,095	8,229	9,183	0.25	0.25		0.841	0.144	0.317	0.317	68.3%
1943	64,598	8,278	23,210	0.23	0.23		0.844	0.144	0.303	0.303	69.7%
1944	25,094	8,229	8,436	0.25	0.25		0.841	0.144	0.318	0.318	68.2%
1945	27,030	8,369	9,159	0.25	0.25		0.848	0.144	0.318	0.318	68.2%
1946	23,647	8,652	7,894	0.57	0.25		0.864	0.144	0.326	0.326	67.4%
1947	22,509	8,213	7,468	0.58	0.25		0.840	0.144	0.321	0.321	67.9%
1948	19,240	7,660	6,246	0.59	0.26		0.810	0.144	0.318	0.318	68.2%
1949	41,716	10,880	14,662	0.24	0.24		0.984	0.144	0.342	0.342	65.8%
1950	22,655	8,631	7,523	0.58	0.25		0.874	0.144	0.329	0.329	67.1%
1951	29,827	8,929	10,205	0.24	0.24		0.879	0.144	0.324	0.324	67.6%
1952	57,524	8,164	20,564	0.23	0.23		0.838	0.144	0.303	0.303	69.7%
1953	24,869	7,563	8,362	0.57	0.25		0.805	0.144	0.310	0.310	69.0%
1954	49,538	8,912	17,577	0.23	0.23		0.878	0.144	0.314	0.314	68.6%
1955	17,678	7,253	5,662	0.60	0.26		0.788	0.144	0.315	0.315	68.5%
1956	36,674	7,186	12,766	0.24	0.24		0.765	0.144	0.297	0.297	70.3%
1957	44,383	8,603	15,849	0.23	0.23		0.861	0.144	0.312	0.312	68.8%
1958	93,612	8,294	34,061	0.22	0.22		0.845	0.144	0.300	0.300	70.0%
1959	23,367	7,253	7,797	0.57	0.25		0.768	0.144	0.307	0.307	69.3%
1960	22,606	7,465	7,505	0.58	0.25		0.800	0.144	0.311	0.311	68.9%
1961	20,947	8,050	6,884	0.59	0.26		0.831	0.144	0.321	0.321	67.9%
1962	27,684	7,725	9,396	0.25	0.25		0.814	0.144	0.309	0.309	69.1%
1963	32,641	8,603	11,258	0.24	0.24		0.861	0.144	0.318	0.318	68.2%
1964	17,174	6,993	5,473	0.61	0.27		0.774	0.144	0.312	0.312	68.8%
1965	21,386	8,506	7,049	0.58	0.26		0.858	0.144	0.327	0.327	67.3%
1966	26,689	8,652	8,780	0.25	0.25		0.864	0.144	0.321	0.321	67.9%
1967	54,483	7,514	19,426	0.23	0.23		0.802	0.144	0.296	0.296	70.4%
1968	36,788	7,107	12,809	0.24	0.24		0.780	0.144	0.296	0.296	70.4%
1969	45,326	6,898	16,002	0.23	0.23		0.769	0.144	0.290	0.290	71.0%
1970	35,812	7,221	12,444	0.24	0.24		0.787	0.144	0.298	0.298	70.2%
1971	50,866	8,929	18,062	0.23	0.23		0.879	0.144	0.314	0.314	68.6%
1972	32,933	8,063	11,367	0.24	0.24		0.833	0.144	0.311	0.311	68.9%
1973	47,554	8,685	16,835	0.23	0.23		0.866	0.144	0.312	0.312	68.8%
1974	100,199	8,652	36,524	0.22	0.22		0.864	0.144	0.304	0.304	69.6%
1975	75,999	8,912	27,474	0.23	0.23		0.878	0.144	0.310	0.310	69.0%
1976	20,088	7,855	6,556	0.59	0.26		0.821	0.144	0.319	0.319	68.1%
1977	7,546	2,049	1,872	0.78	0.32		0.507	0.144	0.261	0.261	73.9%
1978	46,448	6,017	16,422	0.23	0.23		0.722	0.144	0.279	0.279	72.1%
1979	32,597	8,229	11,239	0.24	0.24		0.841	0.144	0.313	0.313	68.7%
1980	36,479	7,107	12,693	0.24	0.24		0.780	0.144	0.296	0.296	70.4%
1981	32,494	7,107	11,203	0.24	0.24		0.780	0.144	0.298	0.298	70.2%
1982	69,067	8,880	24,889	0.23	0.23		0.876	0.144	0.310	0.310	69.0%
1983	81,935	4,684	29,694	0.22	0.22		0.650	0.144	0.258	0.258	74.2%
1984	36,495	7,205	12,699	0.24	0.24		0.786	0.144	0.297	0.297	70.3%
1985	21,808	8,847	7,207	0.58	0.26		0.874	0.144	0.331	0.331	66.9%
1986	72,535	8,408	26,178	0.23	0.23		0.851	0.144	0.304	0.304	69.6%
1987	29,551	6,473	10,102	0.24	0.24		0.746	0.144	0.292	0.292	70.8%
1988	11,010	3,773	3,168	0.68	0.29		0.600	0.144	0.278	0.278	72.2%
1989	42,498	11,189	14,844	0.24	0.24		1.000	0.144	0.346	0.346	65.4%
1990	14,832	5,871	4,597	0.63	0.27		0.714	0.144	0.300	0.300	70.0%
1991	29,661	11,303	10,151	0.24	0.24		1.000	0.144	0.354	0.354	64.6%
1992	20,102	8,229	6,568	0.59	0.26		0.841	0.144	0.325	0.325	67.5%

Year	APRIL Sac River Flow	CVP + SW Exports	Calculated Steamboat & Sutter Slough flows	Percent	X-Channel Closed	Water temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123	Weighted Total Survival
1922	22,822	8,369	7,585	0.58	0.25	58.5	0.002	0.911	0.256	0.422	0.424	57.6%	66.92%
1923	22,721	7,932	7,548	0.58	0.25	58.3	0.000	0.884	0.250	0.411	0.411	58.9%	67.23%
1924	8,067	2,790	2,067	0.74	0.32	61.5	0.128	0.664	0.352	0.451	0.521	47.9%	66.55%
1925	22,654	6,958	7,523	0.58	0.25	59.1	0.027	0.846	0.275	0.420	0.436	56.4%	65.69%
1926	21,427	6,665	7,064	0.58	0.26	61.6	0.133	0.875	0.355	0.488	0.556	44.4%	62.18%
1927	48,215	8,100	17,062	0.23	0.23	56.8	0.000	0.866	0.202	0.356	0.356	64.4%	69.71%
1928	29,208	7,630	9,974	0.25	0.25	58.7	0.011	0.875	0.262	0.413	0.419	58.1%	67.60%
1929	8,436	2,353	2,205	0.73	0.31	56.3	0.000	0.547	0.186	0.299	0.299	70.1%	70.83%
1930	12,638	3,899	3,777	0.65	0.28	59.6	0.048	0.690	0.291	0.404	0.433	56.7%	67.62%
1931	9,193	2,958	2,468	0.71	0.31	62.8	0.183	0.697	0.393	0.486	0.580	42.0%	64.53%
1932	13,075	5,378	3,940	0.66	0.28	58.9	0.019	0.757	0.269	0.408	0.417	58.3%	68.63%
1933	12,739	4,134	3,814	0.65	0.28	60.1	0.069	0.712	0.307	0.422	0.462	53.8%	66.97%
1934	12,839	3,563	3,852	0.65	0.28	63.6	0.217	0.744	0.419	0.511	0.617	38.3%	63.25%
1935	24,637	9,092	8,264	0.57	0.25	58.9	0.019	0.958	0.289	0.442	0.452	54.8%	63.93%
1936	21,276	8,369	7,007	0.58	0.26	59.7	0.053	0.933	0.294	0.456	0.487	51.3%	62.48%
1937	23,511	8,050	7,843	0.57	0.25	58.8	0.015	0.900	0.266	0.426	0.434	56.6%	66.87%
1938	47,173	8,420	16,693	0.23	0.23	56.3	0.000	0.875	0.186	0.346	0.346	65.4%	70.29%
1939	12,234	4,134	3,626	0.66	0.29	63.3	0.204	0.769	0.409	0.512	0.612	38.8%	61.83%
1940	41,726	8,268	14,656	0.24	0.24	57.4	0.000	0.886	0.221	0.378	0.378	62.2%	67.93%
1941	42,367	9,310	14,895	0.24	0.24	56.9	0.000	0.934	0.205	0.376	0.376	62.4%	68.84%
1942	43,308	8,907	15,247	0.23	0.23	56.5	0.000	0.905	0.192	0.359	0.359	64.1%	68.97%
1943	29,410	9,462	10,049	0.24	0.24	58.8	0.015	0.976	0.286	0.440	0.448	55.2%	67.01%
1944	9,814	4,235	2,721	0.70	0.30	58.4	0.000	0.686	0.253	0.383	0.383	61.7%	68.01%
1945	11,747	6,252	3,443	0.67	0.29	60.6	0.090	0.835	0.323	0.471	0.518	48.2%	63.96%
1946	12,218	5,949	3,619	0.66	0.29	60.7	0.095	0.820	0.326	0.467	0.518	48.2%	63.44%
1947	13,797	4,907	4,210	0.64	0.28	62.5	0.170	0.796	0.384	0.499	0.584	41.6%	61.68%
1948	23,040	6,823	7,667	0.58	0.25	56.6	0.000	0.794	0.195	0.347	0.347	65.3%	69.27%
1949	13,209	5,075	3,990	0.65	0.28	61.7	0.137	0.791	0.358	0.460	0.551	44.9%	61.31%
1950	19,276	6,252	6,259	0.59	0.26	61.3	0.120	0.847	0.346	0.478	0.539	46.1%	62.11%
1951	14,856	6,386	4,606	0.63	0.27	59.9	0.061	0.830	0.301	0.445	0.479	52.1%	64.81%
1952	56,652	8,773	20,238	0.23	0.23	55.5	0.000	0.879	0.180	0.325	0.325	67.5%	70.78%
1953	16,184	5,647	5,103	0.62	0.27	58.8	0.015	0.770	0.266	0.401	0.410	59.0%	67.62%
1954	39,863	7,361	13,959	0.24	0.24	58.4	0.000	0.855	0.253	0.395	0.395	60.5%	67.86%
1955	9,478	3,664	2,595	0.71	0.30	56.4	0.000	0.620	0.189	0.320	0.320	68.0%	69.87%
1956	20,436	7,986	6,693	0.59	0.26	59.7	0.053	0.911	0.294	0.454	0.482	51.8%	66.29%
1957	21,209	6,453	6,962	0.58	0.26	60.5	0.086	0.844	0.320	0.454	0.501	49.9%	64.69%
1958	52,262	9,663	18,603	0.23	0.23	57.4	0.000	0.962	0.221	0.392	0.392	60.8%	68.88%
1959	10,487	3,798	2,972	0.69	0.30	63	0.191	0.745	0.400	0.502	0.597	40.3%	62.30%
1960	13,546	4,033	4,116	0.64	0.28	59.5	0.044	0.695	0.288	0.402	0.428	57.2%	66.51%
1961	12,789	3,546	3,833	0.65	0.28	60.1	0.069	0.680	0.307	0.412	0.453	54.7%	66.22%
1962	15,411	5,579	4,814	0.62	0.27	61.8	0.141	0.820	0.362	0.486	0.559	44.1%	62.68%
1963	69,457	8,100	25,027	0.23	0.23	53.7	0.000	0.811	0.103	0.263	0.263	73.7%	71.04%
1964	8,957	3,496	2,400	0.72	0.31	59.3	0.036	0.663	0.282	0.399	0.421	57.9%	67.17%
1965	45,173	8,537	15,945	0.23	0.23	56.9	0.000	0.892	0.205	0.366	0.366	63.4%	67.78%
1966	12,806	4,974	3,839	0.65	0.28	61.9	0.145	0.789	0.365	0.485	0.559	44.1%	62.43%
1967	39,930	9,546	13,984	0.24	0.24	53.8	0.000	0.891	0.106	0.292	0.292	70.8%	72.22%
1968	15,646	5,243	4,902	0.62	0.27	61.5	0.128	0.797	0.352	0.472	0.540	46.0%	64.94%
1969	44,787	7,512	15,800	0.23	0.23	56.4	0.000	0.827	0.189	0.338	0.338	66.2%	71.21%
1970	16,604	6,588	5,260	0.61	0.27	58.8	0.015	0.821	0.266	0.414	0.423	57.7%	68.57%
1971	21,946	6,588	7,259	0.58	0.26	58.7	0.011	0.819	0.262	0.404	0.411	58.9%	67.31%
1972	12,453	4,706	3,707	0.66	0.28	58.5	0.002	0.714	0.256	0.386	0.387	61.3%	68.15%
1973	19,511	7,428	6,347	0.59	0.26	61.3	0.120	0.911	0.346	0.493	0.553	44.7%	63.32%
1974	33,206	9,327	11,470	0.24	0.24	56.8	0.000	0.933	0.202	0.378	0.378	62.2%	68.98%
1975	25,763	8,773	8,685	0.25	0.25	56.8	0.000	0.903	0.202	0.376	0.376	62.4%	68.72%
1976	9,426	3,006	2,576	0.71	0.30	58.9	0.019	0.629	0.269	0.378	0.390	61.0%	67.58%
1977	9,142	3,006	2,469	0.71	0.31	64.3	0.246	0.726	0.441	0.529	0.645	35.5%	64.20%
1978	38,703	7,512	13,525	0.24	0.24	56.9	0.000	0.836	0.205	0.355	0.355	64.5%	71.04%
1979	17,696	6,857	5,668	0.60	0.26	59.8	0.057	0.853	0.298	0.445	0.476	52.4%	65.59%
1980	19,814	6,958	6,460	0.59	0.26	57.1	0.000	0.810	0.211	0.367	0.367	63.3%	69.98%
1981	16,990	5,445	5,404	0.61	0.27	61.5	0.128	0.807	0.362	0.473	0.541	45.9%	64.61%
1982	75,843	9,159	27,415	0.23	0.23	54.1	0.000	0.875	0.115	0.287	0.287	71.3%	71.39%
1983	68,296	6,958	24,593	0.23	0.23	56	0.000	0.772	0.144	0.287	0.287	71.3%	74.84%
1984	17,864	6,857	5,731	0.60	0.26	59.7	0.053	0.851	0.294	0.442	0.471	52.9%	67.10%
1985	13,327	4,236	4,034	0.65	0.28	60.8	0.099	0.730	0.330	0.442	0.497	50.3%	63.60%
1986	20,772	7,512	6,819	0.59	0.26	60.4	0.082	0.899	0.317	0.467	0.511	48.9%	64.96%
1987	12,369	3,496	3,676	0.66	0.28	65.7	0.305	0.778	0.486	0.569	0.701	29.9%	60.38%
1988	8,621	2,857	2,274	0.73	0.31	59.9	0.061	0.639	0.301	0.406	0.442	55.8%	68.63%
1989	23,629	5,647	7,887	0.57	0.25	61.4	0.124	0.817	0.349	0.467	0.533	46.7%	62.62%
1990	12,436	3,529	3,701	0.66	0.28	61.6	0.133	0.706	0.355	0.456	0.527	47.3%	64.56%
1991	15,276	4,252	4,763	0.62	0.27	60.8	0.099	0.730	0.330	0.439	0.494	50.6%	63.69%
1992	12,470	3,731	3,714	0.66	0.28	61.2	0.116	0.710	0.342	0.447	0.511	48.9%	63.72%
												Average	65.60%

Formulas: Winter Run Salmon Smolt Survival Model

C10 ='Study 468 Flow Data'!E7
D10 ='Study 468 Flow Data'!O7 (HIDDEN)
E10 ='Study 468 Flow Data'!Y7 (HIDDEN)
F10 =(D9+E9)
G10 =0.374*C9-950
H10 =IF(C9>$G$2,(0.133*C9+829)/(C9-G9),(0.293*C9+2090)/(C9-G9))
I10 =(0.133*C9+829)/(C9-G9)
K10 =(-0.5916024)+(0.017968*$M$1)+(0.000054*F9)
M10 =(K9*I9)+L9*(1-I9)
N10 =J9+M9-(J9*M9)
O10 =1-N9

Q10 ='Study 468 Flow Data'!F7
R10 ='Study 468 Flow Data'!P7 (HIDDEN)
S10 ='Study 468 Flow Data'!Z7 (HIDDEN)
T10 =(R9+S9)
U10 =0.374*Q9-950
V10 =IF(Q9>$G$2,(0.133*Q9+829)/(Q9-U9),(0.293*Q9+2090)/(Q9-U9))
Y10 =(0.133*Q9+829)/(Q9-U9)
W10 =IF(((-0.5916024)+(0.017968*$M$2)+(0.000054*T9))>1,1,((-0.5916024)+(0.017968*$M$2)+(0.000054*T9)))
Z10 =-1.613493+(0.0319584*$M$2)
AA10 =(Y9*W9)+Z9*(1-W9)
AB10 =X9+AA9-(X9*AA9)
AC10 =1-AB9

AE10 ='Study 468 Flow Data'!G7
AF10 ='Study 468 Flow Data'!Q7 (HIDDEN)
AG10 ='Study 468 Flow Data'!AA7 (HIDDEN)
AH10 =AF9+AG9
AI10 =0.374*AE9-950
AJ10 =IF(AE9>$G$2,(0.133*AE9+829)/(AE9-AI9),(0.293*AE9+2090)/(AE9-AI9))
AK10 =(0.133*AE9+829)/(AE9-AI9)
AM10 =IF((-2.45925+(0.0420748*AL9))<0,0,(-2.45925+(0.0420748*AL9)))
AN10 =IF(((-0.5916024)+(0.017968*AL9)+(0.000054*AH9))>1,1,((-0.5916024)+(0.017968*AL9)+(0.000054*AH9)))
AO10 =-1.613493+(0.0319584*AL9)
AP10 =(AN9*AK9)+(AO9*(1-AK9))
AQ10 =AM9+AP9-(AM9*AP9)
AR10 =1-AQ9
AS10 =(0.13*O9)+(0.57*AC9)+(0.3*AR9)

C-032381

STUDY: 1995C06F-SWRCB-468 DWRSIM: 8.18, 27 Nov 96
CP # 137, SACRAMENTO RIVER AT FREEPORT (converted from TAF to CFS)

Project: /1995C06F-SWRCB-468/137/FLOW-DOWNSTREAM//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	11814	17142	17499	34409	31551	22822	46530	34720
1923	18133	34544	32283	24326	17174	22721	14214	18150
1924	11243	13873	14621	16898	12100	8067	8278	10151
1925	7025	11254	10213	44583	18557	22654	12067	16352
1926	10924	11547	19776	36714	18947	21427	13613	15276
1927	20284	14312	29681	88121	43863	48215	26786	18889
1928	22940	16572	26103	27364	86229	29208	20606	14100
1929	12856	13710	15515	18528	16930	8436	9807	11411
1930	7159	14442	20768	15683	30087	12638	12067	18621
1931	9798	9368	11970	11092	8701	9193	9807	12487
1932	8050	14653	17256	13995	10522	13075	12019	19058
1933	9512	8181	12100	11974	10392	12739	7741	11041
1934	8083	12474	16101	12748	14735	12839	8912	14991
1935	9209	8506	25489	11974	24916	24637	28624	17683
1936	11361	10880	32039	47548	33454	21276	14100	18587
1937	11663	12702	16215	33455	38463	23511	16182	18133
1938	23696	48367	31437	82359	78634	47173	57426	35510
1939	19444	16687	18410	19032	16394	12234	8571	18587
1940	8436	7839	23452	42646	59134	41728	18280	15343
1941	13781	35975	72291	75031	58581	42367	39488	20605
1942	18184	65623	63265	78344	27095	43308	36040	27124
1943	21914	28803	58060	52253	64598	29410	21077	16856
1944	14890	13775	17678	29937	25094	9814	8912	18217
1945	13764	15824	12685	40621	27030	11747	13222	16671
1946	20637	54840	43228	24362	23647	12218	13694	16285
1947	13781	18134	15223	21571	22509	13797	8864	18822
1948	10453	9384	14897	15594	19240	23040	28835	23259
1949	14453	15564	14930	16277	41716	13209	14914	17091
1950	11411	11449	20931	35166	22655	19276	13873	20301
1951	41863	68095	62208	60572	29827	14856	18784	17646
1952	16789	46709	67347	62499	57524	56652	59557	38972
1953	16537	42334	64078	28341	24899	16184	26867	25881
1954	20923	14914	33421	57151	49538	39863	25403	14234
1955	20856	26022	22265	16295	17678	9478	11271	18133
1956	12184	25290	83724	61543	36674	20436	39000	22301
1957	15478	14149	16638	33149	44383	21209	16816	19108
1958	19259	23745	36463	63003	93612	52282	43488	33930
1959	16133	14621	35162	50075	23387	10487	9417	17915
1960	11411	11075	14523	26217	22606	13545	10913	18217
1961	14251	18280	15011	32843	20947	12789	9238	19814
1962	9814	16703	12653	45177	27664	15411	14735	17243
1963	21242	27550	16280	58699	32641	69457	29095	19562
1964	28653	14849	25534	19019	17174	8957	10295	18150
1965	13646	27989	81236	33329	21386	45173	24851	18402
1966	25662	16995	29632	26775	28689	12806	14930	15562
1967	16066	39748	34625	43106	54483	39930	44790	39342
1968	16234	16686	30640	54520	36788	15646	9384	17394
1969	14318	24981	68502	67486	45326	44787	45538	24133
1970	17646	50156	92669	57565	35812	16604	12149	15512
1971	23511	54125	46888	29206	50688	21948	29404	23629
1972	15343	20004	20394	24217	32933	12453	10799	17142
1973	23494	26200	49376	70961	47554	19511	15743	19427
1974	54299	61590	78422	41918	100199	33208	26949	21629
1975	17579	17613	18670	58807	75999	25763	28542	24788
1976	19226	16768	16768	19523	20069	9428	10067	19360
1977	8285	8115	7660	12172	7546	9142	6993	9579
1978	6924	12279	43066	50129	46448	38703	21061	16469
1979	14402	12751	27241	42044	32592	17696	12572	19427
1980	16940	20833	63823	69453	36479	19814	14783	16268
1981	13024	15613	28607	29674	32494	16990	8750	18066
1982	33258	68599	51165	65650	69087	75843	38431	24418
1983	39107	55410	59150	82917	81935	68298	54515	55576
1984	62802	82944	47359	36004	36495	17864	13417	18436
1985	33998	23875	16800	20131	21809	13327	13141	16638
1986	9546	15727	21500	95486	72535	20772	13125	12688
1987	11226	13791	16735	23030	29551	12369	8457	20318
1988	8453	15841	25534	17072	11010	8621	9774	15058
1989	8588	8847	12002	11830	42496	23629	14328	16873
1990	11764	14637	21582	16944	14832	12436	7709	19629
1991	8134	8766	6847	11002	29681	15276	8685	10974
1992	7512	7465	12133	31415	20102	12470	9026	14470

STUDY: 1995C06F-SWRCB-468 DWRSIM: recirc818-f, 17 Jun 97
CVP, CVP EXPORT AT TRACY PP (converted from TAF to CFS)

Project: /1995C06F-SWRCB-468/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	3773	418[illegible]	4342	4605
1923	4302	4212	4212	4285	4228	3966	3123	4218
1924	3832	3919	4212	4068	1480	1395	423	454
1925	1311	4212	3545	4213	3708	3479	2521	3479
1926	4302	4212	4212	4231	4228	3328	2440	3580
1927	4252	4212	4212	2827	3236	4050	4163	4605
1928	4285	4212	4212	4103	4228	3815	2992	3025
1929	4269	4212	4212	4231	4066	538	2944	3025
1930	2286	4212	4212	2791	2976	1949	1756	4302
1931	2655	2179	4212	3331	1659	1479	1496	1563
1932	1176	4212	4212	4085	927	2689	2423	3596
1933	3059	2017	4212	3835	293	2067	1626	1697
1934	992	4163	4212	1621	2179	1781	1935	4101
1935	2538	3220	4212	684	4228	4470	2992	4101
1936	4285	4212	4212	4103	4228	4185	3155	4605
1937	4285	4212	4212	4231	4228	3075	2683	3042
1938	4285	4212	4212	4267	4228	4050	4001	4605
1939	4302	4212	4212	2593	2067	2067	1740	4302
1940	2807	1431	4212	4085	4228	4134	2992	4084
1941	4269	4212	4212	4285	4228	4605	4603	4605
1942	4302	4212	4212	4285	4228	4453	4342	4605
1943	4302	4212	4212	4267	4228	4605	4163	4605
1944	4285	4212	4212	4103	4228	2118	1870	4168
1945	4269	4212	4212	4249	4228	3126	2618	3378
1946	4285	4212	4212	4267	4228	2975	2635	3361
1947	4269	4212	4212	4249	4228	2454	1740	4302
1948	3025	2293	4212	4085	4228	3412	3838	4605
1949	4269	4212	4212	4249	3773	2538	2374	3630
1950	4285	4212	4212	4249	4228	3126	2635	4605
1951	4269	4212	4212	4285	4228	3193	3562	4605
1952	4285	4212	4212	4138	4228	4605	4440	4605
1953	4302	4212	4212	4285	3448	2823	3838	4605
1954	4285	4212	4212	4267	4228	3680	2992	3277
1955	4285	4212	4212	4249	4228	1832	1984	4050
1956	4269	4212	4212	4138	2488	3983	4342	4605
1957	4302	4212	4212	4249	4228	3227	2976	4504
1958	4285	4212	4212	4249	4228	4605	4603	4605
1959	4302	4212	4212	4249	4228	1899	1838	4201
1960	4269	4212	4212	4085	3432	303	1675	4353
1961	4269	4212	4212	4249	3497	303	1496	4554
1962	2672	4212	4212	4231	4228	2790	2667	3949
1963	4285	4212	4212	4285	4228	4050	4163	4605
1964	4269	4212	4212	4120	3643	1748	1870	4168
1965	4067	4212	4212	4249	4228	4269	2992	4605
1966	4302	4212	4212	4285	4228	2487	2391	3630
1967	4269	4212	4212	4285	4228	4605	4603	4605
1968	4302	4212	4212	2677	2992	2622	1822	4218
1969	4285	4212	4212	4285	3643	3344	3985	4605
1970	4302	4212	4163	1206	3106	3294	2960	4185
1971	4285	4212	4212	4285	4228	3294	3838	4605
1972	4269	4212	4212	4103	3724	2353	1935	4101
1973	4269	4212	4212	4267	4228	3714	3253	2454
1974	4285	4212	4212	4267	4228	4605	4342	4605
1975	4302	4212	4212	4249	4228	4386	4342	4605
1976	4302	4212	4212	4085	4228	639	1561	4453
1977	2689	1708	2098	666	797	1059	293	50
1978	2470	4131	2521	1711	2114	3445	4098	4605
1979	4302	4212	4212	4249	4228	3428	2992	2823
1980	4269	4212	4212	4103	3757	3008	3594	4605
1981	4285	4212	4212	2899	2992	2723	1756	4302
1982	4285	4212	4212	4285	4228	3596	4017	4605
1983	4302	4212	4212	3421	2049	3311	3952	4605
1984	3328	2992	1334	1443	3204	3428	3074	4403
1985	4285	4212	4212	4249	4228	2118	2114	3899
1986	2487	4212	4212	4249	4228	2302	2651	3933
1987	4269	4212	1106	1260	2342	319	1415	4605
1988	2975	4212	4212	3981	2000	1428	1529	4470
1989	2386	2472	4196	954	4228	2823	1968	4067
1990	4252	4212	2553	1224	2228	1765	1350	4538
1991	2487	1659	1691	396	4228	2084	1447	1949
1992	3109	2960	4212	1565	1984	1865	1887	3764

STUDY: 1995C06F-SWRCB-468 DWRSIM: recirc81 un 97
SWP, SWP EXPORT AT BANKS PP (converted from TAF to CFS)

Project: /1995C06F-SWRCB-468/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4319	7107	7579	6356	4147	4185	4342	6672
1923	6672	4505	3643	2377	3367	3966	3123	3395
1924	3748	6424	6652	4624	1675	1395	358	471
1925	3210	4847	3155	7581	4163	3479	2521	2941
1926	3109	3871	7140	7635	3497	3328	2440	2487
1927	6672	7042	7286	8499	4147	4050	4163	3748
1928	6672	5513	3643	4225	4424	3815	3383	2672
1929	5462	6180	7091	3853	2765	1815	114	101
1930	1765	6278	7091	3997	4066	1949	1756	2672
1931	3277	2992	4879	1891	1626	1479	1301	1328
1932	1647	7188	7823	5894	2732	2689	2423	3798
1933	2605	2488	5416	2701	4342	2067	1073	84
1934	1563	5546	7156	4411	2277	1781	1008	1311
1935	4285	3399	7660	3943	6977	4622	2472	3512
1936	3445	3285	7449	8206	7058	4185	3155	3361
1937	3664	5741	7579	4556	4001	4974	4050	4605
1938	6672	7530	3938	3943	3968	4369	5448	6672
1939	5277	3741	3236	3961	3985	2067	1740	3075
1940	1748	2667	8018	8206	4651	4134	3285	3092
1941	6100	7335	8132	6878	3838	4706	5123	6302
1942	8168	3610	3236	3961	4001	4453	4342	6672
1943	6521	3773	3301	3997	4050	4857	4163	3143
1944	6672	6424	3269	3825	4001	2118	1870	3176
1945	6605	6961	5188	3997	4131	3126	2618	3798
1946	6672	7595	3643	3979	4424	2975	2635	3596
1947	6621	7140	6684	3997	3985	2454	1740	2958
1948	3630	3090	6522	1791	3432	3412	3838	4521
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3378	3448	7172	7526	4603	3126	2635	3529
1951	6672	7595	7319	4682	4700	3193	3562	2823
1952	6672	7107	6847	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3854	4628	4684	3680	4440	2739
1955	6672	6912	6017	3889	3025	1832	1984	3025
1956	4218	7595	8018	4520	4700	3983	4342	6672
1957	6672	5806	3887	4646	4375	3227	2976	3462
1958	6672	6928	3367	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3025	1899	1838	2991
1960	3075	2797	6408	7041	4033	3731	1675	2689
1961	6235	6896	7075	7112	4554	3243	1496	3008
1962	3378	6879	3919	8481	3497	2790	2667	2874
1963	6672	6896	7253	8499	4375	4050	4163	4017
1964	6672	6050	3871	3512	3350	1748	1870	2840
1965	6252	7465	8506	5618	4277	4269	4733	3630
1966	6672	6180	3659	4375	4424	2487	2391	2622
1967	6672	7123	7676	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2807
1969	6353	6977	5286	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3294	2960	2622
1971	6672	7042	5465	4285	4700	3294	3838	5042
1972	6672	6196	3887	4485	4359	2353	1935	2706
1973	6672	6896	6408	4429	4456	3714	3253	5579
1974	6672	7140	3643	4375	4424	4722	4342	4924
1975	5411	4245	3854	4628	4684	4386	4342	6672
1976	6672	4651	3806	4085	3627	2370	1561	2941
1977	3311	3009	2440	1404	1252	1949	439	387
1978	1714	5530	7774	7418	3903	4067	4098	3899
1979	6588	3676	3269	3961	4001	3428	2992	5227
1980	6672	6993	3155	3633	3350	3949	3871	4067
1981	5579	4115	3350	4069	4115	2723	1756	2891
1982	6672	7026	7644	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	3428	3074	3361
1985	6672	6619	3871	4646	4619	2118	2114	2622
1986	4168	6944	7351	7328	4180	5210	5481	3848
1987	3496	6099	6359	4213	4131	3176	1415	3143
1988	1865	6879	7058	2538	1773	1428	1529	1378
1989	3361	3253	4521	1765	6961	2823	1968	2487
1990	3563	6196	7058	6572	3643	1765	1350	2907
1991	2370	3171	1708	846	7075	2168	1415	1076
1992	1445	1610	4781	7197	6245	1865	1041	1378

Study 506 Sacramento River Fall Run Smolt Survival Model

Cross Channel closed over 25,000 cfs

Cross Channel Closed Apr to May 20, 14 d May 21-Jun 15

Sacramento River temperatures based on limited historical data from USBR

Year	Water Year Type	APRIL Sac River Flows	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channel Closed	observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123
1922	A	22,822	8,369	7,585	58%	0.25	58.5	0.002	0.823	0.258	0.400	0.401	59.9%
1923	B	22,721	7,932	7,548	58%	0.25	58.3	0.000	0.800	0.250	0.389	0.389	61.1%
1924	C	7,989	2,924	2,042	74%	0.32	61.5	0.128	0.640	0.352	0.444	0.515	48.5%
1925	D	22,854	6,958	7,523	58%	0.25	59.1	0.027	0.772	0.275	0.401	0.418	58.2%
1926	D	21,511	6,689	7,095	58%	0.26	61.6	0.133	0.808	0.355	0.470	0.541	45.9%
1927	W	48,215	8,100	17,082	23%	0.23	56.8	0.000	0.791	0.202	0.336	0.336	66.4%
1928	A	29,208	7,461	9,974	25%	0.25	58.7	0.011	0.788	0.262	0.390	0.396	60.4%
1929	C	8,773	2,708	2,331	72%	0.31	56.3	0.000	0.537	0.186	0.295	0.295	70.5%
1930	D	12,838	3,889	3,777	65%	0.28	59.6	0.048	0.649	0.291	0.392	0.422	57.8%
1931	C	9,109	3,059	2,457	72%	0.31	62.8	0.183	0.670	0.393	0.478	0.574	42.6%
1932	D	13,075	5,378	3,940	65%	0.28	58.9	0.019	0.700	0.269	0.390	0.402	59.8%
1933	C	12,739	4,134	3,814	65%	0.28	60.1	0.069	0.688	0.307	0.409	0.450	55.0%
1934	C	12,639	3,563	3,852	65%	0.28	63.6	0.217	0.706	0.419	0.500	0.608	39.2%
1935	B	24,183	8,840	8,095	57%	0.25	58.9	0.019	0.860	0.269	0.415	0.426	57.4%
1936	B	21,828	8,403	7,101	58%	0.26	59.7	0.053	0.848	0.294	0.436	0.465	53.5%
1937	B	23,259	8,218	7,749	57%	0.25	58.8	0.015	0.822	0.286	0.406	0.415	58.5%
1938	W	47,173	8,420	16,693	23%	0.23	56.3	0.000	0.786	0.186	0.326	0.326	67.4%
1939	D	12,234	4,134	3,626	66%	0.29	63.3	0.204	0.725	0.409	0.500	0.602	39.8%
1940	A	41,728	8,571	14,656	24%	0.24	57.4	0.000	0.612	0.221	0.360	0.360	64.0%
1941	W	42,367	9,110	14,896	24%	0.24	56.9	0.000	0.636	0.205	0.353	0.353	64.7%
1942	W	43,308	8,407	15,247	23%	0.23	56.5	0.000	0.810	0.192	0.337	0.337	66.3%
1943	W	29,410	9,462	10,049	24%	0.24	58.8	0.015	0.878	0.266	0.415	0.424	57.6%
1944	D	9,814	4,335	2,721	70%	0.30	58.4	0.000	0.642	0.253	0.370	0.370	63.0%
1945	B	11,899	6,689	3,536	66%	0.29	60.6	0.090	0.788	0.323	0.456	0.505	49.5%
1946	B	12,218	5,948	3,619	66%	0.29	60.7	0.095	0.787	0.326	0.449	0.501	49.9%
1947	D	13,797	4,941	4,210	64%	0.28	62.5	0.170	0.748	0.364	0.464	0.572	42.8%
1948	B	23,293	6,857	7,761	57%	0.25	56.6	0.000	0.723	0.195	0.329	0.329	67.1%
1949	D	13,309	5,075	3,980	65%	0.28	61.7	0.137	0.737	0.358	0.466	0.538	46.2%
1950	B	19,526	6,265	6,353	59%	0.26	61.3	0.120	0.783	0.346	0.459	0.524	47.6%
1951	A	14,772	6,353	4,575	63%	0.27	59.9	0.061	0.780	0.301	0.427	0.462	53.8%
1952	W	56,852	8,773	20,239	23%	0.23	55.5	0.000	0.788	0.160	0.304	0.304	69.6%
1953	W	16,184	5,647	5,103	62%	0.27	58.8	0.015	0.710	0.265	0.386	0.394	60.6%
1954	A	30,863	7,361	13,959	24%	0.24	58.4	0.000	0.777	0.253	0.377	0.377	62.3%
1955	D	9,478	3,664	2,595	71%	0.30	56.4	0.000	0.581	0.189	0.308	0.308	69.2%
1956	W	20,436	7,999	6,693	59%	0.26	59.7	0.063	0.828	0.294	0.432	0.462	53.8%
1957	A	21,106	6,420	6,944	58%	0.26	60.5	0.086	0.774	0.320	0.437	0.486	51.5%
1958	W	52,262	9,663	18,803	23%	0.23	57.4	0.000	0.859	0.221	0.368	0.368	63.2%
1959	B	10,487	3,798	2,972	69%	0.30	63	0.191	0.706	0.400	0.490	0.588	41.2%
1960	D	13,545	4,033	4,118	64%	0.28	59.5	0.044	0.653	0.288	0.390	0.417	58.3%
1961	D	12,789	3,546	3,833	65%	0.28	60.1	0.069	0.642	0.307	0.402	0.443	55.7%
1962	B	15,411	5,579	4,814	62%	0.27	61.8	0.141	0.781	0.362	0.470	0.545	45.5%
1963	W	69,457	8,100	25,027	23%	0.23	53.7	0.000	0.725	0.103	0.244	0.244	75.6%
1964	D	8,957	3,496	2,400	72%	0.31	59.3	0.036	0.638	0.282	0.388	0.410	59.0%
1965	W	46,173	8,537	15,946	23%	0.23	56.9	0.000	0.801	0.205	0.344	0.344	65.6%
1966	B	12,806	4,974	3,839	65%	0.28	61.9	0.145	0.737	0.365	0.470	0.547	45.3%
1967	W	39,930	9,546	13,964	24%	0.24	53.8	0.000	0.789	0.106	0.268	0.268	73.2%
1968	B	15,612	5,243	4,889	62%	0.27	61.5	0.128	0.741	0.352	0.457	0.527	47.3%
1969	W	44,787	7,512	15,800	23%	0.23	56.4	0.000	0.748	0.189	0.320	0.320	68.0%
1970	W	16,604	6,586	5,260	61%	0.27	58.8	0.015	0.751	0.266	0.396	0.404	59.6%
1971	W	22,133	6,621	7,328	58%	0.25	58.7	0.011	0.750	0.262	0.387	0.393	60.7%
1972	B	12,453	4,739	3,707	66%	0.28	58.5	0.002	0.686	0.256	0.372	0.374	62.6%
1973	A	19,511	7,495	6,347	59%	0.26	61.3	0.120	0.835	0.346	0.473	0.536	46.4%
1974	W	32,720	9,327	11,287	24%	0.24	56.8	0.000	0.834	0.202	0.355	0.355	64.5%
1975	W	25,763	8,773	8,685	25%	0.25	56.8	0.000	0.810	0.202	0.353	0.353	64.7%
1976	C	9,426	3,008	2,576	71%	0.30	58.9	0.019	0.587	0.269	0.369	0.381	61.9%
1977	C	9,142	2,991	2,469	71%	0.31	64.3	0.246	0.694	0.441	0.519	0.637	36.3%
1978	A	38,703	7,512	13,625	24%	0.24	56.9	0.000	0.787	0.205	0.336	0.336	66.4%
1979	B	17,698	6,857	5,668	60%	0.26	59.8	0.057	0.760	0.296	0.425	0.458	54.2%
1980	A	19,814	6,941	6,460	59%	0.26	57.1	0.000	0.738	0.211	0.347	0.347	65.3%
1981	D	16,990	5,445	5,404	61%	0.27	61.5	0.128	0.760	0.352	0.458	0.528	47.2%
1982	W	75,843	9,159	27,415	23%	0.23	54.1	0.000	0.778	0.115	0.265	0.265	73.5%
1983	W	68,298	6,958	24,593	23%	0.23	55	0.000	0.699	0.144	0.270	0.270	73.0%
1984	W	17,864	6,857	5,731	60%	0.26	59.7	0.053	0.779	0.294	0.422	0.453	54.7%
1985	D	13,327	4,874	4,034	65%	0.28	60.8	0.099	0.712	0.330	0.437	0.492	50.8%
1986	W	21,024	7,546	6,913	58%	0.26	60.4	0.082	0.821	0.317	0.446	0.492	50.8%
1987	D	12,386	3,496	3,682	66%	0.28	65.7	0.305	0.741	0.486	0.559	0.693	30.7%
1988	C	9,092	2,924	2,450	72%	0.31	59.9	0.061	0.612	0.301	0.398	0.433	56.7%
1989	D	23,629	5,647	7,887	57%	0.25	61.4	0.124	0.757	0.349	0.462	0.520	48.0%
1990	C	12,436	3,546	3,701	66%	0.28	61.6	0.133	0.669	0.355	0.444	0.518	48.2%
1991	C	15,276	4,252	4,783	62%	0.27	60.8	0.099	0.665	0.330	0.426	0.483	51.7%
1992	C	12,470	3,731	3,714	66%	0.28	61.2	0.116	0.670	0.342	0.435	0.501	49.9%

Year	MAY Sac River Flows	CVP + SWP Exports	Calculated Steamboat & Sutter Slough Q	Percent	X-chann Closed	USBR observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123
1922	46,530	8,685	16,452	0.23	0.23	61.2	0.116	0.886	0.348	0.469	0.530	47.0%
1923	14,214	6,245	4,366	0.64	0.33	62.4	0.166	0.801	0.381	0.521	0.600	40.0%
1924	8,636	1,171	2,260	0.73	0.38	69.2	0.462	0.703	0.589	0.636	0.801	19.9%
1925	12,067	5,042	3,563	0.66	0.35	63.2	0.200	0.763	0.409	0.530	0.624	37.6%
1926	13,596	4,879	4,135	0.64	0.34	65.7	0.306	0.801	0.489	0.592	0.717	28.3%
1927	26,786	8,327	9,068	0.25	0.25	62.6	0.175	0.895	0.387	0.513	0.598	40.2%
1928	20,655	6,375	6,775	0.59	0.31	66.6	0.343	0.882	0.518	0.629	0.756	24.4%
1929	9,872	3,108	2,742	0.70	0.38	66.1	0.322	0.731	0.499	0.583	0.718	28.2%
1930	12,067	3,513	3,583	0.66	0.35	63.1	0.196	0.695	0.403	0.504	0.601	39.9%
1931	10,035	3,220	2,803	0.70	0.36	70.5	0.507	0.815	0.640	0.703	0.854	14.6%
1932	12,019	4,847	3,546	0.66	0.35	65.5	0.297	0.796	0.469	0.589	0.711	28.9%
1933	8,181	3,155	2,110	0.74	0.38	63.7	0.221	0.690	0.422	0.525	0.630	37.0%
1934	8,929	2,944	2,389	0.72	0.37	68.3	0.414	0.763	0.569	0.642	0.790	21.0%
1935	26,786	5,627	9,816	0.25	0.25	64	0.234	0.803	0.432	0.523	0.634	36.6%
1936	14,100	6,310	4,324	0.64	0.33	64.9	0.271	0.846	0.461	0.590	0.701	29.9%
1937	18,036	6,961	5,047	0.62	0.33	64.5	0.256	0.869	0.448	0.586	0.691	30.9%
1938	57,426	9,449	20,527	0.23	0.23	62.5	0.170	0.941	0.384	0.512	0.595	40.5%
1939	8,424	3,708	2,201	0.73	0.38	68	0.402	0.791	0.580	0.646	0.789	21.1%
1940	18,166	6,196	5,844	0.60	0.32	65.6	0.301	0.856	0.463	0.601	0.721	27.9%
1941	39,466	9,726	13,818	0.24	0.24	61.6	0.133	0.937	0.358	0.493	0.560	44.0%
1942	36,040	8,685	12,529	0.24	0.24	60.1	0.069	0.885	0.307	0.441	0.479	52.1%
1943	21,077	8,327	6,933	0.58	0.31	65.4	0.292	0.945	0.477	0.621	0.732	26.8%
1944	8,912	3,741	2,383	0.72	0.37	65.9	0.313	0.755	0.493	0.591	0.719	28.1%
1945	12,539	5,237	3,740	0.66	0.34	63.1	0.196	0.769	0.403	0.529	0.621	37.9%
1946	13,604	5,269	4,171	0.64	0.34	63.9	0.229	0.785	0.429	0.549	0.652	34.8%
1947	8,847	3,545	2,359	0.72	0.38	66.7	0.431	0.797	0.582	0.663	0.808	19.2%
1948	29,047	7,676	9,913	0.25	0.25	62.3	0.162	0.861	0.378	0.496	0.578	42.2%
1949	14,914	4,749	4,626	0.63	0.33	65.2	0.284	0.786	0.470	0.574	0.695	30.5%
1950	13,726	5,269	4,184	0.64	0.34	64.3	0.248	0.792	0.441	0.559	0.668	33.2%
1951	18,833	7,123	6,094	0.60	0.32	64.4	0.250	0.875	0.446	0.580	0.685	31.5%
1952	59,557	9,583	21,324	0.23	0.23	61.7	0.137	0.932	0.358	0.490	0.559	44.1%
1953	26,867	7,676	9,098	0.25	0.25	60.9	0.103	0.836	0.338	0.457	0.513	48.7%
1954	25,403	7,432	8,561	0.25	0.25	65.9	0.313	0.915	0.493	0.598	0.724	27.6%
1955	11,271	3,988	3,265	0.67	0.35	66.9	0.356	0.783	0.525	0.615	0.752	24.8%
1956	39,000	8,685	13,636	0.24	0.24	61.4	0.124	0.889	0.349	0.477	0.542	45.8%
1957	16,865	5,985	5,358	0.61	0.32	64	0.234	0.818	0.432	0.556	0.660	34.0%
1958	43,488	10,685	15,315	0.23	0.23	62.9	0.187	1.002	0.397	0.539	0.625	37.5%
1959	9,417	3,676	2,572	0.71	0.37	65.9	0.313	0.752	0.493	0.588	0.717	28.3%
1960	10,913	3,350	3,131	0.68	0.35	65.9	0.313	0.738	0.493	0.580	0.711	28.9%
1961	9,238	2,992	2,505	0.71	0.37	64.3	0.248	0.694	0.441	0.536	0.649	35.1%
1962	14,735	5,334	4,561	0.63	0.33	64.8	0.267	0.804	0.457	0.572	0.687	31.3%
1963	29,095	8,327	9,932	0.25	0.25	62.5	0.170	0.893	0.384	0.509	0.592	40.8%
1964	11,043	3,871	3,180	0.68	0.35	65.2	0.284	0.748	0.470	0.566	0.691	30.9%
1965	24,855	7,937	8,271	0.57	0.30	63.6	0.217	0.898	0.418	0.583	0.658	34.2%
1966	14,930	4,781	4,634	0.63	0.33	67.3	0.372	0.825	0.537	0.632	0.769	23.1%
1967	44,790	10,051	15,801	0.23	0.23	62.1	0.154	0.960	0.371	0.509	0.584	41.6%
1968	9,364	3,643	2,560	0.71	0.37	66.1	0.322	0.754	0.499	0.593	0.724	27.6%
1969	45,538	9,010	16,081	0.23	0.23	63.2	0.200	0.936	0.406	0.530	0.624	37.6%
1970	12,149	5,920	3,594	0.66	0.35	68.6	0.427	0.896	0.579	0.689	0.822	17.8%
1971	29,274	7,676	9,909	0.24	0.24	61	0.107	0.836	0.336	0.459	0.517	48.3%
1972	10,539	3,903	2,991	0.69	0.36	67.3	0.372	0.787	0.537	0.627	0.766	23.4%
1973	15,743	6,570	4,938	0.62	0.33	66.9	0.358	0.898	0.525	0.646	0.772	22.8%
1974	26,949	8,685	9,129	0.25	0.25	63.4	0.208	0.924	0.413	0.539	0.635	36.5%
1975	28,542	8,685	9,725	0.25	0.25	63.8	0.225	0.932	0.425	0.550	0.651	34.9%
1976	10,002	3,253	2,791	0.70	0.36	69.6	0.469	0.800	0.611	0.680	0.830	17.0%
1977	6,993	732	1,685	0.78	0.40	64	0.234	0.590	0.432	0.495	0.613	38.7%
1978	21,061	8,197	6,927	0.58	0.31	63	0.191	0.896	0.400	0.563	0.639	36.1%
1979	12,572	5,985	3,752	0.65	0.34	63.8	0.225	0.815	0.425	0.559	0.658	34.2%
1980	14,783	7,461	4,579	0.63	0.33	63.6	0.217	0.876	0.419	0.570	0.663	33.7%
1981	8,750	3,513	2,322	0.72	0.38	66.7	0.347	0.759	0.518	0.609	0.745	25.5%
1982	36,491	10,701	13,423	0.24	0.24	61.1	0.112	0.971	0.399	0.489	0.546	45.4%
1983	54,515	7,546	19,439	0.23	0.23	60.1	0.069	0.818	0.307	0.424	0.464	53.6%
1984	13,417	6,146	4,068	0.64	0.34	66.5	0.339	0.870	0.512	0.633	0.757	24.3%
1985	12,572	4,521	3,752	0.66	0.34	65.8	0.309	0.787	0.489	0.591	0.718	28.2%
1986	13,125	8,132	3,959	0.66	0.34	66.2	0.326	0.951	0.502	0.664	0.767	23.3%
1987	8,343	2,992	2,170	0.73	0.38	70.5	0.507	0.806	0.640	0.703	0.853	14.7%
1988	9,628	3,025	2,651	0.70	0.37	65.8	0.309	0.722	0.489	0.575	0.706	29.4%
1989	14,344	3,936	4,415	0.63	0.33	64.7	0.263	0.742	0.454	0.550	0.668	33.2%
1990	7,709	2,700	1,933	0.75	0.39	66.4	0.335	0.719	0.509	0.591	0.727	27.3%
1991	8,686	2,862	2,296	0.73	0.38	65.7	0.305	0.713	0.498	0.572	0.702	29.8%
1992	8,467	3,757	2,213	0.73	0.36	66	0.318	0.757	0.498	0.595	0.724	27.6%

Year	JUNE Sac River Flow	CVP + SWP exports	Caculated Steamboat & Sutter Slough Q	percent	X-chann closed	USBR observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	34,720	11,277	12,035	24%	0.24	65.9	0.313	1.000	0.493	0.614	0.735	26.5%	46.5%
1923	17,058	7,999	5,430	61%	0.52	65.3	0.288	0.929	0.473	0.709	0.793	20.7%	40.1%
1924	10,063	1,311	2,821	69%	0.59	70.6	0.511	0.734	0.643	0.696	0.852	14.8%	23.8%
1925	12,856	6,168	3,858	65%	0.55	68.3	0.414	0.903	0.569	0.753	0.856	14.4%	37.0%
1926	14,923	6,067	4,631	63%	0.53	71.2	0.536	0.951	0.662	0.816	0.915	8.5%	27.8%
1927	18,889	8,352	6,115	60%	0.51	68.1	0.406	0.995	0.563	0.781	0.870	13.0%	38.8%
1928	13,461	5,697	4,065	64%	0.55	69.7	0.473	0.908	0.614	0.774	0.881	11.9%	28.3%
1929	9,898	3,126	2,752	70%	0.59	70.1	0.490	0.804	0.627	0.731	0.863	13.7%	32.8%
1930	16,018	7,176	5,040	62%	0.52	69.6	0.469	0.970	0.611	0.799	0.893	10.7%	37.7%
1931	14,167	5,512	4,348	64%	0.54	70.7	0.515	0.918	0.646	0.792	0.899	10.1%	18.9%
1932	19,377	7,714	6,297	59%	0.50	69.5	0.465	0.992	0.606	0.801	0.894	10.6%	30.9%
1933	11,478	2,252	3,343	67%	0.57	69.8	0.478	0.780	0.617	0.698	0.842	15.8%	38.2%
1934	13,495	4,840	4,097	64%	0.54	70.7	0.515	0.889	0.646	0.778	0.893	10.7%	22.2%
1935	17,696	7,647	5,668	60%	0.51	71	0.528	1.000	0.656	0.832	0.921	7.9%	36.0%
1936	19,058	7,986	6,178	60%	0.51	69.2	0.452	0.996	0.596	0.800	0.890	11.0%	30.5%
1937	17,679	7,663	5,662	60%	0.51	69.7	0.473	0.993	0.614	0.809	0.899	10.1%	31.9%
1938	35,510	11,277	12,331	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	41.9%
1939	17,962	7,310	5,775	60%	0.51	71	0.528	1.000	0.656	0.832	0.921	7.9%	21.9%
1940	15,293	7,697	4,770	62%	0.53	71.5	0.549	1.000	0.672	0.845	0.930	7.0%	38.2%
1941	20,805	10,907	6,831	59%	0.50	69	0.444	1.000	0.592	0.795	0.886	11.4%	41.6%
1942	27,124	11,277	9,194	25%	0.25	67.6	0.383	1.000	0.553	0.664	0.796	20.4%	48.8%
1943	16,856	7,747	5,354	61%	0.52	68.6	0.343	0.941	0.515	0.736	0.826	17.4%	30.3%
1944	16,822	7,411	5,342	61%	0.52	67.6	0.383	0.946	0.553	0.758	0.853	14.7%	31.6%
1945	16,686	7,176	5,291	61%	0.52	70.6	0.511	0.988	0.643	0.822	0.913	8.7%	34.6%
1946	14,940	6,974	4,638	63%	0.53	68.1	0.406	0.936	0.563	0.761	0.858	14.2%	33.6%
1947	17,881	7,243	5,736	60%	0.51	70	0.486	0.961	0.624	0.806	0.900	10.0%	21.5%
1948	23,259	9,125	7,749	57%	0.49	69	0.444	1.000	0.592	0.791	0.884	11.6%	41.0%
1949	15,831	6,806	4,971	62%	0.53	70.9	0.524	0.978	0.652	0.823	0.916	8.4%	29.2%
1950	18,184	8,134	5,851	60%	0.51	68.9	0.440	0.999	0.588	0.796	0.887	11.3%	31.7%
1951	17,259	7,512	5,505	61%	0.52	70.3	0.499	0.998	0.633	0.821	0.910	9.0%	31.2%
1952	38,972	11,277	13,626	24%	0.24	66	0.276	1.000	0.464	0.591	0.704	29.6%	45.8%
1953	25,861	10,386	8,729	25%	0.25	66.2	0.326	1.000	0.502	0.626	0.748	25.2%	46.5%
1954	14,083	6,016	4,317	64%	0.54	68.7	0.431	0.904	0.582	0.756	0.861	13.9%	31.0%
1955	16,385	7,176	5,178	61%	0.52	70.1	0.490	0.979	0.627	0.811	0.903	9.7%	29.0%
1956	22,301	11,125	7,391	58%	0.49	68.7	0.431	1.000	0.582	0.787	0.879	12.1%	41.1%
1957	19,125	7,986	6,203	60%	0.51	72	0.570	1.000	0.686	0.845	0.934	6.6%	32.1%
1958	33,930	11,277	11,740	24%	0.24	67.7	0.389	1.008	0.550	0.658	0.791	20.9%	38.9%
1959	17,629	7,243	5,643	61%	0.51	72.1	0.574	1.000	0.691	0.849	0.936	6.4%	28.5%
1960	17,629	7,109	5,643	61%	0.51	72.7	0.600	1.000	0.710	0.859	0.943	5.7%	29.7%
1961	19,444	7,596	6,322	59%	0.50	73.2	0.621	1.000	0.726	0.864	0.948	5.2%	33.2%
1962	17,243	6,823	5,499	61%	0.52	70.4	0.503	0.989	0.636	0.808	0.905	9.5%	29.8%
1963	19,562	8,621	6,366	59%	0.50	69	0.444	1.000	0.592	0.797	0.887	11.3%	41.4%
1964	17,175	6,924	5,474	61%	0.52	69.5	0.465	0.958	0.608	0.788	0.887	11.3%	32.2%
1965	18,167	8,319	5,844	60%	0.51	67.1	0.364	0.975	0.531	0.758	0.846	15.4%	36.2%
1966	15,209	6,252	4,738	63%	0.53	70.4	0.503	0.945	0.636	0.800	0.900	10.0%	24.6%
1967	39,342	11,277	13,764	24%	0.24	66.5	0.339	1.000	0.512	0.627	0.754	24.6%	43.9%
1968	17,142	7,075	5,461	61%	0.52	72	0.570	1.000	0.686	0.849	0.935	6.5%	27.1%
1969	24,133	11,243	8,076	57%	0.48	68.3	0.414	1.000	0.569	0.778	0.870	13.0%	38.4%
1970	14,570	6,907	4,499	63%	0.54	70.7	0.515	0.979	0.646	0.824	0.915	8.5%	23.2%
1971	23,629	9,646	7,887	57%	0.49	68.1	0.406	1.000	0.563	0.775	0.867	13.3%	44.1%
1972	16,436	6,873	5,197	61%	0.52	70.7	0.515	0.977	0.646	0.818	0.912	8.8%	27.8%
1973	17,142	8,571	5,461	61%	0.52	70.1	0.490	1.000	0.627	0.820	0.908	9.2%	24.4%
1974	21,629	9,529	7,139	58%	0.49	68.7	0.473	1.000	0.614	0.805	0.897	10.3%	36.8%
1975	24,768	11,277	8,321	57%	0.48	69.1	0.448	1.000	0.595	0.790	0.884	11.6%	36.2%
1976	18,772	7,361	6,071	60%	0.51	71.8	0.562	1.000	0.681	0.843	0.931	6.9%	22.8%
1977	9,092	437	2,450	72%	0.61	73.9	0.650	0.756	0.748	0.752	0.913	8.7%	32.9%
1978	15,985	8,504	5,021	62%	0.52	70	0.486	1.000	0.624	0.821	0.908	9.2%	36.4%
1979	17,108	8,050	5,448	61%	0.52	69.2	0.452	1.000	0.596	0.806	0.894	10.6%	33.3%
1980	16,268	8,672	5,134	62%	0.52	66.9	0.358	0.987	0.525	0.766	0.849	15.1%	34.7%
1981	17,797	7,226	5,706	60%	0.51	71.9	0.566	1.000	0.684	0.846	0.933	6.7%	25.8%
1982	24,418	11,277	8,183	57%	0.48	66	0.318	1.000	0.496	0.740	0.822	17.8%	46.2%
1983	55,576	9,293	19,835	23%	0.23	63.6	0.217	0.954	0.419	0.542	0.641	35.9%	63.7%
1984	17,276	7,882	5,511	61%	0.52	68.4	0.419	0.979	0.572	0.782	0.873	12.7%	27.4%
1985	15,377	6,369	4,801	62%	0.53	69.4	0.461	0.932	0.604	0.777	0.880	12.0%	29.1%
1986	13,209	7,986	3,990	65%	0.56	71.6	0.553	1.000	0.675	0.853	0.934	6.6%	26.0%
1987	19,797	7,714	6,454	59%	0.50	73.2	0.621	1.000	0.726	0.863	0.948	5.2%	16.7%
1988	14,218	5,663	4,367	64%	0.54	69.4	0.461	0.901	0.604	0.764	0.873	12.7%	31.8%
1989	15,528	6,554	4,658	62%	0.53	68.6	0.427	0.925	0.579	0.762	0.863	13.7%	32.2%
1990	19,158	7,462	6,215	60%	0.50	68.5	0.423	0.963	0.576	0.771	0.868	13.2%	28.3%
1991	9,495	3,966	2,601	71%	0.60	69.4	0.461	0.828	0.604	0.738	0.859	14.1%	30.7%
1992	13,125	4,672	3,959	65%	0.55	69	0.444	0.851	0.592	0.734	0.852	14.8%	29.1%
												Average	32.96%

Formulas Sacramento River Fall Run Smolt Survival

C8 ='Study 506 Flow Data'!G7
D8 ='Study 506 Flow Data'!Q7 (HIDDEN)
E8 ='Study 506 Flow Data'!AA7 (HIDDEN)
F8 =(D8+E8)
G8 =0.374*C8-950
H8 =IF(C8>25000,(0.133*C8+829)/(C8-G8),(0.293*C8+2090)/(C8-G8))
I8 =(0.133*C8+829)/(C8-G8)
K8 =IF((-2.45925+(0.0420748*J8))<0,0,(-2.45925+(0.0420748*J8)))
L8 =(-0.5916024)+(0.017968*J8)+(0.0000434*F8)
M8 =-1.613493+(0.0319584*J8)
N8 =(L8*I8)+(M8*(1-I8))
O8 =K8+N8-(K8*N8)
P8 =1-O8

R8 ='Study 506 Flow Data'!H7
S8 ='Study 506 Flow Data'!R7 (HIDDEN)
T8 ='Study 506 Flow Data'!AB7 (HIDDEN)
U8 =(S8+T8)
V8 =0.374*R8-950
W8 =IF(R8>25000,(0.133*R8+829)/(R8-V8),(0.293*R8+2090)/(R8-V8))
X8 =(0.84*(0.133*R8+829)/(R8-V8))+(0.16*W8)
Z8 =(-2.45925+(0.0420748*Y8))
AA8 =(-0.5916024)+(0.017968*Y8)+(0.0000434*U8)
AB8 =-1.613493+(0.0319584*Y8)
AC8 =(AA8*X8)+(AB8*(1-X8))
AD8 =Z8+AC8-(Z8*AC8)
AE8 =1-AD8

AG8 ='Study 506 Flow Data'!I7
AH8 ='Study 506 Flow Data'!S7 (HIDDEN)
AI8 ='Study 506 Flow Data'!AC7 (HIDDEN)
AJ8 =(AH8+AI8)
AK8 =0.374*AG8-950
AL8 =IF(AG8>25000,(0.133*AG8+829)/(AG8-AK8),(0.293*AG8+2090)/(AG8-AK8))
AM8 =(0.27*(0.133*AG8+829)/(AG8-AK8))+(0.73*AL8)
AO8 =(-2.45925+(0.0420748*AN8))
AP8 =IF(((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8))>1,1,((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8)))
AQ8 =-1.613493+(0.0319584*AN8)
AR8 =(AP8*AM8)+(AQ8*(1-AM8))
AS8 =AO8+AR8-(AO8*AR8)
AT8 =1-AS8
AV8 =(P8*0.17)+(AE8*0.65)+(AT8*0.18)

Study 506 Sacramento River Late Fall Run Smolt Survival Model

Modified m2 by changing the slope to 0.000054

Cross Channel closed for 45 consecutive days, Dec 18-Jan 31

Cross Channel Closed when Sacramento River flow exceeds 25,000 cfs

November Sacramento River Temp 53 degrees F

December Sacramento River Temp 47 degrees F

January Sacramento River Temp 47 degrees F

NOVEMBER Year	Water Year Type	Sac River Flow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	m2	m3	m23	m123	Calculated Survival s123
1922	A	11,814	8,804	3,469	67%	0.29		0.825	0.080	0.578	0.578	42.4%
1923	B	18,133	10,974	5,832	60%	0.28		0.953	0.080	0.606	0.606	39.4%
1924	C	11,243	7,579	3,255	67%	0.29		0.770	0.080	0.545	0.545	45.5%
1925	D	7,025	4,521	1,877	78%	0.33		0.605	0.080	0.487	0.487	51.3%
1926	D	10,924	7,411	3,135	68%	0.29		0.761	0.080	0.543	0.543	45.7%
1927	W	20,536	10,924	6,731	59%	0.28		0.961	0.080	0.591	0.591	40.9%
1928	A	23,343	10,957	7,780	57%	0.25		0.952	0.080	0.581	0.581	41.9%
1929	C	12,856	9,747	3,858	65%	0.28		0.867	0.080	0.605	0.605	39.5%
1930	D	7,159	4,050	1,728	77%	0.33		0.579	0.080	0.465	0.465	53.5%
1931	C	9,764	5,918	2,702	70%	0.30		0.680	0.080	0.501	0.501	49.9%
1932	D	8,235	3,059	2,130	74%	0.32		0.526	0.080	0.409	0.409	59.1%
1933	C	9,512	5,663	2,607	71%	0.30		0.667	0.080	0.494	0.494	50.6%
1934	C	8,636	3,109	2,261	73%	0.31		0.529	0.080	0.408	0.408	59.4%
1935	B	9,209	6,840	2,494	71%	0.31		0.730	0.080	0.544	0.544	45.6%
1936	B	11,865	8,218	3,487	66%	0.29		0.804	0.080	0.561	0.561	43.9%
1937	B	11,411	7,697	3,318	67%	0.29		0.776	0.080	0.548	0.548	45.2%
1938	W	23,948	10,957	8,007	57%	0.25		0.952	0.080	0.578	0.578	42.2%
1939	D	19,444	9,582	6,322	59%	0.28		0.877	0.080	0.563	0.563	44.7%
1940	A	8,436	4,554	2,205	73%	0.31		0.607	0.080	0.486	0.486	53.4%
1941	W	13,764	10,369	4,198	64%	0.28		0.921	0.080	0.618	0.618	38.2%
1942	W	18,184	10,436	5,851	60%	0.28		0.924	0.080	0.586	0.586	41.2%
1943	W	21,914	10,806	7,246	58%	0.28		0.944	0.080	0.582	0.582	41.8%
1944	D	15,125	10,957	4,707	63%	0.27		0.952	0.080	0.626	0.626	37.4%
1945	B	14,018	10,940	4,292	64%	0.28		0.951	0.080	0.636	0.636	36.5%
1946	B	20,856	10,957	6,850	59%	0.28		0.952	0.080	0.591	0.591	40.9%
1947	D	13,989	10,940	4,286	64%	0.28		0.951	0.080	0.636	0.636	36.4%
1948	B	11,108	7,310	3,205	68%	0.29		0.756	0.080	0.537	0.537	46.3%
1949	D	14,453	10,520	4,455	63%	0.28		0.929	0.080	0.617	0.617	38.3%
1950	B	11,529	7,781	3,362	67%	0.29		0.781	0.080	0.549	0.549	46.1%
1951	A	43,306	10,940	15,247	23%	0.23		0.951	0.080	0.265	0.265	71.6%
1952	W	16,806	10,957	5,335	61%	0.27		0.952	0.080	0.614	0.614	38.6%
1953	W	16,537	8,386	5,235	61%	0.27		0.814	0.080	0.530	0.530	47.0%
1954	A	20,957	10,957	6,866	59%	0.28		0.952	0.080	0.590	0.590	41.0%
1955	D	20,856	10,957	6,850	59%	0.28		0.952	0.080	0.591	0.591	40.9%
1956	W	12,184	8,504	3,807	66%	0.29		0.820	0.080	0.566	0.566	43.2%
1957	A	15,478	10,974	4,839	62%	0.27		0.953	0.080	0.624	0.624	37.6%
1958	W	19,259	10,957	6,253	59%	0.28		0.952	0.080	0.599	0.599	40.1%
1959	B	16,133	8,487	5,084	62%	0.27		0.819	0.080	0.536	0.536	46.4%
1960	D	11,411	7,344	3,318	67%	0.29		0.757	0.080	0.535	0.535	46.5%
1961	D	14,251	10,503	4,360	63%	0.28		0.928	0.080	0.618	0.618	38.2%
1962	B	10,164	6,420	2,859	69%	0.30		0.707	0.080	0.515	0.515	48.5%
1963	W	21,242	10,957	6,995	58%	0.28		0.952	0.080	0.589	0.589	41.1%
1964	D	28,653	10,940	9,766	25%	0.25		0.951	0.080	0.294	0.294	70.6%
1965	W	13,646	10,319	4,154	64%	0.28		0.918	0.080	0.618	0.618	38.2%
1966	B	25,410	10,974	8,553	25%	0.25		0.953	0.080	0.298	0.298	70.2%
1967	W	17,579	10,940	5,824	61%	0.28		0.951	0.080	0.608	0.608	39.2%
1968	B	16,234	8,352	5,123	62%	0.27		0.812	0.080	0.531	0.531	46.9%
1969	W	13,814	10,302	4,216	64%	0.28		0.917	0.080	0.615	0.615	38.5%
1970	W	17,646	8,386	5,650	61%	0.28		0.814	0.080	0.524	0.524	47.6%
1971	W	24,217	10,957	8,107	57%	0.25		0.952	0.080	0.578	0.578	42.2%
1972	B	15,343	10,940	4,788	62%	0.27		0.951	0.080	0.624	0.624	37.6%
1973	A	24,869	10,940	8,358	57%	0.25		0.951	0.080	0.575	0.575	42.5%
1974	W	56,786	10,957	20,286	23%	0.23		0.952	0.080	0.281	0.281	71.9%
1975	W	17,579	9,714	5,624	61%	0.28		0.885	0.080	0.568	0.568	43.2%
1976	C	19,228	10,974	6,240	59%	0.28		0.953	0.080	0.600	0.600	40.0%
1977	C	8,366	6,100	2,188	73%	0.31		0.690	0.080	0.528	0.528	47.2%
1978	A	8,924	4,168	1,640	78%	0.33		0.586	0.080	0.474	0.474	52.6%
1979	B	15,142	10,974	4,713	63%	0.27		0.953	0.080	0.627	0.627	37.3%
1980	A	18,721	10,940	6,052	60%	0.28		0.951	0.080	0.601	0.601	39.9%
1981	D	13,024	9,865	3,921	65%	0.28		0.893	0.080	0.608	0.608	39.2%
1982	W	34,098	10,957	11,803	24%	0.24		0.952	0.080	0.290	0.290	71.0%
1983	W	39,107	10,974	13,676	24%	0.24		0.953	0.080	0.287	0.287	71.3%
1984	W	62,802	8,958	22,538	23%	0.23		0.736	0.080	0.230	0.230	77.0%
1985	D	33,998	10,957	11,765	24%	0.24		0.952	0.080	0.290	0.290	71.0%
1986	W	9,646	6,773	2,658	70%	0.30		0.726	0.080	0.535	0.535	46.5%
1987	D	11,209	7,764	3,242	67%	0.29		0.780	0.080	0.552	0.552	44.8%
1988	C	8,453	4,840	2,211	73%	0.31		0.622	0.080	0.477	0.477	52.3%
1989	D	8,981	6,151	2,413	72%	0.31		0.693	0.080	0.520	0.520	48.0%
1990	C	11,764	7,815	3,450	67%	0.29		0.783	0.080	0.548	0.548	45.2%
1991	C	8,134	4,867	2,092	74%	0.32		0.623	0.080	0.482	0.482	51.8%
1992	C	7,647	4,521	1,910	75%	0.32		0.605	0.080	0.478	0.478	52.4%

DECEMBER Year	Sac River Flows	SWP+CVP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	m2	m3	m23	m123	Calculated Survival s123
1922	17,142	11,319	5,461	61%	0.45		0.880		0.393	0.393	60.7%
1923	34,544	8,668	11,969	24%	0.24		0.721		0.173	0.173	82.7%
1924	13,873	10,344	4,238	64%	0.48		0.811		0.386	0.386	61.4%
1925	11,254	9,059	3,259	67%	0.50		0.742		0.372	0.372	62.8%
1926	11,547	8,034	3,369	67%	0.50		0.687		0.342	0.342	65.8%
1927	14,556	11,254	4,494	63%	0.47		0.815		0.405	0.405	59.5%
1928	16,572	10,376	5,248	61%	0.46		0.813		0.372	0.372	62.8%
1929	13,710	10,392	4,178	64%	0.48		0.814		0.369	0.369	61.1%
1930	14,442	10,508	4,451	63%	0.47		0.820		0.387	0.387	61.3%
1931	9,583	5,399	2,627	71%	0.52		0.544		0.285	0.285	71.5%
1932	14,653	11,401	4,530	63%	0.47		0.869		0.408	0.408	59.2%
1933	8,148	4,489	2,097	74%	0.55		0.498		0.272	0.272	72.8%
1934	12,474	9,709	3,715	66%	0.49		0.777		0.380	0.380	62.0%
1935	8,506	6,619	2,231	73%	0.54		0.610		0.331	0.331	66.9%
1936	11,626	8,246	3,369	67%	0.50		0.698		0.347	0.347	65.3%
1937	12,458	9,791	3,709	66%	0.49		0.782		0.362	0.362	61.8%
1938	51,148	11,742	18,180	23%	0.23		0.867		0.205	0.205	79.5%
1939	18,687	7,953	6,039	60%	0.45		0.682		0.305	0.305	69.5%
1940	7,839	4,115	1,982	75%	0.58		0.478		0.264	0.264	73.6%
1941	35,801	11,547	12,365	24%	0.24		0.878		0.210	0.210	79.0%
1942	65,623	7,823	23,583	23%	0.23		0.675		0.154	0.154	84.6%
1943	28,803	7,985	9,822	25%	0.25		0.684		0.168	0.168	83.2%
1944	13,775	10,636	4,202	64%	0.48		0.827		0.395	0.395	60.5%
1945	18,068	11,173	5,060	62%	0.46		0.858		0.395	0.395	60.5%
1946	55,344	11,807	19,749	23%	0.23		0.890		0.205	0.205	79.5%
1947	18,134	11,352	5,832	60%	0.45		0.868		0.389	0.389	61.1%
1948	11,433	7,449	3,326	67%	0.50		0.656		0.327	0.327	67.3%
1949	15,564	11,108	4,871	62%	0.46		0.853		0.396	0.396	60.4%
1950	11,693	7,866	3,423	67%	0.50		0.679		0.337	0.337	66.3%
1951	86,095	11,807	24,518	23%	0.23		0.890		0.202	0.202	79.8%
1952	47,408	11,319	16,781	23%	0.23		0.864		0.201	0.201	79.9%
1953	42,334	7,953	14,863	24%	0.24		0.682		0.181	0.181	83.9%
1954	14,914	8,115	4,626	63%	0.47		0.681		0.324	0.324	67.6%
1955	28,022	11,124	8,782	25%	0.25		0.854		0.212	0.212	78.8%
1956	27,355	11,807	9,281	25%	0.25		0.890		0.220	0.220	78.0%
1957	14,149	10,051	4,342	64%	0.47		0.798		0.377	0.377	62.3%
1958	23,745	11,140	7,930	57%	0.43		0.854		0.366	0.366	63.4%
1959	14,621	8,087	4,518	63%	0.47		0.686		0.324	0.324	67.6%
1960	11,075	7,010	3,192	68%	0.50		0.631		0.318	0.318	68.2%
1961	19,464	11,108	6,337	59%	0.44		0.853		0.378	0.378	62.2%
1962	18,947	11,092	5,386	61%	0.46		0.852		0.366	0.366	61.2%
1963	27,550	11,108	9,354	25%	0.25		0.853		0.211	0.211	78.9%
1964	14,849	10,246	4,603	63%	0.47		0.808		0.378	0.378	62.2%
1965	29,079	11,515	9,926	25%	0.25		0.876		0.214	0.214	78.6%
1966	16,995	10,457	5,408	61%	0.46		0.818		0.372	0.372	62.8%
1967	39,699	11,336	13,897	24%	0.24		0.866		0.205	0.205	79.5%
1968	16,666	7,953	5,291	61%	0.46		0.682		0.312	0.312	68.8%
1969	25,160	11,189	8,460	25%	0.25		0.857		0.214	0.214	78.6%
1970	50,156	7,693	17,809	23%	0.23		0.668		0.155	0.155	84.5%
1971	54,401	11,254	19,398	23%	0.23		0.861		0.198	0.198	80.2%
1972	20,134	10,392	6,580	56%	0.44		0.814		0.359	0.359	64.1%
1973	28,200	11,108	8,649	25%	0.25		0.863		0.212	0.212	78.8%
1974	61,590	11,352	22,065	23%	0.23		0.868		0.198	0.198	80.2%
1975	17,613	8,457	5,637	61%	0.45		0.710		0.321	0.321	67.9%
1976	18,768	8,864	5,321	61%	0.46		0.732		0.334	0.334	66.6%
1977	8,229	4,798	2,128	74%	0.55		0.512		0.280	0.280	72.0%
1978	12,279	9,860	3,642	66%	0.49		0.775		0.360	0.360	62.0%
1979	12,751	7,868	3,819	65%	0.49		0.679		0.330	0.330	67.0%
1980	20,833	11,208	6,842	59%	0.44		0.858		0.376	0.376	62.4%
1981	15,613	8,278	4,869	62%	0.46		0.700		0.325	0.325	67.5%
1982	66,599	11,157	24,708	23%	0.23		0.866		0.194	0.194	80.6%
1983	55,410	8,636	19,773	23%	0.23		0.719		0.165	0.165	83.5%
1984	82,844	6,099	30,071	22%	0.22		0.582		0.131	0.131	86.9%
1985	23,875	9,953	7,979	57%	0.43		0.790		0.338	0.338	66.2%
1986	15,971	11,157	5,023	62%	0.46		0.856		0.395	0.395	60.5%
1987	13,791	10,311	4,208	64%	0.48		0.810		0.386	0.386	61.4%
1988	15,841	11,092	4,974	62%	0.46		0.852		0.394	0.394	60.6%
1989	9,303	6,847	2,529	71%	0.53		0.623		0.329	0.329	67.1%
1990	14,637	10,409	4,524	63%	0.47		0.815		0.363	0.363	61.7%
1991	8,782	4,879	2,335	72%	0.54		0.518		0.277	0.277	72.3%
1992	7,465	4,570	1,842	76%	0.56		0.500		0.282	0.282	71.8%

JANUARY Year	Sac River Flows	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	17,499	11,791	5,595	61%	0.27		0.890	0.236	0.236		76.4%	60.1%
1923	32,283	7,855	11,124	24%	0.24		0.677	0.164	0.164		83.6%	72.1%
1924	14,621	10,864	4,518	63%	0.27		0.840	0.230	0.230		77.0%	61.3%
1925	10,213	6,701	2,870	69%	0.30		0.615	0.183	0.183		81.7%	64.9%
1926	19,776	11,303	8,446	59%	0.26		0.863	0.224	0.224		77.6%	63.7%
1927	32,624	11,498	11,252	24%	0.24		0.874	0.211	0.211		78.9%	59.7%
1928	28,509	7,855	8,985	25%	0.25		0.677	0.168	0.168		83.2%	62.7%
1929	15,515	11,303	4,853	62%	0.27		0.863	0.234	0.234		76.6%	59.6%
1930	20,768	11,303	6,817	59%	0.26		0.863	0.222	0.222		77.8%	63.5%
1931	12,214	9,270	3,618	66%	0.29		0.753	0.215	0.215		78.5%	67.8%
1932	17,256	12,002	5,504	61%	0.27		0.901	0.240	0.240		76.0%	63.4%
1933	12,100	9,626	3,575	66%	0.29		0.773	0.221	0.221		77.9%	68.5%
1934	16,101	11,303	5,072	62%	0.27		0.863	0.232	0.232		76.8%	65.0%
1935	25,489	11,872	8,575	25%	0.25		0.894	0.223	0.223		77.7%	64.3%
1936	32,527	11,861	11,215	24%	0.24		0.883	0.213	0.213		78.7%	63.3%
1937	15,971	11,791	5,023	62%	0.27		0.890	0.240	0.240		76.0%	61.2%
1938	31,535	7,449	10,844	24%	0.24		0.855	0.159	0.159		84.1%	71.3%
1939	18,410	7,449	5,935	60%	0.26		0.855	0.172	0.172		82.8%	66.6%
1940	23,452	12,230	7,821	57%	0.25		0.913	0.231	0.231		76.9%	69.4%
1941	73,169	12,378	26,415	23%	0.23		0.921	0.208	0.208		79.2%	68.9%
1942	63,265	7,449	22,711	23%	0.23		0.855	0.149	0.149		85.1%	73.9%
1943	58,060	7,514	20,765	23%	0.23		0.859	0.151	0.151		84.9%	73.3%
1944	17,678	7,481	5,662	60%	0.26		0.857	0.174	0.174		82.6%	60.3%
1945	13,255	9,807	4,007	65%	0.28		0.782	0.219	0.219		78.1%	58.9%
1946	43,228	7,855	15,217	23%	0.23		0.877	0.159	0.159		84.1%	71.0%
1947	15,223	10,945	4,743	63%	0.27		0.844	0.230	0.230		77.0%	58.9%
1948	15,645	11,222	4,901	62%	0.27		0.859	0.233	0.233		76.7%	64.4%
1949	14,930	11,027	4,634	63%	0.27		0.848	0.232	0.232		76.8%	59.0%
1950	21,191	11,384	6,976	58%	0.26		0.868	0.223	0.223		77.7%	63.8%
1951	82,206	11,661	22,316	23%	0.23		0.883	0.201	0.201		79.9%	77.7%
1952	67,347	10,978	24,236	23%	0.23		0.846	0.192	0.192		80.8%	69.8%
1953	64,078	7,546	23,015	23%	0.23		0.800	0.150	0.150		85.0%	78.0%
1954	33,421	8,087	11,550	24%	0.24		0.888	0.166	0.166		83.4%	64.9%
1955	22,265	10,132	7,377	58%	0.25		0.800	0.204	0.204		79.6%	69.5%
1956	84,716	12,198	30,734	22%	0.22		0.912	0.204	0.204		79.6%	68.7%
1957	18,836	8,099	6,021	60%	0.26		0.890	0.181	0.181		81.9%	61.8%
1958	36,483	7,774	12,687	24%	0.24		0.673	0.161	0.161		83.9%	62.7%
1959	35,162	7,546	12,200	24%	0.24		0.800	0.158	0.158		84.2%	66.4%
1960	14,523	10,620	4,482	63%	0.27		0.826	0.227	0.227		77.3%	65.1%
1961	15,011	11,287	4,664	63%	0.27		0.862	0.235	0.235		76.5%	60.8%
1962	12,897	8,376	3,873	65%	0.28		0.705	0.199	0.199		80.1%	62.8%
1963	17,806	11,466	5,710	60%	0.26		0.872	0.230	0.230		77.0%	69.0%
1964	25,713	8,083	8,666	25%	0.25		0.689	0.172	0.172		82.8%	69.4%
1965	81,236	12,718	29,432	22%	0.22		0.940	0.211	0.211		78.9%	68.6%
1966	29,832	7,872	10,132	24%	0.24		0.678	0.166	0.166		83.4%	69.8%
1967	34,153	11,669	11,823	24%	0.24		0.895	0.215	0.215		78.5%	69.2%
1968	30,640	7,546	10,509	24%	0.24		0.660	0.161	0.161		83.9%	67.1%
1969	70,177	10,522	25,296	23%	0.23		0.821	0.186	0.186		81.4%	69.3%
1970	92,669	7,497	33,706	22%	0.22		0.658	0.147	0.147		85.3%	75.5%
1971	47,262	9,677	18,726	23%	0.23		0.775	0.181	0.181		81.9%	71.1%
1972	20,364	8,099	6,677	59%	0.26		0.690	0.178	0.178		82.2%	62.0%
1973	50,156	11,124	17,809	23%	0.23		0.854	0.198	0.198		80.2%	70.1%
1974	78,422	7,855	28,360	22%	0.22		0.677	0.152	0.152		84.8%	79.3%
1975	18,670	8,087	6,033	60%	0.26		0.688	0.180	0.180		82.0%	65.3%
1976	18,768	8,018	5,321	61%	0.27		0.686	0.183	0.183		81.7%	63.7%
1977	7,660	4,538	1,915	75%	0.32		0.496	0.160	0.160		84.0%	68.8%
1978	43,086	10,831	15,157	23%	0.23		0.836	0.197	0.197		80.3%	64.2%
1979	27,241	7,481	9,238	25%	0.25		0.657	0.182	0.182		83.8%	63.8%
1980	64,452	7,367	23,155	23%	0.23		0.651	0.148	0.148		85.2%	62.9%
1981	28,656	7,583	9,767	25%	0.25		0.661	0.162	0.162		83.8%	64.5%
1982	51,185	11,921	18,188	23%	0.23		0.897	0.208	0.208		79.2%	77.9%
1983	59,150	6,863	21,172	23%	0.23		0.624	0.143	0.143		85.7%	81.0%
1984	47,359	4,212	16,762	23%	0.23		0.480	0.112	0.112		88.8%	84.9%
1985	16,800	8,063	5,333	61%	0.27		0.689	0.184	0.184		81.6%	71.2%
1986	23,354	11,384	7,785	57%	0.25		0.868	0.219	0.219		78.1%	61.4%
1987	16,735	7,741	5,309	61%	0.27		0.671	0.179	0.179		82.1%	62.4%
1988	25,534	11,271	8,600	25%	0.25		0.862	0.215	0.215		78.5%	63.0%
1989	12,490	9,056	3,721	66%	0.28		0.742	0.211	0.211		78.9%	65.3%
1990	21,582	9,639	7,122	58%	0.26		0.784	0.201	0.201		79.9%	62.1%
1991	8,847	3,399	1,611	78%	0.33		0.436	0.145	0.145		85.5%	70.6%
1992	12,133	8,994	3,588	66%	0.29		0.739	0.211	0.211		78.9%	68.7%
											Average:	66.85%

Formulas: Sacramento River Late Fall Run Smolt Survival Model

C10 ='Study 506 Flow Data'!B7
D10 ='Study 506 Flow Data'!L7 (HIDDEN)
E10 ='Study 506 Flow Data'!V7 (HIDDEN)
F10 =(D10+E10)
G10 =0.374*C10-950
H10 =IF(C10>$K$4,(0.133*C10+829)/(C10-G10),(0.293*C10+2090)/(C10-G10))
I10 =(0.133*C10+829)/(C10-G10)
K10 =(-0.5916024)+(0.017968*$T$1)+(0.000054*F10)
L10 =-1.613493+(0.0319584*$T$1)
M10 =(K10*H10)+(L10*(1-H10))
N10 =J10+M10-(J10*M10)
O10 =1-N10

Q10 ='Study 506 Flow Data'!C7
R10 ='Study 506 Flow Data'!M7 (HIDDEN)
S10 ='Study 506 Flow Data'!W7 (HIDDEN)
T10 =(R10+S10)
U10 =0.374*Q10-950
V10 =IF(Q10>$K$4,(0.133*Q10+829)/(Q10-U10),(0.293*Q10+2090)/(Q10-U10))
W10 =(0.45*(0.133*Q10+829)/(Q10-U10))+(0.55*V10)
Y10 =(-0.5916024)+(0.017968*$T$2)+(0.000054*T10)
AA10 =(Y10*W10)+(Z10*(1-W10))
AB10 =X10+AA10-(X10*AA10)
AC10 =1-AB10

AE10 ='Study 506 Flow Data'!D7
AF10 ='Study 506 Flow Data'!N7 (HIDDEN)
AG10 ='Study 506 Flow Data'!X7 (HIDDEN)
AH10 =(AF10+AG10)
AI10 =0.374*AE10-950
AJ10 =IF(AE10>$K$4,(0.133*AE10+829)/(AE10-AI10),(0.293*AE10+2090)/(AE10-AI10))
AK10 =(0.133*AE10+829)/(AE10-AI10)
AM10 =(-0.5916024)+(0.017968*$T$3)+(0.000054*AH10)
AO10 =(AM10*AK10)+(AN10*(1-AK10))
AP10 =AL10+AO10-(AL10*AO10)
AQ10 =1-AP10
AS10 =(O10*0.25)+(AC10*0.5)+(AQ10*0.25)

C-032385

Study 506 Wint... Smolt Survival Model — February Water Temp 50 F — April Water Temperatures based on limited historical data from ...

Cross Cha... d Over 25000 cfs — March Water Temp 56 F

Cross Channel Closed ... to Apr when DOI greater than 12,000 cfs

Row	Year	Water Year Type	FEBRUARY Sac River Flow	CVP + SWP Exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channel Closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123	MARCH Sac River Flow	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	percent	X-Channel Closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123	APRIL Sac River Flow	CVP + SW Exports	Calculated Steamboat & Sutter Slough flows	Percent	X-Channel Closed	Water temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123	Weighted Total Survival
9	1922	A	34,409	10,642	11,919	24%	0.24		0.861		0.212	0.212	78.8%	31,551	7,953	10,860	0.24	0.24		0.826	0.144	0.310	0.310	69.0%	22,822	8,369	7,565	0.58	0.25	58.5	0.002	0.911	0.258	0.422	0.424	57.6%	66.85%
10	1923	B	24,326	6,862	8,146	57%	0.25		0.867		0.167	0.167	83.3%	17,174	7,595	5,473	0.61	0.27		0.807	0.144	0.320	0.320	68.0%	22,721	7,932	7,548	0.58	0.25	58.3	0.000	0.864	0.250	0.411	0.411	58.9%	67.23%
11	1924	C	16,898	8,883	5,370	61%	0.27		0.776		0.207	0.207	79.3%	12,196	3,253	3,612	0.66	0.29		0.572	0.144	0.266	0.266	73.4%	7,999	2,924	2,042	0.74	0.32	61.5	0.128	0.871	0.362	0.453	0.524	47.6%	66.41%
12	1925	D	44,855	11,794	15,751	23%	0.23		0.944		0.221	0.221	77.9%	18,557	7,872	5,990	0.60	0.26		0.822	0.144	0.322	0.322	67.8%	22,654	8,958	7,523	0.58	0.25	59.1	0.027	0.846	0.275	0.420	0.436	56.4%	65.69%
13	1926	D	36,714	11,886	12,781	24%	0.24		0.936		0.224	0.224	77.6%	18,947	7,725	6,136	0.60	0.26		0.814	0.144	0.319	0.319	68.1%	21,511	6,689	7,095	0.58	0.26	61.6	0.133	0.876	0.365	0.489	0.556	44.4%	62.20%
14	1927	W	86,122	10,876	31,260	22%	0.22		0.894		0.200	0.200	80.0%	43,863	7,886	15,455	0.23	0.23		0.823	0.144	0.303	0.303	69.7%	48,215	8,100	17,082	0.23	0.23	56.8	0.000	0.888	0.202	0.356	0.356	64.4%	69.42%
15	1928	A	27,364	8,327	9,264	25%	0.25		0.766		0.187	0.187	81.3%	86,229	8,652	31,300	0.22	0.22		0.864	0.144	0.305	0.305	69.5%	29,206	7,361	9,974	0.25	0.25	58.7	0.011	0.861	0.262	0.409	0.415	58.5%	67.71%
16	1929	C	18,528	8,031	5,980	60%	0.26		0.740		0.194	0.194	80.6%	16,930	8,831	5,382	0.61	0.27		0.765	0.144	0.310	0.310	69.0%	8,773	2,706	2,331	0.72	0.31	56.3	0.000	0.566	0.186	0.304	0.304	69.6%	70.70%
17	1930	D	15,683	8,786	4,916	62%	0.27		0.673		0.182	0.182	81.8%	30,087	7,319	10,303	0.24	0.24		0.792	0.144	0.302	0.302	69.8%	12,638	3,899	3,777	0.65	0.28	59.6	0.048	0.690	0.291	0.404	0.433	56.7%	67.41%
18	1931	C	11,326	5,436	3,286	67%	0.29		0.600		0.174	0.174	82.6%	9,866	4,017	2,736	0.70	0.30		0.614	0.144	0.285	0.285	71.5%	9,109	3,059	2,457	0.72	0.31	62.8	0.183	0.702	0.393	0.488	0.582	41.8%	64.02%
19	1932	D	13,995	9,544	4,284	64%	0.28		0.822		0.228	0.228	77.2%	12,100	5,253	3,575	0.66	0.29		0.680	0.144	0.298	0.298	70.2%	13,075	5,378	3,940	0.65	0.28	58.9	0.019	0.757	0.269	0.406	0.417	58.3%	67.56%
20	1933	C	11,974	6,536	3,526	66%	0.29		0.660		0.189	0.189	81.1%	10,392	4,635	2,937	0.69	0.30		0.647	0.144	0.293	0.293	70.7%	12,739	4,134	3,814	0.65	0.28	60.1	0.069	0.712	0.307	0.422	0.462	53.8%	66.97%
21	1934	C	12,748	5,798	3,818	65%	0.28		0.620		0.175	0.175	82.5%	14,231	3,968	4,372	0.63	0.28		0.611	0.144	0.273	0.273	72.7%	12,839	3,583	3,852	0.65	0.28	63.6	0.217	0.744	0.419	0.511	0.617	38.3%	63.66%
22	1935	B	12,478	5,132	3,717	66%	0.28		0.584		0.166	0.166	83.4%	24,916	11,206	8,368	0.57	0.25		1.000	0.144	0.358	0.358	64.2%	24,183	8,840	8,095	0.57	0.25	58.9	0.019	0.944	0.289	0.439	0.449	55.1%	63.93%
23	1936	B	49,843	12,309	17,691	23%	0.23		0.971		0.225	0.225	77.5%	33,698	10,018	11,653	0.24	0.24		0.938	0.144	0.336	0.336	66.4%	21,528	8,403	7,101	0.58	0.26	59.7	0.053	0.935	0.294	0.458	0.487	51.3%	63.35%
24	1937	B	33,203	9,273	11,468	24%	0.24		0.806		0.195	0.195	80.5%	36,203	8,229	13,336	0.24	0.24		0.841	0.144	0.310	0.310	69.0%	23,259	8,218	7,749	0.57	0.25	58.8	0.015	0.909	0.288	0.428	0.437	56.3%	66.70%
25	1938	W	82,289	8,175	29,819	22%	0.22		0.748		0.168	0.168	83.2%	78,634	8,181	28,459	0.22	0.22		0.836	0.144	0.300	0.300	70.0%	47,173	8,420	16,693	0.23	0.23	56.3	0.000	0.875	0.188	0.346	0.346	65.4%	70.31%
26	1939	D	19,032	8,590	6,168	60%	0.26		0.863		0.173	0.173	82.7%	16,394	6,717	5,181	0.61	0.27		0.759	0.144	0.309	0.309	69.1%	12,234	4,134	3,626	0.66	0.29	63.3	0.204	0.769	0.409	0.512	0.612	38.8%	61.77%
27	1940	A	43,654	12,309	15,377	23%	0.23		0.971		0.228	0.228	77.2%	59,443	8,860	21,262	0.23	0.23		0.876	0.144	0.312	0.312	68.8%	41,726	8,571	14,656	0.24	0.24	57.4	0.000	0.903	0.221	0.382	0.382	61.8%	67.82%
28	1941	W	75,031	11,126	27,112	23%	0.23		0.908		0.205	0.205	79.5%	58,581	8,067	20,959	0.23	0.23		0.832	0.144	0.302	0.302	69.8%	42,367	9,310	14,895	0.24	0.24	56.9	0.000	0.934	0.205	0.376	0.376	62.4%	68.84%
29	1942	W	78,344	8,247	28,351	23%	0.23		0.762		0.169	0.169	83.1%	27,095	8,229	9,183	0.25	0.25		0.841	0.144	0.317	0.317	68.3%	43,308	8,907	15,247	0.23	0.23	56.5	0.000	0.905	0.192	0.359	0.359	64.1%	68.97%
30	1943	W	52,253	8,263	18,593	23%	0.23		0.754		0.174	0.174	82.6%	64,598	8,278	23,210	0.23	0.23		0.844	0.144	0.303	0.303	69.7%	29,410	9,462	10,049	0.24	0.24	58.8	0.015	0.976	0.286	0.440	0.448	55.2%	67.01%
31	1944	D	30,163	7,928	10,331	24%	0.24		0.736		0.179	0.179	82.1%	25,094	8,229	8,436	0.25	0.25		0.841	0.144	0.318	0.318	68.2%	9,814	4,236	2,721	0.70	0.30	58.4	0.000	0.686	0.253	0.383	0.383	61.7%	68.01%
32	1945	B	41,378	8,247	14,525	24%	0.24		0.762		0.177	0.177	82.3%	27,274	8,359	9,250	0.25	0.25		0.848	0.144	0.318	0.318	68.2%	11,999	6,689	3,536	0.66	0.29	60.6	0.090	0.858	0.323	0.477	0.524	47.6%	63.84%
33	1946	B	24,092	8,499	8,060	57%	0.25		0.766		0.193	0.193	80.7%	23,712	8,652	7,918	0.57	0.25		0.864	0.144	0.326	0.326	67.4%	12,218	5,949	3,619	0.66	0.29	60.7	0.095	0.820	0.326	0.467	0.518	48.2%	63.40%
34	1947	D	21,571	8,211	7,116	58%	0.26		0.750		0.192	0.192	80.8%	22,509	8,148	7,468	0.58	0.25		0.837	0.144	0.320	0.320	68.0%	13,797	4,941	4,210	0.64	0.28	62.5	0.170	0.796	0.364	0.499	0.584	41.6%	61.72%
35	1948	B	15,525	5,807	4,856	62%	0.27		0.620		0.168	0.168	83.2%	19,363	7,709	6,288	0.59	0.26		0.813	0.144	0.318	0.318	68.2%	23,293	6,857	7,761	0.57	0.25	56.6	0.000	0.796	0.195	0.347	0.347	65.3%	69.25%
36	1949	D	16,277	8,427	5,136	62%	0.27		0.782		0.205	0.205	79.5%	41,716	11,336	14,862	0.24	0.24		1.000	0.144	0.346	0.346	65.4%	13,209	5,075	3,990	0.65	0.28	61.7	0.137	0.791	0.358	0.480	0.551	44.9%	61.10%
37	1950	B	36,562	11,776	12,360	24%	0.24		0.943		0.226	0.226	77.4%	22,869	8,782	7,614	0.58	0.25		0.871	0.144	0.328	0.328	67.2%	19,528	6,265	6,353	0.59	0.26	61.3	0.120	0.849	0.346	0.477	0.539	46.1%	62.17%
38	1951	A	60,572	8,967	21,704	23%	0.23		0.791		0.181	0.181	81.9%	29,627	8,929	10,205	0.24	0.24		0.879	0.144	0.324	0.324	67.6%	14,772	6,353	4,575	0.63	0.27	59.9	0.061	0.828	0.301	0.445	0.479	52.1%	64.82%
39	1952	W	62,499	7,910	22,425	23%	0.23		0.734		0.167	0.167	83.3%	57,524	8,164	20,564	0.23	0.23		0.836	0.144	0.303	0.303	69.7%	56,652	8,773	20,236	0.23	0.23	55.5	0.000	0.879	0.160	0.325	0.325	67.5%	70.78%
40	1953	W	26,341	8,337	9,850	25%	0.25		0.757		0.186	0.186	81.4%	24,899	7,563	8,362	0.57	0.25		0.805	0.144	0.310	0.310	69.0%	16,164	5,647	5,103	0.62	0.27	58.8	0.015	0.770	0.266	0.401	0.410	59.0%	67.62%
41	1954	A	57,151	8,895	20,424	23%	0.23		0.787		0.181	0.181	81.9%	49,538	8,912	17,577	0.23	0.23		0.878	0.144	0.314	0.314	68.6%	39,863	7,361	13,959	0.24	0.24	56.4	0.000	0.855	0.253	0.395	0.395	60.5%	67.86%
42	1955	D	16,295	8,193	5,144	62%	0.27		0.749		0.201	0.201	79.9%	17,678	7,253	5,662	0.60	0.26		0.786	0.144	0.315	0.315	68.5%	9,478	3,664	2,595	0.71	0.30	56.4	0.000	0.620	0.189	0.320	0.320	68.0%	69.86%
43	1956	W	61,543	8,658	22,067	23%	0.23		0.774		0.177	0.177	82.3%	36,674	7,172	12,766	0.24	0.24		0.784	0.144	0.297	0.297	70.3%	20,436	7,999	6,693	0.59	0.26	59.7	0.053	0.913	0.294	0.454	0.483	51.7%	66.29%
44	1957	A	33,149	8,895	11,448	24%	0.24		0.787		0.190	0.190	81.0%	44,383	8,868	15,649	0.23	0.23		0.865	0.144	0.313	0.313	68.7%	21,108	6,420	6,944	0.58	0.26	60.5	0.086	0.842	0.320	0.454	0.501	49.9%	64.65%
45	1958	W	62,263	8,301	22,344	23%	0.23		0.756		0.172	0.172	82.8%	93,612	8,294	34,061	0.22	0.22		0.845	0.144	0.300	0.300	70.0%	52,282	9,663	18,603	0.23	0.23	57.4	0.000	0.962	0.221	0.392	0.392	60.8%	68.88%
46	1959	B	50,075	8,301	17,778	23%	0.23		0.755		0.175	0.175	82.5%	23,354	7,266	7,785	0.57	0.25		0.790	0.144	0.307	0.307	69.3%	10,467	3,796	2,972	0.69	0.30	63	0.191	0.745	0.400	0.502	0.597	40.3%	62.27%
47	1960	D	26,512	11,126	8,966	25%	0.25		0.908		0.225	0.225	77.5%	22,606	7,530	7,505	0.58	0.25		0.803	0.144	0.312	0.312	68.8%	13,545	4,033	4,116	0.64	0.28	59.5	0.044	0.695	0.288	0.402	0.428	57.2%	66.47%
48	1961	D	32,843	11,362	11,333	24%	0.24		0.920		0.222	0.222	77.8%	20,947	8,050	6,884	0.59	0.26		0.831	0.144	0.321	0.321	67.9%	12,789	3,546	3,833	0.65	0.28	60.1	0.069	0.680	0.307	0.412	0.453	54.7%	65.22%
49	1962	B	45,537	12,748	16,081	23%	0.23		0.995		0.233	0.233	76.7%	27,664	7,725	9,396	0.25	0.25		0.814	0.144	0.309	0.309	69.1%	15,411	5,579	4,814	0.62	0.27	61.8	0.141	0.820	0.362	0.486	0.559	44.1%	62.58%
50	1963	W	57,565	12,550	20,579	23%	0.23		0.985		0.226	0.226	77.4%	32,641	8,929	11,258	0.24	0.24		0.879	0.144	0.322	0.322	67.8%	69,457	8,100	25,027	0.23	0.23	53.7	0.000	0.811	0.103	0.263	0.263	73.7%	70.83%
51	1964	D	19,019	7,632	6,163	60%	0.26		0.719		0.188	0.188	81.2%	16,636	6,733	5,272	0.61	0.27		0.760	0.144	0.309	0.309	69.1%	8,957	3,496	2,400	0.72	0.31	59.3	0.036	0.863	0.282	0.399	0.421	57.9%	67.32%
52	1965	W	33,329	10,299	11,515	24%	0.24		0.983		0.208	0.208	79.2%	21,366	8,603	7,049	0.58	0.26		0.861	0.144	0.328	0.328	67.2%	45,173	8,537	15,945	0.23	0.23	56.9	0.000	0.892	0.205	0.366	0.366	63.4%	67.63%
53	1966	B	26,775	8,661	9,064	25%	0.25		0.774		0.192	0.192	80.8%	26,689	8,652	9,780	0.25	0.25		0.864	0.144	0.321	0.321	67.9%	12,808	4,974	3,839	0.65	0.28	61.9	0.145	0.789	0.365	0.485	0.559	44.1%	62.43%
54	1967	W	43,106	7,480	15,172	23%	0.23		0.711		0.167	0.167	83.3%	54,483	7,514	19,426	0.23	0.23		0.802	0.144	0.296	0.296	70.4%	39,930	9,546	13,984	0.24	0.24	53.8	0.000	0.891	0.108	0.292	0.292	70.8%	72.22%
55	1968	B	54,520	6,572	19,440	23%	0.23		0.862		0.152	0.152	84.8%	36,788	7,107	12,809	0.24	0.24		0.780	0.144	0.296	0.296	70.4%	15,612	5,243	4,889	0.62	0.27	61.5	0.126	0.797	0.352	0.472	0.540	46.0%	64.94%
56	1969	W	67,486	7,454	24,290	23%	0.23		0.709		0.161	0.161	83.9%	45,326	6,896	16,002	0.23	0.23		0.769	0.144	0.290	0.290	71.0%	44,787	7,512	15,800	0.23	0.23	56.4	0.000	0.827	0.189	0.338	0.338	66.2%	71.21%
57	1970	W	57,565	5,256	20,579	23%	0.23		0.691		0.136	0.136	86.4%	35,812	7,221	12,444	0.24	0.24		0.787	0.144	0.298	0.298	70.2%	16,604	6,588	5,260	0.61	0.27	58.8	0.015	0.821	0.286	0.414	0.423	57.7%	68.67%
58	1971	W	29,332	8,461	10,020	24%	0.24		0.765		0.187	0.187	81.3%	50,774	8,929	18,040	0.23	0.23		0.879	0.144	0.314	0.314	68.6%	22,133	6,621	7,328	0.58	0.25	58.7	0.011	0.821	0.262	0.405	0.411	58.9%	67.32%
59	1972	B	24,217	8,608	8,107	57%	0.25		0.772		0.194	0.194	80.6%	32,933	8,164	11,367	0.24	0.24		0.836	0.144	0.312	0.312	68.8%	12,453	4,739	3,707	0.66	0.28	58.5	0.002	0.715	0.256	0.387	0.388	61.2%	68.06%
60	1973	A	70,961	8,697	25,590	23%	0.23		0.776		0.176	0.176	82.4%	47,554	8,685	16,835	0.23	0.23		0.866	0.144	0.312	0.312	68.8%	19,511	7,495	6,347	0.59	0.26	61.3	0.120	0.915	0.346	0.494	0.554	44.6%	63.29%
61	1974	W	43,304	8,643	15,246	23%	0.23		0.774		0.182	0.182	81.8%	99,418	8,652	36,232	0.22	0.22		0.864	0.144	0.304	0.304	69.6%	32,720	9,327	11,287	0.24	0.24	56.8	0.000	0.933	0.202	0.378	0.378	62.2%	68.94%
62	1975	W	58,807	8,877	21,044	23%	0.23		0.786		0.180	0.180	82.0%	75,999	8,912	27,474	0.23	0.23		0.878	0.144	0.310	0.310	69.0%	25,763	8,773	8,665	0.25	0.25	56.8	0.000	0.903	0.202	0.376	0.376	62.4%	68.72%
63	1976	C	19,523	8,256	6,352	59%	0.26		0.753		0.196	0.196	80.4%	20,069	7,855	6,556	0.59	0.26		0.821	0.144	0.319	0.319	68.1%	9,428	3,008	2,576	0.71	0.30	58.9	0.019	0.629	0.269	0.378	0.390	61.0%	67.58%
64	1977	C	12,172	2,107	3,602	66%	0.29		0.421		0.120	0.120	88.0%	7,514	2,017	1,860	0.76	0.32		0.506	0.144	0.261	0.261	73.9%	9,142	2,991	2,469	0.71	0.31	64.3	0.246	0.725	0.441	0.528	0.644	35.6%	64.22%
65	1978	A	50,939	8,301	18,101	23%	0.23		0.756		0.175	0.175	82.5%	45,375	6,017	16,020	0.23	0.23		0.722	0.144	0.279	0.279	72.1%	36,703	7,512	13,525	0.24	0.24	56.9	0.000	0.836	0.205	0.355	0.355	64.5%	71.17%
66	1979	B	42,044	8,211	14,774	24%	0.24		0.750		0.177	0.177	82.3%	32,592	8,229	11,239	0.24	0.24		0.841	0.144	0.313	0.313	68.7%	17,896	6,857	5,668	0.60	0.26	59.8	0.057	0.853	0.298	0.445	0.476	52.4%	65.59%
67	1980	A	69,453	7,771	25,026	23%	0.23		0.726		0.165	0.165	83.5%	36,479	7,123	12,693	0.24	0.24		0.781	0.144	0.296	0.296	70.4%	19,814	6,941	6,460	0.59	0.26	57.1	0.000	0.809	0.211	0.366	0.366	63.4%	68.97%
68	1981	D	29,674	6,716	10,146	24%	0.24		0.669		0.164	0.164	83.6%	32,494	7,107	11,203	0.24	0.24		0.780	0.144	0.298	0.298	70.2%	16,990	5,445	5,404	0.61	0.27	61.5	0.128	0.807	0.362	0.473	0.541	45.9%	64.65%
69	1982	W	85,650	8,913	23,803	23%	0.23		0.786		0.179	0.179	82.1%	69,087	8,860	24,869	0.23	0.23		0.876	0.144	0.310	0.310	69.0%	75,643	9,159	27,415	0.23	0.23	54.1	0.000	0.875	0.115	0.287	0.287	71.3%	71.39%
70	1983	W	82,917	6,212	30,061	22%	0.22		0.842		0.144	0.144	85.6%	81,936	4,664	29,694	0.22	0.22		0.650	0.144	0.258	0.258	74.2%	68,296	6,958	24,593	0.23	0.23	55	0.000	0.772	0.144	0.287	0.287	71.3%	74.84%
71	1984	W	36,004	5,163	12,518	24%	0.24		0.586		0.140	0.140	86.0%	36,496	7,205	12,699	0.24	0.24		0.786	0.144	0.297	0.297	70.3%	17,864	6,857	5,731	0.60	0.26	59.7	0.053	0.851	0.294	0.442	0.471	52.9%	67.10%
72	1985	D	20,669	8,895	6,786	59%	0.26		0.787		0.203	0.203	79.7%	21,809	8,864	7,207	0.58	0.26		0.875	0.144	0.331	0.331	66.9%	13,327	4,874	4,034	0.65	0.28	60.8	0.099	0.764	0.330	0.451	0.505	49.5%	63.34%
73	1986	W	97,916	11,938	36,671	22%	0.22		0.951		0.212	0.212	78.8%	72,536	8,408	26,178	0.23	0.23		0.851	0.144	0.304	0.304	69.6%	21,024	7,546	6,913	0.58	0.26	60.4	0.082	0.901	0.317	0.467	0.511	48.9%	64.61%
74	1987	D	23,030	5,546	7,663	58%	0.25		0.608		0.154	0.154	84.6%	29,502	6,522	10,084	0.24	0.24		0.749	0.144	0.292	0.292	70.8%	12,366	3,496	3,682	0.66	0.28	65.7	0.305	0.778	0.486	0.569	0.701	29.9%	68.33%
75	1988	C	16,638	8,363	5,272	61%	0.27		0.650		0.174	0.174	82.6%	11,075	3,838	3,192	0.66	0.29		0.604	0.144	0.278	0.278	72.2%	9,092	2,924	2,450	0.72	0.31	59.9	0.061	0.643	0.301	0.408	0.442	55.8%	68.61%
76	1989	D	12,766	2,609	3,825	65%	0.28		0.458		0.130	0.130	87.0%	41,098	10,994	14,421	0.24	0.24		0.990	0.144	0.344	0.344	65.6%	23,629	5,647	7,887	0.57	0.25	61.4	0.124	0.817	0.349	0.467	0.533	46.7%	62.73%
77	1990	C	16,944	7,797	5,387	61%	0.27		0.728		0.194	0.194	80.6%	14,832	5,671	4,597	0.63	0.27		0.714	0.144	0.300	0.300	70.0%	12,436	3,546	3,701	0.66	0.28	61.6	0.133	0.707	0.355	0.455	0.527	47.3%	64.66%
78	1991	C	11,056	1,260	3,185	68%	0.29		0.375		0.110	0.110	89.0%	29,661	11,303	10,151	0.24	0.24		1.000	0.144	0.354	0.354	64.6%	15,276	4,252	4,763	0.62	0.27	60.8	0.099	0.730	0.330	0.439	0.494	50.6%	63.60%
79	1992	C	31,415	8,345	10,799	24%	0.24		0.757		0.184	0.184	81.6%	20,102	8,229	6,566	0.59	0.26		0.841	0.144	0.325	0.325	67.5%	12,470	3,731	3,714	0.66	0.26	61.2	0.116	0.710	0.342	0.447	0.511	48.9%	63.79%
80																																				Average	65.57%

Formulas: Winter Run Salmon Smolt Survival Model

C10 ='Study 506 Flow Data'!E7
D10 ='Study 506 Flow Data'!O7 (HIDDEN)
E10 ='Study 506 Flow Data'!Y7 (HIDDEN)
F10 =(D9+E9)
G10 =0.374*C9-950
H10 =IF(C9>$G$2,(0.133*C9+829)/(C9-G9),(0.293*C9+2090)/(C9-G9))
I10 =(0.133*C9+829)/(C9-G9)
K10 =(-0.5916024)+(0.017968*$M$1)+(0.000054*F9)
M10 =(K9*I9)+L9*(1-I9)
N10 =J9+M9-(J9*M9)
O10 =1-N9

Q10 ='Study 506 Flow Data'!F7
R10 ='Study 506 Flow Data'!P7 (HIDDEN)
S10 ='Study 506 Flow Data'!Z7 (HIDDEN)
T10 =(R9+S9)
U10 =0.374*Q9-950
V10 =IF(Q9>$G$2,(0.133*Q9+829)/(Q9-U9),(0.293*Q9+2090)/(Q9-U9))
Y10 =(0.133*Q9+829)/(Q9-U9)
W10 =IF(((-0.5916024)+(0.017968*$M$2)+(0.000054*T9))>1,1,((-0.5916024)+(0.017968*$M$2)+(0.000054*T9)))
Z10 =-1.613493+(0.0319584*$M$2)
AA10 =(Y9*W9)+Z9*(1-W9)
AB10 =X9+AA9-(X9*AA9)
AC10 =1-AB9

AE10 ='Study 506 Flow Data'!G7
AF10 ='Study 506 Flow Data'!Q7 (HIDDEN)
AG10 ='Study 506 Flow Data'!AA7 (HIDDEN)
AH10 =AF9+AG9
AI10 =0.374*AE9-950
AJ10 =IF(AE9>$G$2,(0.133*AE9+829)/(AE9-AI9),(0.293*AE9+2090)/(AE9-AI9))
AK10 =(0.133*AE9+829)/(AE9-AI9)
AM10 =IF((-2.45925+(0.0420748*AL9))<0,0,(-2.45925+(0.0420748*AL9)))
AN10 =IF(((-0.5916024)+(0.017968*AL9)+(0.000054*AH9))>1,1,((-0.5916024)+(0.017968*AL9)+(0.000054*AH9)))
AO10 =-1.613493+(0.0319584*AL9)
AP10 =(AN9*AK9)+(AO9*(1-AK9))
AQ10 =AM9+AP9-(AM9*AP9)
AR10 =1-AQ9
AS10 =(0.13*O9)+(0.57*AC9)+(0.3*AR9)

C — 0 3 2 3 8 5

STUDY: 1995C06F-SWR DWRSIM: recirc818-f, 17 Jun 97

CP # 137, SACRAMENTO RIVER AT FREEPORT, DOWNSTREAM FLOW (converted from TAF to C

Project: /1995C06F-SWRCB-506/137/FLOW-DOWNSTREAM//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	11814	17142	17499	34409	31551	22022	46530	34720
1923	18133	34544	32283	24326	17174	22221	14214	17058
1924	11243	13873	14621	16898	12198	7999	8636	10083
1925	7025	11254	10213	44655	18557	22654	12067	12856
1926	10924	11547	19776	36714	18947	21511	13596	14923
1927	20536	14556	32624	86122	43863	48215	26786	18889
1928	23343	16572	26509	27364	86229	29208	20655	13461
1929	12856	13710	15515	18528	16930	8773	9872	9898
1930	7159	14442	20768	15883	30087	12638	12067	16016
1931	9764	9563	12214	11326	9856	9109	10035	14167
1932	8235	14653	17256	13995	12100	13075	12019	19377
1933	9512	8148	12100	11974	10392	12739	8181	11478
1934	8638	12474	16101	12748	14231	12839	8929	13495
1935	9209	8506	25469	12478	24916	24183	28786	17696
1936	11865	11628	32527	49843	33698	21528	14100	19058
1937	11411	12458	15971	33203	38203	23259	16036	17679
1938	23948	51149	31535	82269	78634	47173	57426	35510
1939	19444	18687	18410	19032	16394	12234	8424	17982
1940	8436	7839	23452	43654	59443	41728	18166	15293
1941	13764	35601	73169	75031	58581	42367	39488	20805
1942	18184	65623	63265	78344	27095	43308	36040	27124
1943	21914	28803	58060	52253	64598	29410	21077	16856
1944	15125	13775	17678	30163	25094	9814	8912	16822
1945	14016	16068	13255	41378	27274	11999	12539	16888
1946	20856	55344	43228	24092	23712	12218	13694	14940
1947	13999	18134	15223	21571	22509	13797	8847	17881
1948	11108	11433	15645	15525	19353	23293	29047	23259
1949	14453	15564	14930	16277	41716	13209	14914	15831
1950	11529	11693	21191	35562	22899	19528	13726	18184
1951	43308	68095	62208	60572	29827	14772	18833	17259
1952	16806	47408	67347	62499	57524	56652	59557	38972
1953	16537	42334	64078	28341	24899	16184	26867	25881
1954	20957	14914	33421	57151	49538	39863	25403	14083
1955	20856	26022	22265	16295	17678	9478	11271	16385
1956	12184	27355	84716	61543	36674	20436	39000	22301
1957	15478	14149	18638	33149	44383	21108	16865	19125
1958	19259	23745	36463	62283	93612	52282	43488	33930
1959	16133	14621	35162	50075	23354	10487	9417	17629
1960	11411	11075	14523	26512	22606	13545	10913	17629
1961	14251	19484	15011	32843	26947	12789	9238	19444
1962	10184	16947	12897	45537	27664	15411	14735	17243
1963	21242	27550	17808	57565	32641	69457	29095	19562
1964	28653	14849	25713	19019	16638	8957	11043	17175
1965	13646	29079	81236	33329	21386	45173	24855	18167
1966	25410	16995	29632	26775	28689	12806	14930	15209
1967	17579	39699	34153	43106	54483	39930	44790	39342
1968	16234	16686	30640	54520	36788	15612	9384	17142
1969	13814	25160	70177	67486	45326	44787	45538	24133
1970	17646	50156	92689	57565	35812	16604	12149	14570
1971	24217	54401	47262	29332	50774	22133	29274	23629
1972	15343	20134	20394	24217	32933	12453	10539	16436
1973	24889	26200	50156	70961	47554	19511	15743	17142
1974	56786	61590	78422	43304	99418	32720	26949	21629
1975	17579	17613	18670	58807	75999	25763	28542	24788
1976	19226	16768	16768	19523	20069	9428	10002	18772
1977	8386	8229	7660	12172	7514	9142	6993	9092
1978	6924	12279	43066	50939	45375	38703	21061	15965
1979	15142	12751	27241	42044	32592	17696	12572	17108
1980	18721	20833	64452	69453	36479	19814	14783	16268
1981	13024	15613	26856	29674	32494	16990	8750	17797
1982	34098	68599	51165	65650	69087	75843	38431	24418
1983	39107	55410	59150	82917	81935	68298	54515	55576
1984	62802	82944	47359	36004	36495	17864	13417	17276
1985	33998	23875	16800	20689	21809	13327	12572	15377
1986	9646	15971	23354	97916	72535	21024	13125	13209
1987	11209	13791	16735	23030	29502	12386	8343	19797
1988	8453	15841	25534	16638	11075	9092	9628	14218
1989	8991	9303	12490	12766	41098	23629	14344	15528
1990	11764	14637	21582	16944	14832	12436	7709	19158
1991	8134	8782	6847	11056	29681	15276	8685	9495
1992	7647	7465	12133	31415	20102	12470	8457	13125

STUDY: 1995C06F-SWRCB-506 DWRSIM: recirc818-f, 17 Jun 97

CVP, CVP EXPORT AT TRACY PP (converted from TAF to CFS)

Project: /1995C06F-SWRCB-506/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	3806	4185	4342	4605
1923	4302	4212	4212	4285	4228	3966	3123	4605
1924	3832	3919	4212	4068	1513	1462	781	823
1925	1311	4212	3545	4213	3708	3479	2521	3479
1926	4302	4212	4212	4231	4228	3344	2440	3580
1927	4252	4212	4212	4285	3741	4050	4163	4605
1928	4285	4212	4212	4103	4228	3880	2992	3025
1929	4285	4212	4212	4231	4017	623	2992	3025
1930	2286	4212	4212	2773	2944	1949	1756	4302
1931	2655	2423	4212	3565	2114	1529	1610	3445
1932	1210	4212	4212	4103	2553	2487	2423	3596
1933	3059	2017	4212	3835	1561	2067	2082	2168
1934	1529	4163	4212	1260	2293	1781	2179	3832
1935	2538	3220	4212	1188	4228	4420	2992	4101
1936	4269	4212	4212	4103	4228	4201	3155	4605
1937	4285	4212	4212	4231	4228	3243	2895	3395
1938	4285	4212	4212	4267	4228	4050	4001	4605
1939	4302	4212	4212	2629	2716	2067	1854	4201
1940	2807	1431	4212	4103	4228	4285	2992	4605
1941	4269	4212	4212	4285	4228	4605	4603	4605
1942	4302	4212	4212	4285	4228	4453	4342	4605
1943	4302	4212	4212	4285	4228	4605	4163	4605
1944	4285	4212	4212	4103	4228	2118	1870	4168
1945	4269	4212	4212	4249	4228	3344	2618	3378
1946	4285	4212	4212	4285	4228	2975	2635	3378
1947	4269	4212	4212	4249	4228	2470	1773	4269
1948	3680	4212	4212	4085	4228	3428	3838	4605
1949	4285	4212	4212	4249	4228	2538	2374	3647
1950	4285	4212	4212	4249	4228	3143	2635	4605
1951	4269	4212	4212	4285	4228	3176	3562	4605
1952	4285	4212	4212	4138	4228	4605	4294	4605
1953	4302	4212	4212	4285	3448	2823	3838	4605
1954	4285	4212	4212	4267	4228	3680	2992	3277
1955	4285	4212	4212	4267	4228	1832	1984	4050
1956	4269	4212	4212	4138	2472	4000	4342	4605
1957	4302	4212	4212	4249	4228	3210	2992	4504
1958	4285	4212	4212	4249	4228	4605	4603	4605
1959	4302	4212	4212	4249	4228	1899	1838	4201
1960	4269	4212	4212	4085	3545	303	1675	4353
1961	4269	4212	4212	4249	3513	303	1496	4554
1962	2924	4212	4212	4249	4228	2790	2667	3949
1963	4285	4212	4212	4285	4228	4050	4163	4605
1964	4269	4212	4212	4120	3415	1748	1935	4101
1965	4087	4212	4212	4249	4228	4269	2992	4605
1966	4302	4212	4212	4285	4228	2487	2391	3630
1967	4269	4212	4212	4285	4228	4605	4603	4605
1968	4302	4212	4212	2660	2992	2622	1822	4218
1969	4285	4212	4212	4285	3643	3344	3985	4605
1970	4302	4212	4163	1206	3106	3294	2960	4185
1971	4285	4212	4212	4285	4228	3311	3838	4605
1972	4269	4212	4212	4120	3741	2370	1952	4084
1973	4269	4212	4212	4267	4228	3748	3285	4554
1974	4285	4212	4212	4267	4228	4605	4342	4605
1975	4302	4212	4212	4249	4228	4386	4342	4605
1976	4302	4212	4212	4085	4228	639	1626	4420
1977	2689	1691	2098	684	829	1109	293	50
1978	2470	4131	3074	1747	2114	3445	4098	4605
1979	4302	4212	4212	4249	4228	3428	2992	2823
1980	4269	4212	4212	4103	3773	2991	3594	4605
1981	4285	4212	4212	2647	2992	2723	1756	4302
1982	4285	4212	4212	4285	4228	3596	4017	4605
1983	4302	4212	4212	3421	2049	3311	3952	4605
1984	3328	2992	1334	1443	3204	3428	3074	4521
1985	4285	4212	4212	4249	4228	2437	2261	3764
1986	2605	4212	4212	4249	4228	2336	2749	4117
1987	4269	4212	1480	1278	2358	319	1496	4538
1988	2975	4212	4212	3894	2082	1482	1513	4487
1989	2790	3285	4212	972	4228	2823	1968	4067
1990	4252	4212	2781	1296	2326	235	1350	4554
1991	2487	1740	1691	432	4228	2084	1447	2622
1992	3025	2960	4212	1147	2098	1865	2716	3311

STUDY: 1995C06F-SWRCB-506 DWRSIM: recirc 17 Jun 97

SWP, SWP EXPORT AT BANKS PP (converted from TAF to CFS)

Project: /1995C06F-SWRCB-506/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4319	7107	7579	6392	4147	4185	4342	6672
1923	6672	4456	3843	2377	3367	3966	3123	3395
1924	3748	6424	6852	4624	1740	1462	390	487
1925	3210	4847	3155	7581	4163	3479	2521	2689
1926	3109	3822	7091	7454	3497	3344	2440	2487
1927	6672	7042	7286	6590	4147	4050	4163	3748
1928	6672	6164	3643	4225	4424	3680	3383	2672
1929	5462	6180	7091	3799	2814	1882	114	101
1930	1765	6294	7091	4015	4375	1949	1756	2874
1931	3260	2976	5058	1873	1903	1529	1610	2067
1932	1849	7188	7790	5442	2700	2891	2423	4117
1933	2605	2472	5416	2701	3074	2067	1073	84
1934	1580	5546	7091	4538	1675	1781	764	1008
1935	4302	3399	7660	3943	6977	4420	2635	3546
1936	3949	4033	7449	8206	5790	4201	3155	3361
1937	3412	5578	7579	5042	4001	4974	4066	4269
1938	6672	7530	3236	3907	3952	4369	5448	6672
1939	5260	3741	3236	3961	4001	2067	1854	3109
1940	1748	2683	8018	8206	4851	4285	3204	3092
1941	6100	7335	8164	6842	3838	4706	5123	6302
1942	6134	3610	3236	3961	4001	4453	4342	6672
1943	6504	3773	3301	3997	4050	4857	4163	3143
1944	6672	6424	3269	3825	4001	2118	1870	3243
1945	6672	6961	5595	3997	4131	3344	2618	3798
1946	6672	7595	3643	4213	4424	2975	2635	3596
1947	6672	7140	6733	3961	3919	2470	1773	2975
1948	3630	3236	7010	1721	3480	3428	3838	4521
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3496	3676	7172	7526	4554	3143	2635	3529
1951	6672	7595	7449	4682	4700	3176	3562	2907
1952	6672	7107	6766	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3854	4628	4684	3680	4440	2739
1955	6672	6912	5920	3925	3025	1832	1984	3126
1956	4235	7595	7985	4520	4700	4000	4342	8521
1957	6672	5839	3887	4646	4440	3210	2992	3462
1958	6672	6928	3562	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3058	1899	1838	3042
1960	3075	2797	6408	7041	3985	3731	1675	2756
1961	6235	6896	7075	7112	4538	3243	1496	3042
1962	3496	6879	4163	8499	3497	2790	2667	2874
1963	6672	6896	7253	8265	4700	4050	4163	4017
1964	6672	6034	3871	3512	3318	1748	1935	2823
1965	6252	7302	8506	6050	4375	4269	4944	3714
1966	6672	6245	3659	4375	4424	2487	2391	2622
1967	6672	7123	7676	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2857
1969	6016	6977	6310	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3294	2960	2723
1971	6672	7042	5465	4195	4700	3311	3838	5042
1972	6672	6180	3887	4485	4424	2370	1952	2790
1973	6672	6896	6912	4429	4456	3748	3285	4017
1974	6672	7140	3643	4375	4424	4722	4342	4924
1975	5411	4245	3854	4628	4684	4386	4342	6672
1976	6672	4651	3806	4172	3627	2370	1626	2941
1977	3412	3106	2440	1422	1187	1882	439	387
1978	1697	5530	7758	6554	3903	4067	4098	3899
1979	6672	3676	3269	3961	4001	3428	2992	5227
1980	6672	6993	3155	3668	3350	3949	3887	4067
1981	5579	4066	3350	4069	4115	2723	1756	2924
1982	6672	6944	7709	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4889
1984	3630	3106	2879	3720	4001	3428	3074	3361
1985	6672	5741	3871	4646	4635	2437	2261	2605
1986	4168	6944	7172	7689	4180	5210	5383	3848
1987	3496	6099	6261	4267	4163	3176	1496	3176
1988	1865	6879	7058	2469	1756	1462	1513	1176
1989	3361	3562	4847	1837	6766	2823	1968	2487
1990	3563	6196	7058	6500	3545	3311	1350	2907
1991	2370	3139	1708	828	7075	2168	1415	1344
1992	1496	1610	4781	7197	6131	1865	1041	1361

C-032386

C-032386

Study 507 Sacramento River Fall Run Smolt Survival Model

Cross Channel closed over 25,000 cfs

Cross Channel Closed Apr to May 20, 14 d May 21-Jun 15

Sacramento River temperatures based on limited historical data from USBR

APRIL

Row	Year	Water Year Type	APRIL Sac River Flows	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channel Closed	observed temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
8	1922	A	22,822	8,369	7,585	58%	0.25	58.5	0.002	0.803	0.256	0.400	0.401	59.9%
9	1923	B	22,721	7,932	7,548	58%	0.25	58.3	0.000	0.800	0.250	0.389	0.389	61.1%
10	1924	C	8,050	2,823	2,081	74%	0.32	61.5	0.128	0.686	0.362	0.442	0.514	48.6%
11	1925	D	22,654	6,958	7,523	58%	0.25	59.1	0.027	0.772	0.275	0.401	0.418	58.2%
12	1926	D	21,242	6,621	6,995	58%	0.26	61.6	0.133	0.803	0.365	0.470	0.540	46.0%
13	1927	W	48,215	8,100	17,082	23%	0.23	56.8	0.000	0.781	0.202	0.336	0.336	66.4%
14	1928	A	29,208	7,361	9,974	25%	0.25	58.7	0.011	0.786	0.262	0.390	0.396	60.4%
15	1929	C	8,773	2,706	2,331	72%	0.31	56.3	0.000	0.537	0.186	0.295	0.295	70.5%
16	1930	D	12,836	3,899	3,777	65%	0.28	59.6	0.046	0.649	0.281	0.382	0.422	57.8%
17	1931	C	9,109	3,059	2,467	72%	0.31	62.8	0.183	0.670	0.393	0.478	0.574	42.6%
18	1932	D	13,075	5,378	3,940	65%	0.28	58.9	0.019	0.700	0.289	0.390	0.402	59.8%
19	1933	C	12,739	4,134	3,814	65%	0.28	60.1	0.069	0.688	0.307	0.409	0.450	55.0%
20	1934	C	12,839	3,563	3,852	65%	0.28	63.6	0.217	0.706	0.419	0.500	0.608	39.2%
21	1935	B	24,186	9,125	8,066	57%	0.25	58.9	0.019	0.863	0.289	0.418	0.429	57.1%
22	1936	B	21,528	8,403	7,101	58%	0.26	59.7	0.053	0.846	0.294	0.436	0.465	53.5%
23	1937	B	23,259	8,236	7,749	57%	0.25	58.8	0.015	0.822	0.298	0.406	0.415	58.5%
24	1938	W	47,173	8,420	16,693	23%	0.23	56.3	0.000	0.785	0.186	0.326	0.326	67.4%
25	1939	D	12,234	4,134	3,626	65%	0.29	63.3	0.204	0.726	0.409	0.500	0.602	39.8%
26	1940	A	41,728	8,336	14,656	24%	0.24	57.4	0.000	0.802	0.221	0.358	0.358	64.2%
27	1941	W	42,367	9,310	14,695	24%	0.24	56.9	0.000	0.835	0.205	0.353	0.353	64.7%
28	1942	W	43,308	8,907	15,247	23%	0.23	56.5	0.000	0.810	0.192	0.337	0.337	66.3%
29	1943	W	29,410	9,462	10,049	24%	0.24	58.8	0.015	0.676	0.266	0.415	0.424	57.6%
30	1944	D	9,814	4,235	2,721	70%	0.30	58.4	0.000	0.642	0.253	0.370	0.370	63.0%
31	1945	B	11,999	6,598	3,538	66%	0.29	60.6	0.090	0.783	0.323	0.455	0.504	49.6%
32	1946	B	12,218	5,949	3,619	66%	0.29	60.7	0.095	0.767	0.326	0.449	0.501	49.9%
33	1947	D	13,797	4,941	4,210	64%	0.28	62.5	0.170	0.746	0.364	0.464	0.572	42.8%
34	1948	B	23,293	6,857	7,761	57%	0.25	56.6	0.000	0.723	0.196	0.329	0.329	67.1%
35	1949	D	13,209	5,075	3,990	65%	0.28	61.7	0.137	0.737	0.358	0.465	0.538	46.2%
36	1950	B	19,526	6,265	6,353	59%	0.26	61.3	0.120	0.783	0.346	0.459	0.524	47.6%
37	1951	A	14,789	6,366	4,581	63%	0.27	59.9	0.061	0.782	0.301	0.427	0.462	53.8%
38	1952	W	56,652	8,773	20,236	23%	0.23	56.5	0.000	0.796	0.160	0.304	0.304	69.6%
39	1953	W	16,184	5,647	5,103	62%	0.27	58.8	0.015	0.710	0.266	0.386	0.394	60.6%
40	1954	A	39,863	7,361	13,909	24%	0.24	58.4	0.000	0.777	0.253	0.377	0.377	62.3%
41	1955	D	9,478	3,864	2,595	71%	0.30	56.4	0.000	0.581	0.189	0.308	0.308	69.2%
42	1956	W	20,436	7,966	6,693	59%	0.26	59.7	0.053	0.827	0.294	0.432	0.462	53.8%
43	1957	A	21,158	6,420	6,983	58%	0.26	60.5	0.086	0.774	0.320	0.437	0.485	51.5%
44	1958	W	52,282	9,663	18,603	23%	0.23	57.4	0.000	0.699	0.221	0.368	0.368	63.2%
45	1959	B	10,487	3,798	2,972	69%	0.30	63	0.191	0.706	0.400	0.490	0.588	41.2%
46	1960	D	13,545	4,033	4,116	64%	0.28	59.5	0.044	0.663	0.289	0.390	0.417	58.3%
47	1961	[illegible]	12,789	3,546	3,833	65%	0.28	60.1	0.069	0.642	0.307	0.402	0.443	55.7%
48	1962	[illegible]	15,411	5,579	4,814	62%	0.27	61.8	0.141	0.781	0.362	0.470	0.545	45.5%
49	1963	W	69,457	8,100	25,027	23%	0.23	53.7	0.000	0.725	0.103	0.244	0.244	75.6%
50	1964	[illegible]	8,957	3,496	2,400	72%	0.31	59.3	0.036	0.626	0.282	0.388	0.410	59.0%
51	1965	W	45,173	8,537	15,945	23%	0.23	56.9	0.000	0.801	0.205	0.344	0.344	65.6%
52	1966	B	12,806	4,974	3,839	65%	0.28	61.9	0.145	0.737	0.366	0.470	0.547	45.3%
53	1967	W	39,930	9,546	13,964	24%	0.24	53.8	0.000	0.789	0.106	0.268	0.268	73.2%
54	1968	B	15,629	5,243	4,895	62%	0.27	61.5	0.128	0.741	0.362	0.457	0.527	47.3%
55	1969	W	44,787	7,512	15,800	23%	0.23	56.4	0.000	0.749	0.189	0.320	0.320	68.0%
56	1970	W	16,804	6,588	5,260	61%	0.27	58.8	0.015	0.781	0.266	0.396	0.404	59.6%
57	1971	W	22,133	6,621	7,328	58%	0.25	58.7	0.011	0.760	0.262	0.387	0.393	60.7%
58	1972	B	12,453	4,739	3,707	66%	0.28	58.5	0.002	0.695	0.258	0.372	0.374	62.6%
59	1973	A	19,511	7,495	6,347	59%	0.26	61.3	0.120	0.836	0.346	0.473	0.536	46.4%
60	1974	W	33,208	9,327	11,470	24%	0.24	56.8	0.000	0.834	0.202	0.354	0.354	64.6%
61	1975	W	25,763	8,773	8,686	25%	0.25	56.8	0.000	0.810	0.202	0.353	0.353	64.7%
62	1976	C	9,426	3,008	2,578	71%	0.30	58.9	0.019	0.597	0.269	0.369	0.381	61.9%
63	1977	C	9,142	2,991	2,469	71%	0.31	64.3	0.246	0.664	0.441	0.519	0.637	36.3%
64	1978	A	36,703	7,512	13,525	24%	0.24	56.9	0.000	0.767	0.205	0.336	0.336	66.4%
65	1979	B	17,696	6,857	5,668	60%	0.26	59.8	0.057	0.790	0.298	0.425	0.458	54.2%
66	1980	A	19,814	6,941	6,460	59%	0.26	57.1	0.000	0.736	0.211	0.347	0.347	65.3%
67	1981	D	16,990	5,446	5,404	61%	0.27	61.5	0.128	0.760	0.362	0.458	0.528	47.2%
68	1982	W	76,843	9,159	27,415	23%	0.23	54.1	0.000	0.778	0.115	0.265	0.265	73.5%
69	1983	W	66,296	6,958	24,593	23%	0.23	55	0.000	0.699	0.144	0.270	0.270	73.0%
70	1984	W	17,864	6,857	5,731	60%	0.26	59.7	0.053	0.779	0.294	0.422	0.453	54.7%
71	1985	D	13,327	4,874	4,034	65%	0.28	60.8	0.099	0.712	0.330	0.437	0.492	50.8%
72	1986	W	21,024	7,546	6,913	58%	0.26	60.4	0.082	0.821	0.317	0.446	0.492	50.8%
73	1987	D	12,366	3,496	3,682	66%	0.28	65.7	0.305	0.741	0.486	0.569	0.693	30.7%
74	1988	C	8,621	2,857	2,274	73%	0.31	59.9	0.061	0.609	0.301	0.397	0.433	56.7%
75	1989	D	23,629	5,647	7,867	57%	0.25	61.4	0.124	0.767	0.349	0.462	0.520	48.0%
76	1990	C	12,436	3,529	3,701	66%	0.28	61.6	0.133	0.698	0.355	0.444	0.518	48.2%
77	1991	C	15,276	4,252	4,763	62%	0.27	60.8	0.099	0.695	0.330	0.426	0.483	51.7%
78	1992	C	12,470	3,731	3,714	66%	0.28	61.2	0.116	0.670	0.342	0.435	0.501	49.9%

MAY

Row	Year	MAY Sac River Flows	CVP + SWP Exports	Calculated Steamboat & Sutter Slough Q	Percent	X-chann Closed	USBR observed temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
8	1922	46,530	8,686	18,452	0.23	0.23	61.2	0.116	0.865	0.343	0.469	0.530	47.0%
9	1923	14,214	6,245	4,366	0.64	0.33	62.4	0.166	0.801	0.381	0.521	0.600	40.0%
10	1924	8,766	1,301	2,326	0.72	0.38	69.2	0.462	0.706	0.598	0.639	0.803	19.7%
11	1925	12,067	5,042	3,563	0.66	0.35	63.2	0.200	0.763	0.406	0.530	0.624	37.6%
12	1926	13,645	4,879	4,153	0.64	0.34	65.7	0.308	0.801	0.468	0.592	0.716	28.4%
13	1927	26,786	8,327	9,066	0.25	0.25	62.6	0.178	0.895	0.387	0.513	0.598	40.2%
14	1928	20,655	6,375	6,775	0.59	0.31	66.6	0.343	0.882	0.515	0.629	0.756	24.4%
15	1929	9,872	3,106	2,742	0.70	0.36	66.1	0.322	0.731	0.499	0.583	0.718	28.2%
16	1930	12,067	3,513	3,563	0.66	0.35	63.1	0.196	0.695	0.403	0.504	0.601	39.9%
17	1931	10,100	3,123	2,827	0.69	0.36	70.5	0.507	0.811	0.640	0.702	0.853	14.7%
18	1932	12,019	4,847	3,546	0.66	0.35	65.5	0.297	0.796	0.460	0.589	0.711	28.9%
19	1933	8,181	3,155	2,110	0.74	0.38	63.7	0.221	0.690	0.422	0.525	0.630	37.0%
20	1934	8,912	2,944	2,383	0.72	0.37	68.3	0.414	0.763	0.569	0.642	0.790	21.0%
21	1935	28,770	5,611	9,810	0.25	0.25	64	0.234	0.802	0.432	0.523	0.634	36.6%
22	1936	14,100	6,310	4,324	0.64	0.33	64.9	0.271	0.848	0.461	0.590	0.701	29.9%
23	1937	16,196	6,749	5,108	0.62	0.32	64.5	0.256	0.860	0.448	0.582	0.688	31.2%
24	1938	57,426	9,449	20,527	0.23	0.23	62.5	0.170	0.941	0.364	0.512	0.595	40.5%
25	1939	8,571	3,480	2,255	0.73	0.38	68	0.402	0.781	0.580	0.644	0.787	21.3%
26	1940	18,199	6,196	5,856	0.60	0.32	65.6	0.301	0.856	0.463	0.601	0.721	27.9%
27	1941	39,468	9,726	13,818	0.24	0.24	61.6	0.133	0.937	0.356	0.493	0.560	44.0%
28	1942	36,040	8,685	12,529	0.24	0.24	60.1	0.069	0.865	0.307	0.441	0.479	52.1%
29	1943	21,077	8,327	6,933	0.58	0.31	65.4	0.292	0.945	0.477	0.621	0.732	26.8%
30	1944	8,912	3,741	2,383	0.72	0.37	65.9	0.313	0.756	0.493	0.591	0.719	28.1%
31	1945	12,539	5,172	3,740	0.66	0.34	63.1	0.198	0.767	0.403	0.526	0.620	38.0%
32	1946	13,694	5,269	4,171	0.64	0.34	63.9	0.229	0.785	0.429	0.549	0.652	34.8%
33	1947	8,847	3,546	2,359	0.72	0.38	66.7	0.431	0.797	0.582	0.663	0.808	19.2%
34	1948	29,030	7,676	9,907	0.25	0.25	62.3	0.162	0.861	0.378	0.498	0.578	42.2%
35	1949	14,914	4,749	4,626	0.63	0.33	65.2	0.284	0.786	0.470	0.574	0.695	30.5%
36	1950	13,726	5,269	4,184	0.64	0.34	64.3	0.246	0.792	0.441	0.559	0.668	33.2%
37	1951	16,817	7,123	6,087	0.60	0.32	64.4	0.250	0.875	0.446	0.580	0.685	31.5%
38	1952	59,557	9,563	21,324	0.23	0.23	61.7	0.137	0.932	0.368	0.490	0.559	44.1%
39	1953	26,867	7,676	9,096	0.25	0.25	60.9	0.103	0.836	0.333	0.457	0.513	48.7%
40	1954	25,403	7,432	8,551	0.25	0.25	65.9	0.313	0.915	0.493	0.598	0.724	27.6%
41	1955	10,278	3,773	2,894	0.69	0.36	66.9	0.356	0.774	0.526	0.614	0.752	24.8%
42	1956	39,000	8,750	13,636	0.24	0.24	61.4	0.124	0.891	0.349	0.477	0.542	45.8%
43	1957	16,833	5,952	5,346	0.61	0.32	64	0.234	0.817	0.432	0.556	0.660	34.0%
44	1958	43,468	10,685	15,315	0.23	0.23	62.9	0.187	1.002	0.387	0.539	0.625	37.5%
45	1959	9,417	3,676	2,572	0.71	0.37	65.9	0.313	0.752	0.493	0.586	0.717	28.3%
46	1960	10,913	3,350	3,131	0.66	0.35	65.9	0.313	0.738	0.493	0.580	0.711	28.9%
47	1961	9,236	2,992	2,506	0.71	0.37	64.3	0.246	0.694	0.441	0.535	0.649	35.1%
48	1962	14,736	5,334	4,561	0.63	0.33	64.8	0.267	0.804	0.457	0.572	0.687	31.3%
49	1963	29,095	8,327	9,932	0.25	0.25	62.5	0.170	0.893	0.364	0.509	0.592	40.8%
50	1964	11,043	3,871	3,180	0.66	0.35	66.2	0.264	0.748	0.470	0.568	0.691	30.9%
51	1965	24,855	7,937	8,271	0.57	0.30	63.6	0.217	0.896	0.419	0.563	0.658	34.2%
52	1966	14,930	4,781	4,634	0.63	0.33	67.3	0.372	0.825	0.537	0.632	0.769	23.1%
53	1967	44,790	10,051	15,801	0.23	0.23	62.1	0.154	0.980	0.371	0.509	0.584	41.6%
54	1968	9,364	3,643	2,580	0.71	0.37	66.1	0.322	0.754	0.499	0.593	0.724	27.6%
55	1969	45,538	9,010	16,061	0.23	0.23	63.2	0.200	0.935	0.406	0.530	0.624	37.6%
56	1970	12,149	5,920	3,594	0.66	0.35	68.6	0.427	0.896	0.579	0.689	0.822	17.8%
57	1971	29,274	7,676	9,899	0.24	0.24	61	0.107	0.836	0.336	0.459	0.517	48.3%
58	1972	10,539	3,903	2,991	0.69	0.36	67.3	0.372	0.787	0.537	0.627	0.766	23.4%
59	1973	15,743	6,570	4,938	0.62	0.33	66.9	0.356	0.896	0.526	0.646	0.772	22.8%
60	1974	26,949	8,685	9,129	0.25	0.25	63.4	0.208	0.924	0.413	0.539	0.635	36.5%
61	1975	26,542	8,685	9,725	0.25	0.25	63.8	0.225	0.932	0.426	0.550	0.651	34.9%
62	1976	10,002	3,253	2,791	0.70	0.36	69.6	0.469	0.800	0.611	0.680	0.830	17.0%
63	1977	6,993	732	1,686	0.78	0.40	64	0.234	0.590	0.432	0.495	0.613	38.7%
64	1978	21,061	8,197	6,927	0.58	0.31	63	0.191	0.896	0.400	0.563	0.639	36.1%
65	1979	12,572	5,985	3,752	0.65	0.34	63.8	0.225	0.815	0.426	0.559	0.658	34.2%
66	1980	14,783	7,461	4,579	0.63	0.33	63.6	0.217	0.876	0.419	0.570	0.663	33.7%
67	1981	8,750	3,513	2,322	0.72	0.38	66.7	0.347	0.759	0.518	0.609	0.745	25.5%
68	1982	38,431	10,701	13,423	0.24	0.24	61.1	0.112	0.971	0.339	0.489	0.546	45.4%
69	1983	54,5?6	7,546	19,439	0.23	0.23	60.1	0.069	0.816	0.307	0.424	0.464	53.6%
70	1984	13,4?7	6,148	4,066	0.64	0.34	66.5	0.339	0.870	0.512	0.633	0.757	24.3%
71	1985	12,376	4,781	3,679	0.66	0.34	65.8	0.309	0.798	0.489	0.596	0.721	27.9%
72	1986	13,126	8,132	3,959	0.65	0.34	66.2	0.326	0.951	0.592	0.654	0.767	23.3%
73	1987	8,441	2,662	2,207	0.73	0.38	70.5	0.507	0.799	0.640	0.700	0.852	14.8%
74	1988	9,774	3,056	2,706	0.70	0.37	65.8	0.309	0.723	0.489	0.575	0.706	29.4%
75	1989	14,328	3,936	4,409	0.63	0.33	64.7	0.263	0.742	0.464	0.550	0.668	33.2%
76	1990	7,709	2,700	1,933	0.75	0.39	66.4	0.336	0.719	0.509	0.591	0.727	27.3%
77	1991	8,695	2,879	2,298	0.73	0.38	65.7	0.305	0.714	0.486	0.572	0.703	29.7%
78	1992	8,620	3,529	2,274	0.73	0.38	66	0.318	0.747	0.498	0.591	0.721	27.9%

JUNE

Row	Year	JUNE Sac River Flow	CVP + SWP exports	Caculated Steamboat & Sutter Slough Q	percent	X-chann closed	USBR observed temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
8	1922	34,720	11,277	12,035	24%	0.24	65.9	0.313	1.000	0.493	0.614	0.735	26.5%	45.6%
9	1923	16,990	7,999	5,404	61%	0.52	65.3	0.288	0.929	0.473	0.709	0.793	20.7%	46.1%
10	1924	10,218	1,462	2,871	69%	0.59	70.6	0.511	0.740	0.643	0.700	0.853	14.7%	23.7%
11	1925	12,839	6,151	3,852	65%	0.55	68.3	0.414	0.903	0.569	0.753	0.855	14.5%	37.6%
12	1926	14,907	6,087	4,625	63%	0.53	71.2	0.536	0.951	0.682	0.816	0.915	8.5%	27.8%
13	1927	18,869	8,352	6,115	60%	0.51	68.1	0.406	0.995	0.563	0.781	0.870	13.0%	38.8%
14	1928	13,461	5,697	4,065	64%	0.55	69.7	0.473	0.908	0.614	0.774	0.881	11.9%	28.3%
15	1929	9,898	3,126	2,752	70%	0.59	70.1	0.490	0.804	0.627	0.731	0.863	13.7%	32.8%
16	1930	16,016	7,176	5,040	62%	0.52	69.6	0.469	0.970	0.611	0.799	0.893	10.7%	37.7%
17	1931	14,251	5,579	4,380	63%	0.54	70.7	0.515	0.921	0.646	0.794	0.900	10.0%	18.6%
18	1932	19,175	7,714	6,222	60%	0.50	69.5	0.465	0.992	0.608	0.802	0.894	10.6%	30.9%
19	1933	11,461	2,252	3,337	67%	0.57	69.8	0.478	0.760	0.617	0.698	0.842	15.8%	36.2%
20	1934	13,528	4,874	4,110	64%	0.54	70.7	0.515	0.890	0.646	0.779	0.893	10.7%	22.2%
21	1935	17,679	7,630	5,662	60%	0.51	71	0.528	1.000	0.656	0.832	0.921	7.9%	34.9%
22	1936	19,058	7,986	6,178	60%	0.51	69.2	0.452	0.996	0.598	0.800	0.890	11.0%	30.9%
23	1937	18,184	7,663	5,851	60%	0.51	69.7	0.473	0.993	0.614	0.806	0.899	10.1%	32.0%
24	1938	35,510	11,277	12,331	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	41.0%
25	1939	18,301	7,411	5,895	60%	0.51	71	0.528	1.000	0.656	0.831	0.920	8.0%	22.1%
26	1940	15,293	7,697	4,770	62%	0.53	71.5	0.549	1.000	0.672	0.845	0.930	7.0%	30.3%
27	1941	20,805	10,907	6,831	59%	0.50	69	0.444	1.000	0.592	0.795	0.886	11.4%	41.8%
28	1942	27,124	11,277	9,194	25%	0.25	67.8	0.393	1.000	0.553	0.664	0.796	20.4%	48.8%
29	1943	16,856	7,747	5,354	61%	0.52	68.6	0.343	0.941	0.515	0.736	0.826	17.4%	30.3%
30	1944	16,822	7,411	5,342	61%	0.52	67.8	0.393	0.948	0.553	0.758	0.853	14.7%	31.8%
31	1945	16,668	7,176	5,291	61%	0.52	70.6	0.511	0.986	0.643	0.822	0.913	8.7%	34.7%
32	1946	14,940	6,958	4,638	63%	0.53	68.1	0.406	0.934	0.563	0.760	0.858	14.2%	33.7%
33	1947	17,881	7,243	5,738	60%	0.51	70	0.486	0.981	0.624	0.806	0.900	10.0%	21.8%
34	1948	23,259	9,125	7,749	57%	0.49	69	0.444	1.000	0.592	0.791	0.884	11.6%	41.8%
35	1949	15,831	6,806	4,971	62%	0.53	70.9	0.524	0.978	0.652	0.823	0.916	8.4%	29.2%
36	1950	18,184	8,134	5,861	60%	0.51	68.9	0.440	0.999	0.588	0.798	0.887	11.3%	31.7%
37	1951	17,243	7,512	5,499	61%	0.52	70.3	0.499	0.998	0.633	0.821	0.910	9.0%	31.2%
38	1952	38,972	11,277	13,626	24%	0.24	65	0.276	1.000	0.464	0.591	0.704	29.6%	45.8%
39	1953	25,861	10,386	8,729	25%	0.25	66.2	0.326	1.000	0.502	0.626	0.748	25.2%	46.8%
40	1954	13,865	6,016	4,235	64%	0.54	68.7	0.431	0.904	0.582	0.756	0.861	13.9%	31.8%
41	1955	16,688	7,327	5,291	61%	0.52	70.1	0.490	0.986	0.627	0.813	0.905	9.5%	29.8%
42	1956	22,301	11,277	7,391	58%	0.49	68.7	0.431	1.000	0.582	0.787	0.879	12.1%	41.1%
43	1957	19,106	7,986	6,196	60%	0.51	72	0.570	1.000	0.688	0.845	0.934	6.6%	32.1%
44	1958	33,930	11,277	11,740	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	38.8%
45	1959	17,629	7,243	5,643	61%	0.51	72.1	0.574	1.000	0.691	0.849	0.936	6.4%	26.5%
46	1960	17,629	7,109	5,643	61%	0.51	72.7	0.600	1.000	0.710	0.859	0.943	5.7%	29.7%
47	1961	19,444	7,596	6,322	59%	0.50	73.2	0.621	1.000	0.726	0.864	0.948	5.2%	33.2%
48	1962	17,243	6,823	5,499	61%	0.52	70.4	0.503	0.989	0.636	0.808	0.905	9.5%	29.8%
49	1963	19,562	8,621	6,366	59%	0.50	69	0.444	1.000	0.592	0.797	0.887	11.3%	41.4%
50	1964	17,175	6,924	5,474	61%	0.52	69.5	0.465	0.958	0.608	0.788	0.887	11.3%	32.2%
51	1965	18,167	8,319	5,844	60%	0.51	67.1	0.364	0.975	0.531	0.758	0.846	15.4%	36.2%
52	1966	15,209	6,252	4,738	63%	0.53	70.4	0.503	0.945	0.636	0.800	0.900	10.0%	24.9%
53	1967	39,342	11,277	13,764	24%	0.24	66.5	0.339	1.000	0.512	0.627	0.754	24.6%	43.9%
54	1968	17,142	7,075	5,461	61%	0.52	72	0.570	1.000	0.688	0.849	0.935	6.5%	27.1%
55	1969	24,133	11,243	8,076	57%	0.48	68.3	0.414	1.000	0.569	0.778	0.870	13.0%	38.4%
56	1970	14,839	7,092	4,800	63%	0.53	70.7	0.515	0.987	0.646	0.827	0.916	8.4%	23.2%
57	1971	23,629	9,646	7,867	57%	0.49	68.1	0.406	1.000	0.563	0.775	0.867	13.3%	44.1%
58	1972	16,436	6,873	5,197	61%	0.52	70.7	0.515	0.977	0.646	0.818	0.912	8.8%	27.5%
59	1973	17,091	8,537	5,442	61%	0.52	70.1	0.490	1.000	0.627	0.820	0.908	9.2%	24.4%
60	1974	21,629	9,529	7,139	58%	0.49	69.7	0.473	1.000	0.614	0.805	0.897	10.3%	36.8%
61	1975	24,766	11,277	8,321	57%	0.48	69.1	0.448	1.000	0.595	0.790	0.884	11.6%	36.8%
62	1976	18,772	7,361	6,071	60%	0.51	71.8	0.562	1.000	0.681	0.843	0.931	6.9%	22.8%
63	1977	9,092	437	2,450	72%	0.61	73.9	0.660	0.755	0.748	0.752	0.913	8.7%	32.9%
64	1978	15,965	8,504	5,021	62%	0.52	70	0.486	1.000	0.624	0.821	0.908	9.2%	36.4%
65	1979	17,108	8,050	5,448	61%	0.52	69.2	0.452	1.000	0.598	0.806	0.894	10.6%	33.3%
66	1980	16,268	8,672	5,134	62%	0.52	66.9	0.356	0.987	0.525	0.766	0.849	15.1%	36.7%
67	1981	17,797	7,226	5,706	60%	0.51	71.9	0.566	1.000	0.684	0.846	0.933	6.7%	25.8%
68	1982	24,418	11,277	8,183	57%	0.48	66	0.318	1.000	0.498	0.740	0.822	17.8%	46.2%
69	1983	55,576	9,293	19,835	23%	0.23	63.6	0.217	0.954	0.419	0.542	0.641	35.9%	53.7%
70	1984	17,276	7,862	5,511	61%	0.52	68.4	0.419	0.979	0.572	0.782	0.873	12.7%	27.4%
71	1985	14,957	6,218	4,644	63%	0.53	69.4	0.461	0.925	0.604	0.775	0.879	12.1%	29.8%
72	1986	13,209	7,966	3,990	65%	0.55	71.6	0.553	1.000	0.675	0.853	0.934	6.6%	26.0%
73	1987	19,948	7,781	6,511	59%	0.50	73.2	0.621	1.000	0.726	0.863	0.948	5.2%	15.9%
74	1988	14,201	5,647	4,361	64%	0.54	69.4	0.461	0.900	0.604	0.764	0.873	12.7%	31.6%
75	1989	15,526	6,564	4,858	62%	0.53	68.6	0.427	0.925	0.579	0.762	0.863	13.7%	32.2%
76	1990	19,192	7,478	6,228	59%	0.50	68.5	0.423	0.964	0.576	0.772	0.868	13.2%	28.3%
77	1991	11,546	4,050	3,368	67%	0.57	69.4	0.461	0.831	0.604	0.733	0.856	14.4%	30.7%
78	1992	13,293	4,857	4,022	65%	0.55	69	0.444	0.859	0.592	0.738	0.854	14.6%	29.3%
													Average	32.97%

A2-47

Formulas — Sacramento River Fall Run Smolt Survival

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C8 ='Study 507 Flow Data'!G7
D8 ='Study 507 Flow Data'!Q7          (HIDDEN)
E8 ='Study 507 Flow Data'!AA7         (HIDDEN)
F8 =(D8+E8)
G8 =0.374*C8-950
H8 =IF(C8>25000,(0.133*C8+829)/(C8-G8),(0.293*C8+2090)/(C8-G8))
I8 =(0.133*C8+829)/(C8-G8)
K8 =IF((-2.45925+(0.0420748*J8))<0,0,(-2.45925+(0.0420748*J8)))
L8 =(-0.5916024)+(0.017968*J8)+(0.0000434*F8)
M8 =-1.613493+(0.0319584*J8)
N8 =(L8*I8)+(M8*(1-I8))
O8 =K8+N8-(K8*N8)
P8 =1-O8

R8 ='Study 507 Flow Data'!H7
S8 ='Study 507 Flow Data'!R7          (HIDDEN)
T8 ='Study 507 Flow Data'!AB7         (HIDDEN)
U8 =(S8+T8)
V8 =0.374*R8-950
W8 =IF(R8>25000,(0.133*R8+829)/(R8-V8),(0.293*R8+2090)/(R8-V8))
X8 =(0.84*(0.133*R8+829)/(R8-V8))+(0.16*W8)
Z8 =(-2.45925+(0.0420748*Y8))
AA8 =(-0.5916024)+(0.017968*Y8)+(0.0000434*U8)
AB8 =-1.613493+(0.0319584*Y8)
AC8 =(AA8*X8)+(AB8*(1-X8))
AD8 =Z8+AC8-(Z8*AC8)
AE8 =1-AD8

AG8 ='Study 507 Flow Data'!I7
AH8 ='Study 507 Flow Data'!S7         (HIDDEN)
AI8 ='Study 507 Flow Data'!AC7        (HIDDEN)
AJ8 =(AH8+AI8)
AK8 =0.374*AG8-950
AL8 =IF(AG8>25000,(0.133*AG8+829)/(AG8-AK8),(0.293*AG8+2090)/(AG8-AK8))
AM8 =(0.27*(0.133*AG8+829)/(AG8-AK8))+(0.73*AL8)
AO8 =(-2.45925+(0.0420748*AN8))
AP8 =IF(((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8))>1,1,((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8)))
AQ8 =-1.613493+(0.0319584*AN8)
AR8 =(AP8*AM8)+(AQ8*(1-AM8))
AS8 =AO8+AR8-(AO8*AR8)
AT8 =1-AS8
AV8 =(P8*0.17)+(AE8*0.65)+(AT8*0.18)
```

Study 507 Sacramento River Late Fall Run Smolt Survival Model

Modified m2 by changing the slope to 0.000054

Cross Channel closed for 45 consecutive days, Dec 18-Jan 31

Cross Channel Closed when Sacramento River flow exceeds 25,000 cfs

November Sacramento River Temp: 53 degrees F

December Sacramento River Temp: 47 degrees F

January Sacramento River Temp: 47 degrees F

NOVEMBER

Year	Water Year Type	Sac River Flow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	xchannel percent closed	m1	Calculated Mortality m2	m3	m123	Calculated Survival s123
1922	A	11,814	8,804	3,489	67%	0.29	0.825	0.080	0.576	0.576	42.4%
1923	B	18,133	10,974	5,832	80%	0.28	0.953	0.080	0.606	0.606	38.4%
1924	C	11,243	7,579	3,255	67%	0.29	0.770	0.080	0.545	0.545	48.6%
1925	D	7,025	4,521	1,677	78%	0.33	0.605	0.080	0.487	0.487	51.3%
1926	D	10,924	7,411	3,135	68%	0.29	0.781	0.080	0.543	0.543	48.7%
1927	W	20,538	10,924	6,731	59%	0.28	0.951	0.080	0.591	0.591	40.9%
1928	A	23,380	10,957	7,787	57%	0.25	0.952	0.080	0.581	0.581	41.9%
1929	C	12,856	9,747	3,858	65%	0.28	0.867	0.080	0.605	0.605	39.5%
1930	D	7,159	4,050	1,728	77%	0.33	0.579	0.080	0.485	0.485	53.5%
1931	C	9,784	5,916	2,702	70%	0.30	0.680	0.080	0.501	0.501	49.9%
1932	D	8,235	3,059	2,130	74%	0.32	0.528	0.080	0.409	0.409	59.1%
1933	C	9,512	5,883	2,807	71%	0.30	0.887	0.080	0.494	0.494	50.6%
1934	C	8,804	3,109	2,268	73%	0.31	0.529	0.080	0.407	0.407	59.3%
1935	B	9,208	6,840	2,484	71%	0.31	0.730	0.080	0.544	0.544	45.6%
1936	B	11,865	8,218	3,487	66%	0.29	0.804	0.080	0.581	0.581	43.9%
1937	B	11,411	7,607	3,318	67%	0.29	0.778	0.080	0.548	0.548	46.2%
1938	W	23,948	10,957	8,007	57%	0.25	0.952	0.080	0.578	0.578	42.2%
1939	D	19,444	9,562	6,322	59%	0.28	0.877	0.080	0.553	0.553	44.7%
1940	A	8,436	4,554	2,205	73%	0.31	0.807	0.080	0.466	0.466	53.4%
1941	W	13,747	10,369	4,191	64%	0.28	0.921	0.080	0.618	0.618	38.2%
1942	W	18,184	10,419	5,851	60%	0.28	0.923	0.080	0.587	0.587	41.3%
1943	W	21,914	10,772	7,246	58%	0.26	0.942	0.080	0.581	0.581	41.9%
1944	D	15,125	10,957	4,707	63%	0.27	0.952	0.080	0.626	0.626	37.4%
1945	B	14,016	10,940	4,292	64%	0.28	0.951	0.080	0.635	0.635	36.5%
1946	B	20,858	10,957	6,850	59%	0.26	0.952	0.080	0.591	0.591	40.9%
1947	D	14,018	10,940	4,292	64%	0.28	0.951	0.080	0.635	0.635	36.5%
1948	B	11,108	7,310	3,205	68%	0.29	0.756	0.080	0.537	0.537	46.3%
1949	D	14,453	10,520	4,455	63%	0.28	0.929	0.080	0.617	0.617	38.3%
1950	B	11,529	7,781	3,362	67%	0.29	0.781	0.080	0.549	0.549	44.1%
1951	A	43,476	10,940	15,310	23%	0.23	0.951	0.080	0.285	0.285	71.5%
1952	W	16,808	10,957	5,335	61%	0.27	0.952	0.080	0.614	0.614	38.6%
1953	W	16,537	8,386	5,235	61%	0.27	0.814	0.080	0.530	0.530	47.0%
1954	A	20,973	10,957	6,894	58%	0.26	0.952	0.080	0.590	0.590	41.0%
1955	D	20,858	10,957	6,850	59%	0.28	0.952	0.080	0.591	0.591	40.9%
1956	W	12,184	8,504	3,607	66%	0.29	0.820	0.080	0.566	0.566	43.2%
1957	A	15,478	10,974	4,839	62%	0.27	0.953	0.080	0.624	0.624	37.6%
1958	W	19,259	10,957	6,253	59%	0.28	0.952	0.080	0.589	0.589	40.1%
1959	B	16,133	8,487	5,084	62%	0.27	0.819	0.080	0.536	0.536	46.4%
1960	D	11,411	7,344	3,318	67%	0.29	0.757	0.080	0.535	0.535	46.5%
1961	D	14,251	10,503	4,380	63%	0.28	0.928	0.080	0.618	0.618	38.2%
1962	B	10,184	6,420	2,859	69%	0.30	0.707	0.080	0.515	0.515	48.5%
1963	W	21,242	10,957	6,995	58%	0.28	0.952	0.080	0.589	0.589	41.1%
1964	D	28,653	10,940	9,766	25%	0.25	0.951	0.080	0.294	0.294	70.6%
1965	W	13,646	10,319	4,154	64%	0.28	0.918	0.080	0.618	0.618	38.2%
1966	B	25,427	10,974	8,560	25%	0.25	0.953	0.080	0.298	0.298	70.2%
1967	W	17,579	10,940	5,624	61%	0.28	0.951	0.080	0.608	0.608	38.2%
1968	B	16,234	8,352	5,122	62%	0.27	0.812	0.080	0.531	0.531	46.9%
1969	W	13,814	10,302	4,216	64%	0.28	0.917	0.080	0.615	0.615	38.5%
1970	W	17,646	8,386	5,650	61%	0.28	0.814	0.080	0.524	0.524	47.6%
1971	W	24,049	10,957	8,044	57%	0.25	0.952	0.080	0.578	0.578	42.2%
1972	B	15,343	10,940	4,788	62%	0.27	0.951	0.080	0.624	0.624	37.6%
1973	A	25,007	10,940	8,402	25%	0.25	0.951	0.080	0.298	0.298	70.2%
1974	W	58,803	10,957	20,294	23%	0.23	0.952	0.080	0.281	0.281	71.9%
1975	W	17,579	9,863	5,624	61%	0.28	0.883	0.080	0.566	0.566	43.4%
1976	C	19,226	10,974	6,240	59%	0.28	0.953	0.080	0.600	0.600	40.0%
1977	C	8,386	6,100	2,186	73%	0.31	0.690	0.080	0.528	0.528	47.2%
1978	A	6,924	4,168	1,640	78%	0.33	0.586	0.080	0.474	0.474	52.6%
1979	B	15,142	10,974	4,713	63%	0.27	0.953	0.080	0.627	0.627	37.3%
1980	A	18,721	10,940	6,052	60%	0.26	0.951	0.080	0.601	0.601	39.9%
1981	D	13,024	9,865	3,921	65%	0.28	0.893	0.080	0.608	0.608	39.2%
1982	W	34,287	10,957	11,886	24%	0.24	0.952	0.080	0.290	0.290	71.0%
1983	W	39,107	10,974	13,678	24%	0.24	0.953	0.080	0.287	0.287	71.3%
1984	W	62,802	8,958	22,538	23%	0.23	0.736	0.080	0.230	0.230	77.0%
1985	D	33,998	10,957	11,765	24%	0.24	0.952	0.080	0.290	0.290	71.0%
1986	W	9,646	6,773	2,658	70%	0.30	0.728	0.080	0.535	0.535	46.5%
1987	D	11,209	7,764	3,242	67%	0.29	0.780	0.080	0.552	0.552	44.8%
1988	C	8,453	4,840	2,211	73%	0.31	0.622	0.080	0.477	0.477	52.3%
1989	D	8,588	5,748	2,262	73%	0.31	0.671	0.080	0.510	0.510	49.0%
1990	C	11,764	7,815	3,450	67%	0.29	0.783	0.080	0.548	0.548	45.2%
1991	C	8,134	4,857	2,092	74%	0.32	0.623	0.080	0.482	0.482	51.8%
1992	C	7,579	4,606	1,885	76%	0.32	0.609	0.080	0.481	0.481	51.9%

DECEMBER

Year	Sac River Flows	SWP+CVP exports	Calculated Steamboat & Sutter Slough Q	xchannel percent closed	m1	Calculated Mortality m2	m3	m123	Calculated Survival s123
1922	17,142	11,319	5,461	61%	0.45	0.864	0.393	0.393	60.7%
1923	34,544	8,571	11,989	24%	0.24	0.716	0.172	0.172	82.8%
1924	13,873	10,344	4,238	64%	0.48	0.811	0.388	0.388	61.4%
1925	11,254	9,056	3,259	67%	0.50	0.782	0.372	0.372	62.8%
1926	11,547	8,034	3,389	67%	0.50	0.687	0.342	0.342	65.8%
1927	14,558	11,254	4,464	63%	0.47	0.891	0.405	0.405	59.5%
1928	16,572	9,677	5,248	61%	0.46	0.779	0.355	0.355	64.5%
1929	13,710	10,392	4,178	64%	0.48	0.814	0.389	0.389	61.1%
1930	14,442	10,508	4,451	63%	0.47	0.820	0.387	0.387	61.3%
1931	9,563	5,399	2,627	71%	0.52	0.544	0.286	0.285	71.5%
1932	14,653	11,401	4,530	63%	0.47	0.869	0.408	0.408	59.2%
1933	8,148	4,489	2,097	74%	0.55	0.495	0.272	0.272	72.8%
1934	12,474	9,709	3,715	66%	0.49	0.777	0.380	0.380	62.0%
1935	8,506	6,619	2,231	73%	0.54	0.610	0.331	0.331	66.9%
1936	11,626	8,246	3,399	67%	0.50	0.698	0.347	0.347	65.3%
1937	12,458	9,791	3,709	66%	0.49	0.782	0.362	0.362	61.8%
1938	49,852	11,742	17,620	23%	0.23	0.887	0.208	0.208	79.4%
1939	18,887	7,953	6,039	60%	0.45	0.852	0.305	0.305	69.5%
1940	7,639	4,115	1,982	75%	0.56	0.478	0.264	0.264	73.6%
1941	35,454	11,531	12,310	24%	0.24	0.878	0.210	0.210	79.0%
1942	65,623	7,823	23,593	23%	0.23	0.675	0.154	0.154	84.6%
1943	28,603	7,985	9,622	25%	0.25	0.864	0.168	0.168	83.2%
1944	13,775	10,536	4,202	64%	0.48	0.827	0.395	0.395	60.5%
1945	16,068	11,173	5,080	62%	0.48	0.858	0.396	0.396	60.5%
1946	55,231	11,807	19,708	23%	0.23	0.890	0.205	0.205	79.5%
1947	18,134	11,352	5,832	60%	0.45	0.866	0.389	0.389	61.1%
1948	11,433	7,449	3,326	67%	0.50	0.655	0.327	0.327	67.3%
1949	15,564	11,108	4,871	62%	0.48	0.853	0.398	0.398	60.4%
1950	11,693	7,888	3,423	67%	0.50	0.679	0.337	0.337	66.3%
1951	68,085	11,807	24,518	23%	0.23	0.890	0.202	0.202	79.8%
1952	47,408	11,319	16,781	23%	0.23	0.864	0.201	0.201	79.9%
1953	42,334	7,953	14,863	24%	0.24	0.882	0.161	0.161	83.9%
1954	14,914	8,115	4,628	63%	0.47	0.891	0.324	0.324	67.6%
1955	26,022	11,124	8,782	25%	0.25	0.864	0.212	0.212	78.8%
1956	27,646	11,807	9,360	25%	0.25	0.890	0.220	0.220	78.0%
1957	14,149	10,002	4,342	64%	0.47	0.793	0.378	0.378	62.4%
1958	23,745	11,140	7,930	57%	0.43	0.864	0.368	0.366	63.4%
1959	14,821	8,087	4,618	63%	0.47	0.888	0.324	0.324	67.6%
1960	11,075	7,010	3,192	66%	0.50	0.831	0.318	0.318	68.2%
1961	19,484	11,108	6,337	56%	0.44	0.853	0.378	0.378	62.2%
1962	16,947	11,092	5,386	61%	0.46	0.852	0.388	0.386	61.2%
1963	27,550	11,108	9,354	25%	0.25	0.853	0.211	0.211	78.9%
1964	14,849	10,246	4,603	63%	0.47	0.808	0.378	0.378	62.2%
1965	29,079	11,628	9,926	25%	0.25	0.861	0.216	0.216	78.4%
1966	16,995	10,425	5,408	61%	0.46	0.816	0.372	0.372	62.8%
1967	39,699	11,336	13,897	24%	0.24	0.885	0.205	0.205	79.5%
1968	16,886	7,953	5,291	61%	0.46	0.862	0.312	0.312	68.8%
1969	25,178	11,189	8,486	25%	0.25	0.857	0.214	0.214	78.6%
1970	50,156	7,893	17,809	23%	0.23	0.868	0.155	0.155	84.5%
1971	54,352	11,254	19,378	23%	0.23	0.861	0.198	0.198	80.2%
1972	20,167	10,392	6,592	59%	0.44	0.814	0.359	0.359	64.1%
1973	28,200	11,108	8,849	25%	0.25	0.853	0.212	0.212	78.8%
1974	61,590	11,352	22,086	23%	0.23	0.888	0.198	0.198	80.2%
1975	17,613	8,457	5,637	61%	0.45	0.710	0.321	0.321	67.9%
1976	16,768	8,864	5,321	61%	0.46	0.732	0.334	0.334	66.6%
1977	8,229	4,798	2,128	74%	0.55	0.512	0.280	0.280	72.0%
1978	12,279	9,860	3,642	66%	0.49	0.775	0.380	0.380	62.0%
1979	12,751	7,888	3,819	65%	0.49	0.679	0.330	0.330	67.0%
1980	20,833	11,208	6,842	59%	0.44	0.858	0.376	0.376	62.4%
1981	15,813	8,248	4,889	62%	0.46	0.698	0.324	0.324	67.6%
1982	68,599	11,189	24,706	23%	0.23	0.857	0.194	0.194	80.6%
1983	55,410	8,636	19,773	23%	0.23	0.719	0.165	0.165	83.5%
1984	82,944	6,099	30,071	22%	0.22	0.582	0.131	0.131	86.9%
1985	23,875	9,853	7,979	57%	0.43	0.790	0.338	0.338	66.2%
1986	15,971	11,157	5,023	62%	0.46	0.855	0.395	0.395	60.5%
1987	13,791	10,311	4,208	64%	0.48	0.810	0.388	0.388	61.4%
1988	15,841	11,082	4,974	62%	0.46	0.852	0.394	0.394	60.6%
1989	8,847	6,406	2,359	72%	0.54	0.599	0.321	0.321	67.9%
1990	14,637	10,409	4,524	63%	0.47	0.815	0.383	0.383	61.7%
1991	8,816	4,912	2,347	72%	0.54	0.518	0.278	0.278	72.2%
1992	7,466	4,570	1,842	76%	0.56	0.500	0.282	0.282	71.8%

JANUARY

Year	Sac River Flows	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	xchannel percent closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	17,499	11,791	5,595	61%	0.27	0.860	0.236	0.236		76.4%	60.1%
1923	32,283	7,855	11,124	24%	0.24	0.677	0.164	0.164		83.6%	72.2%
1924	14,621	10,864	4,518	63%	0.27	0.840	0.230	0.230		77.0%	61.3%
1925	10,213	6,701	2,870	69%	0.30	0.615	0.183	0.183		81.7%	64.6%
1926	19,776	11,303	6,446	59%	0.26	0.863	0.224	0.224		77.6%	63.7%
1927	32,624	11,498	11,252	24%	0.24	0.874	0.211	0.211		78.9%	59.7%
1928	26,526	7,855	8,971	25%	0.25	0.877	0.168	0.168		83.2%	63.5%
1929	15,515	11,303	4,853	62%	0.27	0.863	0.234	0.234		76.6%	59.6%
1930	20,788	11,303	6,817	59%	0.26	0.863	0.222	0.222		77.8%	63.5%
1931	12,214	9,270	3,618	68%	0.29	0.753	0.215	0.215		78.5%	67.8%
1932	17,258	12,035	5,504	51%	0.27	0.903	0.240	0.240		76.0%	63.4%
1933	12,100	9,626	3,575	66%	0.29	0.773	0.221	0.221		77.9%	68.5%
1934	16,101	11,303	5,072	62%	0.27	0.863	0.232	0.232		76.8%	65.0%
1935	25,469	11,872	8,575	25%	0.25	0.894	0.223	0.223		77.7%	64.3%
1936	32,543	11,661	11,221	24%	0.24	0.883	0.213	0.213		78.7%	63.3%
1937	15,971	11,791	5,023	62%	0.27	0.890	0.240	0.240		76.0%	61.2%
1938	31,535	7,868	10,844	24%	0.24	0.679	0.185	0.185		83.5%	71.1%
1939	18,410	7,449	5,935	60%	0.26	0.855	0.172	0.172		82.8%	66.6%
1940	23,452	12,230	7,821	57%	0.25	0.913	0.231	0.231		76.9%	69.4%
1941	72,990	12,380	26,348	23%	0.23	0.920	0.206	0.206		79.2%	66.9%
1942	53,265	7,449	22,711	23%	0.23	0.655	0.149	0.149		85.1%	73.9%
1943	58,060	7,514	20,785	23%	0.23	0.659	0.151	0.151		84.9%	73.3%
1944	17,678	7,481	5,862	60%	0.26	0.857	0.174	0.174		82.6%	60.3%
1945	13,255	9,807	4,007	65%	0.28	0.782	0.219	0.219		78.1%	58.9%
1946	43,228	7,855	15,217	23%	0.23	0.677	0.159	0.159		84.1%	71.0%
1947	15,223	10,766	4,743	63%	0.27	0.834	0.227	0.227		77.3%	59.0%
1948	15,645	11,222	4,901	62%	0.27	0.859	0.233	0.233		76.7%	64.4%
1949	14,930	11,027	4,634	63%	0.27	0.848	0.232	0.232		76.8%	59.0%
1950	21,191	11,384	6,976	58%	0.26	0.868	0.223	0.223		77.7%	63.8%
1951	62,208	11,661	22,316	23%	0.23	0.863	0.201	0.201		79.9%	77.7%
1952	67,347	10,976	24,236	23%	0.23	0.846	0.192	0.192		80.8%	69.8%
1953	64,078	7,546	23,015	23%	0.23	0.660	0.150	0.150		85.0%	75.0%
1954	33,421	8,067	11,550	24%	0.24	0.688	0.186	0.186		83.4%	64.9%
1955	22,265	10,132	7,377	58%	0.25	0.800	0.204	0.204		79.6%	69.5%
1956	84,716	12,198	30,734	22%	0.22	0.912	0.204	0.204		79.6%	69.7%
1957	18,638	8,099	6,021	60%	0.26	0.660	0.181	0.181		81.9%	61.1%
1958	36,463	7,774	12,887	24%	0.24	0.673	0.161	0.161		83.9%	62.7%
1959	35,182	7,546	12,200	24%	0.24	0.660	0.158	0.158		84.2%	66.4%
1960	14,523	10,620	4,482	63%	0.27	0.826	0.227	0.227		77.3%	65.1%
1961	15,011	11,287	4,664	63%	0.27	0.862	0.235	0.235		76.5%	59.8%
1962	12,867	8,378	3,873	65%	0.28	0.705	0.199	0.199		80.1%	62.8%
1963	17,808	11,482	5,710	60%	0.26	0.873	0.231	0.231		76.9%	69.0%
1964	25,745	8,083	8,679	25%	0.25	0.689	0.172	0.172		82.8%	69.4%
1965	81,236	12,718	29,432	22%	0.22	0.940	0.211	0.211		78.9%	68.5%
1966	29,632	7,872	10,132	24%	0.24	0.678	0.186	0.186		83.4%	69.8%
1967	34,153	11,889	11,823	24%	0.24	0.895	0.215	0.215		78.5%	69.2%
1968	30,840	7,546	10,509	24%	0.24	0.660	0.181	0.181		83.9%	67.1%
1969	70,209	10,522	25,308	23%	0.23	0.821	0.186	0.186		81.4%	69.3%
1970	92,869	7,497	33,708	22%	0.22	0.658	0.147	0.147		85.3%	75.5%
1971	47,359	9,677	16,782	23%	0.23	0.775	0.181	0.181		81.9%	71.1%
1972	20,394	8,099	6,677	58%	0.26	0.660	0.178	0.178		82.2%	62.0%
1973	50,254	11,124	17,845	23%	0.23	0.854	0.198	0.198		80.2%	77.0%
1974	78,422	7,855	28,380	22%	0.22	0.877	0.152	0.152		84.8%	79.3%
1975	18,670	8,067	6,033	60%	0.26	0.688	0.180	0.180		82.0%	65.3%
1976	16,768	8,018	5,321	61%	0.27	0.686	0.183	0.183		81.7%	63.7%
1977	7,660	4,536	1,915	75%	0.32	0.498	0.180	0.180		84.0%	68.8%
1978	43,066	10,831	15,157	23%	0.23	0.838	0.197	0.197		80.3%	64.2%
1979	27,241	7,481	9,236	25%	0.25	0.657	0.162	0.162		83.8%	63.8%
1980	64,468	7,367	23,161	23%	0.23	0.651	0.148	0.148		85.2%	62.5%
1981	28,840	7,563	9,781	25%	0.25	0.661	0.162	0.162		83.8%	64.6%
1982	51,165	11,889	18,188	23%	0.23	0.895	0.207	0.207		79.3%	77.9%
1983	59,150	6,863	21,172	23%	0.23	0.624	0.143	0.143		85.7%	81.0%
1984	47,359	4,212	16,782	23%	0.23	0.480	0.112	0.112		88.8%	84.9%
1985	16,800	8,083	5,333	61%	0.27	0.689	0.184	0.184		81.6%	71.2%
1986	23,615	11,384	7,862	57%	0.25	0.868	0.219	0.219		78.1%	61.4%
1987	16,735	7,725	5,309	61%	0.27	0.670	0.179	0.179		82.1%	62.4%
1988	25,534	11,271	8,600	25%	0.25	0.862	0.215	0.215		78.5%	63.0%
1989	12,002	8,490	3,539	66%	0.29	0.711	0.204	0.204		79.6%	66.1%
1990	21,562	9,579	7,122	58%	0.26	0.770	0.197	0.197		80.3%	62.2%
1991	6,847	3,399	1,611	78%	0.33	0.436	0.145	0.145		86.5%	70.4%
1992	12,133	8,994	3,588	66%	0.29	0.739	0.211	0.211		78.9%	68.6%
									Average:		65.97%

Formulas: Sacramento River Late Fall Run Smolt Survival Model

C10 ='Study 507 Flow Data'!B7
D10 ='Study 507 Flow Data'!L7 (HIDDEN)
E10 ='Study 507 Flow Data'!V7 (HIDDEN)
F10 =(D10+E10)
G10 =0.374*C10-950
H10 =IF(C10>$K$4,(0.133*C10+829)/(C10-G10),(0.293*C10+2090)/(C10-G10))
I10 =(0.133*C10+829)/(C10-G10)
K10 =(-0.5916024)+(0.017968*$T$1)+(0.000054*F10)
L10 =-1.613493+(0.0319584*$T$1)
M10 =(K10*H10)+(L10*(1-H10))
N10 =J10+M10-(J10*M10)
O10 =1-N10

Q10 ='Study 507 Flow Data'!C7
R10 ='Study 507 Flow Data'!M7 (HIDDEN)
S10 ='Study 507 Flow Data'!W7 (HIDDEN)
T10 =(R10+S10)
U10 =0.374*Q10-950
V10 =IF(Q10>$K$4,(0.133*Q10+829)/(Q10-U10),(0.293*Q10+2090)/(Q10-U10))
W10 =(0.45*(0.133*Q10+829)/(Q10-U10))+(0.55*V10)
Y10 =(-0.5916024)+(0.017968*$T$2)+(0.000054*T10)
AA10 =(Y10*W10)+(Z10*(1-W10))
AB10 =X10+AA10-(X10*AA10)
AC10 =1-AB10

AE10 ='Study 507 Flow Data'!D7
AF10 ='Study 507 Flow Data'!N7 (HIDDEN)
AG10 ='Study 507 Flow Data'!X7 (HIDDEN)
AH10 =(AF10+AG10)
AI10 =0.374*AE10-950
AJ10 =IF(AE10>$K$4,(0.133*AE10+829)/(AE10-AI10),(0.293*AE10+2090)/(AE10-AI10))
AK10 =(0.133*AE10+829)/(AE10-AI10)
AM10 =(-0.5916024)+(0.017968*$T$3)+(0.000054*AH10)
AO10 =(AM10*AK10)+(AN10*(1-AK10))
AP10 =AL10+AO10-(AL10*AO10)
AQ10 =1-AP10
AS10 =(O10*0.25)+(AC10*0.5)+(AQ10*0.25)

C-032388

C-032388

Study 507 Win[illegible] Smolt Survival Model — February Water Temp 50 F — April Water Temperatures based on limited historical data from U[illegible]

Cross Cha[illegible]d Over 25000 cfs — March Water Temp 56 F

Cross Channel Clos[illegible] to Apr when DOI greater than 12,000 cfs

FEBRUARY

Row	Year	Water Year Type	Sac River Flow	CVP + SWP Exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channel Closed	m1	m2	m3	m23	m123	Calculated Survivability s123
9	1922	A	34,409	10,642	11,919	24%	0.24		[illegible]		0.212	0.212	78.8%
10	1923	B	24,396	6,662	8,148	57%	0.25		[illegible]		0.167	0.167	83.3%
11	1924	C	16,896	8,693	5,370	61%	0.27		0.776		0.207	0.207	79.3%
12	1925	D	44,673	11,794	15,758	23%	0.23		0.946		0.221	0.221	77.9%
13	1926	D	36,714	11,740	12,781	24%	0.24		0.941		0.225	0.225	77.5%
14	1927	W	86,122	10,912	31,260	22%	0.22		0.898		0.201	0.201	79.9%
15	1928	A	27,364	8,327	9,284	25%	0.25		0.786		0.187	0.187	81.3%
16	1929	C	18,526	8,031	5,980	60%	0.26		0.740		0.194	0.194	80.6%
17	1930	D	15,683	6,786	4,916	62%	0.27		0.673		0.182	0.182	81.8%
18	1931	C	11,326	5,436	3,286	67%	0.29		0.600		0.174	0.174	82.6%
19	1932	D	13,996	9,666	4,284	64%	0.28		0.829		0.230	0.230	77.0%
20	1933	C	11,974	6,536	3,526	66%	0.29		0.660		0.189	0.189	81.1%
21	1934	C	12,748	6,032	3,818	65%	0.28		0.633		0.179	0.179	82.1%
22	1935	B	12,478	5,132	3,717	66%	0.28		0.584		0.166	0.166	83.4%
23	1936	B	49,962	12,309	17,743	23%	0.23		0.971		0.225	0.225	77.5%
24	1937	B	33,203	9,273	11,468	24%	0.24		0.808		0.195	0.195	80.5%
25	1938	W	82,269	8,211	29,819	22%	0.22		0.750		0.168	0.168	83.2%
26	1939	D	19,032	6,580	6,168	60%	0.26		0.663		0.173	0.173	82.7%
27	1940	A	43,308	12,309	15,247	23%	0.23		0.971		0.228	0.228	77.2%
28	1941	W	75,031	11,146	27,112	23%	0.23		0.909		0.205	0.205	79.5%
29	1942	W	78,344	8,247	28,351	23%	0.23		0.752		0.169	0.169	83.1%
30	1943	W	52,233	8,265	18,563	23%	0.23		0.753		0.174	0.174	82.6%
31	1944	D	30,163	7,928	10,331	24%	0.24		0.736		0.179	0.179	82.1%
32	1945	B	41,378	8,247	14,525	24%	0.24		0.762		0.177	0.177	82.3%
33	1946	B	24,092	8,499	8,060	57%	0.25		0.786		0.193	0.193	80.7%
34	1947	D	21,571	8,211	7,118	58%	0.26		0.750		0.192	0.192	80.8%
35	1948	B	15,525	5,807	4,856	62%	0.27		0.620		0.168	0.168	83.2%
36	1949	D	16,277	8,427	5,138	62%	0.27		0.762		0.205	0.205	79.5%
37	1950	B	35,582	11,776	12,350	24%	0.24		0.943		0.226	0.226	77.4%
38	1951	A	60,572	8,967	21,704	23%	0.23		0.791		0.181	0.181	81.9%
39	1952	W	62,499	7,910	22,425	23%	0.23		0.734		0.167	0.167	83.3%
40	1953	W	28,341	8,337	9,650	25%	0.25		0.767		0.186	0.186	81.4%
41	1954	A	57,151	8,895	20,424	23%	0.23		0.787		0.181	0.181	81.9%
42	1955	D	16,296	8,193	5,144	62%	0.27		0.749		0.201	0.201	79.9%
43	1956	W	61,543	8,658	22,067	23%	0.23		0.774		0.177	0.177	82.3%
44	1957	A	33,149	8,895	11,448	24%	0.24		0.787		0.190	0.190	81.0%
45	1958	W	62,427	8,301	22,366	23%	0.23		0.756		0.172	0.172	82.8%
46	1959	B	50,075	8,301	17,778	23%	0.23		0.766		0.175	0.175	82.5%
47	1960	D	26,512	11,126	8,966	25%	0.25		0.908		0.225	0.225	77.5%
48	1961	D	32,843	11,362	11,333	24%	0.24		0.920		0.222	0.222	77.8%
49	1962	B	45,637	12,748	16,081	23%	0.23		0.985		0.233	0.233	76.7%
50	1963	W	57,565	12,764	20,579	23%	0.23		0.997		0.229	0.229	77.1%
51	1964	D	19,019	7,632	6,163	60%	0.26		0.719		0.188	0.188	81.2%
52	1965	W	33,329	10,173	11,515	24%	0.24		0.858		0.207	0.207	79.3%
53	1966	B	26,775	8,661	9,064	25%	0.25		0.774		0.192	0.192	80.8%
54	1967	W	43,106	7,490	15,172	23%	0.23		0.711		0.167	0.167	83.3%
55	1968	B	54,520	6,572	19,440	23%	0.23		0.662		0.152	0.152	84.8%
56	1969	W	67,486	7,454	24,290	23%	0.23		0.709		0.161	0.161	83.9%
57	1970	W	57,565	5,258	20,579	23%	0.23		0.591		0.136	0.136	86.4%
58	1971	W	29,332	8,481	10,020	24%	0.24		0.765		0.187	0.187	81.3%
59	1972	B	24,217	8,606	8,107	57%	0.25		0.772		0.194	0.194	80.6%
60	1973	A	70,981	8,697	25,580	23%	0.23		0.776		0.176	0.176	82.4%
61	1974	W	41,918	8,643	14,727	24%	0.24		0.774		0.182	0.182	81.8%
62	1975	W	58,807	6,877	21,044	23%	0.23		0.786		0.180	0.180	82.0%
63	1976	C	19,523	8,258	6,352	59%	0.26		0.753		0.196	0.196	80.4%
64	1977	C	12,172	2,107	3,602	66%	0.29		0.421		0.120	0.120	88.0%
65	1978	A	51,083	8,319	18,155	23%	0.23		0.756		0.175	0.175	82.5%
66	1979	B	42,044	8,211	14,774	24%	0.24		0.760		0.177	0.177	82.3%
67	1980	A	60,451	7,771	[illegible]	23%	0.23		0.726		0.166	0.166	83.4%
68	1981	D	29,674	8,806	10,148	24%	0.24		0.674		0.166	0.166	83.4%
69	1982	W	65,650	8,913	23,603	23%	0.23		0.786		0.179	0.179	82.1%
70	1983	W	82,917	8,212	30,061	22%	0.22		0.642		0.144	0.144	85.6%
71	1984	W	36,004	5,183	12,516	24%	0.24		0.586		0.140	0.140	86.0%
72	1985	D	20,707	8,895	6,794	59%	0.26		0.787		0.203	0.203	79.7%
73	1986	W	98,439	11,874	35,866	22%	0.22		0.963		0.212	0.212	78.8%
74	1987	D	23,030	5,546	7,863	58%	0.25		0.608		0.154	0.154	84.6%
75	1988	C	16,603	6,363	5,259	61%	0.27		0.650		0.174	0.174	82.6%
76	1989	D	12,658	2,791	3,784	65%	0.28		0.468		0.130	0.130	87.0%
77	1990	C	16,944	7,797	5,367	61%	0.27		0.726		0.194	0.194	80.6%
78	1991	C	11,074	1,260	3,192	68%	0.29		0.375		0.109	0.109	89.1%
79	1992	C	31,415	8,519	10,798	24%	0.24		0.767		0.186	0.186	81.4%

MARCH

Row	Year	Sac River Flow	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	percent	X-Channel Closed	m1	m2	m3	m23	m123	Calculated Survivability s123
9	1922	31,551	7,953	10,880	0.24	0.24		0.826	0.144	0.310	0.310	69.0%
10	1923	17,174	7,595	5,473	0.61	0.27		0.807	0.144	0.320	0.320	68.0%
11	1924	12,246	3,316	3,630	0.66	0.29		0.576	0.144	0.267	0.267	73.3%
12	1925	18,557	7,868	5,990	0.60	0.26		0.823	0.144	0.322	0.322	67.8%
13	1926	18,947	7,725	6,136	0.60	0.26		0.814	0.144	0.319	0.319	68.1%
14	1927	43,863	7,920	15,456	0.23	0.23		0.824	0.144	0.304	0.304	69.6%
15	1928	66,229	8,652	31,300	0.22	0.22		0.864	0.144	0.305	0.305	69.5%
16	1929	18,930	6,631	5,362	0.61	0.27		0.765	0.144	0.310	0.310	69.0%
17	1930	30,067	7,319	10,303	0.24	0.24		0.792	0.144	0.302	0.302	69.8%
18	1931	9,856	4,017	2,736	0.70	0.30		0.614	0.144	0.285	0.285	71.5%
19	1932	12,100	5,237	3,575	0.66	0.29		0.679	0.144	0.297	0.297	70.3%
20	1933	10,392	4,635	2,937	0.69	0.30		0.647	0.144	0.293	0.293	70.7%
21	1934	14,263	4,001	4,384	0.63	0.28		0.613	0.144	0.273	0.273	72.7%
22	1935	24,916	11,206	8,366	0.57	0.25		1.000	0.144	0.358	0.358	64.2%
23	1936	33,698	10,018	11,653	0.24	0.24		0.938	0.144	0.335	0.335	66.5%
24	1937	38,203	8,229	13,336	0.24	0.24		0.841	0.144	0.310	0.310	69.0%
25	1938	78,634	8,197	28,459	0.22	0.22		0.839	0.144	0.301	0.301	69.9%
26	1939	16,384	6,717	5,181	0.61	0.27		0.759	0.144	0.309	0.309	69.1%
27	1940	59,163	8,860	21,184	0.23	0.23		0.876	0.144	0.312	0.312	68.8%
28	1941	58,581	8,087	20,959	0.23	0.23		0.832	0.144	0.302	0.302	69.8%
29	1942	27,095	8,229	9,183	0.25	0.25		0.841	0.144	0.317	0.317	68.3%
30	1943	64,566	8,278	23,210	0.23	0.23		0.844	0.144	0.303	0.303	69.7%
31	1944	25,094	8,229	8,436	0.25	0.25		0.841	0.144	0.318	0.318	68.2%
32	1945	27,274	8,358	9,250	0.25	0.25		0.848	0.144	0.318	0.318	68.2%
33	1946	23,712	8,652	7,918	0.57	0.25		0.864	0.144	0.326	0.326	67.4%
34	1947	22,509	8,148	7,468	0.58	0.25		0.837	0.144	0.320	0.320	68.0%
35	1948	19,353	7,709	6,266	0.58	0.26		0.813	0.144	0.318	0.318	68.2%
36	1949	41,716	11,336	14,652	0.24	0.24		1.000	0.144	0.346	0.346	65.4%
37	1950	22,899	8,782	7,614	0.58	0.25		0.871	0.144	0.328	0.328	67.2%
38	1951	29,827	8,929	10,205	0.24	0.24		0.879	0.144	0.324	0.324	67.6%
39	1952	57,524	8,164	20,564	0.23	0.23		0.836	0.144	0.303	0.303	69.7%
40	1953	24,899	7,563	8,362	0.57	0.25		0.805	0.144	0.310	0.310	69.0%
41	1954	49,538	8,912	17,577	0.23	0.23		0.878	0.144	0.314	0.314	68.6%
42	1955	18,117	7,416	5,826	0.60	0.26		0.797	0.144	0.316	0.316	68.4%
43	1956	36,674	7,172	12,766	0.24	0.24		0.784	0.144	0.297	0.297	70.3%
44	1957	44,363	8,666	15,649	0.23	0.23		0.865	0.144	0.313	0.313	68.7%
45	1958	93,612	8,294	34,061	0.22	0.22		0.845	0.144	0.300	0.300	70.0%
46	1959	23,354	7,266	7,785	0.57	0.25		0.790	0.144	0.307	0.307	69.3%
47	1960	22,606	7,530	7,505	0.58	0.25		0.803	0.144	0.312	0.312	68.8%
48	1961	20,947	8,050	6,884	0.59	0.26		0.831	0.144	0.321	0.321	67.9%
49	1962	27,684	7,725	9,396	0.25	0.25		0.814	0.144	0.309	0.309	69.1%
50	1963	32,641	8,717	11,258	0.24	0.24		0.867	0.144	0.319	0.319	68.1%
51	1964	18,638	6,733	5,272	0.61	0.27		0.760	0.144	0.309	0.309	69.1%
52	1965	21,386	8,603	7,049	0.58	0.26		0.861	0.144	0.328	0.328	67.2%
53	1966	28,669	8,652	9,780	0.25	0.25		0.864	0.144	0.321	0.321	67.9%
54	1967	54,483	7,514	19,426	0.23	0.23		0.802	0.144	0.296	0.296	70.4%
55	1968	36,786	7,107	12,809	0.24	0.24		0.780	0.144	0.296	0.296	70.4%
56	1969	45,326	6,896	16,002	0.23	0.23		0.769	0.144	0.290	0.290	71.0%
57	1970	35,812	7,221	12,444	0.24	0.24		0.787	0.144	0.298	0.298	70.2%
58	1971	50,791	8,929	18,046	0.23	0.23		0.879	0.144	0.314	0.314	68.6%
59	1972	32,933	8,213	11,367	0.24	0.24		0.840	0.144	0.312	0.312	68.8%
60	1973	47,554	8,665	16,835	0.23	0.23		0.866	0.144	0.312	0.312	68.8%
61	1974	100,199	8,652	36,524	0.22	0.22		0.864	0.144	0.304	0.304	69.6%
62	1975	75,999	8,912	27,474	0.23	0.23		0.878	0.144	0.310	0.310	69.0%
63	1976	20,089	7,855	6,556	0.59	0.26		0.821	0.144	0.319	0.319	68.1%
64	1977	7,286	2,017	1,775	0.77	0.33		0.506	0.144	0.262	0.262	73.8%
65	1978	45,473	8,017	16,057	0.23	0.23		0.722	0.144	0.279	0.279	72.1%
66	1979	32,592	8,229	11,239	0.24	0.24		0.841	0.144	0.313	0.313	68.7%
67	1980	36,470	7,107	12,693	0.24	0.24		0.780	0.144	0.296	0.296	70.4%
68	1981	32,494	7,107	11,203	0.24	0.24		0.780	0.144	0.298	0.298	70.2%
69	1982	69,087	8,880	24,889	0.23	0.23		0.878	0.144	0.310	0.310	69.0%
70	1983	81,935	4,684	29,684	0.22	0.22		0.650	0.144	0.258	0.258	74.2%
71	1984	36,495	7,205	12,699	0.24	0.24		0.786	0.144	0.297	0.297	70.3%
72	1985	21,809	8,864	7,207	0.58	0.26		0.875	0.144	0.331	0.331	66.9%
73	1986	72,535	8,408	26,178	0.23	0.23		0.851	0.144	0.304	0.304	69.6%
74	1987	29,567	6,522	10,108	0.24	0.24		0.749	0.144	0.292	0.292	70.8%
75	1988	11,075	3,838	3,192	0.68	0.29		0.604	0.144	0.278	0.278	72.2%
76	1989	41,992	11,169	14,755	0.24	0.24		1.000	0.144	0.346	0.346	65.4%
77	1990	14,832	5,856	4,597	0.63	0.27		0.713	0.144	0.300	0.300	70.0%
78	1991	29,681	11,303	10,151	0.24	0.24		1.000	0.144	0.364	0.364	63.6%
79	1992	20,102	8,246	6,568	0.59	0.26		0.842	0.144	0.325	0.325	67.5%

APRIL

Row	Year	Sac River Flow	CVP + SW Exports	Calculated Steamboat & Sutter Slough flows	Percent	X-Channel Closed	Water temp f	m1	m2	m3	m23	m123	Calculated Survivability s123	Weighted Total Survival
9	1922	22,822	8,369	7,585	0.58	0.25	58.5	0.002	0.911	0.256	0.422	0.424	57.6%	66.88%
10	1923	22,721	7,932	7,548	0.58	0.25	58.3	0.000	0.884	0.250	0.411	0.411	58.9%	67.23%
11	1924	8,050	2,823	2,061	0.74	0.32	61.5	0.128	0.666	0.362	0.452	0.522	47.8%	66.41%
12	1925	22,654	6,958	7,523	0.58	0.25	59.1	0.027	0.846	0.275	0.420	0.436	56.4%	65.68%
13	1926	21,242	6,621	6,995	0.58	0.26	61.6	0.133	0.873	0.365	0.488	0.556	44.4%	62.21%
14	1927	46,215	8,100	17,062	0.23	0.23	56.8	0.000	0.866	0.202	0.356	0.356	64.4%	69.30%
15	1928	29,208	7,361	9,974	0.25	0.25	58.7	0.011	0.861	0.262	0.409	0.415	58.5%	67.71%
16	1929	8,773	2,708	2,331	0.72	0.31	56.3	0.000	0.566	0.186	0.304	0.304	69.6%	70.70%
17	1930	12,636	3,869	3,777	0.65	0.28	59.6	0.048	0.690	0.291	0.404	0.433	56.7%	67.41%
18	1931	9,109	3,059	2,457	0.72	0.31	62.8	0.183	0.702	0.393	0.488	0.582	41.8%	64.92%
19	1932	13,075	5,378	3,940	0.65	0.28	58.9	0.019	0.757	0.269	0.406	0.417	58.3%	67.56%
20	1933	12,739	4,134	3,814	0.66	0.28	60.1	0.069	0.712	0.307	0.422	0.462	53.8%	66.97%
21	1934	12,839	3,563	3,852	0.65	0.28	63.6	0.217	0.744	0.419	0.511	0.617	38.3%	63.59%
22	1935	24,166	9,125	8,066	0.57	0.25	58.9	0.019	0.959	0.269	0.443	0.453	54.7%	63.82%
23	1936	21,528	8,403	7,101	0.58	0.26	59.7	0.053	0.935	0.294	0.458	0.487	51.3%	63.35%
24	1937	23,259	8,235	7,749	0.57	0.25	58.8	0.015	0.910	0.266	0.429	0.437	56.3%	66.70%
25	1938	47,173	8,420	16,693	0.23	0.23	56.3	0.000	0.875	0.186	0.346	0.346	65.4%	70.29%
26	1939	12,234	4,134	3,626	0.66	0.29	63.3	0.204	0.769	0.409	0.512	0.612	38.8%	61.77%
27	1940	41,728	8,336	14,656	0.24	0.24	57.4	0.000	0.890	0.221	0.379	0.379	62.1%	67.91%
28	1941	42,367	9,310	14,895	0.24	0.24	56.9	0.000	0.934	0.205	0.376	0.376	62.4%	68.84%
29	1942	43,308	8,907	15,247	0.23	0.23	56.5	0.000	0.905	0.192	0.359	0.359	64.1%	68.97%
30	1943	29,410	9,462	10,049	0.24	0.24	58.8	0.015	0.976	0.266	0.440	0.448	55.2%	67.01%
31	1944	9,814	4,235	2,721	0.70	0.30	58.4	0.000	0.666	0.253	0.383	0.383	61.7%	68.01%
32	1945	11,999	6,588	3,536	0.68	0.29	60.6	0.090	0.853	0.323	0.475	0.523	47.7%	63.85%
33	1946	12,218	5,949	3,619	0.66	0.29	60.7	0.095	0.820	0.326	0.467	0.518	48.2%	63.40%
34	1947	13,797	4,941	4,210	0.64	0.28	62.5	0.170	0.798	0.364	0.499	0.584	41.6%	61.72%
35	1948	23,283	6,857	7,761	0.57	0.25	56.6	0.000	0.798	0.195	0.347	0.347	65.3%	69.25%
36	1949	13,209	5,075	3,990	0.65	0.28	61.7	0.137	0.791	0.358	0.480	0.551	44.9%	61.10%
37	1950	19,528	6,285	6,353	0.59	0.26	61.3	0.120	0.849	0.346	0.477	0.539	46.1%	62.17%
38	1951	14,789	6,388	4,581	0.63	0.27	59.9	0.061	0.830	0.301	0.446	0.479	52.1%	64.81%
39	1952	56,657	8,773	20,238	0.23	0.23	55.5	0.000	0.879	0.160	0.325	0.325	67.5%	70.78%
40	1953	16,184	5,647	5,103	0.62	0.27	58.6	0.015	0.770	0.266	0.401	0.410	59.0%	67.62%
41	1954	39,863	7,361	13,959	0.24	0.24	58.4	0.000	0.855	0.253	0.395	0.395	60.5%	67.86%
42	1955	9,478	3,664	2,585	0.71	0.30	56.4	0.000	0.620	0.189	0.320	0.320	68.0%	69.77%
43	1956	20,436	7,966	6,693	0.59	0.26	59.7	0.053	0.911	0.294	0.454	0.482	51.8%	66.31%
44	1957	21,156	6,420	6,963	0.58	0.26	60.5	0.066	0.842	0.320	0.454	0.501	49.9%	64.65%
45	1958	52,282	9,663	18,603	0.23	0.23	57.4	0.000	0.962	0.221	0.392	0.392	60.8%	68.88%
46	1959	10,487	3,798	2,972	0.69	0.30	63	0.191	0.745	0.400	0.502	0.597	40.3%	62.27%
47	1960	13,545	4,033	4,118	0.64	0.26	59.5	0.044	0.895	0.286	0.402	0.428	57.2%	66.47%
48	1961	12,789	3,546	3,833	0.65	0.26	60.1	0.069	0.660	0.307	0.412	0.453	54.7%	66.22%
49	1962	15,411	5,579	4,814	0.62	0.27	61.8	0.141	0.820	0.362	0.486	0.559	44.1%	62.88%
50	1963	69,457	8,100	25,027	0.23	0.23	53.7	0.000	0.811	0.103	0.263	0.263	73.7%	70.95%
51	1964	8,957	3,498	2,400	0.72	0.31	59.3	0.036	0.663	0.282	0.399	0.421	57.9%	67.32%
52	1965	45,173	8,537	15,945	0.23	0.23	56.9	0.000	0.892	0.205	0.366	0.366	63.4%	67.86%
53	1966	12,806	4,974	3,839	0.65	0.28	61.9	0.145	0.789	0.365	0.485	0.559	44.1%	62.43%
54	1967	39,930	9,546	13,984	0.24	0.24	53.8	0.000	0.891	0.106	0.292	0.292	70.8%	72.22%
55	1968	15,629	5,243	4,895	0.62	0.27	61.5	0.126	0.797	0.362	0.472	0.540	46.0%	64.94%
56	1969	44,787	7,512	15,800	0.23	0.23	58.4	0.000	0.827	0.189	0.338	0.338	66.2%	71.21%
57	1970	16,604	6,588	5,260	0.61	0.27	58.8	0.015	0.821	0.266	0.414	0.423	57.7%	68.57%
58	1971	22,133	6,621	7,326	0.58	0.25	58.7	0.011	0.821	0.262	0.405	0.411	58.9%	67.32%
59	1972	12,453	4,739	3,707	0.66	0.28	58.5	0.002	0.715	0.258	0.367	0.368	61.2%	68.04%
60	1973	19,511	7,495	6,347	0.59	0.26	61.3	0.120	0.915	0.346	0.494	0.554	44.6%	63.29%
61	1974	33,206	9,327	11,470	0.24	0.24	56.8	0.000	0.933	0.202	0.378	0.378	62.2%	68.96%
62	1975	25,763	8,773	8,685	0.25	0.25	56.8	0.000	0.903	0.202	0.376	0.376	62.4%	68.72%
63	1976	9,428	3,008	2,576	0.71	0.30	58.9	0.019	0.629	0.269	0.378	0.390	61.0%	67.55%
64	1977	9,142	2,991	2,469	0.71	0.31	64.3	0.246	0.725	0.441	0.528	0.644	35.6%	64.18%
65	1978	36,703	7,512	13,525	0.24	0.24	58.9	0.000	0.836	0.205	0.355	0.355	64.5%	71.17%
66	1979	17,696	6,857	5,666	0.60	0.26	58.8	0.057	0.853	0.298	0.445	0.476	52.4%	65.59%
67	1980	19,814	6,941	6,460	0.59	0.26	57.1	0.000	0.809	0.211	0.366	0.366	63.4%	69.90%
68	1981	16,900	6,445	5,404	0.61	0.27	61.5	0.126	0.807	0.362	0.473	0.541	45.9%	64.63%
69	1982	75,643	9,159	27,415	0.23	0.23	54.1	0.000	0.675	0.115	0.287	0.287	71.3%	71.39%
70	1983	68,298	6,956	24,593	0.23	0.23	55	0.000	0.772	0.144	0.287	0.287	71.3%	74.84%
71	1984	17,864	6,857	5,731	0.60	0.26	59.7	0.053	0.851	0.294	0.442	0.471	52.9%	67.10%
72	1985	13,327	4,874	4,034	0.65	0.26	60.8	0.099	0.764	0.330	0.451	0.505	49.5%	63.34%
73	1986	21,024	7,546	6,913	0.58	0.26	60.4	0.082	0.901	0.317	0.467	0.511	48.9%	64.60%
74	1987	12,386	3,496	3,682	0.66	0.28	65.7	0.305	0.778	0.486	0.569	0.701	29.9%	60.33%
75	1988	8,621	2,857	2,274	0.73	0.31	59.9	0.061	0.639	0.301	0.406	0.442	55.8%	68.59%
76	1989	23,629	5,647	7,867	0.57	0.25	61.4	0.124	0.817	0.349	0.467	0.533	46.7%	62.62%
77	1990	12,436	3,529	3,701	0.66	0.28	61.6	0.133	0.706	0.355	0.455	0.527	47.3%	64.57%
78	1991	15,276	4,252	4,763	0.62	0.27	60.8	0.099	0.730	0.330	0.439	0.494	50.6%	63.60%
79	1992	12,470	3,731	3,714	0.66	0.28	61.2	0.118	0.710	0.342	0.447	0.511	48.9%	63.75%
80													Average	65.56%

Formulas: Winter Run Salmon Smolt Survival Model

```
C10 ='Study 507 Flow Data'!E7
D10 ='Study 507 Flow Data'!O7          (HIDDEN)
E10 ='Study 507 Flow Data'!Y7          (HIDDEN)
F10 =(D9+E9)
G10 =0.374*C9-950
H10 =IF(C9>$G$2,(0.133*C9+829)/(C9-G9),(0.293*C9+2090)/(C9-G9))
I10 =(0.133*C9+829)/(C9-G9)
K10 =(-0.5916024)+(0.017968*$M$1)+(0.000054*F9)
M10 =(K9*I9)+L9*(1-I9)
N10 =J9+M9-(J9*M9)
O10 =1-N9

Q10 ='Study 507 Flow Data'!F7
R10 ='Study 507 Flow Data'!P7          (HIDDEN)
S10 ='Study 507 Flow Data'!Z7          (HIDDEN)
T10 =(R9+S9)
U10 =0.374*Q9-950
V10 =IF(Q9>$G$2,(0.133*Q9+829)/(Q9-U9),(0.293*Q9+2090)/(Q9-U9))
Y10 =(0.133*Q9+829)/(Q9-U9)
W10 =IF(((-0.5916024)+(0.017968*$M$2)+(0.000054*T9))>1,1,((-0.5916024)+(0.017968*$M$2)+(0.000054*T9)))
Z10 =-1.613493+(0.0319584*$M$2)
AA10 =(Y9*W9)+Z9*(1-W9)
AB10 =X9+AA9-(X9*AA9)
AC10 =1-AB9

AE10 ='Study 507 Flow Data'!G7
AF10 ='Study 507 Flow Data'!Q7         (HIDDEN)
AG10 ='Study 507 Flow Data'!AA7        (HIDDEN)
AH10 =AF9+AG9
AI10 =0.374*AE9-950
AJ10 =IF(AE9>$G$2,(0.133*AE9+829)/(AE9-AI9),(0.293*AE9+2090)/(AE9-AI9))
AK10 =(0.133*AE9+829)/(AE9-AI9)
AM10 =IF((-2.45925+(0.0420748*AL9))<0,0,(-2.45925+(0.0420748*AL9)))
AN10 =IF(((-0.5916024)+(0.017968*AL9)+(0.000054*AH9))>1,1,((-0.5916024)+(0.017968*AL9)+(0.000054*AH9)))
AO10 =-1.613493+(0.0319584*AL9)
AP10 =(AN9*AK9)+(AO9*(1-AK9))
AQ10 =AM9+AP9-(AM9*AP9)
AR10 =1-AQ9
AS10 =(0.13*O9)+(0.57*AC9)+(0.3*AR9)
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C-032389

STUDY: 1995C06F-SWRC DWRSIM: recirc818-f, 17 Jun 97
CP # 137, SACRAMENTO RIVER AT FREEPORT, DOWNSTREAM FLOW (converted from TAF to C

Project: /1995C06F-SWRCB-507/137/FLOW-DOWNSTREAM//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	11814	17142	17499	34409	31551	22882	46530	34720
1923	18133	34544	32283	24326	17174	22721	14214	16990
1924	11243	13873	14821	16898	12246	8080	8766	10218
1925	7025	11254	10213	44673	18557	22654	12067	12839
1926	10924	11547	19776	36714	18947	21242	13645	14907
1927	20536	14556	32624	86122	43863	48215	26786	18889
1928	23360	16572	26526	27364	86229	29208	20655	13461
1929	12856	13710	15515	18528	16930	8773	9872	9898
1930	7159	14442	20768	15883	30087	12638	12067	16016
1931	9764	9563	12214	11326	9856	9109	10100	14251
1932	8235	14653	17256	13995	12100	13075	12019	19175
1933	9512	8148	12100	11974	10392	12739	8181	11461
1934	8604	12474	16101	12748	14263	12839	8912	13528
1935	9209	8506	25469	12478	24916	24166	28770	17679
1936	11865	11628	32543	49982	33898	21528	14100	19058
1937	11411	12458	15971	33203	38203	23259	16198	18184
1938	23948	49652	31535	82269	78634	47173	57426	35510
1939	19444	18687	18410	19032	16394	12234	8571	18301
1940	8436	7839	23452	43306	59183	41728	18199	15293
1941	13747	35454	72990	75031	58581	42367	39488	20805
1942	18184	65823	63265	78344	27095	43308	36040	27124
1943	21914	28803	58060	52253	64598	29410	21077	16856
1944	15125	13775	17678	30163	25094	9814	8912	16822
1945	14016	16068	13255	41378	27274	11999	12539	16688
1946	20856	55231	43228	24092	23712	12218	13694	14940
1947	14016	18134	15223	21571	22509	13767	8847	17881
1948	11108	11433	15645	15525	19353	23293	29030	23259
1949	14453	15564	14930	16277	41716	13209	14914	15831
1950	11529	11693	21191	35562	22899	19528	13726	18184
1951	43476	68095	62208	60572	29827	14789	18817	17243
1952	16806	47408	67347	62499	57524	56652	59557	38972
1953	16537	42334	64078	28341	24899	16184	26867	25881
1954	20973	14914	33421	57151	49538	39863	25403	13865
1955	20856	26022	22265	16295	18117	9478	10278	16688
1956	12184	27648	84716	61543	36674	20436	39000	22301
1957	15478	14149	18638	33149	44383	21158	16833	19108
1958	19259	23745	36463	62427	93612	52282	43488	33930
1959	16133	14821	35162	50075	23354	10487	9417	17629
1960	11411	11075	14523	26512	22606	13545	10913	17629
1961	14251	19484	15011	32843	20947	12789	9238	19444
1962	10184	16947	12897	45537	27664	15411	14735	17243
1963	21242	27550	17808	57565	32641	69457	29095	19562
1964	28653	14849	25745	19019	16838	8957	11043	17175
1965	13646	29079	81236	33329	21386	45173	24655	18167
1966	25427	16995	29632	20775	28689	12600	14930	15209
1967	17579	39699	34153	43106	54483	39930	44790	39342
1968	16234	16686	30640	54520	36788	15629	9384	17142
1969	13814	25176	70209	67486	45326	44787	45538	24133
1970	17646	50156	92669	57565	35812	16604	12149	14839
1971	24049	54352	47359	29332	50791	22133	29274	23629
1972	15343	20167	20394	24217	32933	12453	10539	16436
1973	25007	26200	50254	70961	47554	19511	15743	17091
1974	56803	61590	78422	41918	100199	33208	26949	21629
1975	17579	17613	18670	58807	75999	25763	28542	24788
1976	19226	16768	16768	19523	20069	9428	10002	18772
1977	8386	8229	7660	12172	7286	9142	6993	9092
1978	6924	12279	43066	51083	45473	38703	21061	15965
1979	15142	12751	27241	42044	32592	17696	12572	17108
1980	18721	20833	64468	69453	36479	19614	14783	16268
1981	13024	15613	28640	29674	32494	16990	8750	17797
1982	34267	68599	51165	65650	69087	75843	38431	24418
1983	39107	55410	59150	82917	81935	68298	54515	55576
1984	62802	82944	47359	36004	36495	17864	13417	17276
1985	33998	23875	16800	20707	21809	13327	12376	14957
1986	9646	15971	23615	98439	72535	21024	13125	13209
1987	11209	13791	16735	23030	29567	12386	8441	19948
1988	8453	15841	25534	16603	11075	8621	9774	14201
1989	8588	8847	12002	12658	41992	23629	14328	15528
1990	11764	14637	21582	16944	14832	12436	7709	19192
1991	8134	8815	6847	11074	29681	15276	8685	11545
1992	7579	7465	12133	31415	20102	12470	8620	13293

STUDY: 1995C06F-SWRCB-507
CVP, CVP EXPORT AT TRACY PP

Project: /1995C06F-SWRCB-507/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	3806	4185	4342	4605
1923	4302	4212	4212	4285	4228	3966	3123	4605
1924	3832	3919	4212	4068	1529	1412	748	790
1925	1311	4212	3545	4213	3757	3479	2521	3479
1926	4302	4212	4212	4231	4228	3311	2440	3580
1927	4252	4212	4212	4285	3773	4050	4163	4605
1928	4285	4212	4212	4103	4228	3680	2992	3025
1929	4285	4212	4212	4231	4017	823	2992	3025
1930	2286	4212	4212	2773	2944	1949	1756	4302
1931	2655	2423	4212	3565	2114	1529	1561	3479
1932	1210	4212	4212	4103	2537	2487	2423	3596
1933	3059	2017	4212	3838	1561	2067	2082	2168
1934	1529	4163	4212	1621	2309	1781	2163	3848
1935	2538	3220	4212	1188	4228	4504	2992	4101
1936	4269	4212	4212	4103	4228	4201	3155	4605
1937	4285	4212	4212	4231	4228	3260	2683	3008
1938	4285	4212	4212	4267	4228	4050	4001	4605
1939	4302	4212	4212	2629	2716	2067	1740	4302
1940	2807	1431	4212	4103	4228	4168	2976	4605
1941	4269	4212	4212	4285	4228	4605	4603	4605
1942	4302	4212	4212	4285	4228	4453	4342	4605
1943	4302	4212	4212	4267	4228	4605	4163	4605
1944	4285	4212	4212	4103	4228	2118	1870	4168
1945	4269	4212	4212	4249	4228	3294	2586	3378
1946	4285	4212	4212	4285	4228	2975	2635	3361
1947	4269	4212	4212	4249	4228	2470	1773	4269
1948	3680	4212	4212	4085	4228	3428	3838	4605
1949	4285	4212	4212	4249	4228	2538	2374	3647
1950	4285	4212	4212	4249	4228	3143	2635	4605
1951	4269	4212	4212	4285	4228	3193	3562	4605
1952	4285	4212	4212	4138	4228	4605	4294	4605
1953	4302	4212	4212	4285	3448	2823	3838	4605
1954	4285	4212	4212	4267	4228	3680	2992	3277
1955	4285	4212	4212	4267	4228	1832	1887	4151
1956	4269	4212	4212	4138	2472	3983	4375	4605
1957	4302	4212	4212	4249	4228	3210	2976	4504
1958	4285	4212	4212	4249	4228	4605	4603	4605
1959	4302	4212	4212	4249	4228	1899	1838	4201
1960	4269	4212	4212	4085	3545	303	1675	4353
1961	4269	4212	4212	4249	3513	303	1496	4554
1962	2924	4212	4212	4249	4228	2790	2667	3949
1963	4285	4212	4212	4285	4228	4050	4163	4605
1964	4269	4212	4212	4120	3415	1748	1935	4101
1965	4067	4212	4212	4249	4228	4269	2992	4605
1966	4302	4212	4212	4285	4228	2487	2391	3630
1967	4269	4212	4212	4285	4228	4605	4603	4605
1968	4302	4212	4212	2660	2992	2622	1822	4218
1969	4285	4212	4212	4285	3643	3344	3945	4605
1970	4302	4212	4163	1206	3108	3294	2960	4353
1971	4285	4212	4212	4285	4228	3311	3838	4605
1972	4269	4212	4212	4120	3789	2370	1952	4084
1973	4269	4212	4212	4267	4228	3748	3285	4521
1974	4285	4212	4212	4267	4228	4605	4342	4605
1975	4302	4212	4212	4249	4228	4386	4342	4605
1976	4302	4212	4212	4085	4228	639	1626	4420
1977	2689	1691	2098	684	829	1109	293	50
1978	2470	4131	3074	1765	2114	3445	4098	4605
1979	4302	4212	4212	4249	4228	3428	2992	2823
1980	4269	4212	4212	4103	3757	2991	3594	4605
1981	4285	4212	4212	2737	2992	2723	1756	4302
1982	4285	4212	4212	4285	4228	3596	4017	4605
1983	4302	4212	4212	3421	2049	3311	3952	4605
1984	3328	2992	1334	1443	3204	3428	3074	4521
1985	4285	4212	4212	4249	4228	2437	2391	3613
1986	2605	4212	4212	4249	4228	2336	2749	4117
1987	4269	4212	1480	1278	2358	319	1431	4605
1988	2975	4212	4212	3894	2082	1428	1529	4487
1989	2386	2846	3936	990	4228	2823	1968	4067
1990	4252	4212	2521	1314	2358	235	1350	4571
1991	2487	1773	1691	432	4228	2084	1447	2706
1992	3109	2960	4212	1321	2082	1865	2521	3512

DWRSIM: recirc818-f, 17 Jun 97
(converted from TAF to CFS)

STUDY: 1995C06F-SWRCB-507
SWP, SWP EXPORT AT BANKS PP

Project: /1995C06F-SWRCB-507/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4319	7107	7579	6392	4147	4185	4342	6672
1923	6672	4359	3643	2377	3367	3966	3123	3395
1924	3748	6424	6652	4624	1789	1412	553	672
1925	3210	4847	3155	7581	4131	3479	2521	2672
1926	3109	3822	7091	7508	3497	3311	2440	2487
1927	6672	7042	7286	6826	4147	4050	4163	3748
1928	6672	5465	3643	4225	4424	3680	3383	2672
1929	5462	6180	7091	3799	2814	1882	114	101
1930	1765	6294	7091	4015	4375	1949	1756	2874
1931	3260	2976	5058	1873	1903	1529	1561	2101
1932	1849	7188	7823	5563	2700	2891	2423	4117
1933	2605	2472	5416	2701	3074	2067	1073	84
1934	1580	5548	7091	4411	1891	1781	781	1025
1935	4302	3399	7660	3943	6977	4622	2618	3529
1936	3949	4033	7449	8206	5790	4201	3155	3361
1937	3412	5578	7579	5042	4001	4974	4066	4655
1938	6672	7530	3676	3943	3968	4389	5448	6672
1939	5260	3741	3236	3961	4001	2067	1740	3109
1940	1748	2683	8018	8206	4651	4168	3220	3092
1941	6100	7319	8148	6860	3838	4706	5123	6302
1942	6117	3610	3236	3961	4001	4453	4342	6672
1943	6470	3773	3301	3997	4050	4857	4163	3143
1944	6672	6424	3269	3825	4001	2118	1870	3243
1945	6672	6961	5595	3997	4131	3294	2586	3798
1946	6672	7595	3643	4213	4424	2975	2635	3596
1947	6672	7140	6554	3961	3919	2470	1773	2975
1948	3630	3236	7010	1721	3480	3428	3838	4521
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3496	3676	7172	7526	4554	3143	2635	3529
1951	6672	7595	7449	4682	4700	3193	3562	2907
1952	6672	7107	6766	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3854	4628	4684	3680	4440	2739
1955	6672	6912	5920	3925	3188	1832	1887	3178
1956	4235	7595	7985	4520	4700	3983	4375	6672
1957	6672	5790	3887	4646	4440	3210	2976	3462
1958	6672	6928	3562	4051	4068	5058	6083	6672
1959	4185	3854	3334	4051	3058	1899	1838	3042
1960	3075	2797	6408	7041	3985	3731	1675	2758
1961	6235	6896	7075	7112	4538	3243	1496	3042
1962	3496	6879	4163	8499	3497	2790	2667	2874
1963	6672	6896	7270	8499	4489	4050	4163	4017
1964	6672	6034	3871	3512	3318	1748	1935	2823
1965	6252	7416	8506	5924	4375	4269	4944	3714
1966	6672	6213	3859	4375	4424	2487	2391	2622
1967	6672	7123	7670	3205	3285	4041	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2857
1969	6016	6977	6310	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3294	2960	2739
1971	6672	7042	5465	4195	4700	3311	3838	5042
1972	6672	6180	3887	4485	4424	2370	1952	2790
1973	6672	6896	6912	4429	4456	3748	3285	4017
1974	6672	7140	3643	4375	4424	4722	4342	4924
1975	5361	4245	3854	4628	4684	4386	4342	6672
1976	6672	4651	3806	4172	3827	2370	1626	2941
1977	3412	3106	2440	1422	1187	1882	439	387
1978	1897	5530	7758	6554	3903	4067	4098	3899
1979	6672	3676	3269	3961	4001	3428	2992	5227
1980	6672	6993	3155	3668	3350	3949	3887	4067
1981	5579	4033	3350	4069	4115	2723	1756	2924
1982	6672	6977	7676	4628	4851	5563	6684	6672
1983	6672	4424	2651	2791	2635	3847	3594	4689
1984	3630	3106	2879	3720	4001	3428	3074	3361
1985	6672	5741	3871	4646	4635	2437	2391	2605
1986	4168	6944	7172	7725	4180	5210	5383	3848
1987	3496	6099	6245	4267	4163	3176	1431	3176
1988	1865	6879	7058	2469	1756	1428	1529	1160
1989	3361	3562	4554	1801	6961	2823	1968	2487
1990	3563	6196	7058	6482	3497	3294	1350	2907
1991	2370	3139	1708	828	7075	2168	1431	1344
1992	1496	1610	4781	7197	6164	1865	1008	1344

C-032390

Study 513 Sacramento River Fall Run Smolt Survival Model

Cross Channel closed over 25,000 cfs

Cross Channel Closed Apr to May 20, 14 d May 21-Jun 15

Sacramento River temperatures based on limited historical data from USBR

April

Year	Water Year Type	APRIL Sac River Flows	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channe Closed	observed temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	A	23,242	9,865	7,743	57%	0.25	58.5	0.002	0.889	0.256	0.416	0.417	58.3%
1923	B	24,086	9,277	8,051	57%	0.25	58.3	0.000	0.858	0.250	0.403	0.403	59.7%
1924	C	6,756	3,986	1,577	79%	0.33	61.5	0.128	0.686	0.352	0.463	0.532	46.8%
1925	D	20,587	8,420	6,749	59%	0.26	59.1	0.027	0.836	0.275	0.420	0.436	56.4%
1926	D	21,293	8,184	7,013	58%	0.26	61.6	0.133	0.870	0.356	0.487	0.555	44.5%
1927	W	46,282	9,613	17,108	23%	0.23	56.8	0.000	0.848	0.202	0.352	0.352	64.8%
1928	A	29,763	8,722	10,181	24%	0.24	58.7	0.011	0.842	0.282	0.404	0.410	59.0%
1929	C	7,831	3,406	1,979	75%	0.32	56.3	0.000	0.572	0.186	0.309	0.309	69.1%
1930	D	13,092	5,829	3,946	65%	0.28	59.6	0.046	0.719	0.291	0.412	0.440	56.0%
1931	C	8,033	4,101	2,054	74%	0.32	62.8	0.183	0.715	0.393	0.495	0.588	41.2%
1932	D	11,377	6,789	3,305	67%	0.29	58.9	0.019	0.761	0.269	0.412	0.423	57.7%
1933	C	11,529	5,512	3,382	67%	0.29	60.1	0.089	0.728	0.307	0.429	0.468	53.2%
1934	C	11,646	5,193	3,406	67%	0.29	63.6	0.217	0.777	0.419	0.522	0.626	37.4%
1935	B	24,587	10,117	8,245	57%	0.25	58.9	0.019	0.906	0.269	0.429	0.439	56.1%
1936	B	23,175	9,865	7,717	57%	0.25	59.7	0.053	0.908	0.294	0.450	0.479	52.1%
1937	B	23,578	9,394	7,868	57%	0.25	58.8	0.015	0.873	0.286	0.419	0.427	57.3%
1938	W	47,543	9,075	16,831	23%	0.23	56.3	0.000	0.814	0.186	0.332	0.332	66.8%
1939	D	10,806	5,886	3,091	68%	0.29	63.3	0.204	0.800	0.409	0.524	0.621	37.9%
1940	A	42,938	10,336	15,109	23%	0.23	57.4	0.000	0.886	0.221	0.378	0.378	62.2%
1941	W	42,770	9,411	15,046	24%	0.24	56.9	0.000	0.839	0.205	0.354	0.354	64.6%
1942	W	43,678	9,747	15,385	23%	0.23	56.5	0.000	0.847	0.192	0.346	0.346	65.4%
1943	W	29,427	9,784	10,086	24%	0.24	58.8	0.015	0.889	0.286	0.418	0.427	57.3%
1944	D	10,100	6,319	2,827	69%	0.30	58.4	0.000	0.732	0.253	0.396	0.396	60.4%
1945	B	13,142	8,722	3,985	65%	0.28	60.6	0.090	0.878	0.323	0.478	0.526	47.4%
1946	B	12,722	7,815	3,808	65%	0.28	60.7	0.095	0.838	0.326	0.471	0.521	47.9%
1947	D	14,251	6,117	4,380	63%	0.28	62.5	0.170	0.797	0.384	0.496	0.583	41.7%
1948	B	24,873	8,665	8,390	57%	0.25	56.6	0.000	0.801	0.195	0.347	0.347	65.3%
1949	D	18,822	5,378	6,090	60%	0.26	61.7	0.137	0.750	0.358	0.461	0.535	46.5%
1950	B	20,756	7,865	6,812	59%	0.26	61.3	0.120	0.851	0.348	0.476	0.539	46.1%
1951	A	14,722	7,966	4,556	63%	0.27	59.9	0.081	0.830	0.301	0.446	0.480	52.0%
1952	W	57,324	6,873	20,489	23%	0.23	55.5	0.000	0.791	0.160	0.305	0.305	69.5%
1953	W	18,822	7,042	5,342	61%	0.27	58.8	0.015	0.771	0.286	0.401	0.409	59.1%
1954	A	40,434	8,520	14,172	24%	0.24	58.4	0.000	0.828	0.253	0.389	0.389	61.1%
1955	D	10,722	5,512	3,080	68%	0.29	58.4	0.000	0.661	0.189	0.328	0.328	67.2%
1956	W	21,829	10,151	7,139	58%	0.26	59.7	0.063	0.922	0.294	0.455	0.484	51.6%
1957	A	19,629	7,378	6,391	59%	0.26	60.5	0.086	0.816	0.320	0.449	0.496	50.4%
1958	W	52,869	9,764	18,748	23%	0.23	57.4	0.000	0.864	0.221	0.369	0.369	63.1%
1959	B	11,986	5,714	3,525	66%	0.29	63	0.191	0.788	0.400	0.511	0.605	39.5%
1960	D	10,571	5,210	3,003	69%	0.30	59.5	0.044	0.704	0.288	0.411	0.437	56.3%
1961	D	10,940	4,874	3,142	69%	0.29	60.1	0.069	0.700	0.307	0.422	0.462	53.8%
1962	[illegible]	13,932	7,529	4,280	64%	0.28	61.8	0.141	0.846	0.382	0.496	0.567	43.3%
1963	W	70,684	9,880	25,496	23%	0.23	53.7	0.000	0.793	0.103	0.259	0.259	74.1%
1964	B	9,394	5,193	2,583	71%	0.30	59.3	0.036	0.690	0.282	0.409	0.430	57.0%
1965	W	44,451	9,909	15,675	23%	0.23	56.9	0.000	0.865	0.205	0.360	0.360	64.0%
1966	[illegible]	15,512	6,588	4,851	62%	0.27	61.9	0.145	0.807	0.385	0.486	0.559	44.1%
1967	W	40,922	9,646	14,355	24%	0.24	53.8	0.000	0.794	0.106	0.268	0.268	73.2%
1968	B	14,671	6,201	4,537	63%	0.27	61.5	0.128	0.783	0.362	0.470	0.538	46.2%
1969	W	45,476	7,630	16,058	23%	0.23	56.4	0.000	0.753	0.189	0.321	0.321	67.9%
1970	W	15,478	6,083	4,839	62%	0.27	58.8	0.015	0.818	0.288	0.415	0.424	57.6%
1971	W	21,595	7,798	7,127	58%	0.26	58.7	0.011	0.802	0.282	0.400	0.407	59.3%
1972	B	20,856	6,981	6,850	59%	0.26	58.5	0.002	0.763	0.256	0.386	0.388	61.2%
1973	A	20,049	10,218	6,548	59%	0.26	61.3	0.120	0.953	0.346	0.503	0.563	43.7%
1974	W	33,460	10,201	11,564	24%	0.24	56.8	0.000	0.872	0.202	0.363	0.363	63.7%
1975	W	28,200	10,487	8,849	25%	0.25	56.6	0.000	0.884	0.202	0.371	0.371	62.9%
1976	C	9,863	4,588	2,864	70%	0.30	58.9	0.019	0.686	0.289	0.389	0.400	60.0%
1977	C	7,949	3,916	2,023	75%	0.32	64.3	0.246	0.734	0.441	0.534	0.649	36.1%
1978	A	36,821	7,613	13,589	24%	0.24	56.9	0.000	0.761	0.205	0.337	0.337	66.3%
1979	B	18,217	9,310	5,863	60%	0.26	59.8	0.057	0.867	0.298	0.463	0.484	51.6%
1980	A	20,570	8,285	6,743	59%	0.26	57.1	0.000	0.794	0.211	0.362	0.362	63.8%
1981	D	17,377	6,756	5,549	61%	0.27	61.5	0.128	0.807	0.362	0.473	0.540	46.0%
1982	W	76,247	9,915	27,586	23%	0.23	54.1	0.000	0.811	0.115	0.272	0.272	72.8%
1983	W	67,809	7,075	24,336	23%	0.23	55	0.000	0.704	0.144	0.271	0.271	72.9%
1984	W	17,175	8,420	5,474	61%	0.27	59.7	0.053	0.846	0.294	0.441	0.471	52.9%
1985	D	13,896	6,117	4,248	64%	0.28	60.6	0.099	0.766	0.330	0.451	0.505	49.5%
1986	W	22,234	7,815	7,365	58%	0.25	60.4	0.082	0.833	0.317	0.448	0.493	50.7%
1987	D	10,453	4,319	2,959	69%	0.30	65.7	0.305	0.776	0.466	0.572	0.703	29.7%
1988	C	9,730	4,638	2,889	70%	0.30	59.9	0.061	0.686	0.301	0.417	0.453	54.7%
1989	D	30,300	6,773	10,362	24%	0.24	61.4	0.124	0.806	0.349	0.460	0.527	47.3%
1990	C	12,117	4,689	3,582	68%	0.29	61.6	0.133	0.719	0.365	0.469	0.531	46.9%
1991	C	16,839	6,201	5,348	61%	0.27	60.8	0.099	0.770	0.330	0.447	0.502	49.8%
1992	C	12,167	5,344	3,601	68%	0.29	61.2	0.116	0.740	0.342	0.456	0.519	48.1%

May

Year	MAY Sac River Flows	CVP + SWP Exports	Calculated Steamboat & Sutter Slough Q	Percent	X-chann Closed	USBR observed temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	46,302	10,165	16,367	0.23	0.23	61.2	0.116	0.949	0.342	0.484	0.544	45.6%
1923	15,092	7,583	4,695	0.63	0.33	62.4	0.166	0.858	0.387	0.538	0.615	38.5%
1924	9,660	4,310	2,663	0.70	0.37	69.2	0.452	0.839	0.596	0.686	0.828	17.2%
1925	12,586	6,664	3,758	0.65	0.34	63.2	0.200	0.834	0.408	0.553	0.642	35.8%
1926	12,263	5,839	3,636	0.66	0.34	65.7	0.305	0.842	0.485	0.609	0.728	27.2%
1927	26,640	9,189	9,013	0.25	0.25	62.6	0.175	0.932	0.387	0.522	0.606	39.4%
1928	18,345	7,481	5,911	0.60	0.32	66.6	0.343	0.930	0.515	0.646	0.768	23.2%
1929	8,213	4,326	2,122	0.74	0.38	66.1	0.322	0.784	0.499	0.608	0.734	26.6%
1930	12,133	5,221	3,586	0.66	0.35	63.1	0.196	0.769	0.403	0.530	0.622	37.8%
1931	8,766	4,180	2,328	0.72	0.38	70.5	0.507	0.857	0.640	0.721	0.863	13.7%
1932	12,962	6,701	3,898	0.65	0.34	65.5	0.297	0.876	0.460	0.615	0.729	27.1%
1933	7,741	4,700	1,945	0.75	0.39	63.7	0.221	0.757	0.422	0.553	0.651	34.9%
1934	8,181	4,440	2,110	0.74	0.38	66.3	0.414	0.828	0.569	0.689	0.806	19.4%
1935	29,128	8,587	9,944	0.25	0.25	64	0.234	0.931	0.432	0.554	0.658	34.2%
1936	19,110	8,018	6,197	0.60	0.31	64.9	0.271	0.922	0.461	0.606	0.713	28.7%
1937	14,735	9,364	4,561	0.63	0.33	64.5	0.256	0.975	0.448	0.622	0.718	28.2%
1938	57,020	10,083	20,375	0.23	0.23	62.5	0.170	0.969	0.384	0.518	0.600	40.0%
1939	8,181	5,090	2,110	0.74	0.38	68	0.402	0.851	0.560	0.671	0.803	19.7%
1940	16,019	5,952	5,041	0.62	0.33	65.6	0.301	0.845	0.483	0.601	0.721	27.9%
1941	39,536	9,937	13,637	0.24	0.24	61.6	0.133	0.946	0.356	0.495	0.562	43.8%
1942	36,267	10,063	12,614	0.24	0.24	60.1	0.069	0.928	0.307	0.455	0.493	50.7%
1943	20,427	10,409	6,860	0.58	0.31	66.4	0.292	1.035	0.477	0.650	0.753	24.7%
1944	9,709	5,839	2,681	0.70	0.37	65.9	0.313	0.846	0.493	0.622	0.740	26.0%
1945	13,840	7,920	4,226	0.64	0.34	63.1	0.196	0.866	0.403	0.565	0.650	35.0%
1946	12,230	7,205	3,624	0.66	0.35	63.9	0.229	0.869	0.429	0.581	0.677	32.3%
1947	9,579	5,188	2,633	0.70	0.37	66.7	0.431	0.868	0.582	0.687	0.822	17.8%
1948	32,185	8,864	11,087	0.24	0.24	62.3	0.162	0.912	0.378	0.507	0.587	41.3%
1949	11,775	6,099	3,464	0.67	0.35	65.2	0.284	0.845	0.470	0.601	0.714	28.6%
1950	16,182	6,847	5,102	0.62	0.32	64.3	0.246	0.861	0.441	0.578	0.682	31.8%
1951	18,329	7,855	5,906	0.60	0.32	64.4	0.250	0.906	0.446	0.591	0.693	30.7%
1952	59,768	10,083	21,403	0.23	0.23	61.7	0.137	0.965	0.358	0.495	0.564	43.6%
1953	27,355	8,538	9,281	0.25	0.25	60.9	0.103	0.873	0.333	0.466	0.521	47.9%
1954	23,322	8,506	7,772	0.57	0.30	65.9	0.313	0.962	0.493	0.635	0.750	25.0%
1955	10,929	5,627	3,137	0.68	0.35	66.9	0.356	0.865	0.525	0.642	0.769	23.1%
1956	37,357	11,466	13,022	0.24	0.24	61.4	0.124	1.009	0.349	0.506	0.567	43.3%
1957	18,914	7,628	6,124	0.60	0.32	64	0.234	0.869	0.432	0.576	0.675	32.5%
1958	43,226	10,897	15,217	0.23	0.23	62.9	0.187	1.011	0.397	0.541	0.627	37.3%
1959	10,197	5,318	2,864	0.69	0.36	65.9	0.313	0.823	0.493	0.612	0.734	26.6%
1960	14,263	5,806	4,364	0.63	0.33	65.9	0.313	0.844	0.493	0.610	0.732	26.8%
1961	9,482	4,868	2,598	0.71	0.37	64.3	0.246	0.768	0.441	0.561	0.669	33.1%
1962	13,141	6,473	3,965	0.65	0.34	64.8	0.267	0.854	0.457	0.592	0.701	29.9%
1963	28,868	9,530	9,846	0.25	0.25	62.5	0.170	0.946	0.384	0.522	0.603	39.7%
1964	11,791	5,546	3,460	0.67	0.35	65.2	0.284	0.821	0.470	0.592	0.708	29.2%
1965	23,306	8,977	7,766	0.57	0.30	63.6	0.217	0.941	0.419	0.578	0.669	33.1%
1966	12,393	6,099	3,685	0.66	0.34	67.3	0.372	0.862	0.537	0.656	0.784	21.6%
1967	45,651	10,262	16,124	0.23	0.23	62.1	0.154	0.970	0.371	0.511	0.586	41.4%
1968	9,888	5,351	2,748	0.70	0.36	66.1	0.322	0.828	0.499	0.619	0.742	25.8%
1969	45,261	9,221	15,978	0.23	0.23	63.2	0.200	0.944	0.408	0.532	0.626	37.4%
1970	13,267	7,172	4,019	0.66	0.34	68.6	0.427	0.952	0.579	0.705	0.831	16.9%
1971	30,986	8,587	10,643	0.24	0.24	61	0.107	0.877	0.336	0.468	0.525	47.5%
1972	10,539	5,351	2,991	0.69	0.36	67.3	0.372	0.850	0.537	0.649	0.780	22.0%
1973	16,636	8,506	5,272	0.61	0.32	66.9	0.356	0.960	0.526	0.671	0.788	21.2%
1974	27,371	10,148	9,287	0.25	0.25	63.4	0.208	0.866	0.413	0.555	0.648	35.2%
1975	29,941	10,051	10,248	0.24	0.24	63.8	0.225	0.891	0.426	0.564	0.662	33.8%
1976	8,652	4,326	2,286	0.73	0.38	69.6	0.469	0.847	0.611	0.700	0.841	15.9%
1977	7,680	2,228	1,915	0.76	0.39	64	0.234	0.855	0.432	0.519	0.631	36.9%
1978	21,809	8,392	7,207	0.56	0.31	63	0.191	0.806	0.400	0.555	0.640	36.0%
1979	13,352	7,530	4,044	0.64	0.34	63.8	0.225	0.862	0.425	0.580	0.674	32.6%
1980	14,881	9,823	4,616	0.68	0.33	63.6	0.217	0.977	0.419	0.604	0.689	31.1%
1981	9,010	5,156	2,420	0.72	0.37	66.7	0.347	0.831	0.518	0.636	0.762	23.8%
1982	38,069	10,913	13,296	0.24	0.24	61.1	0.112	0.980	0.339	0.491	0.548	45.2%
1983	54,719	7,758	19,512	0.23	0.23	60.1	0.089	0.825	0.307	0.426	0.466	53.4%
1984	15,338	7,336	4,786	0.62	0.33	66.5	0.339	0.922	0.512	0.646	0.766	23.4%
1985	11,368	5,578	3,302	0.67	0.35	65.8	0.309	0.833	0.489	0.610	0.731	26.9%
1986	13,434	9,530	4,074	0.64	0.34	66.2	0.326	1.011	0.502	0.674	0.780	22.0%
1987	8,294	4,554	2,152	0.74	0.38	70.5	0.507	0.873	0.640	0.729	0.866	13.4%
1988	8,864	4,505	2,366	0.72	0.37	65.8	0.309	0.786	0.489	0.601	0.724	27.6%
1989	19,191	6,489	6,227	0.59	0.31	64.7	0.263	0.853	0.464	0.579	0.690	31.0%
1990	7,221	4,163	1,751	0.77	0.40	66.4	0.335	0.782	0.509	0.617	0.745	25.5%
1991	9,140	4,651	2,466	0.71	0.37	65.7	0.305	0.791	0.486	0.599	0.722	27.8%
1992	8,343	4,586	2,170	0.73	0.38	66	0.318	0.793	0.496	0.609	0.733	26.7%

June

Year	JUNE Sac River Flow	CVP + SWP exports	Caculated Steamboat & Sutter Slough Q	percent	X-chann closed	USBR observed temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	34,115	11,545	11,809	24%	0.24	65.9	0.313	1.000	0.493	0.615	0.735	26.5%	44.3%
1923	15,948	8,436	5,015	62%	0.52	66.3	0.286	0.948	0.473	0.722	0.802	19.8%	38.7%
1924	13,092	6,134	3,946	65%	0.55	70.6	0.511	0.843	0.643	0.808	0.906	9.4%	20.8%
1925	10,756	3,764	3,073	68%	0.58	68.3	0.414	0.798	0.589	0.702	0.825	17.5%	36.0%
1926	11,796	6,353	3,462	67%	0.56	71.2	0.536	0.963	0.662	0.832	0.922	7.8%	26.6%
1927	18,066	9,193	5,807	60%	0.51	68.1	0.406	1.000	0.563	0.786	0.873	12.7%	38.9%
1928	15,259	7,882	4,757	62%	0.53	69.7	0.473	1.000	0.614	0.818	0.904	9.6%	26.8%
1929	14,133	6,806	4,336	64%	0.54	70.1	0.490	0.963	0.627	0.808	0.902	9.8%	30.8%
1930	13,024	6,571	3,921	65%	0.55	69.6	0.469	0.944	0.611	0.794	0.891	10.9%	36.1%
1931	12,316	6,057	3,657	66%	0.56	70.7	0.515	0.942	0.646	0.811	0.908	9.2%	17.6%
1932	15,125	5,583	4,707	63%	0.53	69.5	0.465	0.899	0.608	0.762	0.873	12.7%	29.7%
1933	10,686	4,554	3,047	68%	0.58	69.8	0.478	0.860	0.617	0.758	0.873	12.7%	34.0%
1934	12,722	6,437	3,808	65%	0.55	70.7	0.515	0.958	0.646	0.818	0.912	8.8%	20.6%
1935	17,226	8,873	5,492	61%	0.52	71	0.528	1.000	0.656	0.833	0.921	7.9%	33.2%
1936	16,520	8,571	5,228	61%	0.52	69.2	0.462	1.000	0.596	0.807	0.894	10.6%	29.4%
1937	16,251	8,789	5,128	62%	0.52	69.7	0.473	1.000	0.614	0.816	0.903	9.7%	29.8%
1938	35,645	11,545	12,381	24%	0.24	67.7	0.389	1.000	0.560	0.658	0.791	20.9%	41.1%
1939	13,940	7,260	4,267	64%	0.54	71	0.526	0.909	0.656	0.841	0.925	7.5%	20.6%
1940	15,932	8,369	5,006	62%	0.52	71.5	0.549	1.000	0.672	0.844	0.930	7.0%	30.0%
1941	21,847	11,545	7,221	58%	0.49	69	0.444	1.000	0.592	0.793	0.885	11.5%	41.6%
1942	27,275	11,545	9,251	25%	0.25	67.8	0.393	1.000	0.563	0.664	0.796	20.4%	47.7%
1943	15,629	8,739	4,895	62%	0.53	66.6	0.343	0.984	0.515	0.762	0.844	15.6%	28.6%
1944	12,352	6,857	3,670	66%	0.56	67.8	0.393	0.924	0.563	0.760	0.854	14.6%	29.8%
1945	16,117	8,487	5,078	62%	0.52	70.6	0.511	1.000	0.643	0.830	0.917	8.3%	32.3%
1946	15,428	8,168	4,820	62%	0.53	68.1	0.406	0.988	0.563	0.787	0.873	12.7%	31.4%
1947	13,243	6,974	4,003	65%	0.55	70	0.466	0.989	0.624	0.813	0.904	9.6%	20.4%
1948	23,444	10,739	7,818	57%	0.49	69	0.444	1.000	0.592	0.790	0.883	11.7%	40.1%
1949	12,571	6,722	3,751	65%	0.55	70.9	0.524	0.974	0.652	0.831	0.919	8.1%	27.9%
1950	17,747	8,739	5,687	60%	0.51	68.9	0.440	1.000	0.588	0.799	0.888	11.2%	30.5%
1951	16,234	8,470	5,122	62%	0.52	70.3	0.499	1.000	0.633	0.825	0.912	8.8%	30.4%
1952	38,418	11,545	13,418	24%	0.24	65	0.276	1.000	0.464	0.591	0.704	29.6%	45.6%
1953	26,469	11,545	8,949	25%	0.25	66.2	0.326	1.000	0.502	0.626	0.748	25.2%	46.7%
1954	14,991	7,882	4,658	63%	0.53	66.7	0.431	0.985	0.582	0.796	0.884	11.6%	28.8%
1955	12,487	6,789	3,720	66%	0.56	70.1	0.490	0.963	0.627	0.813	0.905	9.5%	28.2%
1956	23,225	11,545	7,736	57%	0.49	68.7	0.431	1.000	0.582	0.786	0.878	12.2%	39.1%
1957	17,024	8,621	5,417	61%	0.52	72	0.570	1.000	0.688	0.849	0.935	6.5%	30.9%
1958	34,096	11,545	11,803	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	38.7%
1959	12,772	6,890	3,827	65%	0.55	72.1	0.574	1.000	0.691	0.862	0.941	5.9%	25.1%
1960	11,747	6,164	3,443	67%	0.58	72.7	0.600	0.983	0.710	0.864	0.946	5.4%	28.0%
1961	14,856	7,210	4,606	63%	0.53	73.2	0.621	1.000	0.726	0.872	0.951	4.9%	31.5%
1962	19,041	8,302	6,171	60%	0.51	70.4	0.503	1.000	0.636	0.820	0.911	8.9%	28.4%
1963	17,896	9,327	5,668	60%	0.51	69	0.444	1.000	0.592	0.801	0.889	11.1%	40.4%
1964	14,856	7,394	4,606	63%	0.53	69.5	0.465	0.978	0.606	0.805	0.896	10.4%	30.5%
1965	16,974	9,226	5,398	61%	0.52	67.1	0.364	1.000	0.531	0.774	0.856	14.4%	35.0%
1966	11,394	6,521	3,311	67%	0.57	70.4	0.503	0.956	0.636	0.818	0.910	9.0%	23.1%
1967	36,936	11,545	13,613	24%	0.24	66.5	0.339	1.000	0.512	0.628	0.754	24.6%	43.8%
1968	14,554	7,563	4,493	63%	0.54	72	0.570	1.000	0.688	0.855	0.938	6.2%	25.7%
1969	24,234	11,512	8,113	57%	0.48	68.3	0.414	1.000	0.569	0.778	0.870	13.0%	38.2%
1970	15,310	8,268	4,776	62%	0.53	70.7	0.515	1.000	0.646	0.833	0.919	8.1%	22.2%
1971	24,318	11,209	8,145	57%	0.48	68.1	0.406	1.000	0.563	0.774	0.866	13.4%	43.4%
1972	12,201	6,739	3,613	66%	0.56	70.7	0.515	0.971	0.646	0.826	0.916	8.4%	26.2%
1973	16,789	8,705	5,329	61%	0.52	70.1	0.490	1.000	0.627	0.820	0.908	9.2%	22.9%
1974	22,200	11,058	7,353	58%	0.49	69.7	0.473	1.000	0.614	0.804	0.897	10.3%	35.6%
1975	25,141	11,545	8,453	25%	0.25	69.1	0.448	1.000	0.595	0.696	0.832	16.8%	35.7%
1976	15,276	7,159	4,763	62%	0.53	71.8	0.562	1.000	0.681	0.850	0.934	6.6%	21.7%
1977	8,369	1,294	2,180	73%	0.62	73.9	0.650	0.792	0.746	0.776	0.921	7.9%	31.3%
1978	15,646	9,193	4,902	62%	0.53	70	0.486	1.000	0.624	0.822	0.908	9.2%	36.3%
1979	16,049	8,319	5,062	62%	0.52	69.2	0.452	1.000	0.598	0.809	0.895	10.5%	31.9%
1980	15,663	9,394	4,906	62%	0.53	66.9	0.356	1.000	0.525	0.775	0.855	14.5%	33.7%
1981	13,293	7,008	4,022	65%	0.55	71.9	0.566	1.000	0.684	0.857	0.938	6.2%	24.4%
1982	25,326	11,545	8,522	25%	0.25	66	0.318	1.000	0.496	0.622	0.742	25.8%	46.4%
1983	54,215	9,562	19,326	23%	0.23	63.6	0.217	0.966	0.419	0.545	0.644	35.6%	53.5%
1984	16,268	8,467	5,134	62%	0.52	66.4	0.419	1.000	0.572	0.796	0.881	11.9%	26.3%
1985	12,100	6,605	3,575	66%	0.56	69.4	0.461	0.942	0.604	0.793	0.889	11.1%	27.9%
1986	14,251	9,327	4,380	63%	0.54	71.6	0.553	1.000	0.675	0.850	0.933	6.7%	24.1%
1987	15,377	7,394	4,801	62%	0.53	73.2	0.621	1.000	0.726	0.871	0.951	4.9%	14.6%
1988	14,251	6,941	4,380	63%	0.54	69.4	0.461	0.957	0.604	0.794	0.889	11.1%	29.2%
1989	11,461	6,033	3,337	67%	0.57	66.6	0.427	0.903	0.579	0.763	0.864	13.6%	30.6%
1990	13,260	6,437	4,009	65%	0.55	66.5	0.423	0.919	0.576	0.763	0.863	13.7%	27.0%
1991	10,087	3,580	2,815	69%	0.59	69.4	0.461	0.811	0.604	0.726	0.852	14.8%	29.2%
1992	12,890	6,302	3,871	65%	0.55	69	0.444	0.922	0.592	0.773	0.874	12.6%	27.8%
												Average.	31.75%

Formulas — Sacramento River Fall Run Smolt Survival

```
C8 ='Study 513 Flow Data'!G7
D8 ='Study 513 Flow Data'!Q7        (HIDDEN)
E8 ='Study 513 Flow Data'!AA7       (HIDDEN)
F8 =(D8+E8)
G8 =0.374*C8-950
H8 =IF(C8>25000,(0.133*C8+829)/(C8-G8),(0.293*C8+2090)/(C8-G8))
I8 =(0.133*C8+829)/(C8-G8)
K8 =IF((-2.45925+(0.0420748*J8))<0,0,(-2.45925+(0.0420748*J8)))
L8 =(-0.5916024)+(0.017968*J8)+(0.0000434*F8)
M8 =-1.613493+(0.0319584*J8)
N8 =(L8*I8)+(M8*(1-I8))
O8 =K8+N8-(K8*N8)
P8 =1-O8

R8 ='Study 513 Flow Data'!H7
S8 ='Study 513 Flow Data'!R7        (HIDDEN)
T8 ='Study 513 Flow Data'!AB7       (HIDDEN)
U8 =(S8+T8)
V8 =0.374*R8-950
W8 =IF(R8>25000,(0.133*R8+829)/(R8-V8),(0.293*R8+2090)/(R8-V8))
X8 =(0.84*(0.133*R8+829)/(R8-V8))+(0.16*W8)
Z8 =(-2.45925+(0.0420748*Y8))
AA8 =(-0.5916024)+(0.017968*Y8)+(0.0000434*U8)
AB8 =-1.613493+(0.0319584*Y8)
AC8 =(AA8*X8)+(AB8*(1-X8))
AD8 =Z8+AC8-(Z8*AC8)
AE8 =1-AD8

AG8 ='Study 513 Flow Data'!I7
AH8 ='Study 513 Flow Data'!S7       (HIDDEN)
AI8 ='Study 513 Flow Data'!AC7      (HIDDEN)
AJ8 =(AH8+AI8)
AK8 =0.374*AG8-950
AL8 =IF(AG8>25000,(0.133*AG8+829)/(AG8-AK8),(0.293*AG8+2090)/(AG8-AK8))
AM8 =(0.27*(0.133*AG8+829)/(AG8-AK8))+(0.73*AL8)
AO8 =(-2.45925+(0.0420748*AN8))
AP8 =IF(((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8))>1,1,((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8)))
AQ8 =-1.613493+(0.0319584*AN8)
AR8 =(AP8*AM8)+(AQ8*(1-AM8))
AS8 =AO8+AR8-(AO8*AR8)
AT8 =1-AS8
AV8 =(P8*0.17)+(AE8*0.65)+(AT8*0.18)
```


C-032391

Study 513 Sacramento River Late Fall Run Smolt Survival Model

Modified m2 by changing the slope to 0.000054

Cross Channel closed for 45 consecutive days, Dec 18-Jan 31

Cross Channel Closed when Sacramento River flow exceeds 25,000 cfs

November Sacramento River Temp: 53 degrees F

December Sacramento River Temp: 47 degrees F

January Sacramento River Temp: 47 degrees F

NOVEMBER

Year	Water Year Type	Sac River Flow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	A	12,033	9,193	3,550	86%	0.29		0.857	0.080	0.595	0.595	40.5%
1923	B	18,150	11,159	5,836	80%	0.28		0.863	0.080	0.612	0.612	38.8%
1924	C	11,411	8,033	3,318	67%	0.29		0.794	0.080	0.560	0.560	44.0%
1925	D	8,033	5,815	2,054	74%	0.32		0.675	0.080	0.522	0.522	47.8%
1926	D	11,445	8,188	3,330	67%	0.29		0.802	0.080	0.564	0.564	43.6%
1927	W	23,057	11,108	7,673	58%	0.28		0.861	0.080	0.586	0.586	41.4%
1928	A	27,074	11,142	9,178	25%	0.25		0.862	0.080	0.299	0.299	70.1%
1929	C	13,579	10,588	4,129	84%	0.28		0.832	0.080	0.627	0.627	37.3%
1930	D	7,563	4,857	1,878	78%	0.32		0.623	0.080	0.491	0.491	50.9%
1931	C	11,764	8,188	3,450	67%	0.29		0.802	0.080	0.561	0.561	43.9%
1932	D	8,621	4,840	2,274	73%	0.31		0.622	0.080	0.474	0.474	52.6%
1933	C	9,142	6,218	2,469	71%	0.31		0.698	0.080	0.521	0.521	47.9%
1934	C	7,731	4,958	1,941	75%	0.32		0.628	0.080	0.493	0.493	50.7%
1935	B	9,445	6,000	2,582	71%	0.30		0.665	0.080	0.508	0.508	49.2%
1936	B	12,117	8,672	3,582	69%	0.29		0.829	0.080	0.575	0.575	42.5%
1937	B	11,428	8,033	3,324	67%	0.29		0.794	0.080	0.560	0.560	44.0%
1938	W	24,923	11,142	8,371	57%	0.25		0.862	0.080	0.581	0.581	41.9%
1939	D	19,343	8,537	6,284	59%	0.26		0.822	0.080	0.521	0.521	47.9%
1940	A	9,193	6,000	2,468	71%	0.31		0.685	0.080	0.511	0.511	48.9%
1941	W	14,150	11,125	4,342	84%	0.28		0.861	0.080	0.641	0.641	35.9%
1942	W	18,200	8,756	5,857	60%	0.28		0.834	0.080	0.533	0.533	46.7%
1943	W	22,287	9,983	7,378	58%	0.25		0.900	0.080	0.554	0.554	44.6%
1944	D	14,974	11,142	4,650	63%	0.27		0.862	0.080	0.634	0.634	36.6%
1945	B	16,469	11,125	5,210	61%	0.27		0.861	0.080	0.621	0.621	37.9%
1946	B	22,519	11,142	7,472	58%	0.26		0.862	0.080	0.590	0.590	41.0%
1947	D	15,713	11,125	4,927	62%	0.27		0.861	0.080	0.627	0.627	37.3%
1948	B	12,772	9,277	3,827	65%	0.28		0.862	0.080	0.590	0.590	41.0%
1949	D	14,705	11,142	4,550	63%	0.27		0.862	0.080	0.636	0.636	36.4%
1950	B	11,445	8,033	3,330	67%	0.29		0.794	0.080	0.559	0.559	44.1%
1951	A	48,871	11,125	17,328	23%	0.23		0.861	0.080	0.285	0.285	71.6%
1952	W	17,679	11,142	5,862	60%	0.28		0.862	0.080	0.614	0.614	38.6%
1953	W	18,622	8,571	5,342	61%	0.27		0.824	0.080	0.535	0.535	46.5%
1954	A	21,343	11,125	7,032	58%	0.26		0.861	0.080	0.594	0.594	40.6%
1955	D	20,805	11,142	6,831	59%	0.26		0.862	0.080	0.567	0.567	40.3%
1956	W	13,814	10,453	4,216	64%	0.28		0.925	0.080	0.621	0.621	37.9%
1957	A	15,360	11,159	4,795	62%	0.27		0.863	0.080	0.631	0.631	36.9%
1958	W	19,209	11,125	6,234	59%	0.26		0.861	0.080	0.604	0.604	39.6%
1959	B	16,086	8,672	5,059	62%	0.27		0.829	0.080	0.543	0.543	45.7%
1960	D	11,293	7,512	3,274	67%	0.29		0.786	0.080	0.542	0.542	46.8%
1961	D	17,780	11,108	5,700	60%	0.26		0.861	0.080	0.612	0.612	38.8%
1962	B	12,856	9,478	3,856	65%	0.28		0.873	0.080	0.596	0.596	40.4%
1963	W	21,259	11,142	7,001	58%	0.28		0.862	0.080	0.595	0.595	40.5%
1964	D	32,065	11,125	11,042	24%	0.24		0.861	0.080	0.294	0.294	70.6%
1965	W	15,562	11,125	4,870	62%	0.27		0.861	0.080	0.626	0.626	37.2%
1966	B	28,566	11,142	9,741	25%	0.26		0.862	0.080	0.297	0.297	70.3%
1967	W	23,242	11,125	7,743	57%	0.25		0.861	0.080	0.586	0.586	41.4%
1968	B	16,150	8,537	5,090	62%	0.27		0.822	0.080	0.538	0.538	46.2%
1969	W	17,041	11,125	5,423	61%	0.27		0.861	0.080	0.618	0.618	38.2%
1970	W	17,579	8,571	5,624	61%	0.28		0.824	0.080	0.530	0.530	47.0%
1971	W	27,914	11,142	9,490	25%	0.25		0.862	0.080	0.298	0.298	70.2%
1972	B	16,671	11,125	5,285	61%	0.27		0.861	0.080	0.620	0.620	38.0%
1973	A	28,771	11,125	9,082	25%	0.25		0.861	0.080	0.299	0.299	70.1%
1974	W	60,666	11,125	21,740	23%	0.23		0.861	0.080	0.282	0.282	71.8%
1975	W	17,478	9,109	5,587	61%	0.27		0.853	0.080	0.549	0.549	45.1%
1976	C	19,158	11,142	6,215	60%	0.26		0.862	0.080	0.605	0.605	39.5%
1977	C	8,338	6,470	2,167	73%	0.31		0.710	0.080	0.543	0.543	45.7%
1978	A	6,420	2,134	1,451	80%	0.34		0.476	0.080	0.397	0.397	60.3%
1979	B	15,024	11,159	4,669	63%	0.27		0.863	0.080	0.634	0.634	36.6%
1980	A	19,898	11,125	6,492	59%	0.26		0.861	0.080	0.601	0.601	39.9%
1981	D	12,991	9,915	3,909	65%	0.28		0.866	0.080	0.610	0.610	39.0%
1982	W	45,039	11,125	15,895	23%	0.23		0.861	0.080	0.286	0.286	71.4%
1983	W	38,569	10,705	13,475	24%	0.24		0.939	0.080	0.284	0.284	71.6%
1984	W	62,920	7,193	22,582	23%	0.23		0.749	0.080	0.233	0.233	76.7%
1985	D	36,720	11,142	12,783	24%	0.24		0.862	0.080	0.291	0.291	70.9%
1986	W	11,478	8,957	3,343	67%	0.29		0.844	0.080	0.592	0.592	40.8%
1987	D	11,529	8,201	3,362	67%	0.29		0.804	0.080	0.565	0.565	43.5%
1988	C	8,974	6,336	2,406	72%	0.31		0.703	0.080	0.528	0.528	47.2%
1989	D	11,428	8,991	3,324	67%	0.29		0.846	0.080	0.594	0.594	40.6%
1990	C	12,117	8,487	3,582	66%	0.29		0.819	0.080	0.568	0.568	43.2%
1991	C	8,554	4,890	2,248	73%	0.31		0.625	0.080	0.477	0.477	52.3%
1992	C	8,033	5,243	2,054	74%	0.32		0.644	0.080	0.499	0.499	50.1%

DECEMBER

Year	Sac River Flows	SWP+CVP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	17,142	11,468	5,461	61%	0.45		0.872	0.398	0.398	60.4%	
1923	33,600	8,246	11,617	24%	0.24		0.698	0.188	0.188	83.2%	
1924	13,580	10,506	4,129	64%	0.48		0.820	0.393	0.393	60.7%	
1925	12,669	10,344	3,786	65%	0.49		0.811	0.395	0.395	60.5%	
1926	11,108	7,808	3,204	68%	0.50		0.694	0.339	0.339	66.1%	
1927	19,142	11,368	6,209	60%	0.44		0.867	0.366	0.366	61.4%	
1928	16,491	10,984	5,218	61%	0.46		0.847	0.388	0.388	61.2%	
1929	14,540	11,271	4,468	63%	0.47		0.862	0.406	0.406	59.4%	
1930	15,011	11,222	4,664	63%	0.47		0.859	0.402	0.402	59.8%	
1931	14,344	10,588	4,415	63%	0.47		0.826	0.390	0.390	61.0%	
1932	15,645	11,598	4,901	62%	0.46		0.879	0.407	0.407	59.3%	
1933	9,937	6,554	2,766	70%	0.52		0.807	0.315	0.315	68.5%	
1934	13,645	10,864	4,153	64%	0.48		0.840	0.401	0.401	59.9%	
1935	8,750	7,221	2,322	72%	0.54		0.843	0.346	0.346	65.4%	
1936	13,208	10,197	3,989	65%	0.48		0.804	0.387	0.387	61.3%	
1937	12,474	10,197	3,715	68%	0.49		0.804	0.393	0.393	60.7%	
1938	56,824	11,840	20,302	23%	0.23		0.892	0.205	0.205	79.5%	
1939	18,687	8,063	6,039	60%	0.45		0.889	0.308	0.308	69.2%	
1940	8,473	5,172	2,219	73%	0.54		0.532	0.289	0.289	71.1%	
1941	39,650	11,583	13,879	24%	0.24		0.877	0.206	0.206	79.2%	
1942	65,135	7,953	23,411	23%	0.23		0.682	0.155	0.155	84.5%	
1943	28,738	8,115	9,798	25%	0.25		0.891	0.170	0.170	83.0%	
1944	13,759	10,718	4,198	64%	0.48		0.832	0.397	0.397	60.3%	
1945	18,752	11,338	6,063	60%	0.45		0.885	0.388	0.388	61.4%	
1946	58,101	11,872	21,154	23%	0.23		0.894	0.205	0.205	79.5%	
1947	18,280	11,401	5,887	60%	0.45		0.889	0.360	0.360	63.9%	
1948	11,515	7,808	3,356	67%	0.50		0.874	0.336	0.336	66.4%	
1949	15,560	11,271	4,877	62%	0.46		0.862	0.400	0.400	60.0%	
1950	11,758	8,294	3,448	67%	0.50		0.701	0.348	0.348	65.2%	
1951	67,705	11,937	24,372	23%	0.23		0.898	0.204	0.204	79.6%	
1952	51,067	11,498	18,149	23%	0.23		0.874	0.202	0.202	79.8%	
1953	42,628	8,083	14,992	24%	0.24		0.889	0.162	0.162	83.8%	
1954	15,011	8,246	4,964	63%	0.47		0.898	0.327	0.327	67.3%	
1955	26,005	11,303	8,778	25%	0.25		0.883	0.215	0.215	78.5%	
1956	39,818	11,937	13,867	24%	0.24		0.898	0.213	0.213	78.7%	
1957	14,198	9,758	4,360	64%	0.47		0.780	0.369	0.369	63.1%	
1958	24,021	11,287	8,034	57%	0.43		0.862	0.366	0.366	63.2%	
1959	14,637	8,197	4,524	63%	0.47		0.898	0.327	0.327	67.3%	
1960	10,929	7,140	3,137	66%	0.51		0.836	0.323	0.323	67.7%	
1961	23,143	11,254	7,705	57%	0.43		0.861	0.370	0.370	63.0%	
1962	20,557	11,238	6,738	56%	0.44		0.860	0.377	0.377	62.3%	
1963	30,933	11,287	10,619	24%	0.24		0.862	0.210	0.210	79.0%	
1964	14,881	9,969	4,618	63%	0.47		0.791	0.371	0.371	62.9%	
1965	37,926	11,645	13,234	24%	0.24		0.862	0.210	0.210	79.0%	
1966	17,093	9,400	5,443	61%	0.45		0.781	0.346	0.346	65.4%	
1967	40,621	11,531	14,317	24%	0.24		0.876	0.207	0.207	79.3%	
1968	16,621	8,063	5,266	61%	0.46		0.889	0.315	0.315	68.5%	
1969	27,745	11,368	9,427	25%	0.25		0.867	0.214	0.214	78.6%	
1970	49,508	7,823	17,585	23%	0.23		0.675	0.157	0.157	84.3%	
1971	57,329	11,449	20,491	23%	0.23		0.871	0.200	0.200	80.0%	
1972	22,183	10,490	7,347	58%	0.43		0.819	0.355	0.355	64.5%	
1973	27,144	11,303	9,202	25%	0.25		0.863	0.214	0.214	78.6%	
1974	60,776	11,401	21,780	23%	0.23		0.889	0.198	0.198	80.2%	
1975	17,613	8,587	5,637	61%	0.45		0.717	0.324	0.324	67.6%	
1976	16,768	9,091	5,321	61%	0.46		0.744	0.340	0.340	66.0%	
1977	8,132	5,692	2,081	74%	0.55		0.560	0.308	0.308	69.2%	
1978	11,970	9,872	3,527	66%	0.49		0.796	0.366	0.366	61.2%	
1979	12,783	8,002	3,831	65%	0.49		0.685	0.333	0.333	66.7%	
1980	21,256	11,319	7,000	58%	0.44		0.884	0.377	0.377	62.3%	
1981	18,638	8,376	5,272	61%	0.46		0.705	0.323	0.323	67.7%	
1982	68,372	11,338	24,621	23%	0.23		0.885	0.198	0.198	80.4%	
1983	54,385	8,652	19,390	23%	0.23		0.720	0.186	0.186	83.4%	
1984	82,748	6,245	29,998	22%	0.22		0.590	0.132	0.132	86.8%	
1985	23,793	8,838	7,949	57%	0.43		0.719	0.308	0.308	69.2%	
1986	17,971	11,303	5,771	60%	0.45		0.883	0.369	0.369	61.1%	
1987	13,629	10,441	4,147	64%	0.48		0.817	0.391	0.391	60.9%	
1988	18,019	11,238	5,041	62%	0.46		0.880	0.398	0.398	60.4%	
1989	11,937	9,368	3,515	66%	0.49		0.759	0.375	0.375	62.5%	
1990	11,937	7,989	3,515	66%	0.49		0.683	0.338	0.338	66.2%	
1991	9,612	6,768	2,645	70%	0.52		0.618	0.324	0.324	67.6%	
1992	7,888	5,367	2,000	75%	0.55		0.543	0.301	0.301	69.9%	

JANUARY

Year	Sac River Flows	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	17,727	11,970	5,660	60%	0.26		0.869	0.238	0.238	76.2%		59.4%
1923	32,039	7,937	11,033	24%	0.24		0.681	0.185	0.185	83.5%		72.2%
1924	15,044	11,384	4,676	63%	0.27		0.868	0.237	0.237	76.3%		60.5%
1925	11,108	7,904	3,204	68%	0.29		0.680	0.198	0.198	80.2%		62.2%
1926	20,297	11,468	6,641	59%	0.26		0.872	0.225	0.225	77.5%		63.3%
1927	34,430	10,864	11,927	24%	0.24		0.840	0.202	0.202	79.8%		61.0%
1928	27,225	7,969	9,232	25%	0.25		0.683	0.189	0.189	83.1%		68.9%
1929	16,003	11,468	5,035	62%	0.27		0.872	0.235	0.235	76.5%		58.1%
1930	22,704	11,498	7,541	56%	0.25		0.874	0.222	0.222	77.8%		62.1%
1931	14,507	11,043	4,476	63%	0.27		0.849	0.234	0.234	76.6%		60.7%
1932	16,621	12,198	5,266	61%	0.27		0.912	0.244	0.244	75.6%		61.7%
1933	14,035	11,140	4,299	64%	0.28		0.854	0.237	0.237	76.3%		65.3%
1934	18,004	11,271	5,783	60%	0.26		0.862	0.227	0.227	77.3%		61.9%
1935	24,839	12,067	8,265	57%	0.25		0.905	0.227	0.227	77.3%		64.3%
1936	34,367	11,468	11,915	24%	0.24		0.872	0.210	0.210	79.0%		61.0%
1937	16,052	11,954	5,053	62%	0.27		0.898	0.242	0.242	75.8%		60.3%
1938	31,567	7,790	10,858	24%	0.24		0.674	0.164	0.164	83.6%		71.1%
1939	16,605	7,563	6,008	60%	0.28		0.661	0.173	0.173	82.7%		67.2%
1940	26,688	12,344	9,031	25%	0.25		0.919	0.228	0.228	77.2%		67.1%
1941	72,307	12,523	26,093	23%	0.23		0.929	0.210	0.210	79.0%		68.3%
1942	62,631	7,563	22,474	23%	0.23		0.661	0.151	0.151	84.9%		75.1%
1943	57,003	7,628	20,369	23%	0.23		0.685	0.153	0.153	84.7%		73.8%
1944	18,849	7,595	6,100	60%	0.26		0.663	0.173	0.173	82.7%		60.0%
1945	15,011	10,653	4,664	63%	0.27		0.828	0.226	0.226	77.4%		59.5%
1946	42,545	8,392	14,962	24%	0.24		0.706	0.186	0.186	83.4%		70.9%
1947	15,320	11,027	4,780	62%	0.27		0.848	0.231	0.231	76.9%		59.1%
1948	17,565	11,401	5,619	61%	0.26		0.869	0.230	0.230	77.0%		62.7%
1949	15,044	11,368	4,676	63%	0.27		0.867	0.237	0.237	76.3%		58.2%
1950	22,931	11,563	7,628	58%	0.25		0.877	0.222	0.222	77.8%		63.1%
1951	62,663	11,222	22,486	23%	0.23		0.859	0.196	0.196	80.4%		77.8%
1952	65,786	8,766	23,654	23%	0.23		0.726	0.185	0.185	83.5%		78.4%
1953	62,972	7,660	22,602	23%	0.23		0.667	0.152	0.152	84.8%		74.7%
1954	33,291	8,181	11,501	24%	0.24		0.695	0.168	0.168	83.2%		64.6%
1955	22,720	9,530	7,547	58%	0.25		0.768	0.195	0.195	80.5%		69.6%
1956	85,204	10,409	30,918	22%	0.22		0.815	0.183	0.183	81.7%		69.3%
1957	18,947	8,197	6,136	60%	0.26		0.666	0.182	0.182	81.8%		61.2%
1958	39,309	8,246	13,751	24%	0.24		0.668	0.165	0.165	83.5%		62.3%
1959	36,324	7,660	12,261	24%	0.24		0.667	0.160	0.160	84.0%		66.1%
1960	15,873	11,449	4,967	62%	0.27		0.871	0.235	0.235	76.5%		64.4%
1961	15,710	11,468	4,926	62%	0.27		0.872	0.236	0.236	76.4%		60.3%
1962	14,149	10,002	4,342	64%	0.28		0.793	0.219	0.219	78.1%		60.8%
1963	24,769	11,645	8,314	57%	0.25		0.882	0.221	0.221	77.9%		68.1%
1964	26,705	8,197	9,038	25%	0.25		0.696	0.172	0.172	82.8%		69.8%
1965	61,870	12,620	29,669	22%	0.22		0.934	0.210	0.210	79.0%		68.6%
1966	29,258	7,969	9,992	25%	0.25		0.683	0.167	0.167	83.3%		71.1%
1967	38,089	8,115	12,547	24%	0.24		0.691	0.165	0.165	83.5%		70.9%
1968	30,640	7,660	10,509	24%	0.24		0.667	0.162	0.162	83.8%		66.7%
1969	73,299	7,579	26,464	23%	0.23		0.862	0.150	0.150	84.0%		70.1%
1970	92,002	7,660	33,458	22%	0.22		0.667	0.149	0.149	85.1%		75.2%
1971	47,310	10,295	16,744	23%	0.23		0.809	0.188	0.188	81.2%		77.8%
1972	20,378	8,213	6,671	59%	0.26		0.696	0.180	0.180	82.0%		62.3%
1973	46,302	9,319	16,367	23%	0.23		0.756	0.176	0.176	82.4%		77.4%
1974	78,798	8,099	28,520	22%	0.22		0.690	0.155	0.155	84.5%		79.2%
1975	18,882	8,181	6,112	60%	0.26		0.695	0.182	0.182	81.8%		65.5%
1976	16,719	8,197	5,303	61%	0.27		0.696	0.186	0.186	81.4%		63.2%
1977	8,636	5,790	2,280	73%	0.31		0.566	0.176	0.176	82.4%		68.6%
1978	54,861	10,768	19,493	23%	0.23		0.834	0.192	0.192	80.8%		65.9%
1979	27,583	7,595	9,398	25%	0.25		0.663	0.164	0.164	83.6%		63.4%
1980	65,261	7,481	23,465	23%	0.23		0.657	0.149	0.149	85.1%		62.4%
1981	29,307	7,676	10,011	24%	0.24		0.667	0.163	0.163	83.7%		64.5%
1982	51,392	10,360	18,271	23%	0.23		0.812	0.188	0.188	81.2%		78.3%
1983	58,809	6,977	21,044	23%	0.23		0.630	0.144	0.144	85.6%		81.0%
1984	47,536	4,326	16,629	23%	0.23		0.487	0.113	0.113	88.7%		84.7%
1985	17,727	8,197	5,660	60%	0.26		0.666	0.184	0.184	81.6%		72.7%
1986	25,956	11,580	8,758	25%	0.25		0.878	0.219	0.219	78.1%		60.3%
1987	17,109	8,181	5,449	61%	0.27		0.695	0.185	0.185	81.5%		61.7%
1988	26,282	11,433	8,879	25%	0.25		0.870	0.216	0.216	78.4%		61.6%
1989	14,653	10,409	4,530	63%	0.27		0.815	0.224	0.224	77.6%		60.8%
1990	22,037	10,799	7,292	58%	0.25		0.836	0.213	0.213	78.7%		63.6%
1991	8,406	5,107	2,195	73%	0.31		0.529	0.166	0.166	83.4%		67.7%
1992	12,442	9,482	3,703	66%	0.28		0.765	0.217	0.217	78.3%		67.0%
											Average:	66.62%

Formulas: Sacramento River Late Fall Run Smolt Survival Model

C10 ='Study 513 Flow Data'!B7
D10 ='Study 513 Flow Data'!L7 (HIDDEN)
E10 ='Study 513 Flow Data'!V7 (HIDDEN)
F10 =(D10+E10)
G10 =0.374*C10-950
H10 =IF(C10>$K$4,(0.133*C10+829)/(C10-G10),(0.293*C10+2090)/(C10-G10))
I10 =(0.133*C10+829)/(C10-G10)
K10 =(-0.5916024)+(0.017968*$T$1)+(0.000054*F10)
L10 =-1.613493+(0.0319584*$T$1)
M10 =(K10*H10)+(L10*(1-H10))
N10 =J10+M10-(J10*M10)
O10 =1-N10

Q10 ='Study 513 Flow Data'!C7
R10 ='Study 513 Flow Data'!M7 (HIDDEN)
S10 ='Study 513 Flow Data'!W7 (HIDDEN)
T10 =(R10+S10)
U10 =0.374*Q10-950
V10 =IF(Q10>$K$4,(0.133*Q10+829)/(Q10-U10),(0.293*Q10+2090)/(Q10-U10))
W10 =(0.45*(0.133*Q10+829)/(Q10-U10))+(0.55*V10)
Y10 =(-0.5916024)+(0.017968*$T$2)+(0.000054*T10)
AA10 =(Y10*W10)+(Z10*(1-W10))
AB10 =X10+AA10-(X10*AA10)
AC10 =1-AB10

AE10 ='Study 513 Flow Data'!D7
AF10 ='Study 513 Flow Data'!N7 (HIDDEN)
AG10 ='Study 513 Flow Data'!X7 (HIDDEN)
AH10 =(AF10+AG10)
AI10 =0.374*AE10-950
AJ10 =IF(AE10>$K$4,(0.133*AE10+829)/(AE10-AI10),(0.293*AE10+2090)/(AE10-AI10))
AK10 =(0.133*AE10+829)/(AE10-AI10)
AM10 =(-0.5916024)+(0.017968*$T$3)+(0.000054*AH10)
AO10 =(AM10*AK10)+(AN10*(1-AK10))
AP10 =AL10+AO10-(AL10*AO10)
AQ10 =1-AP10
AS10 =(O10*0.25)+(AC10*0.5)+(AQ10*0.25)

Study 513 Win[illegible] Smolt Survival Model February Water Temp 50 F April Water Temperatures based on limited historical data [illegible] UI

Cross Cha[illegible] ed Over 25000 cfs March Water Temp 55 F

Cross Channel Clos[illegible] to Apr when DOI greater than 12,000 cfs

Year	Water Year Type	FEBRUARY Sac River Flow	CVP + SWP Exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channel Closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123	MARCH Sac River Flow	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	percent	X-Channel Closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123	APRIL Sac River Flow	CVP + SW Exports	Calculated Steamboat & Sutter Slough flows	Percent	X-Channel Closed	Water temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123	Weighted Total Survival
1922	A	33,928	9,705	11,737	24%	0.24		0.831		0.200	0.200	80.0%	32,413	8,473	11,172	0.24	0.24		0.854	0.144	0.316	0.316	68.4%	23,242	9,866	7,743	0.57	0.25	58.5	0.002	0.982	0.256	0.442	0.443	55.7%	66.08%
1923	B	22,798	8,752	7,569	58%	0.25		0.871		0.170	0.170	83.8%	17,174	8,343	5,473	0.61	0.27		0.847	0.144	0.331	0.331	66.9%	24,066	9,277	8,051	0.57	0.25	58.3	0.000	0.957	0.250	0.428	0.428	57.2%	66.08%
1924	C	17,924	9,457	5,754	60%	0.26		0.818		0.216	0.216	78.4%	12,734	4,180	3,813	0.65	0.28		0.622	0.144	0.279	0.279	72.1%	6,756	3,988	1,577	0.79	0.33	61.5	0.128	0.728	0.352	0.477	0.544	45.6%	64.84%
1925	D	43,861	9,129	15,461	23%	0.23		0.860		0.188	0.188	81.2%	27,079	5,676	9,177	0.25	0.25		0.703	0.144	0.283	0.283	71.7%	20,587	8,420	6,749	0.59	0.26	59.1	0.027	0.925	0.275	0.443	0.458	54.2%	67.72%
1926	D	37,020	12,010	12,898	24%	0.24		0.985		0.228	0.228	77.2%	18,736	8,311	8,057	0.60	0.26		0.845	0.144	0.328	0.328	67.2%	21,293	8,184	7,013	0.58	0.26	61.6	0.133	0.967	0.356	0.509	0.575	42.5%	61.11%
1927	W	98,771	8,175	31,502	22%	0.22		0.748		0.167	0.167	83.3%	44,285	7,465	15,613	0.23	0.23		0.800	0.144	0.298	0.298	70.2%	46,282	9,813	17,108	0.23	0.23	56.8	0.000	0.948	0.202	0.375	0.375	62.5%	69.59%
1928	A	27,729	8,432	9,421	25%	0.25		0.782		0.188	0.188	81.2%	85,285	8,750	30,947	0.22	0.22		0.869	0.144	0.307	0.307	69.3%	29,763	8,722	10,181	0.24	0.24	58.7	0.011	0.934	0.262	0.427	0.433	56.7%	67.10%
1929	C	19,266	8,049	6,256	59%	0.26		0.741		0.193	0.193	80.7%	17,711	7,725	5,674	0.60	0.26		0.814	0.144	0.321	0.321	67.9%	7,831	3,496	1,979	0.75	0.32	56.3	0.000	0.609	0.186	0.321	0.321	67.9%	69.64%
1930	D	17,970	8,103	5,771	60%	0.26		0.744		0.196	0.196	80.4%	30,624	6,961	10,503	0.24	0.24		0.773	0.144	0.297	0.297	70.3%	13,092	5,529	3,946	0.65	0.28	59.6	0.046	0.778	0.291	0.428	0.456	54.4%	68.83%
1931	C	13,649	7,400	4,155	64%	0.28		0.708		0.197	0.197	80.3%	10,490	4,679	2,973	0.69	0.30		0.660	0.144	0.297	0.297	70.3%	8,033	4,101	2,054	0.74	0.32	62.8	0.183	0.758	0.393	0.509	0.599	40.1%	62.55%
1932	D	15,098	9,788	4,694	63%	0.27		0.835		0.228	0.228	77.2%	10,457	6,570	2,961	0.69	0.30		0.751	0.144	0.324	0.324	67.6%	11,377	6,789	3,305	0.67	0.29	58.9	0.019	0.833	0.269	0.433	0.443	55.7%	65.27%
1933	C	13,613	7,869	4,141	64%	0.28		0.732		0.204	0.204	79.6%	11,043	5,643	3,180	0.68	0.29		0.701	0.144	0.307	0.307	69.3%	11,529	5,512	3,362	0.67	0.29	60.1	0.069	0.786	0.307	0.446	0.484	51.6%	66.32%
1934	C	13,955	6,662	4,269	64%	0.28		0.867		0.185	0.185	81.5%	15,450	6,912	4,828	0.62	0.27		0.770	0.144	0.314	0.314	68.6%	11,646	5,193	3,406	0.67	0.29	63.6	0.217	0.832	0.419	0.538	0.638	36.2%	60.55%
1935	B	13,080	7,040	3,946	65%	0.28		0.867		0.193	0.193	80.7%	24,363	11,905	8,162	0.57	0.25		1.000	0.144	0.359	0.359	64.1%	24,567	10,117	8,245	0.57	0.25	58.9	0.019	1.000	0.269	0.452	0.463	53.7%	63.14%
1936	B	64,325	8,171	23,107	23%	0.23		0.748		0.170	0.170	83.0%	36,048	8,457	12,158	0.24	0.24		0.853	0.144	0.314	0.314	68.6%	23,175	9,866	7,717	0.57	0.25	59.7	0.063	1.000	0.294	0.473	0.501	49.9%	64.85%
1937	B	33,726	8,517	11,663	24%	0.24		0.767		0.185	0.185	81.5%	36,187	8,067	13,332	0.24	0.24		0.832	0.144	0.308	0.308	69.2%	23,578	9,394	7,868	0.57	0.25	58.8	0.015	0.972	0.266	0.444	0.452	54.8%	66.49%
1938	W	80,775	8,319	29,260	22%	0.22		0.756		0.170	0.170	83.0%	79,187	8,294	28,666	0.22	0.22		0.845	0.144	0.302	0.302	69.8%	47,543	9,075	16,831	0.23	0.23	56.3	0.000	0.910	0.186	0.354	0.354	64.6%	69.96%
1939	D	19,392	8,319	6,303	59%	0.26		0.756		0.197	0.197	80.3%	16,914	7,010	5,376	0.61	0.27		0.775	0.144	0.313	0.313	68.7%	10,806	5,865	3,091	0.68	0.29	63.3	0.204	0.862	0.409	0.543	0.636	36.4%	60.55%
1940	A	50,386	12,413	17,886	23%	0.23		0.977		0.228	0.228	77.4%	63,037	8,946	22,626	0.23	0.23		0.860	0.144	0.312	0.312	68.8%	42,936	10,335	15,109	0.23	0.23	57.4	0.000	0.998	0.221	0.404	0.404	59.6%	67.17%
1941	W	75,481	9,597	27,280	23%	0.23		0.825		0.186	0.186	81.4%	58,955	8,164	21,099	0.23	0.23		0.836	0.144	0.303	0.303	69.7%	42,770	9,411	15,046	0.24	0.24	56.9	0.000	0.939	0.205	0.377	0.377	62.3%	68.98%
1942	W	78,614	8,337	28,452	22%	0.22		0.757		0.170	0.170	83.0%	27,550	8,327	9,354	0.25	0.25		0.848	0.144	0.318	0.318	68.2%	43,678	9,747	15,385	0.23	0.23	56.5	0.000	0.950	0.192	0.370	0.370	63.0%	68.69%
1943	W	52,577	8,373	18,714	23%	0.23		0.759		0.175	0.175	82.5%	65,119	8,376	23,404	0.23	0.23		0.849	0.144	0.305	0.305	69.5%	29,427	9,764	10,058	0.24	0.24	58.8	0.015	0.992	0.266	0.444	0.452	54.8%	66.81%
1944	D	33,276	8,015	11,495	24%	0.24		0.740		0.178	0.178	82.2%	25,127	8,327	8,448	0.25	0.25		0.846	0.144	0.320	0.320	68.0%	10,100	6,319	2,827	0.69	0.30	58.4	0.000	0.799	0.253	0.416	0.416	58.4%	66.97%
1945	B	44,881	8,445	15,764	23%	0.23		0.783		0.179	0.179	82.1%	28,152	8,457	9,579	0.25	0.25		0.863	0.144	0.319	0.319	68.1%	13,142	8,722	3,965	0.65	0.28	60.6	0.090	0.966	0.323	0.504	0.549	45.1%	63.83%
1946	B	23,948	8,787	8,007	57%	0.25		0.781		0.197	0.197	80.3%	25,127	8,766	8,448	0.25	0.25		0.870	0.144	0.326	0.326	67.4%	12,722	7,815	3,806	0.65	0.28	60.7	0.095	0.921	0.326	0.495	0.542	45.8%	62.60%
1947	D	22,185	8,536	7,340	58%	0.25		0.788		0.196	0.196	80.4%	24,686	8,522	8,263	0.57	0.25		0.857	0.144	0.323	0.323	67.7%	14,251	6,117	4,380	0.63	0.28	62.5	0.170	0.862	0.384	0.516	0.598	40.2%	61.11%
1948	B	14,412	5,754	4,440	63%	0.28		0.818		0.170	0.170	83.0%	18,459	8,213	5,954	0.60	0.26		0.840	0.144	0.327	0.327	67.3%	24,973	8,655	8,390	0.57	0.25	56.6	0.000	0.893	0.195	0.370	0.370	63.0%	68.06%
1949	D	16,511	8,391	5,225	61%	0.27		0.780		0.204	0.204	79.6%	41,277.	8,327	14,487	0.24	0.24		0.846	0.144	0.310	0.310	68.9%	18,822	5,378	6,090	0.60	0.26	61.7	0.137	0.807	0.358	0.478	0.548	45.2%	63.27%
1950	B	36,012	12,244	12,518	24%	0.24		0.988		0.231	0.231	76.9%	24,102	8,815	8,064	0.57	0.25		0.873	0.144	0.327	0.327	67.3%	20,755	7,865	6,812	0.59	0.26	61.3	0.120	0.936	0.346	0.497	0.557	44.3%	61.60%
1951	A	61,238	9,057	21,953	23%	0.23		0.796		0.182	0.182	81.8%	30,819	9,026	10,576	0.24	0.24		0.864	0.144	0.324	0.324	67.6%	14,722	7,966	4,556	0.63	0.27	59.9	0.061	0.915	0.301	0.469	0.502	49.8%	64.10%
1952	W	62,812	8,015	22,542	23%	0.23		0.740		0.169	0.169	83.1%	58,174	8,262	20,807	0.23	0.23		0.843	0.144	0.304	0.304	69.6%	57,324	8,873	20,469	0.23	0.23	56.5	0.000	0.865	0.160	0.326	0.326	67.4%	70.68%
1953	W	26,990	8,427	9,892	25%	0.25		0.782		0.187	0.187	81.3%	25,989	8,441	8,770	0.25	0.25		0.852	0.144	0.320	0.320	68.0%	16,822	7,042	5,342	0.61	0.27	58.8	0.015	0.845	0.266	0.420	0.429	57.1%	66.43%
1954	A	57,151	9,003	20,424	23%	0.23		0.793		0.182	0.182	81.8%	49,701	8,864	17,638	0.23	0.23		0.875	0.144	0.314	0.314	68.6%	40,434	8,520	14,172	0.24	0.24	58.4	0.000	0.918	0.253	0.410	0.410	59.0%	67.44%
1955	D	18,692	8,445	5,293	61%	0.27		0.783		0.204	0.204	79.6%	17,499	7,872	5,596	0.61	0.27		0.822	0.144	0.324	0.324	67.6%	10,722	5,512	3,080	0.68	0.29	56.4	0.000	0.719	0.189	0.345	0.345	65.5%	68.54%
1956	W	82,534	8,745	22,438	23%	0.23		0.779		0.178	0.178	82.2%	37,569	7,367	13,101	0.24	0.24		0.794	0.144	0.299	0.299	70.1%	21,629	10,151	7,139	0.58	0.26	59.7	0.053	1.000	0.294	0.475	0.503	49.7%	65.57%
1957	A	32,989	8,985	11,380	24%	0.24		0.792		0.191	0.191	80.9%	44,513	8,831	15,698	0.23	0.23		0.874	0.144	0.315	0.315	68.5%	19,629	7,378	6,391	0.59	0.26	60.5	0.086	0.894	0.320	0.469	0.515	48.5%	64.11%
1958	W	64,731	8,409	23,260	23%	0.23		0.781		0.173	0.173	82.7%	93,547	8,392	34,037	0.22	0.22		0.860	0.144	0.302	0.302	69.8%	52,869	9,764	18,748	0.23	0.23	57.4	0.000	0.987	0.221	0.393	0.393	60.7%	68.76%
1959	B	50,383	8,409	17,886	23%	0.23		0.781		0.176	0.176	82.4%	22,476	8,246	7,456	0.58	0.25		0.842	0.144	0.322	0.322	67.8%	11,986	5,714	3,525	0.66	0.29	63	0.191	0.849	0.400	0.529	0.619	38.1%	60.81%
1960	D	27,642	11,144	9,386	25%	0.25		0.909		0.224	0.224	77.6%	29,648	6,961	10,138	0.24	0.24		0.773	0.144	0.298	0.298	70.2%	10,571	5,210	3,003	0.69	0.30	59.5	0.044	0.759	0.266	0.427	0.452	54.8%	66.53%
1961	D	33,527	11,524	11,589	24%	0.24		0.929		0.224	0.224	77.6%	21,549	7,026	7,109	0.58	0.26		0.776	0.144	0.308	0.308	69.4%	10,940	4,874	3,142	0.68	0.29	60.1	0.069	0.751	0.307	0.437	0.476	52.4%	66.36%
1962	B	46,437	12,010	16,418	23%	0.23		0.955		0.223	0.223	77.7%	27,906	8,087	9,488	0.25	0.25		0.832	0.144	0.314	0.314	68.6%	13,932	7,529	4,260	0.64	0.28	61.8	0.141	0.925	0.362	0.518	0.586	41.4%	61.64%
1963	W	59,150	12,712	21,172	23%	0.23		0.983		0.227	0.227	77.3%	32,267	8,782	11,118	0.24	0.24		0.871	0.144	0.320	0.320	68.0%	70,684	9,680	25,466	0.23	0.23	53.7	0.000	0.896	0.103	0.262	0.262	71.8%	70.33%
1964	D	17,333	7,364	5,533	61%	0.27		0.704		0.187	0.187	81.3%	16,572	7,364	5,248	0.61	0.27		0.795	0.144	0.319	0.319	68.1%	9,394	5,193	2,583	0.71	0.30	59.3	0.036	0.754	0.262	0.425	0.446	55.4%	66.03%
1965	W	34,535	10,047	11,966	24%	0.24		0.849		0.204	0.204	79.6%	22,232	8,750	7,365	0.58	0.25		0.869	0.144	0.329	0.329	67.1%	44,451	9,999	15,675	0.23	0.23	56.9	0.000	0.971	0.205	0.384	0.384	61.6%	67.98%
1966	B	27,099	8,751	9,185	25%	0.25		0.779		0.193	0.193	80.7%	29,356	8,750	10,029	0.24	0.24		0.869	0.144	0.322	0.322	67.8%	15,512	6,586	4,851	0.62	0.27	61.9	0.145	0.876	0.365	0.504	0.576	42.4%	61.88%
1967	W	42,800	7,599	15,057	24%	0.24		0.717		0.169	0.169	83.1%	54,546	7,611	19,451	0.23	0.23		0.808	0.144	0.297	0.297	70.3%	40,922	9,646	14,355	0.24	0.24	53.8	0.000	0.896	0.106	0.292	0.292	70.8%	72.11%
1968	B	53,494	8,136	19,057	23%	0.23		0.746		0.172	0.172	82.8%	37,276	8,441	12,991	0.24	0.24		0.852	0.144	0.313	0.313	68.7%	14,671	6,201	4,537	0.63	0.27	61.5	0.128	0.848	0.352	0.488	0.554	44.6%	63.31%
1969	W	67,792	7,526	24,404	23%	0.23		0.713		0.162	0.162	83.8%	45,717	5,867	16,146	0.23	0.23		0.715	0.144	0.277	0.277	72.3%	45,478	7,630	16,056	0.23	0.23	56.4	0.000	0.834	0.189	0.340	0.340	66.0%	71.89%
1970	W	58,771	7,094	21,031	23%	0.23		0.690		0.158	0.158	84.2%	35,942	7,351	12,492	0.24	0.24		0.794	0.144	0.300	0.300	70.0%	15,478	8,063	4,839	0.62	0.27	58.8	0.015	0.901	0.266	0.438	0.446	55.4%	67.48%
1971	W	29,476	9,075	10,074	24%	0.24		0.797		0.195	0.195	80.5%	51,197	9,026	18,196	0.23	0.23		0.884	0.144	0.315	0.315	68.5%	21,595	7,798	7,127	0.58	0.26	58.7	0.011	0.884	0.262	0.422	0.428	57.2%	66.65%
1972	B	24,565	8,693	8,237	57%	0.25		0.776		0.195	0.195	80.5%	33,259	7,644	11,489	0.24	0.24		0.809	0.144	0.305	0.305	69.5%	20,856	6,991	6,850	0.59	0.26	58.5	0.002	0.837	0.256	0.406	0.407	59.3%	67.90%
1973	A	71,376	8,805	25,744	23%	0.23		0.782		0.177	0.177	82.3%	48,156	8,782	17,060	0.23	0.23		0.871	0.144	0.313	0.313	68.7%	20,049	10,218	6,548	0.59	0.26	61.3	0.120	1.000	0.346	0.515	0.573	42.7%	62.65%
1974	W	42,440	8,769	14,923	24%	0.24		0.780		0.184	0.184	81.6%	100,199	8,766	36,524	0.22	0.22		0.870	0.144	0.308	0.308	69.4%	33,460	10,201	11,564	0.24	0.24	56.8	0.000	0.980	0.202	0.389	0.389	61.1%	68.52%
1975	W	57,871	8,985	20,694	23%	0.23		0.792		0.182	0.182	81.8%	75,007	9,010	27,103	0.23	0.23		0.883	0.144	0.311	0.311	68.9%	28,200	10,487	8,849	0.25	0.25	56.8	0.000	0.995	0.202	0.399	0.399	60.1%	67.95%
1976	C	19,819	8,414	6,462	59%	0.26		0.761		0.197	0.197	80.3%	19,581	8,343	6,373	0.59	0.26		0.847	0.144	0.327	0.327	67.3%	9,663	4,588	2,664	0.70	0.30	58.9	0.019	0.714	0.269	0.403	0.415	58.5%	66.36%
1977	C	12,370	2,629	3,676	66%	0.28		0.449		0.128	0.128	87.2%	7,758	2,830	1,961	0.75	0.32		0.549	0.144	0.274	0.274	72.6%	7,949	3,916	2,023	0.75	0.32	64.3	0.246	0.775	0.441	0.548	0.659	34.1%	62.95%
1978	A	50,327	9,957	17,872	23%	0.23		0.844		0.196	0.196	80.4%	48,595	6,115	17,225	0.23	0.23		0.727	0.144	0.280	0.280	72.0%	38,821	7,613	13,589	0.24	0.24	56.9	0.000	0.842	0.205	0.356	0.356	64.4%	70.83%
1979	B	42,134	8,301	14,808	24%	0.24		0.755		0.178	0.178	82.2%	33,210	8,327	11,471	0.24	0.24		0.846	0.144	0.314	0.314	68.6%	18,217	9,310	5,863	0.60	0.26	59.8	0.057	0.986	0.296	0.479	0.508	49.2%	64.56%
1980	A	70,531	7,841	25,429	23%	0.23		0.730		0.165	0.165	83.5%	36,983	5,985	12,862	0.24	0.24		0.720	0.144	0.281	0.281	71.9%	20,570	8,285	6,743	0.59	0.26	57.1	0.000	0.862	0.211	0.384	0.384	61.6%	70.28%
1981	D	30,124	8,427	10,316	24%	0.24		0.762		0.186	0.186	81.4%	31,996	8,067	11,014	0.24	0.24		0.832	0.144	0.311	0.311	68.9%	17,377	6,756	5,549	0.61	0.27	61.5	0.126	0.878	0.352	0.492	0.557	44.3%	63.15%
1982	W	67,486	9,003	24,290	23%	0.23		0.793		0.180	0.180	82.0%	68,957	8,977	24,840	0.23	0.23		0.861	0.144	0.311	0.311	68.9%	76,247	9,915	27,566	0.23	0.23	54.1	0.000	0.916	0.115	0.296	0.296	70.4%	71.04%
1983	W	83,368	7,184	30,229	22%	0.22		0.695		0.158	0.158	84.4%	83,627	5,465	30,326	0.22	0.22		0.692	0.144	0.267	0.267	73.3%	67,609	7,075	24,336	0.23	0.23	55	0.000	0.779	0.144	0.268	0.268	71.2%	74.11%
1984	W	36,700	5,407	12,776	24%	0.24		0.599		0.143	0.143	85.7%	36,528	7,319	12,711	0.24	0.24		0.792	0.144	0.299	0.299	70.1%	17,175	8,420	5,474	0.61	0.27	59.7	0.053	0.936	0.294	0.465	0.493	50.7%	66.31%
1985	D	22,543	9,003	7,481	58%	0.25		0.793		0.201	0.201	79.9%	21,958	9,010	7,261	0.58	0.26		0.883	0.144	0.333	0.333	66.7%	13,898	6,117	4,248	0.64	0.28	60.8	0.099	0.831	0.330	0.469	0.521	47.9%	62.77%
1986	W	######	11,812	37,058	22%	0.22		0.945		0.210	0.210	79.0%	72,828	5,936	26,268	0.23	0.23		0.717	0.144	0.274	0.274	72.6%	22,234	7,815	7,365	0.58	0.25	60.4	0.082	0.916	0.317	0.469	0.513	48.7%	66.29%
1987	D	23,624	5,798	7,885	57%	0.25		0.620		0.156	0.156	84.4%	32,592	6,814	11,239	0.24	0.24		0.765	0.144	0.294	0.294	70.6%	10,453	4,319	2,959	0.69	0.30	65.7	0.305	0.822	0.486	0.586	0.712	28.8%	59.83%
1988	C	14,169	5,233	4,349	64%	0.28		0.569		0.163	0.163	83.7%	10,148	4,651	2,845	0.69	0.30		0.648	0.144	0.294	0.294	70.6%	9,730	4,638	2,689	0.70	0.30	59.9	0.061	0.735	0.301	0.432	0.466	53.4%	67.10%
1989	D	11,002	4,988	3,165	68%	0.29		0.576		0.169	0.169	83.1%	48,611	7,725	17,231	0.23	0.23		0.814	0.144	0.300	0.300	70.0%	30,300	6,773	10,382	0.24	0.24	61.4	0.124	0.877	0.349	0.478	0.543	45.7%	64.44%
1990	C	17,566	8,445	5,616	61%	0.26		0.783		0.202	0.202	79.8%	15,239	6,717	4,749	0.62	0.27		0.759	0.144	0.312	0.312	68.8%	12,117	4,669	3,582	0.66	0.29	61.6	0.133	0.768	0.355	0.473	0.543	45.7%	63.31%
1991	C	10,583	1,909	2,990	69%	0.30		0.410		0.121	0.121	87.9%	31,567	11,531	10,868	0.24	0.24		1.000	0.144	0.362	0.362	64.8%	16,839	6,201	5,346	0.61	0.27	60.6	0.099	0.836	0.330	0.465	0.518	48.2%	62.83%
1992	C	32,110	8,293	11,059	24%	0.24		0.755		0.183	0.183	81.7%	20,508	9,108	6,720	0.59	0.26		0.888	0.144	0.336	0.336	66.4%	12,187	5,344	3,601	0.66	0.29	61.2	0.116	0.797	0.342	0.472	0.533	46.7%	62.46%
																																			Average	64.98%

Formulas: Winter Run Salmon Smolt Survival Model

C10 ='Study 513 Flow Data'!E7
D10 ='Study 513 Flow Data'!O7 (HIDDEN)
E10 ='Study 513 Flow Data'!Y7 (HIDDEN)
F10 =(D9+E9)
G10 =0.374*C9-950
H10 =IF(C9>$G$2,(0.133*C9+829)/(C9-G9),(0.293*C9+2090)/(C9-G9))
I10 =(0.133*C9+829)/(C9-G9)
K10 =(-0.5916024)+(0.017968*$M$1)+(0.000054*F9)
M10 =(K9*I9)+L9*(1-I9)
N10 =J9+M9-(J9*M9)
O10 =1-N9

Q10 ='Study 513 Flow Data'!F7
R10 ='Study 513 Flow Data'!P7 (HIDDEN)
S10 ='Study 513 Flow Data'!Z7 (HIDDEN)
T10 =(R9+S9)
U10 =0.374*Q9-950
V10 =IF(Q9>$G$2,(0.133*Q9+829)/(Q9-U9),(0.293*Q9+2090)/(Q9-U9))
Y10 =(0.133*Q9+829)/(Q9-U9)
W10 =IF(((-0.5916024)+(0.017968*$M$2)+(0.000054*T9))>1,1,((-0.5916024)+(0.017968*$M$2)+(0.000054*T9)))
Z10 =-1.613493+(0.0319584*$M$2)
AA10 =(Y9*W9)+Z9*(1-W9)
AB10 =X9+AA9-(X9*AA9)
AC10 =1-AB9

AE10 ='Study 513 Flow Data'!G7
AF10 ='Study 513 Flow Data'!Q7 (HIDDEN)
AG10 ='Study 513 Flow Data'!AA7 (HIDDEN)
AH10 =AF9+AG9
AI10 =0.374*AE9-950
AJ10 =IF(AE9>$G$2,(0.133*AE9+829)/(AE9-AI9),(0.293*AE9+2090)/(AE9-AI9))
AK10 =(0.133*AE9+829)/(AE9-AI9)
AM10 =IF((-2.45925+(0.0420748*AL9))<0,0,(-2.45925+(0.0420748*AL9)))
AN10 =IF(((-0.5916024)+(0.017968*AL9)+(0.000054*AH9))>1,1,((-0.5916024)+(0.017968*AL9)+(0.000054*AH9)))
AO10 =-1.613493+(0.0319584*AL9)
AP10 =(AN9*AK9)+(AO9*(1-AK9))
AQ10 =AM9+AP9-(AM9*AP9)
AR10 =1-AQ9
AS10 =(0.13*O9)+(0.57*AC9)+(0.3*AR9)

STUDY: 1995C06H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97

CP # 137, SACRAMENTO RIVER AT FREEPORT, DOWNSTREAM FLOW (TAF to CFS)

Project: /1995C06H-SWRCB-513/137/FLOW-DOWNSTREAM//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	12033	17142	17727	33923	32413	23244	46302	34115
1923	18150	33600	32039	22778	17174	24066	15092	15948
1924	11411	13580	15044	17924	12734	6764	9660	13092
1925	8033	12669	11108	43881	27079	20587	12588	10756
1926	11445	11108	20297	37020	18735	21293	12263	11798
1927	23057	19142	34430	86771	44285	48289	26640	18066
1928	27074	16491	27225	27729	85285	29784	18345	15259
1929	13579	14540	16003	19266	17711	7831	8213	14133
1930	7563	15011	22704	17970	30624	13092	12133	13024
1931	11764	14344	14507	13649	10490	8033	8766	12318
1932	8621	15645	16621	15090	10457	11377	12962	15125
1933	9142	9937	14035	13613	11043	11529	7741	10688
1934	7731	13645	18004	13955	15450	11646	8181	12722
1935	9445	8750	24839	13090	24363	24587	29128	17226
1936	12117	13206	34397	64325	35048	23175	19110	16520
1937	11428	12474	16052	33725	38187	23578	14735	16251
1938	24923	56824	31567	80775	79187	47543	57020	35645
1939	19343	18687	18605	19392	16914	10606	8181	13949
1940	9193	8473	26688	50365	63037	42938	16019	15932
1941	14150	39650	72307	75481	58955	42770	39536	21847
1942	18200	65135	62631	78614	27550	43678	36267	27275
1943	22267	28738	57003	52577	65119	29427	20427	15829
1944	14974	13759	18849	33275	25127	10100	9709	12352
1945	16469	18752	15011	44691	28152	13142	13840	16117
1946	22519	59101	42545	23948	25127	12722	12230	15428
1947	15713	18280	15320	22165	24688	14251	9579	13243
1948	12772	11515	17565	14412	18459	24973	32185	23444
1949	14705	15580	15044	16511	41277	18822	11775	12571
1950	11445	11758	22931	36012	24102	20755	16182	17747
1951	48871	67705	62663	61238	30819	14722	18329	16234
1952	17679	51067	65786	62812	58174	57324	59768	38418
1953	16822	42626	62972	28990	25989	16822	27355	26469
1954	21343	15011	33291	57151	49701	40434	23322	14991
1955	20805	26005	22720	16692	17499	10722	10929	12487
1956	13814	39618	85204	62534	37569	21829	37357	23225
1957	15360	14196	18947	32969	44513	19829	18914	17024
1958	19209	24021	39309	64731	93547	52669	43228	34098
1959	16066	14637	35324	50363	22476	11966	10197	12772
1960	11293	10929	15873	27642	29648	10571	14263	11747
1961	17780	23143	15710	33527	21549	10940	9482	14856
1962	12856	20557	14149	46437	27906	13932	13141	19041
1963	21259	30933	24769	59150	32267	70684	28868	17696
1964	32065	14881	26705	17333	16572	9394	11791	14856
1965	15562	37926	81870	34535	22232	44451	23306	16974
1966	28586	17093	29258	27099	29356	15512	12393	11394
1967	23242	40821	36089	42800	54548	40922	45651	38938
1968	16150	16621	30640	53494	37276	14671	9888	14554
1969	17041	27745	73299	67792	45717	45478	45261	24234
1970	17579	49506	92002	58771	35942	15478	13287	15310
1971	27914	57329	47310	29476	51197	21595	30998	24318
1972	16671	22183	20378	24565	33259	20856	10539	12201
1973	26771	27144	46302	71376	48156	20049	16638	16789
1974	60668	60776	78796	42440	100199	33460	27371	22200
1975	17478	17613	18882	57871	75007	26200	29941	25141
1976	19158	16768	16719	19819	19581	9663	8652	15276
1977	8336	8132	8636	12370	7758	7949	7660	8369
1978	6420	11970	54661	50327	48595	38821	21809	15646
1979	15024	12783	27583	42134	33210	18217	13352	16049
1980	19898	21256	65281	70531	36983	20570	14881	15663
1981	12991	16638	29307	30124	31990	17377	9010	13293
1982	45039	68372	51392	67466	68957	76247	38089	25326
1983	38569	54385	58809	83368	83627	67609	54710	54215
1984	62920	82748	47538	36700	36528	17175	15336	16268
1985	36720	23793	17727	22543	21956	13898	11368	12100
1986	11478	17971	25956	101626	72828	22234	13434	14251
1987	11529	13629	17109	23624	32592	10453	8294	15377
1988	8974	16019	26282	14169	10148	9730	8664	14251
1989	11428	11937	14653	11002	48611	30300	19191	11461
1990	12117	11937	22037	17556	15239	12117	7221	13260
1991	8554	9612	8408	10533	31567	16839	9140	10067
1992	8033	7888	12442	32110	20508	12167	8343	12890

STUDY: 1995C06H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97

CVP, TOTAL CVP EXPORT (TAF converted to CFS)

Project: /1995C06H-SWRCB-513/CVP/EXPORT-TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4470	4342	4326	4357	4326	4706	4814	4874
1923	4487	4342	4326	4375	4326	4638	3887	4874
1924	4269	4342	4326	4172	1854	2067	1464	420
1925	2521	4375	4115	1206	3415	4269	3350	3126
1926	4470	4342	4326	4339	4326	4151	3025	3630
1927	4437	4342	4326	4069	3334	4706	4700	4874
1928	4470	4342	4326	4207	4326	4420	3204	4874
1929	4453	4342	4326	4339	4424	655	2277	4235
1930	2286	4375	4342	3493	2862	2823	2718	3798
1931	4437	4342	4326	3241	2065	2134	1822	1344
1932	2202	4375	4342	4259	3009	3664	3529	3664
1933	3613	4147	4342	3493	2017	2840	3074	3428
1934	2823	4375	4115	1404	2862	454	2407	4101
1935	2218	3676	4342	3457	4326	4689	3204	4874
1936	4453	4342	4326	4207	4326	4706	3204	4874
1937	4453	4342	4326	4339	4066	4437	4814	4874
1938	4470	4342	4326	4375	4326	4706	4635	4874
1939	4487	4342	4326	4357	3009	2991	2651	3865
1940	3395	2472	4326	4207	4326	4706	3204	4874
1941	4453	4342	4326	4393	4326	4706	4814	4874
1942	4487	4342	4326	4375	4326	4706	4814	4874
1943	4470	4342	4326	4375	4326	4706	4814	4874
1944	4470	4342	4326	4190	4326	3210	3025	3462
1945	4453	4342	4326	4339	4326	4420	4066	4874
1946	4470	4342	4326	4375	4326	3966	3708	4588
1947	4453	4342	4326	4339	4326	3109	2700	3815
1948	4453	4342	4326	3633	3903	4087	4538	4874
1949	4470	4342	4326	4339	4326	1378	3155	3328
1950	4453	4342	4326	4357	4326	3983	3529	4874
1951	4453	4342	4326	4375	4326	4033	4033	4874
1952	4470	4342	4326	4242	4326	4706	4814	4874
1953	4487	4342	4326	4375	4326	3580	4375	4874
1954	4453	4342	4326	4375	4180	4319	3204	4874
1955	4470	4342	4326	4357	4326	2807	2927	3580
1956	4437	4342	4326	4225	2667	4706	4814	4874
1957	4487	4342	4326	4339	4326	3748	3919	4874
1958	4453	4342	4326	4357	4326	4706	4814	4874
1959	4487	4342	4326	4357	4326	2907	2766	3748
1960	4437	4342	4326	4016	2862	2655	3009	3512
1961	4437	4342	4326	4339	2862	2487	2440	4084
1962	4437	4342	4326	4339	3448	3815	3350	4874
1963	4470	4342	4326	4375	4326	4872	4814	4874
1964	4453	4342	4326	3199	3090	2655	2879	4386
1965	4453	4342	4326	4357	4326	4638	3936	4874
1966	4470	4342	4326	4375	4326	3344	3155	3496
1967	4453	4342	4326	4393	4326	4706	4814	4874
1968	4487	4342	4326	4225	4326	3159	2781	4453
1969	4453	4342	4326	4393	2651	3462	4196	4874
1970	4487	4342	4326	3043	3236	4218	3692	4874
1971	4470	4342	4326	4393	4326	3949	4407	4874
1972	4453	4342	4326	4207	3155	3546	2781	3731
1973	4453	4342	4326	4375	4326	4706	4359	4840
1974	4453	4342	4326	4357	4326	4706	4814	4874
1975	4487	4342	4326	4357	4326	4706	4814	4874
1976	4470	4842	4326	4190	4424	1529	2277	4235
1977	3008	2537	3301	1116	1464	1849	1171	286
1978	1428	4228	2944	2143	2212	3546	4310	4874
1979	4487	4342	4326	4339	4326	4655	3871	2588
1980	4453	4342	4326	4207	2635	4336	4814	4874
1981	4470	4342	4326	4357	3952	3428	2683	3832
1982	4453	4342	4326	4375	4326	4353	4228	4874
1983	4487	4342	4326	4393	2830	3428	4163	4874
1984	3563	3139	1447	1686	3318	4269	3773	4874
1985	4470	4342	4326	4357	4326	3109	2895	3613
1986	4437	4842	4326	4357	1773	2622	3871	4874
1987	4453	4342	2423	1422	2505	437	2391	4134
1988	4437	4342	4326	2590	2635	2319	2358	4151
1989	4437	4342	4326	3457	4196	2050	3204	3462
1990	4437	4342	3708	1531	2700	1378	2196	4319
1991	2773	3594	3480	990	4424	3193	2521	2758
1992	3563	3708	3708	1008	2602	1563	2700	3815

STUDY: 1995C06H-SWRCB-513 DWRSIM: recirc818 Sep 97

SWP, SWP EXPORT AT BANKS PP (TAF converted to CFS)

Project: /1995C06H-SWRCB-513/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4722	7123	7644	5348	4147	5159	5351	6672
1923	6672	3903	3610	2377	4017	4638	3676	3563
1924	3764	6164	7058	5285	2326	1899	2846	5714
1925	3294	5969	3789	7923	2261	4151	3334	639
1926	3697	3464	7140	7671	3985	4033	2814	2723
1927	6672	7026	6538	4105	4131	4907	4489	4319
1928	6672	6652	3643	4225	4424	4302	4277	3008
1929	6134	6928	7140	3709	3301	2840	2049	2571
1930	2571	6847	7156	4610	4098	2706	2505	2773
1931	3731	6245	6717	4159	2814	1966	2358	4722
1932	2638	7221	7855	5528	3562	3126	3171	1899
1933	2605	2407	6798	4375	3627	2672	1626	1126
1934	2134	6489	7156	5258	4050	4739	2033	2336
1935	3781	3545	7725	3583	7579	5428	5383	4000
1936	4218	5855	7140	3964	4131	5159	4814	3697
1937	3580	5855	7628	4177	4001	4958	4570	3916
1938	6672	7497	3464	3943	3968	4369	5448	6672
1939	4050	3741	3236	3961	4001	2874	2440	3395
1940	2605	2700	8018	8206	4619	5630	2749	3496
1941	6672	7221	8197	5204	3838	4706	5123	6672
1942	4269	3610	3236	3961	4001	5042	5269	6672
1943	5512	3773	3301	3997	4050	5058	5595	3865
1944	6672	6375	3269	3825	4001	3109	2814	3395
1945	6672	6993	6326	4105	4131	4302	3854	3613
1946	6672	7530	4066	4411	4440	3848	3497	3580
1947	6672	7058	6701	4195	4196	3008	2488	3159
1948	4823	3464	7075	2121	4310	4588	4326	5865
1949	6672	6928	7042	4051	4001	4000	2944	3395
1950	3580	3952	7237	7887	4489	3882	3318	3865
1951	6672	7595	6896	4682	4700	3933	3822	3596
1952	6672	7156	4440	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	3462	4163	6672
1954	6672	3903	3854	4628	4684	4201	5302	3008
1955	6672	6961	5204	4087	3545	2706	2700	3210
1956	6016	7595	6083	4520	4700	5445	6652	6672
1957	6672	5416	3871	4646	4505	3630	3708	3748
1958	6672	6944	3919	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3919	2607	2553	3143
1960	3075	2797	7123	7128	4098	2554	2797	2672
1961	6672	6912	7140	7184	4163	2386	2228	3126
1962	5042	6896	5676	7671	4619	3714	3123	3428
1963	6672	6944	7319	8337	4456	5008	4716	4453
1964	6672	5627	3871	4155	4294	2538	2667	3008
1965	6672	7302	8294	5690	4424	5361	5042	4353
1966	6672	5058	3643	4375	4424	3243	2944	3025
1967	6672	7188	3789	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	3042	2570	3109
1969	6672	7026	3253	3133	3236	4168	5025	6638
1970	4084	3480	3334	4051	4115	3865	3480	3395
1971	6672	7107	5969	4682	4700	3848	4180	6336
1972	6672	6148	3887	4485	4489	3445	2570	3008
1973	6672	6961	4993	4429	4456	5512	4147	3865
1974	6672	7058	3773	4411	4440	5495	5334	6184
1975	4622	4245	3854	4628	4684	5781	5237	6672
1976	6672	4749	3871	4225	3919	3059	2049	2924
1977	3462	3155	2488	1513	1366	2067	1057	1008
1978	706	5643	7823	7815	3903	4067	4082	4319
1979	6672	3659	3269	3961	4001	4655	3659	5731
1980	6672	6977	3155	3633	3350	3949	5009	4521
1981	5445	4033	3350	4069	4115	3328	2472	3176
1982	6672	6993	6034	4628	4651	5583	6684	6672
1983	6218	4310	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	4151	3562	3613
1985	6672	4294	3871	4646	4684	3008	2683	2991
1986	4521	6961	7253	7454	4163	5193	5660	4453
1987	3748	6099	5757	4375	4310	3882	2163	3260
1988	1899	6896	7107	2643	2017	2319	2147	2790
1989	4554	5025	6083	1531	3529	4722	3285	2571
1990	4050	3627	7091	6914	4017	3311	1968	2118
1991	2118	3171	1626	918	7107	3008	2131	823
1992	1681	1659	5774	7284	6505	3781	1887	2487

C-032394

C-032394

Study 485 Sacramento River Fall Run Smolt Survival Model

Cross Channel closed over 25,000 cfs

Cross Channel Closed Apr to May 20, 14 d May 21-Jun 15

Sacramento River temperatures based on limited historical data from USBR

Year	Water Year Type	APRIL Sac River Flows	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channe Closed	observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123
1922	A	22,822	8,369	7,586	58%	0.25	58.5	0.002	0.828	0.258	0.400	0.401	59.9%
1923	B	23,007	7,966	7,666	58%	0.25	58.3	0.000	0.802	0.250	0.390	0.390	61.0%
1924	C	8,134	2,790	2,092	74%	0.32	61.5	0.126	0.638	0.352	0.441	0.513	48.7%
1925	D	22,251	6,924	7,372	58%	0.25	59.1	0.027	0.771	0.275	0.401	0.418	58.2%
1926	D	20,049	6,420	6,548	59%	0.26	61.6	0.133	0.794	0.355	0.469	0.539	46.1%
1927	W	46,215	8,087	17,062	23%	0.23	56.8	0.000	0.779	0.202	0.336	0.336	66.4%
1928	A	29,208	7,630	9,974	25%	0.25	58.7	0.011	0.798	0.262	0.393	0.399	60.1%
1929	C	9,082	2,958	2,460	72%	0.31	58.3	0.000	0.548	0.186	0.297	0.297	70.3%
1930	D	12,638	3,899	3,777	65%	0.28	58.6	0.046	0.648	0.291	0.392	0.422	57.8%
1931	C	9,193	2,958	2,466	71%	0.31	62.8	0.183	0.865	0.393	0.477	0.572	42.8%
1932	D	13,092	5,378	3,946	65%	0.28	58.9	0.019	0.700	0.269	0.390	0.402	59.8%
1933	C	12,739	4,117	3,814	65%	0.28	60.1	0.069	0.667	0.307	0.409	0.450	55.0%
1934	C	12,856	3,563	3,858	65%	0.28	63.6	0.217	0.708	0.419	0.500	0.608	39.2%
1935	B	24,637	9,075	8,264	57%	0.25	58.9	0.019	0.861	0.269	0.417	0.428	57.2%
1936	B	21,024	8,369	6,913	58%	0.26	59.7	0.053	0.844	0.294	0.436	0.465	53.5%
1937	B	21,965	7,965	7,265	58%	0.26	58.8	0.015	0.811	0.266	0.405	0.413	58.7%
1938	W	47,173	7,714	16,693	23%	0.23	56.3	0.000	0.756	0.186	0.318	0.318	68.2%
1939	D	12,234	4,134	3,626	66%	0.29	63.3	0.204	0.725	0.409	0.500	0.602	39.8%
1940	A	41,728	8,504	14,656	24%	0.24	57.4	0.000	0.809	0.221	0.359	0.359	64.1%
1941	W	42,367	9,310	14,895	24%	0.24	56.9	0.000	0.836	0.205	0.353	0.353	64.7%
1942	W	43,308	8,907	15,247	23%	0.23	56.5	0.000	0.810	0.192	0.337	0.337	66.3%
1943	W	29,410	9,125	10,049	24%	0.24	58.8	0.015	0.861	0.266	0.411	0.420	58.0%
1944	D	9,814	4,235	2,721	70%	0.30	58.4	0.000	0.642	0.253	0.370	0.370	63.0%
1945	B	11,747	6,420	3,443	67%	0.29	60.6	0.090	0.776	0.323	0.454	0.503	49.7%
1946	B	12,218	5,949	3,619	66%	0.29	60.7	0.095	0.757	0.326	0.449	0.501	49.9%
1947	D	13,797	4,941	4,210	64%	0.28	62.5	0.170	0.746	0.364	0.464	0.572	42.8%
1948	B	22,786	6,789	7,573	58%	0.25	56.6	0.000	0.720	0.195	0.328	0.328	67.2%
1949	D	13,209	5,075	3,990	65%	0.28	61.7	0.137	0.737	0.356	0.465	0.538	46.2%
1950	B	18,772	6,184	6,071	60%	0.26	61.3	0.120	0.778	0.346	0.459	0.524	47.6%
1951	A	14,736	6,353	4,582	63%	0.27	59.9	0.061	0.760	0.301	0.427	0.462	53.8%
1952	W	56,852	7,848	20,238	23%	0.23	55.5	0.000	0.746	0.160	0.295	0.295	70.5%
1953	W	16,184	5,647	5,103	62%	0.27	58.8	0.015	0.710	0.266	0.385	0.394	60.6%
1954	A	39,863	7,381	13,959	24%	0.24	58.4	0.000	0.777	0.253	0.377	0.377	62.3%
1955	D	9,478	3,864	2,565	71%	0.30	58.4	0.000	0.581	0.189	0.308	0.308	69.2%
1956	W	20,436	7,966	6,693	59%	0.26	59.7	0.053	0.827	0.294	0.432	0.462	53.8%
1957	A	21,209	6,453	6,982	58%	0.26	60.5	0.066	0.778	0.320	0.437	0.485	51.5%
1958	W	52,282	9,478	18,603	23%	0.23	57.4	0.000	0.861	0.221	0.367	0.367	63.3%
1959	B	10,467	3,764	2,972	69%	0.30	63	0.191	0.704	0.400	0.490	0.587	41.3%
1960	D	13,764	4,050	4,198	64%	0.28	59.5	0.044	0.653	0.286	0.390	0.417	58.3%
1961	D	12,806	3,529	3,839	65%	0.28	60.1	0.069	0.641	0.307	0.402	0.443	55.7%
1962	B	10,739	4,840	3,086	66%	0.29	61.8	0.141	0.728	0.362	0.470	0.544	45.6%
1963	W	69,457	8,100	25,027	23%	0.23	53.7	0.000	0.725	0.103	0.244	0.244	75.6%
1964	D	8,957	3,496	2,400	72%	0.31	59.3	0.036	0.626	0.262	0.388	0.410	59.0%
1965	W	45,661	8,957	16,127	23%	0.23	56.9	0.000	0.820	0.205	0.349	0.349	65.1%
1966	B	16,520	5,613	5,228	61%	0.27	61.9	0.145	0.764	0.365	0.472	0.548	45.2%
1967	W	39,930	8,487	13,984	24%	0.24	53.6	0.000	0.743	0.108	0.257	0.257	74.3%
1968	B	15,596	5,243	4,883	62%	0.27	61.5	0.126	0.741	0.362	0.457	0.527	47.3%
1969	W	44,787	7,512	15,800	23%	0.23	56.4	0.000	0.748	0.189	0.320	0.320	68.0%
1970	W	16,604	6,568	5,260	61%	0.27	58.8	0.015	0.751	0.266	0.396	0.404	59.6%
1971	W	21,614	6,564	7,208	59%	0.26	58.7	0.011	0.748	0.262	0.386	0.393	60.7%
1972	B	12,463	4,739	3,707	66%	0.28	58.5	0.002	0.665	0.256	0.372	0.374	62.6%
1973	A	19,511	8,100	6,347	59%	0.26	61.3	0.120	0.861	0.346	0.480	0.542	45.8%
1974	W	33,208	9,327	11,470	24%	0.24	56.8	0.000	0.834	0.202	0.354	0.354	64.6%
1975	W	25,763	6,773	8,685	25%	0.25	56.8	0.000	0.810	0.202	0.353	0.353	64.7%
1976	C	9,428	3,006	2,576	71%	0.30	58.9	0.019	0.507	0.269	0.369	0.381	61.9%
1977	C	9,125	2,991	2,463	72%	0.31	64.3	0.246	0.694	0.441	0.519	0.637	36.3%
1978	A	36,703	7,512	13,525	24%	0.24	56.9	0.000	0.767	0.205	0.336	0.336	66.4%
1979	B	17,896	7,092	5,668	60%	0.26	59.6	0.057	0.791	0.296	0.428	0.461	53.9%
1980	A	19,814	6,873	6,460	59%	0.26	57.1	0.000	0.733	0.211	0.347	0.347	65.3%
1981	D	16,990	5,445	5,404	61%	0.27	61.5	0.128	0.750	0.362	0.468	0.528	47.2%
1982	W	75,843	8,941	27,415	23%	0.23	54.1	0.000	0.768	0.115	0.263	0.263	73.7%
1983	W	68,296	6,958	24,593	23%	0.23	55	0.000	0.699	0.144	0.270	0.270	73.0%
1984	W	17,861	6,857	5,736	60%	0.26	59.7	0.053	0.779	0.294	0.422	0.453	54.7%
1985	D	12,335	4,101	3,883	66%	0.28	60.8	0.099	0.679	0.330	0.429	0.486	51.4%
1986	W	20,536	9,680	6,731	59%	0.26	60.4	0.082	0.914	0.317	0.471	0.514	48.6%
1987	D	12,285	3,479	3,646	66%	0.29	65.7	0.305	0.740	0.486	0.568	0.693	30.7%
1988	C	8,621	2,857	2,274	73%	0.31	59.9	0.061	0.609	0.301	0.397	0.433	56.7%
1989	D	23,629	5,647	7,887	57%	0.25	61.4	0.124	0.757	0.349	0.452	0.520	48.0%
1990	C	12,463	3,529	3,707	66%	0.28	61.6	0.133	0.668	0.365	0.444	0.518	48.2%
1991	C	15,276	4,252	4,763	62%	0.27	60.8	0.099	0.685	0.330	0.426	0.483	51.7%
1992	C	12,470	3,731	3,714	66%	0.28	61.2	0.116	0.670	0.342	0.435	0.501	49.9%

Year	MAY Sac River Flows	CVP + SWP Exports	Calculated Steamboat & Sutter Slough Q	Percent	X-chann Closed	USBR observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123
1922	46,269	8,665	16,355	0.23	0.23	61.2	0.118	0.885	0.342	0.469	0.530	47.0%
1923	14,344	6,245	4,415	0.63	0.33	62.4	0.166	0.801	0.381	0.521	0.600	40.0%
1924	10,181	2,667	2,858	0.69	0.36	69.2	0.452	0.768	0.596	0.659	0.813	18.7%
1925	12,067	5,107	3,563	0.66	0.35	63.2	0.200	0.766	0.406	0.531	0.625	37.5%
1926	14,003	4,944	4,267	0.64	0.33	65.7	0.306	0.803	0.486	0.592	0.717	28.3%
1927	26,786	8,327	9,066	0.25	0.25	62.6	0.175	0.895	0.367	0.513	0.598	40.2%
1928	20,215	6,375	6,611	0.59	0.31	66.6	0.343	0.862	0.515	0.629	0.756	24.4%
1929	9,709	2,862	2,681	0.70	0.37	66.1	0.322	0.720	0.498	0.580	0.715	28.5%
1930	12,067	3,480	3,563	0.66	0.35	63.1	0.198	0.693	0.403	0.504	0.601	39.9%
1931	10,132	3,123	2,839	0.69	0.36	70.5	0.507	0.811	0.640	0.701	0.853	14.7%
1932	12,019	4,847	3,546	0.66	0.35	65.5	0.297	0.796	0.480	0.589	0.711	28.9%
1933	8,424	3,367	2,201	0.73	0.36	63.7	0.221	0.699	0.422	0.528	0.632	36.8%
1934	8,912	2,944	2,383	0.72	0.37	66.3	0.414	0.763	0.569	0.642	0.790	21.0%
1935	28,624	5,465	9,755	0.25	0.25	64	0.234	0.796	0.432	0.521	0.633	36.7%
1936	14,100	6,375	4,324	0.64	0.33	64.9	0.271	0.851	0.461	0.591	0.702	29.8%
1937	16,066	6,977	5,060	0.62	0.33	64.5	0.256	0.870	0.446	0.585	0.691	30.9%
1938	57,426	9,433	20,527	0.23	0.23	62.5	0.170	0.941	0.364	0.512	0.595	40.5%
1939	8,571	3,480	2,256	0.73	0.36	68	0.402	0.781	0.560	0.644	0.787	21.3%
1940	18,996	6,944	6,154	0.60	0.31	65.6	0.301	0.868	0.483	0.611	0.728	27.2%
1941	39,486	9,726	13,818	0.24	0.24	61.6	0.133	0.937	0.356	0.493	0.560	44.0%
1942	36,040	8,685	12,529	0.24	0.24	60.1	0.069	0.865	0.307	0.441	0.479	52.1%
1943	20,297	7,660	6,641	0.59	0.31	66.4	0.292	0.916	0.477	0.613	0.726	27.4%
1944	8,912	3,741	2,383	0.72	0.37	65.9	0.313	0.755	0.498	0.591	0.719	28.1%
1945	11,626	4,944	3,399	0.67	0.35	63.1	0.198	0.757	0.403	0.527	0.619	38.1%
1946	13,710	5,269	4,178	0.64	0.34	63.9	0.229	0.785	0.429	0.549	0.652	34.8%
1947	8,847	3,545	2,359	0.72	0.38	66.7	0.431	0.797	0.582	0.663	0.808	19.2%
1948	23,826	7,091	7,961	0.57	0.30	62.3	0.162	0.836	0.378	0.516	0.595	40.5%
1949	14,914	4,749	4,626	0.63	0.33	65.2	0.284	0.786	0.470	0.574	0.695	30.5%
1950	13,726	5,302	4,184	0.64	0.34	64.3	0.248	0.794	0.441	0.560	0.668	33.2%
1951	19,126	7,186	6,203	0.60	0.31	64.4	0.250	0.876	0.446	0.581	0.686	31.4%
1952	59,557	9,221	21,324	0.23	0.23	61.7	0.137	0.917	0.358	0.486	0.557	44.3%
1953	26,867	7,676	9,096	0.25	0.25	60.9	0.103	0.836	0.333	0.457	0.513	48.7%
1954	25,403	7,416	8,561	0.25	0.25	65.9	0.313	0.914	0.493	0.596	0.724	27.6%
1955	10,276	3,773	2,894	0.69	0.36	68.9	0.356	0.774	0.525	0.614	0.752	24.8%
1956	39,000	8,782	13,636	0.24	0.24	61.4	0.124	0.893	0.348	0.478	0.543	45.7%
1957	16,816	5,952	5,339	0.61	0.32	64	0.234	0.817	0.432	0.566	0.660	34.0%
1958	43,468	10,636	15,315	0.23	0.23	62.9	0.187	1.000	0.397	0.536	0.625	37.5%
1959	9,417	3,676	2,572	0.71	0.37	65.9	0.313	0.752	0.493	0.588	0.717	28.3%
1960	10,913	3,363	3,131	0.68	0.35	65.9	0.313	0.739	0.493	0.580	0.712	28.8%
1961	8,717	2,895	2,310	0.72	0.38	64.3	0.246	0.669	0.441	0.535	0.649	35.1%
1962	15,320	4,847	4,780	0.62	0.33	64.8	0.267	0.783	0.457	0.564	0.681	31.9%
1963	29,095	8,327	9,932	0.25	0.25	62.5	0.170	0.893	0.364	0.509	0.592	40.8%
1964	10,100	3,706	2,827	0.69	0.36	65.2	0.284	0.741	0.470	0.566	0.691	30.9%
1965	25,257	8,685	8,496	0.25	0.25	63.6	0.217	0.928	0.419	0.546	0.645	35.5%
1966	14,146	4,684	4,342	0.64	0.33	67.3	0.372	0.821	0.537	0.632	0.769	23.1%
1967	44,790	9,433	15,801	0.23	0.23	62.1	0.154	0.934	0.371	0.503	0.579	42.1%
1968	9,364	3,643	2,560	0.71	0.37	66.1	0.322	0.754	0.499	0.593	0.724	27.6%
1969	45,538	9,010	16,061	0.23	0.23	63.2	0.200	0.935	0.406	0.530	0.624	37.6%
1970	12,149	5,920	3,594	0.66	0.35	68.6	0.427	0.898	0.579	0.689	0.822	17.8%
1971	29,616	7,876	10,126	0.24	0.24	61	0.107	0.838	0.336	0.459	0.517	48.3%
1972	10,539	3,903	2,991	0.69	0.36	67.3	0.372	0.787	0.537	0.627	0.766	23.4%
1973	15,743	6,766	4,936	0.62	0.33	66.9	0.358	0.904	0.525	0.646	0.773	22.7%
1974	26,949	8,685	9,129	0.25	0.25	63.4	0.208	0.924	0.413	0.539	0.635	36.5%
1975	26,542	8,685	9,725	0.25	0.25	63.6	0.225	0.932	0.425	0.560	0.651	34.9%
1976	10,116	3,155	2,833	0.69	0.36	69.6	0.469	0.796	0.611	0.678	0.829	17.1%
1977	7,461	1,203	1,848	0.78	0.39	64	0.234	0.611	0.432	0.502	0.618	38.2%
1978	21,061	8,213	6,927	0.58	0.31	63	0.191	0.897	0.400	0.554	0.639	36.1%
1979	12,572	5,965	3,752	0.65	0.34	63.8	0.225	0.815	0.425	0.559	0.658	34.2%
1980	14,783	7,461	4,579	0.63	0.33	63.6	0.217	0.876	0.419	0.570	0.663	33.7%
1981	8,750	3,513	2,322	0.72	0.38	66.7	0.347	0.759	0.518	0.609	0.745	25.5%
1982	38,431	10,701	13,423	0.24	0.24	61.1	0.112	0.971	0.339	0.489	0.546	45.4%
1983	54,815	7,546	19,439	0.23	0.23	60.1	0.069	0.816	0.307	0.424	0.464	53.6%
1984	13,417	6,115	4,066	0.64	0.34	66.5	0.339	0.869	0.512	0.632	0.757	24.3%
1985	12,763	4,226	3,831	0.66	0.34	65.8	0.309	0.774	0.489	0.587	0.715	28.5%
1986	13,125	8,132	3,969	0.65	0.34	66.2	0.326	0.951	0.502	0.654	0.767	23.3%
1987	8,457	2,830	2,213	0.73	0.38	70.5	0.507	0.796	0.640	0.700	0.852	14.8%
1988	9,758	3,074	2,700	0.70	0.37	65.8	0.309	0.724	0.489	0.575	0.707	29.3%
1989	14,296	3,936	4,397	0.63	0.33	64.7	0.263	0.742	0.454	0.550	0.668	33.2%
1990	7,774	2,700	1,957	0.75	0.39	66.4	0.335	0.719	0.509	0.590	0.727	27.3%
1991	8,686	2,911	2,298	0.73	0.38	65.7	0.305	0.715	0.488	0.573	0.703	29.7%
1992	9,042	2,944	2,432	0.72	0.37	66	0.318	0.722	0.496	0.580	0.714	28.6%

Year	JUNE Sac River Flow	CVP + SWP exports	Caculated Steamboat & Sutter Slough Q	percent	X-chann closed	USBR observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	34,720	11,277	12,035	24%	0.24	65.8	0.313	1.000	0.493	0.614	0.735	26.5%	45.5%
1923	19,209	7,999	6,234	59%	0.50	65.3	0.288	0.929	0.473	0.703	0.789	21.1%	46.2%
1924	11,545	2,370	3,368	67%	0.57	70.6	0.511	0.780	0.643	0.720	0.863	13.7%	22.9%
1925	18,116	7,426	5,826	60%	0.51	68.3	0.414	0.958	0.569	0.766	0.864	13.6%	36.8%
1926	18,167	7,092	5,644	60%	0.51	71.2	0.536	0.996	0.662	0.832	0.922	7.8%	27.8%
1927	17,896	6,166	5,744	60%	0.51	66.1	0.406	0.986	0.563	0.780	0.869	13.1%	39.8%
1928	17,780	7,277	5,700	60%	0.51	69.7	0.473	0.977	0.614	0.800	0.895	10.5%	27.9%
1929	10,586	2,790	3,010	69%	0.58	70.1	0.490	0.789	0.627	0.721	0.858	14.2%	33.8%
1930	19,024	7,277	6,166	60%	0.51	69.6	0.469	0.975	0.611	0.795	0.891	10.9%	37.7%
1931	13,159	4,067	3,971	65%	0.56	70.7	0.515	0.856	0.646	0.761	0.884	11.6%	18.9%
1932	21,444	8,453	7,070	58%	0.49	69.5	0.465	1.000	0.606	0.802	0.894	10.6%	30.9%
1933	11,006	1,899	3,187	68%	0.57	69.8	0.478	0.745	0.617	0.691	0.838	16.2%	34.2%
1934	14,890	5,761	4,619	63%	0.53	70.7	0.515	0.930	0.646	0.797	0.902	9.8%	22.1%
1935	17,629	7,613	5,643	61%	0.51	71	0.528	1.000	0.656	0.832	0.921	7.9%	36.8%
1936	18,063	7,966	5,813	60%	0.51	69.2	0.462	0.996	0.596	0.802	0.892	10.8%	30.4%
1937	17,679	7,663	5,662	60%	0.51	69.7	0.473	0.993	0.614	0.809	0.899	10.1%	31.9%
1938	35,510	11,277	12,331	24%	0.24	67.7	0.389	1.000	0.560	0.658	0.791	20.9%	41.7%
1939	19,360	7,697	6,291	59%	0.50	71	0.528	1.000	0.656	0.829	0.919	8.1%	22.1%
1940	16,486	7,579	5,216	61%	0.52	71.5	0.549	1.000	0.672	0.843	0.929	7.1%	29.9%
1941	20,806	10,907	6,831	59%	0.50	69	0.444	1.000	0.592	0.795	0.886	11.4%	41.6%
1942	27,124	11,277	9,194	25%	0.25	67.8	0.393	1.000	0.553	0.664	0.796	20.4%	48.8%
1943	16,856	7,747	5,354	61%	0.52	68.6	0.343	0.941	0.515	0.736	0.826	17.4%	30.8%
1944	19,444	7,781	6,322	59%	0.50	67.8	0.393	0.964	0.553	0.760	0.855	14.5%	31.8%
1945	18,822	7,932	6,090	60%	0.51	70.6	0.511	1.000	0.643	0.824	0.914	8.6%	34.7%
1946	19,478	8,063	6,336	59%	0.50	68.1	0.408	0.983	0.563	0.774	0.866	13.4%	33.8%
1947	19,058	7,546	6,178	60%	0.51	70	0.486	0.994	0.624	0.811	0.903	9.7%	21.8%
1948	22,889	8,991	7,611	58%	0.49	69	0.444	1.000	0.592	0.791	0.884	11.6%	38.8%
1949	19,847	7,764	6,473	59%	0.50	70.9	0.524	1.000	0.652	0.827	0.917	8.3%	29.1%
1950	19,780	8,134	6,448	59%	0.50	68.9	0.440	0.999	0.588	0.795	0.885	11.5%	31.7%
1951	17,646	7,426	5,650	61%	0.51	70.3	0.499	0.994	0.633	0.818	0.909	9.1%	31.2%
1952	38,972	11,277	13,626	24%	0.24	65	0.276	1.000	0.464	0.591	0.704	29.6%	46.1%
1953	25,881	10,386	8,729	25%	0.25	66.2	0.326	1.000	0.502	0.626	0.748	25.2%	46.8%
1954	17,058	7,176	5,430	61%	0.52	68.7	0.431	0.954	0.582	0.774	0.872	12.8%	30.8%
1955	19,814	7,680	6,460	59%	0.50	70.1	0.490	1.000	0.627	0.814	0.905	9.5%	29.8%
1956	22,301	11,277	7,391	58%	0.49	68.7	0.431	1.000	0.582	0.787	0.879	12.1%	41.1%
1957	19,410	8,067	6,309	59%	0.50	72	0.570	1.000	0.688	0.845	0.933	6.7%	32.1%
1958	33,930	11,277	11,740	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	38.8%
1959	19,007	7,613	6,159	60%	0.51	72.1	0.574	1.000	0.691	0.847	0.935	6.5%	26.6%
1960	18,869	7,277	6,115	60%	0.51	72.7	0.600	1.000	0.710	0.857	0.943	5.7%	28.7%
1961	20,133	7,680	6,580	59%	0.50	73.2	0.621	1.000	0.726	0.863	0.948	5.2%	33.2%
1962	19,125	7,495	6,203	60%	0.51	70.4	0.503	0.999	0.636	0.819	0.910	9.0%	30.1%
1963	19,578	8,621	6,372	59%	0.50	69	0.444	1.000	0.592	0.797	0.887	11.3%	41.4%
1964	19,360	7,462	6,291	59%	0.50	69.5	0.465	0.981	0.606	0.796	0.891	10.9%	32.1%
1965	18,167	8,319	5,844	60%	0.51	67.1	0.364	0.975	0.531	0.758	0.846	15.4%	37.8%
1966	17,780	7,210	5,700	60%	0.51	70.4	0.503	0.986	0.636	0.816	0.908	9.2%	24.3%
1967	39,342	11,277	13,764	24%	0.24	66.5	0.339	1.000	0.512	0.627	0.754	24.6%	44.4%
1968	18,436	7,426	5,945	60%	0.51	72	0.570	1.000	0.688	0.846	0.934	6.6%	27.2%
1969	24,133	11,243	8,076	57%	0.48	68.3	0.414	1.000	0.569	0.778	0.870	13.0%	38.4%
1970	16,722	7,226	5,304	61%	0.52	70.7	0.515	0.992	0.646	0.826	0.916	8.4%	23.2%
1971	23,629	9,630	7,867	57%	0.48	68.1	0.406	1.000	0.563	0.775	0.867	13.3%	44.1%
1972	18,133	7,344	5,832	60%	0.51	70.7	0.515	0.997	0.646	0.825	0.915	8.5%	27.4%
1973	18,686	7,966	6,039	60%	0.51	70.1	0.490	1.000	0.627	0.816	0.906	9.4%	24.2%
1974	21,629	9,529	7,139	58%	0.49	69.7	0.473	1.000	0.614	0.805	0.897	10.3%	36.5%
1975	24,786	11,277	8,321	57%	0.48	69.1	0.448	1.000	0.595	0.790	0.884	11.6%	35.8%
1976	19,730	7,546	6,429	59%	0.50	71.8	0.562	1.000	0.681	0.841	0.930	7.0%	22.9%
1977	9,781	739	2,706	70%	0.59	73.9	0.650	0.768	0.748	0.760	0.916	8.4%	32.5%
1978	15,985	8,504	5,021	62%	0.52	70	0.486	1.000	0.624	0.821	0.908	9.2%	36.4%
1979	21,074	8,636	6,932	58%	0.50	69.2	0.452	1.000	0.598	0.797	0.889	11.1%	33.4%
1980	16,268	8,672	5,134	62%	0.52	66.9	0.356	0.967	0.525	0.766	0.849	15.1%	36.7%
1981	18,869	7,495	6,115	60%	0.51	71.9	0.566	1.000	0.684	0.844	0.932	6.8%	25.8%
1982	24,418	11,277	8,183	57%	0.48	66	0.318	1.000	0.496	0.740	0.822	17.8%	46.2%
1983	55,578	9,293	19,835	23%	0.23	63.6	0.217	0.954	0.419	0.542	0.641	35.9%	53.7%
1984	19,024	7,966	6,165	60%	0.51	68.4	0.419	0.963	0.572	0.780	0.872	12.8%	27.4%
1985	18,063	7,226	5,813	60%	0.51	69.4	0.461	0.969	0.604	0.791	0.887	11.3%	29.3%
1986	12,419	7,680	3,695	66%	0.56	71.6	0.553	1.000	0.675	0.856	0.936	6.4%	24.8%
1987	20,284	7,747	6,636	59%	0.50	73.2	0.621	1.000	0.726	0.863	0.948	5.2%	15.8%
1988	14,520	5,579	4,460	63%	0.54	69.4	0.461	0.898	0.604	0.761	0.871	12.9%	31.8%
1989	16,368	7,092	5,920	60%	0.51	68.6	0.427	0.949	0.579	0.767	0.867	13.3%	32.1%
1990	19,763	7,512	6,441	59%	0.50	68.5	0.423	0.965	0.576	0.771	0.868	13.2%	28.3%
1991	10,789	3,311	3,085	68%	0.58	69.4	0.461	0.799	0.604	0.717	0.847	15.3%	30.8%
1992	14,503	5,647	4,474	63%	0.54	69	0.444	0.893	0.592	0.753	0.863	13.7%	29.6%
												Average	32.96%

Formulas Sacramento River Fall Run Smolt Survival

```
C8 ='Study 485 Flow Data'!G7
D8 ='Study 485 Flow Data'!Q7        (HIDDEN)
E8 ='Study 485 Flow Data'!AA7       (HIDDEN)
F8 =(D8+E8)
G8 =0.374*C8-950
H8 =IF(C8>25000,(0.133*C8+829)/(C8-G8),(0.293*C8+2090)/(C8-G8))
I8 =(0.133*C8+829)/(C8-G8)
K8 =IF((-2.45925+(0.0420748*J8))<0,0,(-2.45925+(0.0420748*J8)))
L8 =(-0.5916024)+(0.017968*J8)+(0.0000434*F8)
M8 =-1.613493+(0.0319584*J8)
N8 =(L8*I8)+(M8*(1-I8))
O8 =K8+N8-(K8*N8)
P8 =1-O8

R8 ='Study 485 Flow Data'!H7
S8 ='Study 485 Flow Data'!R7        (HIDDEN)
T8 ='Study 485 Flow Data'!AB7       (HIDDEN)
U8 =(S8+T8)
V8 =0.374*R8-950
W8 =IF(R8>25000,(0.133*R8+829)/(R8-V8),(0.293*R8+2090)/(R8-V8))
X8 =(0.84*(0.133*R8+829)/(R8-V8))+(0.16*W8)
Z8 =(-2.45925+(0.0420748*Y8))
AA8 =(-0.5916024)+(0.017968*Y8)+(0.0000434*U8)
AB8 =-1.613493+(0.0319584*Y8)
AC8 =(AA8*X8)+(AB8*(1-X8))
AD8 =Z8+AC8-(Z8*AC8)
AE8 =1-AD8

AG8 ='Study 485 Flow Data'!I7
AH8 ='Study 485 Flow Data'!S7       (HIDDEN)
AI8 ='Study 485 Flow Data'!AC7      (HIDDEN)
AJ8 =(AH8+AI8)
AK8 =0.374*AG8-950
AL8 =IF(AG8>25000,(0.133*AG8+829)/(AG8-AK8),(0.293*AG8+2090)/(AG8-AK8))
AM8 =(0.27*(0.133*AG8+829)/(AG8-AK8))+(0.73*AL8)
AO8 =(-2.45925+(0.0420748*AN8))
AP8 =IF(((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8))>1,1,((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8)))
AQ8 =-1.613493+(0.0319584*AN8)
AR8 =(AP8*AM8)+(AQ8*(1-AM8))
AS8 =AO8+AR8-(AO8*AR8)
AT8 =1-AS8
AV8 =(P8*0.17)+(AE8*0.65)+(AT8*0.18)
```

1 St[illegible]85 Sacramento River Late Fall Run Smolt Survival Model — November Sacramento River Temp. 53 degrees F
2 Modified m2 by changing the slope to 0.000054 — December Sacramento River Temp. 47 degrees F
3 Cross Channel closed for 45 consecutive days, Dec 18-Jan 31 — January Sacramento River Temp: 47 degrees F
4 Cross Channel Closed when Sacramento River flow exceeds 25,000 cfs

NOVEMBER

Row	Year	Water Year Type	Sac River Flow (C)	CVP+SWP exports (F)	Calculated Steamboat & Sutter Slough Q (G)	percent (H)	xchannel closed (I)	m1 (J)	Calculated Mortality m2 (K)	m3 (L)	m23 (M)	m123 (N)	Calculated Survival s123 (O)
10	1922	A	13,344	9,361	4,041	64%	0.28		0.866	0.080	0.587	0.587	41.3%
11	1923	B	17,861	10,974	5,738	60%	0.26		0.953	0.080	0.607	0.607	39.3%
12	1924	C	9,831	6,151	2,727	70%	0.30		0.893	0.080	0.509	0.509	49.1%
13	1925	D	7,025	4,521	1,677	78%	0.33		0.605	0.080	0.487	0.487	51.3%
14	1926	D	12,352	7,294	3,670	66%	0.28		0.755	0.080	0.524	0.524	47.6%
15	1927	W	20,284	10,924	6,636	59%	0.26		0.951	0.080	0.593	0.593	40.7%
16	1928	A	21,746	10,974	7,183	58%	0.26		0.953	0.080	0.588	0.588	41.2%
17	1929	C	13,006	9,243	3,915	65%	0.28		0.860	0.080	0.586	0.586	41.4%
18	1930	D	7,159	4,050	1,726	77%	0.33		0.579	0.080	0.465	0.465	53.5%
19	1931	C	9,781	5,916	2,708	70%	0.30		0.680	0.080	0.501	0.501	49.9%
20	1932	D	8,151	2,924	2,098	74%	0.32		0.519	0.080	0.405	0.405	59.5%
21	1933	C	9,512	5,663	2,607	71%	0.30		0.667	0.080	0.494	0.494	50.6%
22	1934	C	8,134	2,636	2,092	74%	0.32		0.503	0.080	0.393	0.393	60.7%
23	1935	B	9,209	4,420	2,494	71%	0.31		0.599	0.080	0.450	0.450	55.0%
24	1936	B	9,378	5,748	2,557	71%	0.30		0.671	0.080	0.499	0.499	50.1%
25	1937	B	14,184	8,974	4,366	64%	0.28		0.845	0.080	0.566	0.566	43.4%
26	1938	W	23,948	10,957	8,007	57%	0.25		0.952	0.080	0.578	0.578	42.2%
27	1939	D	19,444	9,579	6,322	59%	0.26		0.878	0.080	0.554	0.554	44.6%
28	1940	A	8,436	4,554	2,205	73%	0.31		0.607	0.080	0.466	0.466	53.4%
29	1941	W	13,747	10,352	4,191	64%	0.28		0.920	0.080	0.618	0.618	38.2%
30	1942	W	18,184	10,470	5,851	60%	0.26		0.926	0.080	0.589	0.589	41.1%
31	1943	W	21,914	10,823	7,246	58%	0.26		0.945	0.080	0.582	0.582	41.8%
32	1944	D	15,125	10,957	4,707	63%	0.27		0.952	0.080	0.626	0.626	37.4%
33	1945	B	13,764	10,873	4,198	64%	0.28		0.948	0.080	0.636	0.636	36.4%
34	1946	B	17,243	10,957	5,499	61%	0.27		0.952	0.080	0.611	0.611	38.9%
35	1947	D	13,781	10,907	4,204	64%	0.28		0.950	0.080	0.637	0.637	36.3%
36	1948	B	10,201	6,420	2,865	69%	0.30		0.707	0.080	0.514	0.514	48.6%
37	1949	D	14,453	10,503	4,456	63%	0.28		0.928	0.080	0.617	0.617	38.3%
38	1950	B	14,049	7,697	4,304	64%	0.28		0.776	0.080	0.524	0.524	47.6%
39	1951	A	39,626	10,940	13,871	24%	0.24		0.951	0.080	0.287	0.287	71.3%
40	1952	W	16,570	10,974	5,247	61%	0.27		0.953	0.080	0.616	0.616	38.4%
41	1953	W	16,537	8,386	5,235	61%	0.27		0.814	0.080	0.530	0.530	47.0%
42	1954	A	20,906	10,957	6,869	59%	0.26		0.952	0.080	0.591	0.591	40.9%
43	1955	D	17,058	10,957	5,430	61%	0.27		0.952	0.080	0.612	0.612	38.8%
44	1956	W	10,470	6,789	2,966	69%	0.30		0.727	0.080	0.525	0.525	47.5%
45	1957	A	15,478	10,974	4,839	62%	0.27		0.953	0.080	0.624	0.624	37.6%
46	1958	W	19,259	10,957	6,253	59%	0.26		0.952	0.080	0.599	0.599	40.1%
47	1959	B	16,133	8,487	5,084	62%	0.27		0.819	0.080	0.536	0.536	46.4%
48	1960	D	14,537	7,361	4,487	63%	0.27		0.758	0.080	0.509	0.509	49.1%
49	1961	D	12,991	9,176	3,909	65%	0.28		0.856	0.080	0.584	0.584	41.6%
50	1962	B	13,680	7,747	4,186	64%	0.28		0.779	0.080	0.528	0.528	47.2%
51	1963	W	20,822	10,974	6,837	59%	0.26		0.953	0.080	0.592	0.592	40.8%
52	1964	D	28,653	10,974	9,766	25%	0.25		0.953	0.080	0.295	0.295	70.5%
53	1965	W	13,394	10,187	4,059	64%	0.28		0.910	0.080	0.615	0.615	38.5%
54	1966	B	25,477	10,957	8,578	25%	0.25		0.952	0.080	0.298	0.298	70.2%
55	1967	W	14,265	10,957	4,392	63%	0.28		0.952	0.080	0.634	0.634	36.6%
56	1968	B	16,234	8,352	5,122	62%	0.27		0.812	0.080	0.531	0.531	46.9%
57	1969	W	13,394	9,714	4,059	64%	0.28		0.865	0.080	0.599	0.599	40.1%
58	1970	W	17,646	8,386	5,650	61%	0.26		0.814	0.080	0.524	0.524	47.6%
59	1971	W	18,990	10,957	6,152	60%	0.26		0.952	0.080	0.600	0.600	40.0%
60	1972	B	15,343	10,957	4,788	62%	0.27		0.952	0.080	0.624	0.624	37.6%
61	1973	A	21,914	10,957	7,246	58%	0.26		0.952	0.080	0.586	0.586	41.4%
62	1974	W	55,778	10,974	19,911	23%	0.23		0.953	0.080	0.281	0.281	71.9%
63	1975	W	17,579	9,714	5,624	61%	0.26		0.865	0.080	0.568	0.568	43.2%
64	1976	C	19,226	10,974	6,240	59%	0.26		0.953	0.080	0.600	0.600	40.0%
65	1977	C	8,420	6,000	2,199	73%	0.31		0.685	0.080	0.523	0.523	47.7%
66	1978	A	6,924	4,185	1,640	78%	0.33		0.567	0.080	0.475	0.475	52.5%
67	1979	B	15,142	10,974	4,713	63%	0.27		0.953	0.080	0.627	0.627	37.3%
68	1980	A	15,797	10,957	4,958	62%	0.27		0.952	0.080	0.621	0.621	37.9%
69	1981	D	13,613	9,865	4,141	64%	0.28		0.893	0.080	0.602	0.602	39.8%
70	1982	W	27,981	10,957	9,515	25%	0.25		0.952	0.080	0.295	0.295	70.5%
71	1983	W	39,107	10,974	13,676	24%	0.24		0.953	0.080	0.287	0.287	71.3%
72	1984	W	62,802	6,974	22,536	23%	0.23		0.737	0.080	0.230	0.230	77.0%
73	1985	D	33,292	10,974	11,501	24%	0.24		0.953	0.080	0.291	0.291	70.9%
74	1986	W	9,546	6,669	2,620	71%	0.30		0.722	0.080	0.533	0.533	46.7%
75	1987	D	11,209	7,747	3,242	67%	0.29		0.779	0.080	0.552	0.552	44.8%
76	1988	C	8,453	4,840	2,211	73%	0.31		0.622	0.080	0.477	0.477	52.3%
77	1989	D	8,588	5,748	2,262	73%	0.31		0.671	0.080	0.510	0.510	49.0%
78	1990	C	11,260	7,310	3,261	67%	0.29		0.756	0.080	0.535	0.535	46.5%
79	1991	C	8,134	4,823	2,092	74%	0.32		0.621	0.080	0.481	0.481	51.9%
80	1992	C	7,579	4,605	1,885	76%	0.32		0.609	0.080	0.481	0.481	51.9%

DECEMBER

Row	Year	Sac River Flows (Q)	SWP+CVP exports (T)	Calculated Steamboat & Sutter Slough Q (U)	percent (V)	xchannel closed (W)	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123 (AC)
10	1922	17,142	11,319	5,461	61%	0.45		0.864		0.393	0.393	60.7%
11	1923	34,544	8,847	11,969	24%	0.24		0.731		0.176	0.176	82.4%
12	1924	13,417	9,868	4,068	64%	0.48		0.787		0.378	0.378	62.2%
13	1925	11,254	9,059	3,259	67%	0.50		0.742		0.372	0.372	62.8%
14	1926	12,962	7,091	3,898	65%	0.48		[illegible]		0.308	0.308	69.2%
15	1927	14,312	11,254	4,403	63%	0.47		0.861		0.407	0.407	59.3%
16	1928	18,572	11,287	5,248	61%	0.46		0.862		0.395	0.395	60.5%
17	1929	13,206	10,083	3,989	65%	0.48		0.797		0.384	0.384	61.6%
18	1930	14,442	10,508	4,451	63%	0.47		0.820		0.387	0.387	61.3%
19	1931	9,335	5,172	2,541	71%	0.53		0.532		0.281	0.281	71.9%
20	1932	14,653	11,401	4,530	63%	0.47		0.869		0.408	0.408	59.2%
21	1933	8,197	4,521	2,116	74%	0.55		0.497		0.273	0.273	72.7%
22	1934	12,474	9,709	3,715	66%	0.49		0.777		0.380	0.380	62.0%
23	1935	8,508	8,619	2,231	73%	0.54		0.610		0.331	0.331	66.9%
24	1936	9,400	8,034	2,566	71%	0.53		0.579		0.305	0.305	69.5%
25	1937	14,003	10,815	4,287	64%	0.48		0.837		0.398	0.398	60.2%
26	1938	41,781	11,742	14,676	24%	0.24		0.867		0.209	0.209	79.1%
27	1939	18,667	7,953	6,039	60%	0.45		0.662		0.305	0.305	69.5%
28	1940	7,839	4,115	1,982	75%	0.56		0.476		0.264	0.264	73.6%
29	1941	30,652	11,563	10,589	24%	0.24		0.877		0.214	0.214	78.6%
30	1942	65,623	7,623	23,593	23%	0.23		0.675		0.154	0.154	84.6%
31	1943	28,803	7,985	9,822	25%	0.25		0.684		0.168	0.168	83.2%
32	1944	13,775	10,636	4,202	64%	0.48		0.827		0.395	0.395	60.5%
33	1945	15,824	11,173	4,968	62%	0.46		0.856		0.396	0.396	60.4%
34	1946	54,806	11,807	19,548	23%	0.23		0.890		0.205	0.205	79.5%
35	1947	18,134	11,352	5,832	60%	0.45		0.868		0.389	0.389	61.1%
36	1948	9,742	5,741	2,893	70%	0.52		0.583		0.294	0.294	70.6%
37	1949	15,564	11,108	4,871	62%	0.46		0.853		0.396	0.396	60.4%
38	1950	10,994	7,186	3,162	68%	0.50		0.641		0.323	0.323	67.7%
39	1951	67,997	11,807	24,481	23%	0.23		0.890		0.202	0.202	79.8%
40	1952	45,586	11,319	16,099	23%	0.23		0.864		0.202	0.202	79.8%
41	1953	42,334	7,953	14,863	24%	0.24		0.662		0.161	0.161	83.9%
42	1954	14,914	8,115	4,628	63%	0.47		0.691		0.324	0.324	67.6%
43	1955	25,517	11,124	8,593	25%	0.25		0.854		0.213	0.213	78.7%
44	1956	24,964	11,807	8,387	57%	0.42		0.890		0.378	0.378	62.2%
45	1957	14,149	10,018	4,342	64%	0.47		0.794		0.376	0.376	62.4%
46	1958	23,745	11,140	7,930	57%	0.43		0.854		0.366	0.366	63.4%
47	1959	14,621	8,067	4,518	63%	0.47		0.686		0.324	0.324	67.6%
48	1960	9,807	5,741	2,718	70%	0.52		0.583		0.293	0.293	70.7%
49	1961	16,507	11,108	5,224	61%	0.46		0.853		0.391	0.391	60.9%
50	1962	16,703	11,092	5,287	61%	0.46		0.852		0.389	0.389	61.1%
51	1963	27,550	11,108	9,364	25%	0.25		0.853		0.211	0.211	78.9%
52	1964	14,849	11,206	4,603	63%	0.47		0.858		0.402	0.402	59.8%
53	1965	24,330	11,677	8,149	57%	0.43		0.883		0.377	0.377	62.3%
54	1966	18,995	10,636	5,406	61%	0.46		0.827		0.377	0.377	62.3%
55	1967	34,496	11,336	11,951	24%	0.24		0.866		0.208	0.208	79.2%
56	1968	16,666	7,953	5,291	61%	0.46		0.662		0.312	0.312	68.8%
57	1969	23,336	11,169	7,778	57%	0.43		0.867		0.368	0.368	63.2%
58	1970	50,158	7,693	17,809	23%	0.23		[illegible]		0.155	0.155	84.5%
59	1971	52,368	11,254	18,636	23%	0.23		0.861		0.199	0.199	80.1%
60	1972	19,988	10,425	6,525	59%	0.44		0.818		0.360	0.360	64.0%
61	1973	26,200	11,108	8,849	25%	0.25		0.853		0.212	0.212	78.8%
62	1974	61,590	11,364	22,086	23%	0.23		0.868		0.198	0.198	80.2%
63	1975	17,613	8,457	5,637	61%	0.45		0.710		0.321	0.321	67.9%
64	1976	16,766	9,059	5,321	61%	0.46		0.742		0.339	0.339	66.1%
65	1977	8,148	4,895	2,097	74%	0.55		0.517		0.284	0.284	71.6%
66	1978	12,279	9,660	3,642	66%	0.49		0.775		0.380	0.380	62.0%
67	1979	14,019	7,888	4,293	64%	0.48		0.679		0.323	0.323	67.7%
68	1980	20,329	11,206	6,653	59%	0.44		0.858		0.377	0.377	62.3%
69	1981	15,613	8,327	4,869	62%	0.46		0.703		0.326	0.326	67.4%
70	1982	68,453	11,236	24,651	23%	0.23		0.860		0.195	0.195	80.5%
71	1983	56,410	8,636	19,773	23%	0.23		0.719		0.165	0.165	83.5%
72	1984	82,944	6,099	30,071	22%	0.22		0.582		0.131	0.131	86.9%
73	1985	23,875	11,173	7,979	57%	0.43		0.856		0.366	0.366	63.4%
74	1986	15,467	11,157	4,834	62%	0.46		0.855		0.397	0.397	60.3%
75	1987	13,369	9,872	4,050	64%	0.48		0.786		0.378	0.378	62.2%
76	1988	15,841	11,092	4,974	62%	0.46		0.852		0.394	0.394	60.6%
77	1989	8,847	6,408	2,369	72%	0.54		0.599		0.321	0.321	67.9%
78	1990	12,751	8,622	3,819	65%	0.49		0.713		0.347	0.347	65.3%
79	1991	8,278	4,391	2,146	74%	0.55		0.490		0.268	0.268	73.2%
80	1992	7,486	4,570	1,842	76%	0.56		0.500		0.282	0.282	71.8%

JANUARY

Row	Year	Sac River Flows (AE)	CVP+SWP exports (AH)	Calculated Steamboat & Sutter Slough Q (AI)	percent (AJ)	xchannel closed (AK)	m1	Calculated Mortality m2 (AM)	m3	m23 (AO)	m123 (AP)	Calculated Survival s123 (AQ)	Weighted Total Survival (AS)
10	1922	18,557	11,791	5,990	60%	0.26		0.890		0.233	0.233	76.7%	59.8%
11	1923	32,263	7,855	11,124	24%	0.24		0.677		0.164	0.164	83.6%	71.9%
12	1924	13,369	10,051	4,050	64%	0.28		0.796		0.223	0.223	77.7%	62.8%
13	1925	10,213	6,701	2,870	69%	0.30		0.615		0.183	0.183	81.7%	64.6%
14	1926	18,766	9,877	6,069	60%	0.26		0.775		0.203	0.203	79.7%	66.4%
15	1927	26,640	11,482	9,761	25%	0.25		0.873		0.214	0.214	78.6%	59.5%
16	1928	25,257	7,855	8,498	25%	0.25		0.677		0.169	0.169	83.1%	61.3%
17	1929	14,767	10,848	4,573	63%	0.27		0.839		0.230	0.230	77.0%	60.4%
18	1930	20,768	11,303	6,817	59%	0.26		0.863		0.222	0.222	77.8%	63.5%
19	1931	11,710	8,945	3,429	67%	0.29		0.736		0.212	0.212	78.8%	68.1%
20	1932	17,256	12,035	5,504	61%	0.27		0.903		0.240	0.240	76.0%	63.5%
21	1933	12,100	9,628	3,575	66%	0.29		0.773		0.221	0.221	77.9%	68.5%
22	1934	16,101	11,368	5,072	62%	0.27		0.867		0.233	0.233	76.7%	65.3%
23	1935	25,469	11,872	8,575	25%	0.25		0.894		0.223	0.223	77.7%	66.6%
24	1936	31,584	11,661	10,862	24%	0.24		0.883		0.214	0.214	78.6%	66.9%
25	1937	17,272	11,791	5,510	61%	0.27		0.890		0.236	0.236	76.4%	60.0%
26	1938	30,543	7,449	10,473	24%	0.24		0.655		0.160	0.160	84.0%	71.1%
27	1939	18,410	5,952	5,935	60%	0.26		0.574		0.151	0.151	84.9%	67.1%
28	1940	23,452	12,230	7,821	57%	0.25		0.913		0.231	0.231	76.9%	69.4%
29	1941	71,494	12,376	25,789	23%	0.23		0.921		0.208	0.208	79.2%	68.7%
30	1942	63,265	7,449	22,711	23%	0.23		0.655		0.149	0.149	85.1%	73.9%
31	1943	58,060	7,514	20,785	23%	0.23		0.659		0.151	0.151	84.9%	73.3%
32	1944	17,678	7,481	5,662	60%	0.26		0.657		0.174	0.174	82.6%	60.3%
33	1945	14,052	9,140	4,305	64%	0.28		0.746		0.207	0.207	79.3%	59.1%
34	1946	43,228	7,855	15,217	23%	0.23		0.677		0.159	0.159	84.1%	70.5%
35	1947	14,979	11,336	4,652	63%	0.27		0.865		0.236	0.236	76.4%	58.7%
36	1948	14,653	10,571	4,530	63%	0.27		0.824		0.226	0.226	77.4%	66.8%
37	1949	14,930	11,027	4,634	63%	0.27		0.848		0.232	0.232	76.8%	59.0%
38	1950	19,435	11,384	6,319	59%	0.26		0.868		0.226	0.226	77.4%	65.1%
39	1951	62,208	11,856	22,316	23%	0.23		0.893		0.204	0.204	79.6%	77.6%
40	1952	67,347	11,417	24,238	23%	0.23		0.869		0.197	0.197	80.3%	69.6%
41	1953	64,078	6,050	23,015	23%	0.23		0.580		0.132	0.132	86.8%	75.4%
42	1954	33,421	8,067	11,550	24%	0.24		0.686		0.166	0.166	83.4%	64.9%
43	1955	22,004	11,401	7,260	58%	0.26		0.869		0.222	0.222	77.8%	68.5%
44	1956	64,489	12,246	30,649	22%	0.22		0.914		0.205	0.205	79.5%	62.8%
45	1957	18,638	8,099	6,021	60%	0.26		0.690		0.181	0.181	81.9%	61.1%
46	1958	36,219	7,741	12,596	24%	0.24		0.671		0.160	0.160	84.0%	62.7%
47	1959	35,162	8,066	12,200	24%	0.24		0.580		0.139	0.139	86.1%	66.9%
48	1960	14,279	10,457	4,380	63%	0.28		0.818		0.226	0.226	77.4%	67.0%
49	1961	13,515	10,311	4,105	64%	0.28		0.810		0.226	0.226	77.4%	60.2%
50	1962	12,653	8,132	3,782	65%	0.28		0.692		0.196	0.196	80.4%	62.4%
51	1963	18,605	11,466	6,006	60%	0.26		0.872		0.229	0.229	77.1%	69.0%
52	1964	25,631	8,083	8,636	25%	0.25		0.689		0.172	0.172	82.8%	68.2%
53	1965	81,236	12,718	29,432	22%	0.22		0.940		0.211	0.211	78.9%	60.5%
54	1966	29,632	7,872	10,132	24%	0.24		0.678		0.166	0.166	83.4%	69.6%
55	1967	33,486	11,869	11,574	24%	0.24		0.896		0.216	0.216	78.4%	68.4%
56	1968	30,640	6,086	10,509	24%	0.24		0.580		0.141	0.141	85.9%	67.6%
57	1969	66,404	11,612	23,665	23%	0.23		0.880		0.200	0.200	80.0%	61.6%
58	1970	92,669	5,839	33,708	22%	0.22		0.568		0.127	0.127	87.3%	76.0%
59	1971	46,904	10,848	16,592	23%	0.23		0.839		0.196	0.196	80.4%	70.2%
60	1972	20,394	8,099	6,677	59%	0.26		0.690		0.178	0.178	82.2%	61.9%
61	1973	49,392	11,677	17,523	23%	0.23		0.883		0.205	0.205	79.5%	69.5%
62	1974	78,422	7,985	28,380	22%	0.22		0.684		0.154	0.154	84.6%	79.2%
63	1975	18,670	8,087	6,033	60%	0.26		0.686		0.180	0.180	82.0%	65.3%
64	1976	16,768	8,050	5,321	61%	0.27		0.686		0.184	0.184	81.6%	63.6%
65	1977	7,904	4,796	2,006	75%	0.32		0.512		0.163	0.163	83.7%	68.6%
66	1978	43,033	10,197	15,144	23%	0.23		0.804		0.189	0.189	81.1%	64.4%
67	1979	27,241	7,481	9,238	25%	0.25		0.657		0.162	0.162	83.8%	64.1%
68	1980	60,484	7,367	21,671	23%	0.23		0.651		0.149	0.149	85.1%	61.9%
69	1981	28,607	5,887	9,749	25%	0.25		0.571		0.140	0.140	86.0%	65.2%
70	1982	51,165	11,970	18,186	23%	0.23		0.899		0.208	0.208	79.2%	77.7%
71	1983	59,150	5,546	21,172	23%	0.23		0.552		0.126	0.126	87.4%	81.4%
72	1984	47,359	4,212	16,762	23%	0.23		0.480		0.112	0.112	88.8%	84.9%
73	1985	16,556	8,083	5,242	61%	0.27		0.689		0.185	0.185	81.5%	69.5%
74	1986	21,256	11,563	7,000	58%	0.26		0.877		0.225	0.225	77.5%	61.2%
75	1987	16,735	6,852	5,309	61%	0.27		0.612		0.164	0.164	83.6%	63.2%
76	1988	25,534	11,271	8,600	25%	0.25		0.862		0.215	0.215	78.5%	63.0%
77	1989	12,002	8,701	3,539	66%	0.29		0.723		0.207	0.207	79.3%	66.0%
78	1990	20,833	10,051	6,842	59%	0.26		0.796		0.205	0.205	79.5%	64.2%
79	1991	6,847	3,399	1,611	78%	0.33		0.436		0.145	0.145	85.6%	71.0%
80	1992	12,133	8,994	3,586	66%	0.29		0.739		0.211	0.211	78.9%	68.6%
81												Average:	66.72%

82 Formulas: Sacramento River Late Fall Run Smolt Survival Model

84 C10 ='Study 485 Flow Data'!B7 — Q10 ='Study 485 Flow Data'!C7 — AE10 ='Study 485 Flow Data'!D7
85 D10 ='Study 485 Flow Data'!L7 (HIDDEN) — R10 ='Study 485 Flow Data'!M7 (HIDDEN) — AF10 ='Study 485 Flow Data'!N7 (HIDDEN)
86 E10 ='Study 485 Flow Data'!V7 (HIDDEN) — S10 ='Study 485 Flow Data'!W7 (HIDDEN) — AG10 ='Study 485 Flow Data'!X7 (HIDDEN)
87 F10 =(D10+E10) — T10 =(R10+S10) — AH10 =(AF10+AG10)
88 G10 =0.374*C10-950 — U10 =0.374*Q10-950 — AI10 =0.374*AE10-950
89 H10 =IF(C10>$K$4,(0.133*C10+829)/(C10-G10),(0.293*C10+2090)/(C10-G10)) — V10 =IF(Q10>$K$4,(0.133*Q10+829)/(Q10-U10),(0.293*Q10+2090)/(Q10-U10)) — AJ10 =IF(AE10>$K$4,(0.133*AE10+829)/(AE10-AI10),(0.293*AE10+2090)/(AE10-AI10))
90 I10 =(0.133*C10+829)/(C10-G10) — W10 =(0.45*(0.133*Q10+829)/(Q10-U10))+(0.55*V10) — AK10 =(0.133*AE10+829)/(AE10-AI10)
91 K10 =(-0.5916024)+(0.017968*$T$1)+(0.000054*F10) — Y10 =(-0.5916024)+(0.017968*$T$2)+(0.000054*T10) — AM10 =(-0.5916024)+(0.017968*$T$3)+(0.000054*AH10)
92 L10 =-1.613493+(0.0319584*$T$1) — AA10 =(Y10*W10)+(Z10*(1-W10)) — AO10 =(AM10*AK10)+(AN10*(1-AK10))
93 M10 =(K10*H10)+(L10*(1-H10)) — AB10 =X10+AA10-(X10*AA10) — AP10 =AL10+AO10-(AL10*AO10)
94 N10 =J10+M10-(J10*M10) — AC10 =1-AB10 — AQ10 =1-AP10
95 O10 =1-N10 — AS10 =(O10*0.25)+(AC10*0.5)+(AQ10*0.25)

Study 485 Wint[illegible] Smolt Survival Model — February Water Temp 50 F — March Water Temp 56 F — April Water Temperatures based on limited historical data from US

Cross Chan[illegible]d Over 25000 cfs

Cross Channel Clos[illegible] to Apr when DOI greater then 12,000 cfs

FEBRUARY

Row	Year	Water Year Type	Sac River Flow	CVP + SWP Exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channel Closed	m1	m2	m3	m23	m123	Calculated Survivability s123
9	1922	A	31,781	9,613	10,836	24%	0.24		[illegible]		0.203	0.203	79.7%
10	1923	B	22,615	4,916	7,508	56%	0.25		0.572		0.145	0.145	85.5%
11	1924	C	15,925	8,258	5,008	62%	0.27		0.758		0.203	0.203	79.7%
12	1925	D	44,691	11,794	15,784	23%	0.23		[illegible]		0.221	0.221	77.9%
13	1926	D	36,724	8,589	12,411	24%	0.24		0.771		0.184	0.184	81.6%
14	1927	W	82,503	11,020	29,906	22%	0.22		0.902		0.202	0.202	79.8%
15	1928	A	27,399	8,380	9,297	25%	0.25		0.789		0.188	0.188	81.2%
16	1929	C	17,536	8,301	5,609	61%	0.27		[illegible]		0.200	0.200	80.0%
17	1930	D	15,683	6,786	4,916	62%	0.27		0.673		0.182	0.182	81.8%
18	1931	C	10,840	4,844	3,104	66%	0.29		0.568		0.167	0.167	83.3%
19	1932	D	13,995	9,979	4,264	64%	0.28		0.846		0.234	0.234	76.6%
20	1933	C	11,974	8,536	3,528	66%	0.29		0.680		0.189	0.189	81.1%
21	1934	C	12,748	6,050	3,818	65%	0.28		0.633		0.179	0.179	82.1%
22	1935	B	11,974	4,628	3,528	66%	0.29		0.557		0.160	0.160	84.0%
23	1936	B	46,053	12,308	16,274	23%	0.23		0.971		0.227	0.227	77.3%
24	1937	B	33,833	6,500	11,704	24%	0.24		0.658		0.158	0.158	84.2%
25	1938	W	82,289	5,150	29,619	22%	0.22		0.586		0.131	0.131	86.9%
26	1939	D	19,032	6,492	6,166	60%	0.26		0.603		0.158	0.158	84.2%
27	1940	A	41,064	12,291	14,406	24%	0.24		0.971		0.229	0.229	77.1%
28	1941	W	75,031	11,236	27,112	23%	0.23		0.914		0.206	0.206	79.4%
29	1942	W	76,344	5,618	26,351	23%	0.23		0.610		0.137	0.137	86.3%
30	1943	W	52,253	5,998	18,593	23%	0.23		0.631		0.146	0.146	85.4%
31	1944	D	30,772	6,137	10,559	24%	0.24		0.638		0.155	0.155	84.5%
32	1945	B	36,911	8,263	13,603	24%	0.24		0.754		0.179	0.179	82.1%
33	1946	B	23,840	6,842	7,986	57%	0.25		0.678		0.170	0.170	83.0%
34	1947	D	21,067	8,193	6,929	58%	0.26		0.749		0.192	0.192	80.8%
35	1948	B	15,681	5,980	4,915	62%	0.27		0.630		0.170	0.170	83.0%
36	1949	D	16,277	8,427	5,138	62%	0.27		0.782		0.205	0.205	79.5%
37	1950	B	31,294	8,985	10,754	24%	0.24		0.782		0.192	0.192	80.8%
38	1951	A	60,572	8,987	21,704	23%	0.23		0.791		0.181	0.181	81.9%
39	1952	W	62,499	7,910	22,425	23%	0.23		0.734		0.167	0.167	83.3%
40	1953	W	28,341	6,060	9,850	25%	0.25		0.633		0.156	0.156	84.4%
41	1954	A	57,151	7,671	20,424	23%	0.23		0.721		0.165	0.165	83.5%
42	1955	D	16,583	7,669	5,252	61%	0.27		0.722		0.193	0.193	80.7%
43	1956	W	61,543	8,658	22,067	23%	0.23		0.774		0.177	0.177	82.3%
44	1957	A	33,149	8,895	11,448	24%	0.24		0.787		0.190	0.190	81.0%
45	1958	W	62,121	7,346	22,283	23%	0.23		0.704		0.161	0.161	83.9%
46	1959	B	50,075	5,852	17,778	23%	0.23		0.623		0.144	0.144	85.6%
47	1960	D	25,852	9,562	8,718	25%	0.25		0.823		0.205	0.205	79.5%
48	1961	D	26,847	9,471	9,764	25%	0.25		0.818		0.201	0.201	79.9%
49	1962	B	37,020	9,281	12,896	24%	0.24		0.809		0.193	0.193	80.7%
50	1963	W	58,699	12,784	21,004	23%	0.23		0.987		0.228	0.228	77.2%
51	1964	D	19,923	7,962	6,501	59%	0.26		0.737		0.191	0.191	80.9%
52	1965	W	33,077	10,156	11,421	24%	0.24		0.865		0.206	0.206	79.4%
53	1966	B	26,775	6,410	9,064	25%	0.25		0.653		0.162	0.162	83.8%
54	1967	W	42,872	7,480	15,064	24%	0.24		0.711		0.167	0.167	83.3%
55	1968	B	54,520	5,807	19,440	23%	0.23		0.620		0.143	0.143	85.7%
56	1969	W	67,486	4,862	24,290	23%	0.23		0.569		0.129	0.129	87.1%
57	1970	W	57,565	5,222	20,579	23%	0.23		0.589		0.135	0.135	86.5%
58	1971	W	29,152	8,569	9,953	25%	0.25		0.771		0.189	0.189	81.1%
59	1972	B	24,217	8,836	8,107	57%	0.25		0.789		0.198	0.198	80.2%
60	1973	A	70,961	8,697	25,590	23%	0.23		0.776		0.176	0.176	82.4%
61	1974	W	41,918	8,211	14,727	24%	0.24		0.760		0.177	0.177	82.3%
62	1975	W	58,807	6,230	21,044	23%	0.23		0.643		0.147	0.147	85.3%
63	1976	C	19,523	7,719	6,352	59%	0.26		0.724		0.188	0.188	81.2%
64	1977	C	12,460	2,053	3,710	66%	0.28		0.418		0.119	0.119	88.1%
65	1978	A	48,814	7,689	17,306	23%	0.23		0.722		0.168	0.168	83.2%
66	1979	B	41,664	5,384	14,840	24%	0.24		0.596		0.141	0.141	85.9%
67	1980	A	69,453	4,485	25,026	23%	0.23		0.549		0.124	0.124	87.6%
68	1981	D	29,674	5,798	10,148	24%	0.24		0.620		0.152	0.152	84.8%
69	1982	W	65,650	7,418	23,603	23%	0.23		0.707		0.161	0.161	83.9%
70	1983	W	82,917	4,177	30,061	22%	0.22		0.532		0.119	0.119	88.1%
71	1984	W	36,004	5,129	12,518	24%	0.24		0.584		0.140	0.140	86.0%
72	1985	D	20,131	8,571	6,579	59%	0.26		0.770		0.199	0.199	80.1%
73	1986	W	96,692	12,260	35,213	22%	0.22		0.970		0.216	0.216	78.4%
74	1987	D	23,030	5,546	7,663	58%	0.25		0.606		0.154	0.154	84.6%
75	1988	C	17,229	6,589	5,493	61%	0.27		0.683		0.176	0.176	82.4%
76	1989	D	13,072	2,701	3,939	65%	0.28		0.453		0.127	0.127	87.3%
77	1990	C	16,223	7,508	5,118	62%	0.27		0.712		0.192	0.192	80.8%
78	1991	C	11,074	1,186	3,192	66%	0.29		0.371		0.108	0.108	89.2%
79	1992	C	31,415	8,414	10,799	24%	0.24		0.781		0.185	0.185	81.5%

MARCH

Year	Sac River Flow	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	percent	X-Channel Closed	m1	m2	m3	m23	m123	Calculated Survivability s123
1922	31,551	6,977	10,850	0.24	0.24		0.773	0.144	0.297	0.297	70.3%
1923	17,028	7,530	5,418	0.61	0.27		0.803	0.144	0.320	0.320	68.0%
1924	12,100	3,139	3,576	0.66	0.29		0.568	0.144	0.265	0.265	73.5%
1925	19,337	8,181	6,262	0.59	0.26		0.838	0.144	0.325	0.325	67.5%
1926	18,019	6,701	5,041	0.62	0.27		0.756	0.144	0.310	0.310	69.0%
1927	43,863	7,628	15,456	0.23	0.23		0.809	0.144	0.300	0.300	70.0%
1928	86,261	7,579	31,312	0.22	0.22		0.806	0.144	0.292	0.292	70.8%
1929	13,515	4,668	4,105	0.64	0.26		0.649	0.144	0.285	0.285	71.5%
1930	30,087	7,172	10,303	0.24	0.24		0.784	0.144	0.300	0.300	70.0%
1931	9,221	3,806	2,499	0.71	0.31		0.602	0.144	0.284	0.284	71.6%
1932	10,539	3,676	2,991	0.69	0.30		0.595	0.144	0.277	0.277	72.3%
1933	10,392	4,635	2,937	0.69	0.30		0.647	0.144	0.293	0.293	70.7%
1934	14,084	3,822	4,317	0.64	0.28		0.603	0.144	0.271	0.271	72.9%
1935	24,916	11,206	8,368	0.57	0.25		1.000	0.144	0.358	0.358	64.2%
1936	33,194	11,693	11,464	0.24	0.24		1.000	0.144	0.351	0.351	64.9%
1937	37,861	6,245	13,210	0.24	0.24		0.734	0.144	0.284	0.284	71.6%
1938	78,634	6,017	28,459	0.22	0.22		0.722	0.144	0.274	0.274	72.6%
1939	16,394	6,668	5,181	0.61	0.27		0.757	0.144	0.309	0.309	69.1%
1940	59,166	8,860	21,178	0.23	0.23		0.876	0.144	0.312	0.312	68.8%
1941	58,581	8,067	20,959	0.23	0.23		0.832	0.144	0.302	0.302	69.8%
1942	27,095	7,432	9,183	0.25	0.25		0.798	0.144	0.306	0.306	69.4%
1943	64,596	5,871	23,210	0.23	0.23		0.714	0.144	0.274	0.274	72.6%
1944	25,084	6,961	8,436	0.25	0.25		0.773	0.144	0.301	0.301	69.9%
1945	27,030	7,319	9,159	0.25	0.25		0.792	0.144	0.305	0.305	69.5%
1946	23,777	7,872	7,943	0.57	0.25		0.822	0.144	0.315	0.315	68.5%
1947	22,102	6,666	7,316	0.58	0.25		0.757	0.144	0.300	0.300	70.0%
1948	19,110	7,626	6,197	0.60	0.26		0.809	0.144	0.318	0.318	68.2%
1949	41,716	11,336	14,652	0.24	0.24		1.000	0.144	0.346	0.346	65.4%
1950	22,151	7,058	7,334	0.58	0.25		0.778	0.144	0.308	0.308	69.2%
1951	29,583	7,953	10,114	0.24	0.24		0.826	0.144	0.311	0.311	68.9%
1952	57,524	7,140	20,564	0.23	0.23		0.782	0.144	0.291	0.291	70.9%
1953	24,869	7,270	8,362	0.57	0.25		0.789	0.144	0.306	0.306	69.4%
1954	49,536	7,656	17,577	0.23	0.23		0.821	0.144	0.301	0.301	69.9%
1955	16,752	7,626	6,063	0.60	0.26		0.809	0.144	0.318	0.318	68.2%
1956	36,674	6,766	12,766	0.24	0.24		0.782	0.144	0.292	0.292	70.8%
1957	44,383	7,626	15,649	0.23	0.23		0.809	0.144	0.300	0.300	70.0%
1958	93,612	7,530	34,081	0.22	0.22		0.803	0.144	0.291	0.291	70.9%
1959	22,021	6,131	7,286	0.58	0.26		0.728	0.144	0.293	0.293	70.7%
1960	20,329	6,294	6,653	0.59	0.26		0.737	0.144	0.297	0.297	70.3%
1961	20,541	7,920	6,732	0.59	0.26		0.824	0.144	0.320	0.320	68.0%
1962	26,265	7,611	8,873	0.25	0.25		0.808	0.144	0.309	0.309	69.1%
1963	32,641	9,254	11,258	0.24	0.24		0.898	0.144	0.326	0.326	67.4%
1964	19,175	7,693	6,221	0.60	0.26		0.812	0.144	0.318	0.318	68.2%
1965	21,126	7,626	6,951	0.58	0.26		0.809	0.144	0.315	0.315	68.5%
1966	28,669	7,644	9,780	0.25	0.25		0.809	0.144	0.308	0.308	69.2%
1967	54,483	6,489	19,426	0.23	0.23		0.747	0.144	0.283	0.283	71.7%
1968	36,768	7,107	12,809	0.24	0.24		0.780	0.144	0.296	0.296	70.4%
1969	45,326	5,302	16,002	0.23	0.23		0.663	0.144	0.270	0.270	73.0%
1970	35,812	7,172	12,444	0.24	0.24		0.784	0.144	0.297	0.297	70.3%
1971	50,953	7,920	18,107	0.23	0.23		0.824	0.144	0.302	0.302	69.8%
1972	32,933	7,872	11,367	0.24	0.24		0.822	0.144	0.308	0.308	69.2%
1973	47,554	7,937	16,836	0.23	0.23		0.825	0.144	0.303	0.303	69.7%
1974	100,199	7,868	36,524	0.22	0.22		0.823	0.144	0.295	0.295	70.5%
1975	75,999	8,132	27,474	0.23	0.23		0.836	0.144	0.300	0.300	70.0%
1976	18,361	6,343	5,917	0.60	0.26		0.739	0.144	0.301	0.301	69.9%
1977	7,351	1,870	1,799	0.76	0.33		0.496	0.144	0.259	0.259	74.1%
1978	45,619	6,017	16,111	0.23	0.23		0.722	0.144	0.279	0.279	72.1%
1979	32,494	7,172	11,203	0.24	0.24		0.784	0.144	0.299	0.299	70.1%
1980	36,479	5,172	12,693	0.24	0.24		0.676	0.144	0.271	0.271	72.9%
1981	32,137	7,107	11,089	0.24	0.24		0.780	0.144	0.298	0.298	70.2%
1982	69,087	7,579	24,889	0.23	0.23		0.806	0.144	0.294	0.294	70.6%
1983	81,936	4,684	29,694	0.22	0.22		0.650	0.144	0.256	0.256	74.2%
1984	36,496	7,237	12,699	0.24	0.24		0.787	0.144	0.298	0.298	70.2%
1985	22,297	7,676	7,369	0.58	0.25		0.811	0.144	0.314	0.314	68.6%
1986	72,536	8,406	26,178	0.23	0.23		0.851	0.144	0.304	0.304	69.6%
1987	29,974	6,457	10,280	0.24	0.24		0.745	0.144	0.291	0.291	70.9%
1988	10,929	3,692	3,137	0.68	0.29		0.596	0.144	0.277	0.277	72.3%
1989	41,862	10,718	14,706	0.24	0.24		0.975	0.144	0.340	0.340	66.0%
1990	13,987	5,562	4,261	0.64	0.28		0.697	0.144	0.297	0.297	70.3%
1991	29,681	11,303	10,151	0.24	0.24		1.000	0.144	0.354	0.354	64.6%
1992	20,102	8,246	6,568	0.59	0.26		0.842	0.144	0.325	0.325	67.5%

APRIL

Year	Sac River Flow	CVP + SW Exports	Calculated Steamboat & Sutter Slough flows	Percent	X-Channel Closed	Water temp f	m1	m2	m3	m23	m123	Calculated Survivability s123	Weighted Total Survival
1922	22,822	8,369	7,585	0.58	0.25	58.5	0.002	0.911	0.256	0.422	0.424	57.6%	67.73%
1923	23,007	7,986	7,655	0.58	0.25	58.3	0.000	0.886	0.250	0.411	0.411	58.9%	67.55%
1924	8,134	2,790	2,092	0.74	0.32	61.5	0.128	0.864	0.352	0.451	0.521	47.9%	66.62%
1925	22,251	6,924	7,372	0.58	0.25	59.1	0.027	0.844	0.275	0.420	0.436	56.4%	65.52%
1926	20,049	6,420	6,548	0.59	0.26	61.6	0.133	0.862	0.365	0.496	0.554	44.6%	63.31%
1927	48,215	8,067	17,062	0.23	0.23	56.8	0.000	0.895	0.202	0.356	0.356	64.4%	69.59%
1928	29,206	7,630	9,974	0.25	0.25	58.7	0.011	0.875	0.262	0.413	0.419	58.1%	68.33%
1929	9,092	2,958	2,450	0.72	0.31	56.3	0.000	0.580	0.186	0.307	0.307	69.3%	71.95%
1930	12,636	3,899	3,777	0.66	0.28	59.6	0.048	0.690	0.291	0.404	0.433	56.7%	67.52%
1931	9,193	2,958	2,488	0.71	0.31	62.8	0.183	0.697	0.393	0.466	0.580	42.0%	64.22%
1932	13,092	5,378	3,946	0.65	0.28	58.9	0.019	0.757	0.269	0.408	0.417	58.3%	68.62%
1933	12,739	4,117	3,814	0.65	0.28	60.1	0.069	0.711	0.307	0.421	0.461	53.9%	66.96%
1934	12,856	3,563	3,858	0.65	0.28	63.6	0.217	0.744	0.419	0.511	0.617	38.3%	63.72%
1935	24,637	9,075	8,264	0.57	0.25	58.9	0.019	0.957	0.269	0.441	0.452	54.8%	63.93%
1936	21,024	8,369	6,913	0.58	0.26	59.7	0.053	0.933	0.294	0.458	0.487	51.3%	62.45%
1937	21,965	7,966	7,265	0.58	0.26	58.8	0.015	0.895	0.266	0.426	0.436	56.5%	68.68%
1938	47,173	7,714	16,893	0.23	0.23	56.3	0.000	0.837	0.186	0.337	0.337	66.3%	72.55%
1939	12,234	4,134	3,626	0.66	0.29	63.3	0.204	0.769	0.409	0.512	0.612	38.8%	62.01%
1940	41,728	8,504	14,656	0.24	0.24	57.4	0.000	0.899	0.221	0.361	0.361	61.9%	67.83%
1941	42,367	9,310	14,895	0.24	0.24	56.9	0.000	0.934	0.205	0.376	0.376	62.4%	68.52%
1942	43,306	8,907	15,247	0.23	0.23	56.5	0.000	0.905	0.192	0.359	0.359	64.1%	69.99%
1943	29,410	9,125	10,049	0.24	0.24	58.8	0.015	0.958	0.266	0.435	0.443	55.7%	69.19%
1944	9,814	4,235	2,721	0.70	0.30	58.4	0.000	0.686	0.253	0.383	0.383	61.7%	69.30%
1945	11,747	6,420	3,443	0.67	0.29	60.6	0.090	0.844	0.323	0.473	0.521	47.9%	64.69%
1946	12,218	5,949	3,619	0.66	0.29	60.7	0.095	0.820	0.326	0.467	0.518	48.2%	64.30%
1947	13,797	4,941	4,210	0.64	0.28	62.5	0.170	0.798	0.384	0.499	0.584	41.6%	62.85%
1948	22,786	6,789	7,573	0.58	0.25	56.8	0.000	0.792	0.195	0.347	0.347	65.3%	69.28%
1949	13,209	5,075	3,990	0.65	0.28	61.7	0.137	0.791	0.356	0.460	0.551	44.9%	61.10%
1950	18,772	6,184	6,071	0.60	0.26	61.3	0.120	0.844	0.346	0.476	0.539	46.1%	63.91%
1951	14,736	6,353	4,562	0.63	0.27	59.9	0.061	0.826	0.301	0.445	0.479	52.1%	65.65%
1952	56,852	7,848	20,236	0.23	0.23	55.5	0.000	0.829	0.160	0.314	0.314	68.6%	71.84%
1953	16,184	5,647	5,103	0.62	0.27	58.8	0.015	0.770	0.266	0.401	0.410	59.0%	68.24%
1954	39,863	7,361	13,959	0.24	0.24	58.4	0.000	0.855	0.253	0.395	0.395	60.5%	68.61%
1955	9,478	3,664	2,595	0.71	0.30	58.4	0.000	0.620	0.189	0.320	0.320	68.0%	69.76%
1956	20,436	7,966	6,693	0.59	0.26	59.7	0.053	0.911	0.294	0.454	0.482	51.8%	66.60%
1957	21,209	6,453	6,982	0.58	0.26	60.5	0.086	0.844	0.320	0.454	0.501	49.9%	65.39%
1958	52,282	9,478	18,603	0.23	0.23	57.4	0.000	0.952	0.221	0.390	0.390	61.0%	69.62%
1959	10,487	3,764	2,972	0.69	0.30	63	0.191	0.744	0.400	0.502	0.597	40.3%	63.61%
1960	13,764	4,050	4,196	0.64	0.28	59.5	0.044	0.696	0.266	0.402	0.428	57.2%	67.58%
1961	12,806	3,529	3,839	0.65	0.28	60.1	0.069	0.679	0.307	0.412	0.453	54.7%	65.58%
1962	10,739	4,840	3,066	0.68	0.29	61.8	0.141	0.780	0.362	0.485	0.557	44.3%	63.15%
1963	69,457	8,100	25,027	0.23	0.23	53.7	0.000	0.811	0.103	0.263	0.263	73.7%	70.59%
1964	8,957	3,496	2,400	0.72	0.31	59.3	0.036	0.663	0.262	0.399	0.421	57.9%	66.75%
1965	45,661	8,957	16,127	0.23	0.23	56.9	0.000	0.914	0.205	0.371	0.371	62.9%	68.25%
1966	16,520	5,613	5,228	0.61	0.27	61.9	0.145	0.824	0.365	0.486	0.562	43.8%	63.60%
1967	39,930	8,487	13,984	0.24	0.24	53.8	0.000	0.833	0.106	0.278	0.278	72.2%	73.35%
1968	15,596	5,243	4,883	0.62	0.27	61.5	0.126	0.797	0.352	0.472	0.540	46.0%	65.06%
1969	44,767	7,512	15,800	0.23	0.23	56.4	0.000	0.827	0.169	0.336	0.336	66.2%	72.77%
1970	16,604	6,586	5,260	0.61	0.27	58.8	0.015	0.821	0.266	0.414	0.423	57.7%	68.61%
1971	21,814	6,554	7,208	0.58	0.26	58.7	0.011	0.817	0.262	0.404	0.410	59.0%	68.04%
1972	12,453	4,739	3,707	0.66	0.28	58.5	0.002	0.715	0.256	0.367	0.388	61.2%	68.23%
1973	19,511	8,100	6,347	0.59	0.26	61.3	0.120	0.947	0.346	0.502	0.562	43.8%	63.90%
1974	33,206	9,327	11,470	0.24	0.24	56.8	0.000	0.933	0.202	0.378	0.378	62.2%	69.34%
1975	25,763	8,773	8,885	0.25	0.25	56.8	0.000	0.903	0.202	0.378	0.378	62.4%	69.09%
1976	9,428	3,008	2,576	0.71	0.30	58.9	0.019	0.629	0.269	0.378	0.390	61.0%	68.71%
1977	9,125	2,991	2,463	0.72	0.31	64.3	0.246	0.725	0.441	0.528	0.645	35.5%	64.35%
1978	36,703	7,512	13,525	0.24	0.24	56.9	0.000	0.836	0.205	0.355	0.355	64.5%	71.26%
1979	17,696	7,092	5,668	0.60	0.26	59.8	0.057	0.866	0.298	0.448	0.479	52.1%	66.75%
1980	19,814	6,873	6,460	0.59	0.26	57.1	0.000	0.806	0.211	0.365	0.365	63.5%	71.96%
1981	16,990	5,445	5,404	0.61	0.27	61.5	0.126	0.807	0.352	0.473	0.541	45.9%	64.80%
1982	75,643	8,941	27,415	0.23	0.23	54.1	0.000	0.863	0.115	0.264	0.264	71.6%	72.62%
1983	68,296	6,958	24,593	0.23	0.23	55	0.000	0.772	0.144	0.267	0.267	71.3%	75.15%
1984	17,861	6,857	5,738	0.60	0.26	59.7	0.053	0.851	0.294	0.442	0.471	52.9%	67.06%
1985	12,335	4,101	3,663	0.66	0.28	60.8	0.099	0.722	0.330	0.441	0.497	50.3%	64.62%
1986	20,536	8,680	6,731	0.59	0.26	60.4	0.082	1.000	0.317	0.493	0.535	46.5%	63.83%
1987	12,265	3,479	3,645	0.66	0.29	65.7	0.305	0.777	0.486	0.569	0.700	30.0%	60.40%
1988	8,621	2,857	2,274	0.73	0.31	59.9	0.061	0.639	0.301	0.406	0.442	55.8%	68.68%
1989	23,629	5,647	7,867	0.57	0.25	61.4	0.124	0.817	0.349	0.467	0.533	46.7%	62.96%
1990	12,453	3,529	3,707	0.66	0.28	61.6	0.133	0.706	0.355	0.455	0.527	47.3%	64.75%
1991	15,278	4,252	4,763	0.62	0.27	60.8	0.099	0.730	0.330	0.439	0.494	50.6%	63.62%
1992	12,470	3,731	3,714	0.66	0.28	61.2	0.116	0.710	0.342	0.447	0.511	48.9%	63.76%
												Average	66.13%

Formulas: Winter Run Salmon Smolt Survival Model

C10 ='Study 485 Flow Data'!E7
D10 ='Study 485 Flow Data'!O7 (HIDDEN)
E10 ='Study 485 Flow Data'!Y7 (HIDDEN)
F10 =(D9+E9)
G10 =0.374*C9-950
H10 =IF(C9>$G$2,(0.133*C9+829)/(C9-G9),(0.293*C9+2090)/(C9-G9))
I10 =(0.133*C9+829)/(C9-G9)
K10 =(-0.5916024)+(0.017968*$M$1)+(0.000054*F9)
M10 =(K9*I9)+L9*(1-I9)
N10 =J9+M9-(J9*M9)
O10 =1-N9

Q10 ='Study 485 Flow Data'!F7
R10 ='Study 485 Flow Data'!P7 (HIDDEN)
S10 ='Study 485 Flow Data'!Z7 (HIDDEN)
T10 =(R9+S9)
U10 =0.374*Q9-950
V10 =IF(Q9>$G$2,(0.133*Q9+829)/(Q9-U9),(0.293*Q9+2090)/(Q9-U9))
Y10 =(0.133*Q9+829)/(Q9-U9)
W10 =IF(((-0.5916024)+(0.017968*$M$2)+(0.000054*T9))>1,1,((-0.5916024)+(0.017968*$M$2)+(0.000054*T9)))
Z10 =-1.613493+(0.0319584*$M$2)
AA10 =(Y9*W9)+Z9*(1-W9)
AB10 =X9+AA9-(X9*AA9)
AC10 =1-AB9

AE10 ='Study 485 Flow Data'!G7
AF10 ='Study 485 Flow Data'!Q7 (HIDDEN)
AG10 ='Study 485 Flow Data'!AA7 (HIDDEN)
AH10 =AF9+AG9
AI10 =0.374*AE9-950
AJ10 =IF(AE9>$G$2,(0.133*AE9+829)/(AE9-AI9),(0.293*AE9+2090)/(AE9-AI9))
AK10 =(0.133*AE9+829)/(AE9-AI9)
AM10 =IF((-2.45925+(0.0420748*AL9))<0,0,(-2.45925+(0.0420748*AL9)))
AN10 =IF(((-0.5916024)+(0.017968*AL9)+(0.000054*AH9))>1,1,((-0.5916024)+(0.017968*AL9)+(0.000054*AH9)))
AO10 =-1.613493+(0.0319584*AL9)
AP10 =(AN9*AK9)+(AO9*(1-AK9))
AQ10 =AM9+AP9-(AM9*AP9)
AR10 =1-AQ9
AS10 =(0.13*O9)+(0.57*AC9)+(0.3*AR9)

C-032397
C-032397

STUDY: 1995C06F-SWRCB-485 DWRSIM. recirc818, 14 Apr 97

CP # 137, SACRAMENTO RIVER AT FREEPORT, DOWNSTREAM FLOW (converted from TAF to CFS

Project: /1995C06F-SWRCB-485/137/FLOW-DOWNSTREAM//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	13344	17142	18557	31781	31551	22822	46269	34720
1923	17881	34544	32283	22615	17028	23007	14344	19209
1924	9831	13417	13369	15925	12100	8134	10181	11545
1925	7025	11254	10213	44691	19337	22251	12067	18116
1926	12352	12962	18768	35724	16019	20049	14003	18167
1927	20284	14312	28640	82503	43863	48215	26786	17898
1928	21746	16572	25257	27399	86261	29208	20215	17780
1929	13008	13206	14767	17538	13515	9092	9709	10588
1930	7159	14442	20768	15683	30087	12638	12067	19024
1931	9781	9335	11710	10840	9221	9193	10132	13159
1932	8151	14653	17256	13995	10539	13092	12019	21444
1933	9512	8197	12100	11974	10392	12739	8424	11008
1934	8134	12474	16101	12748	14084	12856	8912	14890
1935	9209	8506	25469	11974	24916	24637	28624	17629
1936	9378	9400	31584	46053	33194	21024	14100	18083
1937	14184	14003	17272	33833	37861	21965	16068	17679
1938	23948	41781	30543	82269	78634	47173	57426	35510
1939	19444	18687	18410	19032	16394	12234	8571	19360
1940	8436	7839	23452	41064	59166	41728	18996	16486
1941	13747	30852	71494	75031	58581	42387	39488	20805
1942	18184	65623	63265	78344	27095	43308	36040	27124
1943	21914	28803	58060	52253	64598	29410	20297	16856
1944	15125	13775	17678	30772	25094	9814	8912	19444
1945	13764	15824	14052	38911	27030	11747	11628	18822
1946	17243	54808	43228	23840	23777	12218	13710	19478
1947	13781	18134	14979	21067	22102	13797	8847	19058
1948	10201	9742	14653	15681	19110	22788	23826	22889
1949	14453	15564	14930	16277	41716	13209	14914	19847
1950	14049	10994	19435	31294	22151	18772	13726	19780
1951	39628	67997	62208	60572	29583	14738	19126	17646
1952	16570	45586	67347	62499	57524	58652	59557	38972
1953	16537	42334	64078	28341	24899	16184	26867	25881
1954	20906	14914	33421	57151	49538	39863	25403	17058
1955	17058	25517	22004	16583	18752	9478	10278	19814
1956	10470	24964	84489	61543	36674	20436	39000	22301
1957	15478	14149	18638	33149	44383	21209	16816	19410
1958	19259	23745	36219	62121	93612	52282	43488	33930
1959	16133	14621	35162	50075	22021	10487	9417	19007
1960	14537	9807	14279	25852	20329	13784	10913	18889
1961	12991	16507	13515	28647	20541	12806	8717	20133
1962	13680	16703	12653	37020	26265	10739	15320	19125
1963	20822	27550	18605	58699	32641	69457	29095	19578
1964	28653	14849	25631	19923	19175	8957	10100	19360
1965	13394	24330	81236	33077	21126	45861	25257	18167
1966	25477	16995	29632	26775	28689	16520	14149	17780
1967	14285	34495	33486	42872	54483	39930	44790	39342
1968	16234	16686	30640	54520	36788	15596	9384	18436
1969	13394	23338	66404	67486	45326	44787	45538	24133
1970	17646	50156	92669	57565	35812	16604	12149	16722
1971	18990	52368	46904	29152	50953	21814	29616	23629
1972	15343	19988	20394	24217	32933	12453	10539	18133
1973	21914	26200	49392	70961	47554	19511	15743	18688
1974	55778	61590	78422	41918	100199	33208	26949	21829
1975	17579	17613	18670	58807	75999	25763	28542	24788
1976	19226	16768	16768	19523	18361	9428	10116	19730
1977	8420	8148	7904	12460	7351	9125	7481	9781
1978	6924	12279	43033	48814	45619	38703	21061	15965
1979	15142	14019	27241	41684	32494	17696	12572	21074
1980	15797	20329	60484	69453	38479	19814	14783	16268
1981	13613	15613	28607	29674	32137	16990	8750	18889
1982	27981	68453	51165	65650	69087	75843	38431	24418
1983	39107	55410	59150	82917	81935	68298	54515	55576
1984	62802	82944	47359	36004	36495	17881	13417	19024
1985	33292	23875	16556	20131	22297	12335	12783	18083
1986	9546	15467	21256	96692	72535	20536	13125	12419
1987	11209	13369	16735	23030	29974	12285	8457	20284
1988	8453	15841	25534	17229	10929	8821	9758	14520
1989	8588	8847	12002	13072	41862	23829	14296	18368
1990	11260	12781	20833	16223	13987	12453	7774	19763
1991	8134	8278	6847	11074	29681	15276	8685	10789
1992	7579	7465	12133	31415	20102	12470	9042	14503

STUDY: 1995C06F-SWRCB-485 DWRSIM: recirc818-f, 18 Jun 97

CVP, CVP EXPORT AT TRACY PP (converted from TAF to CFS)

Project: /1995C06F-SWRCB-485/CVP/EXPORT-TRACY_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4285	4212	4212	4249	2830	4185	4342	4605
1923	4302	4212	4212	2539	4033	3983	3123	4605
1924	2403	2960	4212	4068	1399	1395	2196	1748
1925	1311	4212	3545	4213	4228	3462	2553	4605
1926	4285	4212	2537	954	2749	3210	2472	4605
1927	4252	4212	4212	2521	3480	4033	4163	4605
1928	4302	4212	4212	4120	3139	3815	3188	4605
1929	4285	4212	4212	3151	1870	1479	2749	2689
1930	2286	4212	4212	2791	2651	1949	1740	4605
1931	2655	2196	4212	3007	1610	1479	1578	2470
1932	1176	4212	4212	4085	927	2689	2423	4588
1933	3059	2017	4212	3835	293	2840	1903	1798
1934	1008	4163	4212	1621	2098	1781	2049	4605
1935	1210	3220	4212	684	4228	4437	2976	4117
1936	2470	3058	4212	4103	4228	4185	3188	4605
1937	4285	4212	4212	2773	2374	2958	2879	3378
1938	4285	4212	4212	1206	2065	3344	3985	4605
1939	4302	4212	2716	1531	2683	2067	1740	4605
1940	2807	1431	4212	4085	4228	4252	3708	4487
1941	4302	4212	4212	4285	4228	4605	4603	4605
1942	4302	4212	4212	1657	3432	4453	4342	4605
1943	4302	4212	4212	1999	1822	4067	3480	4605
1944	4285	4212	4212	2312	2960	2118	1870	4605
1945	4269	4212	4212	4231	3171	3210	2472	4336
1946	4285	4212	4212	2449	3448	2975	2635	4605
1947	4302	4212	4212	4231	2781	2470	1773	4605
1948	2790	2537	4212	4311	4228	3395	3545	4605
1949	4269	4212	4212	4249	4228	2538	2374	4605
1950	4285	4082	4212	1458	2635	3092	2651	4605
1951	4269	4212	4212	4285	3253	3176	3594	4605
1952	4302	4212	4212	4138	3204	3680	3952	4605
1953	4302	4212	2716	1999	3155	2823	3838	4605
1954	4285	4212	4212	3043	3171	3680	3708	4437
1955	4285	4212	4212	4249	4603	1832	1887	4605
1956	2554	4212	4212	4138	2065	3983	4391	4605
1957	4302	4212	4212	4249	3188	3227	2976	4605
1958	4285	4212	4212	3295	3464	4420	4554	4605
1959	4302	4212	2732	1801	2992	1882	1838	4605
1960	4285	2944	4212	2521	2293	471	1691	4588
1961	4269	4212	4212	2359	2765	1765	1447	4605
1962	4269	4212	2895	1080	3285	2420	2423	4605
1963	4302	4212	4212	4285	4603	4050	4163	4605
1964	4302	4212	4212	4451	4342	1748	1854	4605
1965	3815	4212	4212	4249	3253	4302	4342	4605
1966	4285	4212	4212	2035	3220	2807	2342	4605
1967	4285	4212	4212	4285	3204	3529	3985	4605
1968	4302	4212	2732	1895	2992	2622	1822	4605
1969	4285	4212	4212	1693	2049	3344	3985	4605
1970	4302	4212	2505	1170	3058	3294	2960	4605
1971	4285	4212	4212	4267	3220	3277	3838	4605
1972	4285	4212	4212	4451	3448	2370	1952	4605
1973	4285	4212	4212	4267	3480	4050	3383	2924
1974	4302	4212	4212	3799	3448	4605	4342	4605
1975	4302	4212	4212	1603	3448	4386	4342	4605
1976	4302	4212	4212	3547	2049	723	1578	4605
1977	2622	1789	2358	684	732	1496	764	353
1978	2470	4131	2423	1639	2114	3445	4115	4605
1979	4302	4212	4212	1422	3171	3546	2992	4605
1980	4285	4212	4212	852	1822	2924	3497	4605
1981	4285	4212	2537	1729	2992	2723	1756	4605
1982	4285	4212	4212	2791	2927	3378	4017	4605
1983	4302	4212	2895	1386	2049	3311	3952	4605
1984	3344	2992	1334	1408	3236	3428	3058	4605
1985	4302	4212	4212	3925	2992	2050	2114	4605
1986	2504	4212	4212	4249	4228	4470	2732	3647
1987	4252	3350	960	1278	2293	706	1415	4605
1988	2975	4212	4212	4103	1984	1428	1675	4605
1989	2386	2848	4050	900	4228	2823	1968	4605
1990	4252	4212	2992	1224	2212	1765	1350	4605
1991	2470	1626	1691	360	4228	2084	1496	1968
1992	3109	2960	4212	1217	2000	1865	1838	4185

STUDY: 1995C06F-SWRCB-485 DWRSIM. recirc818-f, 18 Jun 97

SWP, SWP EXPORT AT BANKS PP (converted from TAF to CFS)

Project: /1995C06F-SWRCB-485/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	5075	7107	7579	5564	4147	4185	4342	6672
1923	6672	4635	3643	2377	3497	3983	3123	3395
1924	3748	6928	5839	4190	1740	1395	472	622
1925	3210	4847	3155	7581	3952	3462	2553	2823
1926	3008	2879	7140	7635	3952	3210	2472	2487
1927	6672	7042	7270	8499	4147	4033	4163	3563
1928	6672	7075	3643	4259	4440	3815	3188	2672
1929	4958	5871	6635	5150	2797	1479	114	101
1930	1765	6294	7091	3997	4521	1949	1740	2672
1931	3260	2976	4733	1837	2196	1479	1545	1597
1932	1748	7188	7823	5894	2749	2689	2423	3865
1933	2605	2505	5416	2701	4342	1277	1464	101
1934	1630	5546	7156	4429	1724	1781	894	1176
1935	3210	3399	7660	3943	6977	4638	2488	3496
1936	3277	2976	7449	8206	7465	4185	3188	3361
1937	4689	6603	7579	3727	3871	5008	4098	4285
1938	6672	7530	3236	3943	3952	4369	5448	6672
1939	5277	3741	3236	3961	3985	2067	1740	3092
1940	1748	2683	8018	8206	4651	4252	3236	3092
1941	6050	7351	8164	6950	3838	4706	5123	6302
1942	6168	3610	3236	3961	4001	4453	4342	6672
1943	6521	3773	3301	3997	4050	5058	4180	3143
1944	6672	6424	3269	3825	4001	2118	1870	3176
1945	6605	6961	4928	4051	4147	3210	2472	3596
1946	6672	7595	3643	4393	4424	2975	2635	3479
1947	6605	7140	7123	3961	3887	2470	1773	2941
1948	3630	3204	6359	1669	3399	3395	3545	4386
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3412	3106	7172	7526	4424	3092	2651	3529
1951	6672	7595	7644	4882	4700	3176	3594	2823
1952	6672	7107	7205	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3854	4628	4684	3680	3708	2739
1955	6672	6912	7188	3439	3025	1832	1887	3075
1956	4235	7595	8034	4520	4700	3983	4391	6672
1957	6672	5806	3887	4646	4440	3227	2976	3462
1958	6672	6928	3529	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3139	1882	1838	3008
1960	3075	2797	6245	7041	4001	3580	1691	2689
1961	4907	6896	6099	7112	5156	1765	1447	3075
1962	3479	6879	5237	8211	4326	2420	2423	2891
1963	6672	6896	7253	8499	4651	4050	4163	4017
1964	6672	6993	3871	3512	3350	1748	1854	2857
1965	6353	7465	8506	5906	4375	4655	4342	3714
1966	6672	6424	3659	4375	4424	2807	2342	2605
1967	6672	7123	7676	3205	3285	4958	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2823
1969	5428	6977	7400	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3294	2960	2622
1971	6672	7042	6635	4321	4700	3277	3838	5025
1972	6672	6213	3887	4485	4424	2370	1952	2739
1973	6672	6896	7465	4429	4456	4050	3383	5042
1974	6672	7172	3773	4411	4440	4722	4342	4924
1975	5411	4245	3854	4628	4684	4386	4342	6672
1976	6672	4847	3838	4172	4294	2286	1578	2941
1977	3378	3106	2440	1368	1138	1496	439	387
1978	1714	5530	7774	6050	3903	4067	4098	3899
1979	6672	3676	3269	3961	4001	3546	2992	4033
1980	6672	6993	3155	3633	3350	3949	3985	4067
1981	5579	4115	3350	4069	4115	2723	1756	2891
1982	6672	7026	7758	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	3428	3058	3361
1985	6672	6961	3871	4646	4684	2050	2114	2622
1986	4185	6944	7351	8031	4180	5210	5399	4033
1987	3496	6522	5692	4267	4163	2773	1415	3143
1988	1865	6879	7058	2486	1708	1428	1399	975
1989	3361	3562	4651	1801	6489	2823	1968	2487
1990	3059	4310	7058	6284	3350	1765	1350	2907
1991	2353	2765	1708	828	7075	2168	1415	1344
1992	1496	1610	4781	7197	6245	1865	1106	1482

C-032398

C-032398

Study 519A Sacramento River Fall Run Smolt Survival Model

Cross Channel closed over 25,000 cfs

Cross Channel Closed Apr to May 20, 14 d May 21-Jun 15

Sacramento River temperatures based on limited historical data from USBR

APRIL

Year	Water Year Type	APRIL Sac River Flows	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channe Closed	observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123
1922	A	22,822	9,680	7,585	58%	0.25	58.5	0.002	0.888	0.256	0.414	0.415	58.5%
1923	B	22,772	10,335	7,567	58%	0.25	58.3	0.000	0.904	0.250	0.416	0.416	58.4%
1924	C	9,613	4,369	2,645	70%	0.30	61.5	0.128	0.703	0.352	0.458	0.528	47.2%
1925	D	20,335	9,579	6,655	59%	0.26	59.1	0.027	0.888	0.275	0.433	0.440	56.1%
1926	D	17,663	8,705	5,656	61%	0.26	61.6	0.133	0.893	0.356	0.498	0.564	43.6%
1927	W	48,215	9,865	17,082	23%	0.23	56.8	0.000	0.857	0.202	0.354	0.354	64.6%
1928	A	29,206	10,184	9,974	25%	0.25	58.7	0.011	0.906	0.262	0.420	0.426	57.4%
1929	C	9,613	3,529	2,645	70%	0.30	56.3	0.000	0.573	0.186	0.303	0.303	69.7%
1930	D	14,604	6,285	4,512	63%	0.27	59.6	0.046	0.752	0.291	0.418	0.446	55.4%
1931	C	11,142	4,857	3,217	65%	0.29	62.8	0.183	0.748	0.393	0.497	0.589	41.1%
1932	D	14,066	7,056	4,311	64%	0.26	58.9	0.019	0.773	0.269	0.408	0.420	58.0%
1933	C	15,327	6,605	4,782	62%	0.27	60.1	0.069	0.775	0.307	0.434	0.474	52.6%
1934	C	15,276	6,067	4,763	62%	0.27	63.6	0.217	0.814	0.419	0.527	0.629	37.1%
1935	B	24,318	10,537	8,145	57%	0.25	58.9	0.019	0.824	0.269	0.433	0.444	55.6%
1936	B	21,526	9,932	7,101	58%	0.26	59.7	0.053	0.812	0.294	0.453	0.481	51.9%
1937	B	23,259	8,067	7,749	57%	0.25	58.8	0.015	0.815	0.266	0.405	0.413	58.7%
1938	W	47,173	8,386	16,693	23%	0.23	56.3	0.000	0.784	0.186	0.325	0.325	67.5%
1939	D	14,486	6,453	4,468	63%	0.26	63.3	0.204	0.826	0.409	0.524	0.621	37.9%
1940	A	41,726	10,463	14,656	24%	0.24	57.4	0.000	0.863	0.221	0.379	0.379	62.1%
1941	W	42,367	9,411	14,695	24%	0.24	56.9	0.000	0.839	0.205	0.354	0.354	64.6%
1942	W	43,306	9,747	15,247	23%	0.23	56.5	0.000	0.847	0.192	0.346	0.346	65.4%
1943	W	29,410	9,764	10,049	24%	0.24	58.8	0.015	0.889	0.266	0.418	0.427	57.3%
1944	D	10,705	5,596	3,064	68%	0.29	58.4	0.000	0.701	0.253	0.385	0.385	61.5%
1945	B	12,520	7,210	3,733	66%	0.28	60.6	0.090	0.810	0.323	0.461	0.510	49.0%
1946	B	12,218	6,369	3,619	66%	0.29	60.7	0.095	0.775	0.326	0.455	0.506	49.4%
1947	D	15,444	5,746	4,826	62%	0.27	62.5	0.170	0.781	0.364	0.492	0.578	42.2%
1948	B	22,766	9,963	7,573	58%	0.25	56.6	0.000	0.859	0.196	0.364	0.364	63.6%
1949	D	13,209	6,252	3,980	65%	0.28	61.7	0.137	0.788	0.368	0.479	0.550	45.0%
1950	B	19,624	8,636	6,165	60%	0.26	61.3	0.120	0.866	0.346	0.466	0.546	46.2%
1951	A	18,083	8,268	5,813	60%	0.26	59.9	0.061	0.844	0.301	0.444	0.478	52.2%
1952	W	56,952	8,873	20,236	23%	0.23	55.5	0.000	0.791	0.160	0.305	0.305	69.5%
1953	W	16,184	7,260	6,103	62%	0.27	58.8	0.015	0.780	0.266	0.404	0.413	58.7%
1954	A	39,863	10,453	13,959	24%	0.24	58.4	0.000	0.911	0.253	0.409	0.409	59.1%
1955	D	9,478	4,636	2,595	71%	0.30	58.4	0.000	0.623	0.189	0.321	0.321	67.9%
1956	W	20,436	9,310	6,693	59%	0.26	59.7	0.053	0.865	0.294	0.447	0.476	52.4%
1957	A	24,503	8,621	8,214	57%	0.25	60.5	0.086	0.870	0.320	0.458	0.505	49.5%
1958	W	52,262	9,764	18,603	23%	0.23	57.4	0.000	0.864	0.221	0.369	0.369	63.1%
1959	B	12,705	5,613	3,802	65%	0.28	63	0.191	0.784	0.400	0.509	0.603	39.7%
1960	D	14,201	4,353	4,361	64%	0.28	59.5	0.044	0.688	0.268	0.393	0.419	58.1%
1961	D	13,495	4,165	4,097	64%	0.28	60.1	0.069	0.670	0.307	0.408	0.450	55.0%
1962	B	17,612	8,134	5,637	61%	0.26	61.8	0.141	0.872	0.362	0.497	0.568	43.2%
1963	W	69,457	10,218	25,027	23%	0.23	53.7	0.000	0.817	0.103	0.264	0.264	73.6%
1964	C	9,125	4,369	2,463	72%	0.31	59.3	0.036	0.654	0.282	0.399	0.420	58.0%
1965	W	46,861	9,747	16,127	23%	0.23	58.9	0.000	0.854	0.205	0.357	0.357	64.3%
1966	B	12,991	5,932	3,909	65%	0.28	61.9	0.146	0.778	0.365	0.481	0.556	44.4%
1967	W	39,930	9,646	13,984	24%	0.24	53.8	0.000	0.794	0.106	0.269	0.269	73.1%
1968	B	19,646	8,134	6,397	59%	0.26	61.5	0.126	0.865	0.352	0.486	0.552	44.8%
1969	W	44,787	7,613	15,800	23%	0.23	56.4	0.000	0.752	0.189	0.321	0.321	67.9%
1970	W	19,629	8,571	6,391	59%	0.26	58.6	0.015	0.837	0.266	0.414	0.423	57.7%
1971	W	25,713	9,193	8,666	25%	0.25	58.7	0.011	0.862	0.262	0.412	0.418	58.2%
1972	B	14,402	6,201	4,436	63%	0.28	58.5	0.002	0.729	0.256	0.388	0.388	61.2%
1973	A	19,511	9,663	6,347	59%	0.26	61.3	0.120	0.929	0.346	0.497	0.558	44.2%
1974	W	33,206	10,201	11,470	24%	0.24	56.8	0.000	0.872	0.202	0.363	0.363	63.7%
1975	W	25,763	10,487	8,665	25%	0.25	56.8	0.000	0.864	0.202	0.372	0.372	62.8%
1976	C	10,302	4,201	2,903	69%	0.30	58.9	0.019	0.649	0.269	0.382	0.394	60.6%
1977	C	11,260	4,941	3,261	67%	0.29	64.3	0.246	0.778	0.441	0.539	0.653	34.7%
1978	A	38,703	7,613	13,525	24%	0.24	56.9	0.000	0.761	0.205	0.337	0.337	66.3%
1979	B	18,537	8,420	5,963	60%	0.26	59.8	0.057	0.848	0.298	0.442	0.474	52.6%
1980	A	19,814	7,008	6,460	59%	0.26	57.1	0.000	0.739	0.211	0.348	0.348	65.2%
1981	D	20,301	8,403	6,643	59%	0.26	61.5	0.128	0.878	0.362	0.488	0.554	44.6%
1982	W	75,843	9,226	27,415	23%	0.23	54.1	0.000	0.781	0.115	0.265	0.265	73.5%
1983	W	68,296	7,075	24,593	23%	0.23	55	0.000	0.704	0.144	0.271	0.271	72.9%
1984	W	20,940	8,453	6,881	59%	0.26	59.7	0.053	0.848	0.294	0.437	0.466	53.4%
1985	D	13,327	5,963	4,034	65%	0.28	60.8	0.099	0.761	0.330	0.450	0.505	49.5%
1986	W	20,536	7,495	6,731	59%	0.26	60.4	0.082	0.819	0.317	0.446	0.492	50.8%
1987	D	14,656	6,134	4,606	63%	0.27	65.7	0.305	0.665	0.486	0.587	0.713	28.7%
1988	C	10,319	4,470	2,909	69%	0.30	59.9	0.061	0.679	0.301	0.413	0.449	55.1%
1989	D	23,629	9,293	7,667	57%	0.25	61.4	0.124	0.915	0.349	0.492	0.555	44.5%
1990	C	15,310	6,420	4,776	62%	0.27	61.6	0.133	0.794	0.355	0.474	0.544	45.6%
1991	C	16,772	6,974	5,323	61%	0.27	60.8	0.099	0.804	0.330	0.456	0.510	49.0%
1992	C	14,736	6,151	4,562	63%	0.27	61.2	0.116	0.775	0.342	0.461	0.523	47.7%

MAY

Year	MAY Sac River Flows	CVP + SWP Exports	Calculated Steamboat & Sutter Slough Q	Percent	X-chann Closed	USBR observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123
1922	46,530	4,765	16,452	0.23	0.23	61.2	0.116	0.795	0.34[illegible]	0.429	0.495	50.5%
1923	14,214	4,017	4,366	0.64	0.33	62.4	0.186	0.704	0.381	0.489	0.574	42.6%
1924	8,392	781	2,189	0.73	0.38	69.2	0.452	0.686	0.598	0.631	0.798	20.2%
1925	10,962	3,269	3,150	0.68	0.35	63.2	0.200	0.686	0.408	0.505	0.604	39.6%
1926	13,352	2,586	4,044	0.64	0.34	65.7	0.305	0.701	0.486	0.559	0.693	30.7%
1927	26,786	3,952	9,068	0.25	0.25	62.6	0.178	0.705	0.387	0.466	0.559	44.1%
1928	18,313	3,139	5,899	0.60	0.32	66.6	0.346	0.741	0.518	0.587	0.728	27.2%
1929	8,733	1,870	2,316	0.72	0.38	66.1	0.322	0.677	0.498	0.566	0.706	29.4%
1930	11,758	1,870	3,446	0.67	0.35	63.1	0.198	0.623	0.403	0.480	0.582	41.8%
1931	8,864	1,740	2,365	0.72	0.37	70.5	0.507	0.751	0.640	0.681	0.843	15.7%
1932	10,929	3,578	3,137	0.68	0.35	65.5	0.297	0.741	0.460	0.572	0.699	30.1%
1933	7,465	2,163	1,842	0.76	0.39	63.7	0.221	0.647	0.422	0.511	0.619	38.1%
1934	7,839	1,773	1,982	0.75	0.39	66.3	0.414	0.713	0.569	0.625	0.780	22.0%
1935	28,201	5,741	9,597	0.25	0.25	64	0.234	0.808	0.432	0.524	0.635	36.5%
1936	14,100	4,928	4,324	0.64	0.33	64.9	0.271	0.788	0.461	0.570	0.687	31.3%
1937	15,971	7,237	5,023	0.62	0.33	64.5	0.256	0.861	0.448	0.589	0.694	30.6%
1938	57,426	9,660	20,527	0.23	0.23	62.5	0.170	0.951	0.384	0.514	0.597	40.3%
1939	8,146	2,486	2,097	0.74	0.38	68	0.402	0.736	0.580	0.628	0.778	22.2%
1940	17,613	4,733	5,637	0.61	0.32	65.6	0.301	0.792	0.483	0.582	0.708	29.2%
1941	39,466	9,563	13,818	0.24	0.24	61.6	0.133	0.930	0.355	0.491	0.559	44.1%
1942	36,040	5,774	12,529	0.24	0.24	60.1	0.069	0.739	0.307	0.410	0.451	54.9%
1943	20,134	6,164	6,580	0.59	0.31	66.4	0.292	0.861	0.477	0.593	0.712	28.8%
1944	9,075	3,204	2,444	0.72	0.37	65.9	0.313	0.732	0.493	0.582	0.713	28.7%
1945	11,496	4,277	3,360	0.67	0.35	63.1	0.198	0.728	0.403	0.517	0.611	38.9%
1946	12,620	3,789	3,770	0.66	0.34	63.9	0.229	0.721	0.429	0.529	0.637	36.3%
1947	9,839	2,358	2,730	0.70	0.36	66.7	0.431	0.745	0.582	0.641	0.796	20.4%
1948	26,542	3,367	8,977	0.25	0.25	62.3	0.162	0.674	0.378	0.451	0.540	46.0%
1949	13,141	3,009	3,965	0.65	0.34	65.2	0.284	0.710	0.470	0.552	0.679	32.1%
1950	13,954	2,911	4,269	0.64	0.33	64.3	0.246	0.690	0.441	0.525	0.642	35.8%
1951	18,914	3,594	5,376	0.61	0.32	64.4	0.250	0.722	0.446	0.534	0.650	35.0%
1952	59,557	10,063	21,324	0.23	0.23	61.7	0.137	0.955	0.358	0.495	0.564	43.6%
1953	26,867	2,911	9,096	0.25	0.25	60.9	0.103	0.629	0.333	0.406	0.467	53.3%
1954	22,639	3,106	7,517	0.58	0.31	65.9	0.313	0.727	0.493	0.564	0.701	29.9%
1955	10,278	2,505	2,894	0.69	0.36	66.9	0.356	0.719	0.525	0.595	0.739	26.1%
1956	39,000	6,099	13,636	0.24	0.24	61.4	0.124	0.776	0.349	0.450	0.518	48.2%
1957	15,320	3,025	4,760	0.62	0.33	64	0.234	0.690	0.432	0.516	0.629	37.1%
1958	43,488	10,897	15,315	0.23	0.23	62.9	0.187	1.011	0.397	0.541	0.627	37.3%
1959	9,173	2,293	2,461	0.71	0.37	65.9	0.313	0.692	0.493	0.567	0.702	29.8%
1960	10,913	2,033	3,131	0.68	0.35	65.9	0.313	0.681	0.493	0.559	0.697	30.3%
1961	10,116	1,805	2,833	0.69	0.36	64.3	0.246	0.642	0.441	0.514	0.634	36.6%
1962	13,238	3,041	4,001	0.65	0.34	64.8	0.267	0.705	0.457	0.541	0.664	33.6%
1963	29,095	4,733	9,932	0.25	0.25	62.5	0.170	0.737	0.384	0.470	0.561	43.9%
1964	11,352	2,391	3,295	0.67	0.35	65.2	0.284	0.664	0.470	0.545	0.674	32.6%
1965	23,029	4,277	7,663	0.58	0.30	63.6	0.217	0.737	0.419	0.516	0.621	37.9%
1966	13,190	2,797	3,963	0.65	0.34	67.3	0.372	0.739	0.537	0.606	0.753	24.7%
1967	44,790	10,262	15,801	0.23	0.23	62.1	0.154	0.970	0.371	0.511	0.586	41.4%
1968	9,364	2,391	2,560	0.71	0.37	66.1	0.322	0.700	0.499	0.573	0.711	28.9%
1969	46,536	9,221	16,081	0.23	0.23	63.2	0.200	0.944	0.406	0.532	0.626	37.4%
1970	12,149	3,789	3,594	0.66	0.35	68.6	0.427	0.806	0.579	0.657	0.804	19.6%
1971	25,973	2,879	8,764	0.25	0.25	61	0.107	0.629	0.336	0.409	0.472	52.8%
1972	9,626	2,196	2,651	0.70	0.37	67.3	0.372	0.713	0.537	0.602	0.750	25.0%
1973	15,743	5,481	4,936	0.62	0.33	66.9	0.356	0.848	0.526	0.630	0.762	23.8%
1974	26,949	5,416	9,129	0.25	0.25	63.4	0.208	0.783	0.413	0.504	0.608	39.2%
1975	28,542	4,636	9,725	0.25	0.25	63.8	0.225	0.756	0.426	0.507	0.618	38.2%
1976	8,864	1,854	2,366	0.72	0.37	69.6	0.469	0.739	0.611	0.659	0.819	18.1%
1977	7,010	618	1,672	0.78	0.40	64	0.234	0.595	0.432	0.493	0.612	38.8%
1978	21,061	8,424	6,927	0.56	0.31	63	0.191	0.906	0.400	0.556	0.641	35.9%
1979	12,442	4,636	3,703	0.66	0.34	63.8	0.225	0.756	0.426	0.539	0.643	35.7%
1980	14,783	6,587	4,579	0.63	0.33	63.6	0.217	0.837	0.419	0.557	0.653	34.7%
1981	8,750	2,358	2,322	0.72	0.38	66.7	0.347	0.709	0.518	0.580	0.732	26.8%
1982	38,451	10,929	13,423	0.24	0.24	61.1	0.112	0.981	0.389	0.492	0.548	45.2%
1983	54,515	7,758	19,439	0.23	0.23	60.1	0.069	0.825	0.307	0.426	0.466	53.4%
1984	12,084	3,529	3,569	0.66	0.35	66.5	0.339	0.756	0.512	0.596	0.733	26.7%
1985	11,856	2,423	3,464	0.66	0.35	65.8	0.309	0.698	0.489	0.561	0.697	30.3%
1986	13,125	8,099	3,959	0.65	0.34	66.2	0.326	0.949	0.502	0.654	0.767	23.3%
1987	7,481	1,903	1,848	0.76	0.39	70.5	0.507	0.758	0.640	0.686	0.845	15.5%
1988	8,587	1,805	2,262	0.73	0.38	65.8	0.309	0.689	0.489	0.557	0.694	30.6%
1989	13,027	1,836	3,922	0.66	0.34	64.7	0.263	0.651	0.454	0.521	0.647	35.3%
1990	6,995	1,756	1,629	0.78	0.40	66.4	0.335	0.678	0.509	0.577	0.718	28.2%
1991	8,685	2,065	2,298	0.73	0.38	65.7	0.305	0.679	0.486	0.559	0.693	30.7%
1992	7,989	1,919	2,030	0.75	0.39	66	0.318	0.678	0.486	0.566	0.704	29.6%

JUNE

Year	JUNE Sac River Flow	CVP + SWP exports	Cacutated Steamboat & Sutter Slough Q	percent	X-chann closed	USBR observed temp f	m1	m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	34,720	11,545	12,035	24%	0.24	65.9	0.313	1.000	0.493	0.614	0.735	26.5%	47.6%
1923	18,234	7,796	5,870	60%	0.51	65.3	0.288	0.920	0.473	0.701	0.787	21.3%	41.5%
1924	10,033	1,042	2,802	70%	0.59	70.6	0.511	0.722	0.643	0.689	0.848	15.2%	23.9%
1925	16,016	6,369	5,040	62%	0.52	68.3	0.414	0.912	0.569	0.749	0.853	14.7%	37.7%
1926	18,016	7,310	5,788	60%	0.51	71.2	0.536	1.000	0.662	0.835	0.923	7.7%	28.7%
1927	19,494	8,403	6,341	59%	0.50	68.1	0.406	0.997	0.563	0.781	0.870	13.0%	42.0%
1928	18,251	7,529	5,876	60%	0.51	69.7	0.473	0.968	0.614	0.804	0.897	10.3%	29.3%
1929	9,781	2,134	2,708	70%	0.59	70.1	0.490	0.761	0.627	0.706	0.850	15.0%	33.7%
1930	18,869	7,495	6,115	60%	0.51	69.6	0.469	0.964	0.611	0.800	0.894	10.6%	38.5%
1931	12,453	3,512	3,707	66%	0.56	70.7	0.515	0.831	0.646	0.749	0.878	12.2%	19.4%
1932	18,822	7,378	6,090	60%	0.51	69.5	0.465	0.977	0.608	0.795	0.890	11.0%	31.4%
1933	10,453	1,479	2,959	69%	0.58	69.8	0.478	0.727	0.617	0.681	0.833	16.7%	36.7%
1934	14,806	5,862	4,587	63%	0.53	70.7	0.515	0.934	0.646	0.800	0.903	9.7%	22.3%
1935	17,612	7,932	5,637	61%	0.51	71	0.528	1.000	0.656	0.832	0.921	7.9%	34.6%
1936	17,915	8,117	5,750	60%	0.51	69.2	0.452	1.000	0.596	0.804	0.893	10.7%	31.1%
1937	17,763	7,714	5,694	60%	0.51	69.7	0.473	0.996	0.614	0.810	0.900	10.0%	31.7%
1938	35,510	11,545	12,331	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	41.4%
1939	19,814	7,915	6,460	59%	0.50	71	0.528	1.000	0.656	0.828	0.919	8.1%	22.4%
1940	16,184	7,142	5,103	62%	0.52	71.5	0.549	1.000	0.672	0.843	0.929	7.1%	30.8%
1941	20,806	11,041	6,831	59%	0.50	69	0.444	1.000	0.592	0.795	0.886	11.4%	41.7%
1942	27,124	11,545	9,194	25%	0.25	67.8	0.393	1.000	0.553	0.664	0.796	20.4%	50.6%
1943	17,696	7,915	5,668	60%	0.51	66.6	0.343	0.949	0.515	0.737	0.827	17.3%	31.6%
1944	19,713	7,986	6,423	59%	0.50	67.8	0.393	0.972	0.553	0.764	0.857	14.3%	31.7%
1945	17,074	7,462	5,436	61%	0.52	70.6	0.511	1.000	0.643	0.827	0.916	8.4%	36.1%
1946	18,906	7,999	6,121	60%	0.51	68.1	0.406	0.979	0.563	0.774	0.866	13.4%	34.4%
1947	18,923	7,563	6,127	60%	0.51	70	0.486	0.994	0.624	0.811	0.903	9.7%	22.2%
1948	23,007	9,226	7,655	58%	0.49	69	0.444	1.000	0.592	0.791	0.884	11.6%	42.8%
1949	19,864	8,033	6,479	59%	0.50	70.9	0.524	1.000	0.652	0.827	0.917	8.3%	30.9%
1950	20,264	8,403	6,636	59%	0.50	68.9	0.440	1.000	0.586	0.794	0.885	11.5%	33.1%
1951	18,167	7,680	5,844	60%	0.51	70.3	0.499	1.000	0.633	0.820	0.910	9.0%	33.2%
1952	38,972	11,545	13,626	24%	0.24	65	0.276	1.000	0.464	0.591	0.704	29.6%	46.8%
1953	25,881	10,319	8,729	25%	0.25	66.2	0.326	1.000	0.502	0.626	0.748	25.2%	40.1%
1954	18,503	7,613	5,970	60%	0.51	68.7	0.431	0.973	0.582	0.781	0.875	12.5%	31.7%
1955	19,696	7,899	6,416	59%	0.50	70.1	0.490	1.000	0.627	0.814	0.905	9.5%	30.2%
1956	22,301	11,546	7,391	58%	0.49	68.7	0.431	1.000	0.582	0.787	0.879	12.1%	42.4%
1957	20,284	8,319	6,636	59%	0.50	72	0.570	1.000	0.688	0.844	0.933	6.7%	33.7%
1958	33,930	11,545	11,740	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	38.7%
1959	19,242	7,747	6,247	59%	0.50	72.1	0.574	1.000	0.691	0.847	0.935	6.5%	27.3%
1960	18,755	7,512	6,064	60%	0.51	72.7	0.600	1.000	0.710	0.857	0.943	5.7%	30.6%
1961	19,209	7,613	6,234	59%	0.50	73.2	0.621	1.000	0.726	0.864	0.948	5.2%	34.1%
1962	19,108	7,747	6,196	60%	0.51	70.4	0.503	1.000	0.636	0.820	0.911	8.9%	30.8%
1963	20,150	8,857	6,586	59%	0.50	69	0.444	1.000	0.592	0.796	0.886	11.4%	43.1%
1964	18,721	7,478	6,052	60%	0.51	69.5	0.465	0.982	0.608	0.797	0.892	10.8%	33.9%
1965	18,637	8,420	6,020	60%	0.51	67.1	0.364	0.979	0.531	0.759	0.846	15.4%	38.3%
1966	18,368	7,495	5,920	60%	0.51	70.4	0.503	0.999	0.636	0.821	0.911	8.9%	26.2%
1967	39,342	11,545	13,764	24%	0.24	66.5	0.339	1.000	0.512	0.627	0.754	24.6%	43.8%
1968	18,570	7,546	5,995	60%	0.51	72	0.570	1.000	0.688	0.846	0.934	6.6%	27.6%
1969	24,133	11,512	8,076	57%	0.48	68.3	0.414	1.000	0.569	0.778	0.870	13.0%	38.2%
1970	16,301	7,159	5,147	62%	0.52	70.7	0.515	0.969	0.646	0.825	0.915	8.5%	24.1%
1971	23,629	9,562	7,667	57%	0.49	68.1	0.406	1.000	0.563	0.775	0.867	13.3%	46.6%
1972	18,637	7,596	6,020	60%	0.51	70.7	0.515	1.000	0.646	0.826	0.916	8.4%	28.2%
1973	18,940	8,168	6,134	60%	0.51	70.1	0.490	1.000	0.627	0.816	0.906	9.4%	24.7%
1974	21,780	9,411	7,196	58%	0.49	69.7	0.473	1.000	0.614	0.804	0.897	10.3%	38.2%
1975	24,788	11,545	8,321	57%	0.48	69.1	0.448	1.000	0.595	0.790	0.884	11.6%	37.6%
1976	19,326	7,613	6,278	59%	0.50	71.8	0.562	1.000	0.681	0.842	0.931	6.9%	23.3%
1977	9,613	672	2,646	70%	0.60	73.9	0.650	0.765	0.748	0.758	0.915	8.5%	32.7%
1978	16,352	8,773	5,166	62%	0.52	70	0.486	1.000	0.624	0.820	0.907	9.3%	36.3%
1979	19,881	8,319	6,485	59%	0.50	69.2	0.452	1.000	0.596	0.800	0.890	11.0%	34.1%
1980	16,453	8,873	5,203	61%	0.52	66.9	0.356	0.998	0.525	0.770	0.852	14.8%	36.3%
1981	19,158	7,663	6,215	60%	0.50	71.9	0.566	1.000	0.684	0.844	0.932	6.8%	26.2%
1982	24,418	11,545	8,163	57%	0.48	66	0.318	1.000	0.496	0.740	0.822	17.8%	46.1%
1983	55,576	9,582	19,835	23%	0.23	63.6	0.217	0.986	0.419	0.545	0.644	35.6%	53.6%
1984	19,007	8,033	6,159	60%	0.51	66.4	0.419	0.986	0.572	0.782	0.873	12.7%	28.7%
1985	18,671	7,512	6,033	60%	0.51	69.4	0.461	0.981	0.604	0.796	0.890	11.0%	30.1%
1986	12,656	7,899	3,783	65%	0.55	71.6	0.553	1.000	0.675	0.855	0.935	6.5%	26.8%
1987	20,318	8,016	6,649	59%	0.50	73.2	0.621	1.000	0.726	0.863	0.948	5.2%	16.9%
1988	14,466	5,731	4,468	63%	0.54	69.4	0.461	0.904	0.604	0.765	0.873	12.7%	31.5%
1989	18,234	7,310	5,870	60%	0.51	68.6	0.427	0.958	0.579	0.772	0.870	13.0%	32.9%
1990	19,578	7,663	6,372	59%	0.50	68.5	0.423	0.972	0.576	0.775	0.870	13.0%	28.4%
1991	11,327	4,134	3,286	67%	0.57	69.4	0.461	0.835	0.604	0.736	0.857	14.3%	30.8%
1992	14,369	5,731	4,424	63%	0.54	69	0.444	0.897	0.592	0.756	0.864	13.6%	29.8%
												Average	33.72%

Formulas Sacramento River Fall Run Smolt Survival

C8 ='Study 519A Flow Data'!G7
D8 ='Study 519A Flow Data'!Q7 (HIDDEN)
E8 ='Study 519A Flow Data'!AA7 (HIDDEN)
F8 =(D8+E8)
G8 =0.374*C8-950
H8 =IF(C8>25000,(0.133*C8+829)/(C8-G8),(0.293*C8+2090)/(C8-G8))
I8 =(0.133*C8+829)/(C8-G8)
K8 =IF((-2.45925+(0.0420748*J8))<0,0,(-2.45925+(0.0420748*J8)))
L8 =(-0.5916024)+(0.017968*J8)+(0.0000434*F8)
M8 =-1.613493+(0.0319584*J8)
N8 =(L8*I8)+(M8*(1-I8))
O8 =K8+N8-(K8*N8)
P8 =1-O8

R8 ='Study 519A Flow Data'!H7
S8 ='Study 519A Flow Data'!R7 (HIDDEN)
T8 ='Study 519A Flow Data'!AB7 (HIDDEN)
U8 =(S8+T8)
V8 =0.374*R8-950
W8 =IF(R8>25000,(0.133*R8+829)/(R8-V8),(0.293*R8+2090)/(R8-V8))
X8 =(0.84*(0.133*R8+829)/(R8-V8))+(0.16*W8)
Z8 =(-2.45925+(0.0420748*Y8))
AA8 =(-0.5916024)+(0.017968*Y8)+(0.0000434*U8)
AB8 =-1.613493+(0.0319584*Y8)
AC8 =(AA8*X8)+(AB8*(1-X8))
AD8 =Z8+AC8-(Z8*AC8)
AE8 =1-AD8

AG8 ='Study 519A Flow Data'!I7
AH8 ='Study 519A Flow Data'!S7 (HIDDEN)
AI8 ='Study 519A Flow Data'!AC7 (HIDDEN)
AJ8 =(AH8+AI8)
AK8 =0.374*AG8-950
AL8 =IF(AG8>25000,(0.133*AG8+829)/(AG8-AK8),(0.293*AG8+2090)/(AG8-AK8))
AM8 =(0.27*(0.133*AG8+829)/(AG8-AK8))+(0.73*AL8)
AO8 =(-2.45925+(0.0420748*AN8))
AP8 =IF(((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8))>1,1,((-0.5916024)+(0.017968*AN8)+(0.0000434*AJ8)))
AQ8 =-1.613493+(0.0319584*AN8)
AR8 =(AP8*AM8)+(AQ8*(1-AM8))
AS8 =AO8+AR8-(AO8*AR8)
AT8 =1-AS8
AV8 =(P8*0.17)+(AE8*0.65)+(AT8*0.18)

A2-59

Study 519A Sacramento River Late Fall Run Smolt Survival Model

November Sacramento River Temp 53 degrees F
December Sacramento River Temp 47 degrees F
January Sacramento River Temp 47 degrees F

Modified m2 by changing the slope to 0.000054
Cross Channel closed for 45 consecutive days, Dec 18-Jan 31
Cross Channel Closed when Sacramento River flow exceeds 25,000 cfs

NOVEMBER

Year	Water Year Type	Sac River Flow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	A	11,814	8,857	3,489	67%	0.29		0.839	0.080	0.585	0.585	41.5%
1923	B	17,226	11,159	5,492	61%	0.27		0.983	0.080	0.617	0.617	38.3%
1924	C	10,756	7,277	3,073	68%	0.28		0.754	0.080	0.540	0.540	46.0%
1925	D	7,025	4,756	1,677	78%	0.33		0.618	0.080	0.497	0.497	50.3%
1926	D	10,083	6,806	2,821	69%	0.30		0.728	0.080	0.530	0.530	47.0%
1927	W	20,284	11,092	6,636	59%	0.28		0.980	0.080	0.598	0.598	40.2%
1928	A	21,830	11,142	7,215	58%	0.28		0.982	0.080	0.592	0.592	40.8%
1929	C	12,369	9,445	3,676	68%	0.28		0.871	0.080	0.600	0.600	40.0%
1930	D	7,159	4,269	1,728	77%	0.33		0.591	0.080	0.474	0.474	52.6%
1931	C	9,814	6,151	2,721	70%	0.30		0.693	0.080	0.509	0.509	49.1%
1932	D	7,863	3,529	1,916	75%	0.32		0.551	0.080	0.436	0.436	56.4%
1933	C	9,478	5,865	2,595	71%	0.30		0.677	0.080	0.503	0.503	49.7%
1934	C	8,033	3,361	2,054	74%	0.32		0.542	0.080	0.424	0.424	57.6%
1935	B	9,209	7,109	2,494	71%	0.31		0.745	0.080	0.554	0.554	44.6%
1936	B	11,865	8,470	3,487	66%	0.29		0.818	0.080	0.571	0.571	42.9%
1937	B	11,411	7,966	3,318	67%	0.29		0.791	0.080	0.557	0.557	44.3%
1938	W	23,948	11,142	8,007	57%	0.26		0.982	0.080	0.584	0.584	41.6%
1939	D	19,444	10,487	6,322	59%	0.28		0.927	0.080	0.583	0.583	41.7%
1940	A	8,436	4,808	2,205	73%	0.31		0.620	0.080	0.478	0.478	52.4%
1941	W	13,663	10,688	4,160	64%	0.28		0.936	0.080	0.630	0.630	37.0%
1942	W	18,184	10,974	5,651	60%	0.28		0.953	0.080	0.605	0.605	39.5%
1943	W	21,914	11,142	7,246	58%	0.28		0.982	0.080	0.592	0.592	40.8%
1944	D	14,318	11,125	4,405	63%	0.28		0.981	0.080	0.639	0.639	36.1%
1945	B	13,764	11,108	4,198	64%	0.28		0.981	0.080	0.644	0.644	35.6%
1946	B	19,629	11,142	6,391	59%	0.26		0.982	0.080	0.603	0.603	39.7%
1947	D	13,781	11,125	4,204	64%	0.28		0.981	0.080	0.644	0.644	35.6%
1948	B	10,201	8,621	2,865	69%	0.30		0.718	0.080	0.522	0.522	47.8%
1949	D	14,453	10,722	4,455	63%	0.28		0.940	0.080	0.624	0.624	37.6%
1950	B	11,377	7,865	3,305	67%	0.29		0.786	0.080	0.554	0.554	44.6%
1951	A	41,846	11,125	14,700	24%	0.24		0.981	0.080	0.288	0.288	71.2%
1952	W	18,453	11,125	5,203	61%	0.27		0.981	0.080	0.622	0.622	37.8%
1953	W	16,537	8,571	5,235	61%	0.27		0.824	0.080	0.536	0.536	46.4%
1954	A	19,679	11,142	6,410	59%	0.28		0.982	0.080	0.603	0.603	39.7%
1955	D	17,985	11,125	5,769	60%	0.28		0.981	0.080	0.612	0.612	38.8%
1956	W	10,722	7,294	3,060	68%	0.29		0.755	0.080	0.541	0.541	46.9%
1957	A	15,478	11,159	4,839	62%	0.27		0.963	0.080	0.630	0.630	37.0%
1958	W	19,259	11,125	6,253	59%	0.28		0.981	0.080	0.604	0.604	39.6%
1959	B	16,133	8,672	5,064	62%	0.27		0.829	0.080	0.542	0.542	46.8%
1960	D	11,377	7,529	3,305	67%	0.29		0.787	0.080	0.542	0.542	46.8%
1961	D	13,495	10,201	4,097	64%	0.28		0.912	0.080	0.615	0.615	38.5%
1962	B	9,781	6,252	2,708	70%	0.30		0.698	0.080	0.513	0.513	48.7%
1963	W	20,923	11,125	6,875	59%	0.28		0.981	0.080	0.598	0.598	40.2%
1964	D	28,653	11,125	9,766	25%	0.25		0.981	0.080	0.297	0.297	70.3%
1965	W	13,394	10,403	4,059	64%	0.28		0.922	0.080	0.623	0.623	37.7%
1966	B	25,427	11,142	8,580	25%	0.25		0.982	0.080	0.301	0.301	69.9%
1967	W	14,537	11,125	4,487	63%	0.27		0.981	0.080	0.637	0.637	36.3%
1968	B	16,234	8,537	5,122	62%	0.27		0.822	0.080	0.537	0.537	46.3%
1969	W	13,562	10,369	4,122	64%	0.28		0.921	0.080	0.620	0.620	38.0%
1970	W	17,646	8,571	5,650	61%	0.28		0.824	0.080	0.530	0.530	47.0%
1971	W	20,940	11,142	6,881	59%	0.26		0.982	0.080	0.598	0.598	40.4%
1972	B	15,343	11,125	4,788	62%	0.27		0.981	0.080	0.630	0.630	37.0%
1973	A	22,015	11,125	7,284	58%	0.28		0.981	0.080	0.591	0.591	40.9%
1974	W	55,005	11,142	19,622	23%	0.23		0.982	0.080	0.283	0.283	71.7%
1975	W	17,579	11,159	5,624	61%	0.28		0.963	0.080	0.615	0.615	38.5%
1976	C	19,226	11,142	6,240	59%	0.28		0.982	0.080	0.605	0.605	39.5%
1977	C	8,235	6,168	2,130	74%	0.32		0.694	0.080	0.533	0.533	46.7%
1978	A	6,924	4,403	1,640	78%	0.33		0.598	0.080	0.484	0.484	51.6%
1979	B	14,537	11,159	4,487	63%	0.27		0.963	0.080	0.638	0.638	36.2%
1980	A	18,301	11,125	5,147	62%	0.27		0.981	0.080	0.623	0.623	37.7%
1981	D	13,024	10,050	3,921	65%	0.28		0.903	0.080	0.614	0.614	38.6%
1982	W	30,284	11,125	10,378	24%	0.24		0.981	0.080	0.295	0.295	70.5%
1983	W	39,107	11,159	13,676	24%	0.24		0.963	0.080	0.290	0.290	71.0%
1984	W	62,802	7,142	22,538	23%	0.23		0.746	0.080	0.232	0.232	76.8%
1985	D	33,578	11,142	11,608	24%	0.24		0.982	0.080	0.293	0.293	70.7%
1986	W	9,546	6,941	2,820	71%	0.30		0.735	0.080	0.543	0.543	46.7%
1987	D	11,125	8,235	3,211	68%	0.29		0.805	0.080	0.570	0.570	43.0%
1988	C	8,453	5,042	2,211	73%	0.31		0.633	0.080	0.485	0.485	51.5%
1989	D	8,588	5,949	2,262	73%	0.31		0.682	0.080	0.518	0.518	48.2%
1990	C	11,512	7,784	3,355	67%	0.29		0.780	0.080	0.549	0.549	45.1%
1991	C	8,134	5,092	2,092	74%	0.32		0.636	0.080	0.491	0.491	50.9%
1992	C	7,462	4,739	1,841	76%	0.32		0.617	0.080	0.486	0.486	51.2%

DECEMBER

Year	Sac River Flows	SWP+CVP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	17,142	11,486	5,481	61%	0.45		0.872	0.368	0.368	0.368	60.4%
1923	34,365	9,400	11,902	24%	0.24		0.761	0.183	0.183	0.183	81.7%
1924	10,051	6,706	2,809	70%	0.52		0.618	0.320	0.320	0.320	68.0%
1925	11,254	9,319	3,259	67%	0.50		0.756	0.379	0.379	0.379	62.1%
1926	10,295	7,042	2,900	69%	0.51		0.633	0.325	0.325	0.325	67.5%
1927	14,296	11,417	4,397	63%	0.47		0.869	0.411	0.411	0.411	58.9%
1928	16,572	10,181	5,248	61%	0.46		0.803	0.366	0.366	0.366	63.2%
1929	13,206	10,278	3,989	65%	0.48		0.808	0.389	0.389	0.389	61.1%
1930	14,881	10,994	4,816	63%	0.47		0.847	0.397	0.397	0.397	60.3%
1931	9,351	5,399	2,547	71%	0.53		0.544	0.287	0.287	0.287	71.3%
1932	14,653	11,598	4,530	63%	0.47		0.879	0.413	0.413	0.413	58.7%
1933	8,457	5,090	2,213	73%	0.54		0.528	0.287	0.287	0.287	71.3%
1934	12,474	9,953	3,715	66%	0.49		0.790	0.386	0.386	0.386	61.4%
1935	8,506	6,928	2,231	73%	0.54		0.627	0.340	0.340	0.340	66.0%
1936	13,267	10,197	4,019	65%	0.48		0.804	0.387	0.387	0.387	61.3%
1937	12,458	10,018	3,709	66%	0.49		0.794	0.368	0.368	0.368	61.2%
1938	49,929	11,905	17,723	23%	0.23		0.898	0.208	0.208	0.208	79.2%
1939	18,887	8,083	6,039	60%	0.45		0.689	0.308	0.308	0.308	69.2%
1940	7,639	4,375	1,982	75%	0.56		0.489	0.272	0.272	0.272	72.8%
1941	34,708	11,824	12,030	24%	0.24		0.891	0.214	0.214	0.214	78.6%
1942	65,823	7,953	23,593	23%	0.23		0.682	0.156	0.156	0.156	84.4%
1943	26,803	8,115	9,822	25%	0.25		0.691	0.170	0.170	0.170	83.0%
1944	13,775	10,913	4,202	64%	0.48		0.842	0.402	0.402	0.402	59.8%
1945	15,624	11,336	4,968	62%	0.46		0.865	0.400	0.400	0.400	60.0%
1946	54,678	11,937	19,499	23%	0.23		0.898	0.207	0.207	0.207	79.3%
1947	18,134	11,547	5,832	60%	0.45		0.878	0.394	0.394	0.394	60.6%
1948	9,238	5,497	2,505	71%	0.53		0.550	0.291	0.291	0.291	70.9%
1949	15,564	11,254	4,871	62%	0.46		0.861	0.369	0.369	0.369	60.1%
1950	10,978	7,432	3,156	66%	0.50		0.654	0.330	0.330	0.330	67.0%
1951	66,095	11,937	24,518	23%	0.23		0.898	0.204	0.204	0.204	79.6%
1952	43,537	11,498	15,333	23%	0.23		0.874	0.205	0.205	0.205	79.5%
1953	42,334	8,083	14,863	24%	0.24		0.689	0.162	0.162	0.162	83.8%
1954	14,914	8,994	4,628	63%	0.47		0.730	0.346	0.346	0.346	65.4%
1955	25,517	11,271	8,593	25%	0.25		0.862	0.215	0.215	0.215	78.5%
1956	25,160	11,937	8,460	25%	0.25		0.898	0.224	0.224	0.224	77.6%
1957	14,149	10,962	4,342	64%	0.47		0.845	0.401	0.401	0.401	59.9%
1958	23,745	11,287	7,930	57%	0.43		0.862	0.369	0.369	0.369	63.1%
1959	14,621	8,197	4,518	63%	0.47		0.686	0.327	0.327	0.327	67.3%
1960	10,978	7,140	3,156	66%	0.50		0.636	0.322	0.322	0.322	67.8%
1961	17,499	11,254	5,595	61%	0.45		0.861	0.360	0.360	0.360	61.0%
1962	16,703	11,238	5,297	61%	0.46		0.860	0.393	0.393	0.393	60.7%
1963	27,550	11,254	9,354	25%	0.25		0.861	0.213	0.213	0.213	78.7%
1964	14,849	10,571	4,603	63%	0.47		0.824	0.386	0.386	0.386	61.4%
1965	24,265	11,807	8,125	57%	0.43		0.860	0.380	0.380	0.380	62.0%
1966	16,995	10,522	5,406	61%	0.46		0.821	0.374	0.374	0.374	62.6%
1967	36,609	11,498	13,490	24%	0.24		0.874	0.207	0.207	0.207	79.3%
1968	16,686	8,083	5,291	61%	0.46		0.689	0.315	0.315	0.315	68.5%
1969	23,842	11,352	7,997	57%	0.43		0.866	0.370	0.370	0.370	63.0%
1970	50,156	7,823	17,809	23%	0.23		0.675	0.157	0.157	0.157	84.3%
1971	53,734	11,417	19,147	23%	0.23		0.869	0.200	0.200	0.200	80.0%
1972	18,378	11,449	5,923	60%	0.45		0.871	0.391	0.391	0.391	60.9%
1973	26,200	11,271	8,849	25%	0.25		0.862	0.214	0.214	0.214	78.6%
1974	61,590	11,742	22,065	23%	0.23		0.867	0.203	0.203	0.203	79.7%
1975	17,613	8,852	5,637	61%	0.45		0.720	0.326	0.326	0.326	67.4%
1976	16,768	10,508	5,321	61%	0.46		0.620	0.375	0.375	0.375	62.5%
1977	8,050	4,912	2,081	74%	0.55		0.518	0.286	0.286	0.286	71.4%
1978	12,279	9,937	3,842	66%	0.49		0.789	0.367	0.367	0.367	61.3%
1979	12,751	8,018	3,819	65%	0.49		0.686	0.333	0.333	0.333	66.7%
1980	20,833	11,352	6,842	59%	0.44		0.886	0.379	0.379	0.379	62.1%
1981	15,613	9,010	4,889	62%	0.46		0.739	0.343	0.343	0.343	65.7%
1982	67,623	11,368	24,341	23%	0.23		0.867	0.197	0.197	0.197	80.3%
1983	55,410	8,766	19,773	23%	0.23		0.728	0.167	0.167	0.167	83.3%
1984	82,944	8,245	30,071	22%	0.22		0.590	0.132	0.132	0.132	86.8%
1985	23,875	11,368	7,979	57%	0.43		0.867	0.371	0.371	0.371	62.9%
1986	15,467	11,319	4,834	62%	0.46		0.864	0.402	0.402	0.402	59.8%
1987	13,417	10,441	4,088	64%	0.48		0.817	0.382	0.382	0.382	60.8%
1988	15,841	11,222	4,974	62%	0.46		0.859	0.397	0.397	0.397	60.3%
1989	8,847	6,619	2,369	72%	0.54		0.810	0.327	0.327	0.327	67.3%
1990	14,540	10,539	4,486	63%	0.47		0.822	0.387	0.387	0.387	61.3%
1991	8,620	4,912	2,274	73%	0.54		0.518	0.280	0.280	0.280	72.0%
1992	7,449	4,814	1,836	76%	0.56		0.513	0.280	0.290	0.290	71.0%

JANUARY

Year	Sac River Flows	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	17,499	11,970	5,565	61%	0.27		0.899	0.238	0.238		76.2%	59.6%
1923	32,283	7,989	11,124	24%	0.24		0.683	0.185	0.185		83.5%	71.3%
1924	14,377	10,860	4,427	63%	0.28		0.840	0.232	0.232		76.8%	64.7%
1925	10,197	6,961	2,864	69%	0.30		0.629	0.187	0.187		81.3%	63.9%
1926	18,788	11,449	6,069	60%	0.26		0.871	0.228	0.228		77.2%	64.8%
1927	29,489	11,861	10,072	24%	0.24		0.883	0.216	0.216		78.4%	59.1%
1928	25,208	7,989	8,478	25%	0.25		0.683	0.171	0.171		82.9%	62.5%
1929	14,767	11,027	4,573	63%	0.27		0.848	0.232	0.232		76.8%	59.7%
1930	21,273	11,466	7,006	58%	0.26		0.872	0.224	0.224		77.6%	62.7%
1931	11,970	9,270	3,527	66%	0.29		0.753	0.216	0.216		78.4%	67.5%
1932	17,256	12,246	5,504	61%	0.27		0.914	0.243	0.243		75.7%	62.4%
1933	12,604	10,181	3,764	65%	0.28		0.803	0.227	0.227		77.3%	67.4%
1934	16,101	11,482	5,072	62%	0.27		0.873	0.235	0.235		76.5%	64.2%
1935	25,469	12,100	8,575	25%	0.25		0.906	0.226	0.226		77.4%	63.5%
1936	32,413	11,856	11,172	24%	0.24		0.893	0.216	0.216		78.4%	61.0%
1937	15,971	11,970	5,023	62%	0.27		0.899	0.243	0.243		75.7%	60.6%
1938	31,535	7,888	10,844	24%	0.24		0.679	0.185	0.185		83.5%	70.9%
1939	18,410	7,563	5,935	60%	0.28		0.861	0.174	0.174		82.6%	65.7%
1940	23,452	12,442	7,821	57%	0.25		0.925	0.234	0.234		76.6%	68.7%
1941	71,998	12,832	25,977	23%	0.23		0.946	0.214	0.214		78.6%	68.2%
1942	83,265	7,563	22,711	23%	0.23		0.661	0.151	0.151		84.9%	73.3%
1943	58,050	7,628	20,765	23%	0.23		0.665	0.152	0.152		84.8%	72.9%
1944	17,678	7,565	5,662	60%	0.26		0.663	0.175	0.175		82.5%	59.6%
1945	12,409	9,236	3,691	66%	0.26		0.752	0.214	0.214		78.6%	58.6%
1946	43,226	7,989	15,217	23%	0.23		0.683	0.160	0.160		84.0%	70.6%
1947	14,979	11,319	4,652	63%	0.27		0.864	0.236	0.236		76.4%	58.3%
1948	14,853	10,718	4,530	63%	0.27		0.832	0.228	0.228		77.2%	68.7%
1949	14,900	11,222	4,634	63%	0.27		0.859	0.295	0.235		76.5%	58.8%
1950	20,427	11,560	6,690	59%	0.28		0.878	0.227	0.227		77.3%	64.0%
1951	62,208	11,352	22,318	23%	0.23		0.866	0.198	0.198		80.2%	77.7%
1952	67,233	12,458	24,195	23%	0.23		0.926	0.210	0.210		79.0%	69.0%
1953	64,078	7,660	23,015	23%	0.23		0.867	0.152	0.152		84.8%	74.7%
1954	33,421	8,164	11,550	24%	0.24		0.664	0.167	0.167		83.3%	63.5%
1955	22,004	11,596	7,280	58%	0.26		0.879	0.224	0.224		77.6%	68.4%
1956	84,017	12,490	30,472	22%	0.22		0.927	0.208	0.208		79.2%	70.1%
1957	18,638	8,213	6,021	60%	0.26		0.696	0.183	0.183		81.7%	59.7%
1958	36,381	8,424	12,857	24%	0.24		0.708	0.169	0.169		83.1%	62.2%
1959	35,162	7,660	12,200	24%	0.24		0.667	0.160	0.160		84.0%	66.1%
1960	13,515	10,148	4,105	64%	0.26		0.801	0.224	0.224		77.6%	64.8%
1961	14,263	10,978	4,364	63%	0.26		0.846	0.233	0.233		76.7%	59.3%
1962	12,653	8,311	3,782	65%	0.26		0.702	0.199	0.199		80.1%	62.5%
1963	17,548	11,645	5,613	61%	0.27		0.862	0.234	0.234		76.6%	68.6%
1964	24,200	8,148	8,101	57%	0.25		0.893	0.174	0.174		82.6%	68.9%
1965	81,236	12,832	29,432	22%	0.22		0.946	0.212	0.212		78.8%	60.1%
1966	29,832	7,985	10,132	24%	0.24		0.684	0.167	0.167		83.3%	69.6%
1967	35,210	12,064	12,219	24%	0.24		0.905	0.217	0.217		78.3%	68.3%
1968	30,640	7,660	10,509	24%	0.24		0.667	0.162	0.162		83.8%	68.8%
1969	66,781	12,214	24,019	23%	0.23		0.912	0.207	0.207		79.3%	60.8%
1970	92,669	7,611	33,708	22%	0.22		0.664	0.148	0.148		85.2%	75.2%
1971	45,245	10,799	15,972	23%	0.23		0.836	0.196	0.196		80.4%	70.2%
1972	20,394	8,213	6,677	59%	0.26		0.696	0.180	0.180		82.0%	60.2%
1973	49,002	10,571	17,377	23%	0.23		0.824	0.191	0.191		80.9%	69.7%
1974	78,422	7,989	28,380	22%	0.22		0.683	0.154	0.154		84.6%	78.9%
1975	18,670	8,181	6,033	60%	0.26		0.695	0.182	0.182		81.8%	63.8%
1976	16,768	8,132	5,321	61%	0.27		0.692	0.185	0.185		81.5%	61.5%
1977	7,660	4,749	1,915	75%	0.32		0.509	0.164	0.164		83.6%	68.3%
1978	43,066	9,400	15,157	23%	0.23		0.761	0.179	0.179		82.1%	64.1%
1979	27,241	7,595	9,238	25%	0.25		0.663	0.164	0.164		83.6%	63.3%
1980	61,053	7,481	21,884	23%	0.23		0.857	0.150	0.150		85.0%	61.7%
1981	27,843	7,676	9,463	25%	0.25		0.667	0.165	0.165		83.5%	63.4%
1982	51,185	12,832	18,186	23%	0.23		0.946	0.219	0.219		78.1%	77.3%
1983	59,150	8,977	21,172	23%	0.23		0.630	0.144	0.144		85.6%	80.8%
1984	47,359	4,326	16,782	23%	0.23		0.487	0.113	0.113		88.7%	84.7%
1985	16,800	8,197	5,333	61%	0.27		0.696	0.186	0.186		81.4%	69.5%
1986	21,500	11,645	7,091	58%	0.28		0.882	0.226	0.226		77.4%	60.7%
1987	18,735	7,676	5,309	61%	0.27		0.667	0.178	0.178		82.2%	61.7%
1988	25,534	11,401	8,600	25%	0.25		0.869	0.217	0.217		78.3%	62.6%
1989	12,002	8,898	3,539	66%	0.29		0.733	0.210	0.210		79.0%	65.4%
1990	21,338	9,656	7,030	58%	0.28		0.785	0.201	0.201		79.9%	61.9%
1991	6,847	3,529	1,611	78%	0.33		0.443	0.147	0.147		85.3%	70.0%
1992	11,889	9,010	3,498	66%	0.29		0.739	0.212	0.212		78.8%	68.0%
											Average:	66.12%

Formulas: Sacramento River Late Fall Run Smolt Survival Model

C10 ='Study 519A Flow Data'!B7
D10 ='Study 519A Flow Data'!L7 (HIDDEN)
E10 ='Study 519A Flow Data'!V7 (HIDDEN)
F10 =(D10+E10)
G10 =0.374*C10-950
H10 =IF(C10>$K$4,(0.133*C10+829)/(C10-G10),(0.293*C10+2090)/(C10-G10))
I10 =(0.133*C10+829)/(C10-G10)
K10 =(-0.5916024)+(0.017968*$T$1)+(0.000054*F10)
L10 =-1.613493+(0.0319584*$T$1)
M10 =(K10*H10)+(L10*(1-H10))
N10 =J10+M10-(J10*M10)
O10 =1-N10

Q10 ='Study 519A Flow Data'!C7
R10 ='Study 519A Flow Data'!M7 (HIDDEN)
S10 ='Study 519A Flow Data'!W7 (HIDDEN)
T10 =(R10+S10)
U10 =0.374*Q10-950
V10 =IF(Q10>$K$4,(0.133*Q10+829)/(Q10-U10),(0.293*Q10+2090)/(Q10-U10))
W10 =(0.45*(0.133*Q10+829)/(Q10-U10))+(0.55*V10)
Y10 =(-0.5916024)+(0.017968*$T$2)+(0.000054*T10)
AA10 =(Y10*W10)+(Z10*(1-W10))
AB10 =X10+AA10-(X10*AA10)
AC10 =1-AB10

AE10 ='Study 519A Flow Data'!D7
AF10 ='Study 519A Flow Data'!N7 (HIDDEN)
AG10 ='Study 519A Flow Data'!X7 (HIDDEN)
AH10 =(AF10+AG10)
AI10 =0.374*AE10-950
AJ10 =IF(AE10>$K$4,(0.133*AE10+829)/(AE10-AI10),(0.293*AE10+2090)/(AE10-AI10))
AK10 =(0.133*AE10+829)/(AE10-AI10)
AM10 =(-0.5916024)+(0.017968*$T$3)+(0.000054*AH10)
AO10 =(AM10*AK10)+(AN10*(1-AK10))
AP10 =AL10+AO10-(AL10*AO10)
AQ10 =1-AP10
AS10 =(O10*0.25)+(AC10*0.5)+(AQ10*0.25)

C-032401

Study 519A W[illegible] Smolt Survival Model   February Water Temp 50 F   April Water Temperatures based on limited historical data

Cross Chan[illegible]ed Over 25000 cfs   March Water Temp 55 F

Cross Channel Closed Feb to Apr when DOI greater than 12,000 cfs

FEBRUARY

Year	Water Year Type	Sac River Flow	CVP + SWP Exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channel Closed	m1	m2	m3	m23	m123	Calculated Survivability s123
1922	A	34,463	10,515	11,939	24%	0.24		[illegible]		0.210	0.210	79.0%
1923	B	24,092	8,752	8,060	57%	0.25		[illegible]		0.169	0.169	83.1%
1924	C	16,898	8,832	5,370	61%	0.27		0.784		0.209	0.209	79.1%
1925	D	44,709	12,046	15,771	23%	0.23		0.967		0.224	0.224	77.6%
1926	D	35,958	11,920	12,498	24%	0.24		0.960		0.227	0.227	77.3%
1927	W	86,465	9,237	31,388	22%	0.22		0.808		0.180	0.180	82.0%
1928	A	25,521	8,432	8,595	25%	0.25		0.782		0.190	0.190	81.0%
1929	C	17,536	9,237	5,609	61%	0.27		0.908		0.214	0.214	78.6%
1930	D	16,169	7,184	5,097	62%	0.27		0.886		0.187	0.187	81.3%
1931	C	11,092	5,492	3,198	68%	0.29		0.803		0.176	0.176	82.4%
1932	D	13,995	10,101	4,264	64%	0.28		0.852		0.236	0.236	76.4%
1933	C	12,730	7,094	3,811	65%	0.28		0.880		0.195	0.195	80.5%
1934	C	12,748	6,230	3,818	65%	0.28		0.843		0.182	0.182	81.8%
1935	B	12,334	5,330	3,663	66%	0.28		0.595		0.169	0.169	83.1%
1936	B	49,269	12,398	17,477	23%	0.23		0.976		0.227	0.227	77.3%
1937	B	33,203	9,183	11,468	24%	0.24		0.803		0.194	0.194	80.6%
1938	W	82,269	8,301	29,819	22%	0.22		0.756		0.169	0.169	83.1%
1939	D	19,032	6,644	6,168	60%	0.26		0.668		0.174	0.174	82.6%
1940	A	39,134	12,398	13,686	24%	0.24		0.976		0.231	0.231	76.9%
1941	W	75,031	10,588	27,112	23%	0.23		0.879		0.198	0.198	80.2%
1942	W	78,344	8,337	26,351	23%	0.23		0.757		0.170	0.170	83.0%
1943	W	52,253	8,373	18,593	23%	0.23		0.759		0.175	0.175	82.5%
1944	D	26,268	8,015	9,822	25%	0.25		0.740		0.182	0.182	81.8%
1945	B	40,045	8,337	14,027	24%	0.24		0.767		0.179	0.179	82.1%
1946	B	24,074	8,589	8,054	57%	0.25		0.771		0.194	0.194	80.6%
1947	D	21,067	8,263	6,929	58%	0.26		0.754		0.194	0.194	80.6%
1948	B	15,664	5,928	4,906	62%	0.27		0.627		0.170	0.170	83.0%
1949	D	16,187	8,563	5,104	62%	0.27		0.769		0.207	0.207	79.3%
1950	B	35,220	11,938	12,222	24%	0.24		0.961		0.228	0.228	77.2%
1951	A	60,572	9,067	21,704	23%	0.23		0.798		0.182	0.182	81.8%
1952	W	62,499	8,015	22,425	23%	0.23		0.740		0.169	0.169	83.1%
1953	W	28,341	8,427	9,650	25%	0.25		0.782		0.187	0.187	81.3%
1954	A	57,151	9,003	20,424	23%	0.23		0.793		0.182	0.182	81.8%
1955	D	16,295	8,031	5,144	62%	0.27		0.740		0.199	0.199	80.1%
1956	W	61,543	8,745	22,067	23%	0.23		0.779		0.178	0.178	82.2%
1957	A	33,149	8,985	11,448	24%	0.24		0.792		0.191	0.191	80.9%
1958	W	61,130	8,409	21,913	23%	0.23		0.781		0.174	0.174	82.6%
1959	B	50,075	8,409	17,778	23%	0.23		0.781		0.176	0.176	82.4%
1960	D	25,121	11,283	8,445	25%	0.25		0.916		0.229	0.229	77.1%
1961	D	31,168	11,470	10,707	24%	0.24		0.926		0.225	0.225	77.5%
1962	B	44,421	12,836	15,663	23%	0.23		1.000		0.234	0.234	76.6%
1963	W	57,349	12,874	20,499	23%	0.23		1.002		0.230	0.230	77.0%
1964	D	18,932	7,754	6,131	60%	0.26		0.725		0.190	0.190	81.0%
1965	W	33,077	9,813	11,421	24%	0.24		0.837		0.202	0.202	79.8%
1966	B	26,775	8,751	9,064	25%	0.25		0.779		0.193	0.193	80.7%
1967	W	43,106	7,581	15,172	23%	0.23		0.716		0.168	0.168	83.2%
1968	B	54,520	6,783	19,440	23%	0.23		0.672		0.155	0.155	84.5%
1969	W	67,486	7,563	24,290	23%	0.23		0.715		0.162	0.162	83.8%
1970	W	57,565	5,330	20,579	23%	0.23		0.595		0.136	0.136	86.4%
1971	W	29,116	8,751	9,939	25%	0.25		0.779		0.191	0.191	80.9%
1972	B	24,217	8,640	8,107	57%	0.25		0.773		0.194	0.194	80.6%
1973	A	70,961	8,787	25,590	23%	0.23		0.781		0.177	0.177	82.3%
1974	W	41,916	8,733	14,727	24%	0.24		0.778		0.183	0.183	81.7%
1975	W	58,807	8,987	21,044	23%	0.23		0.791		0.181	0.181	81.9%
1976	C	19,523	8,258	6,362	59%	0.26		0.753		0.196	0.196	80.4%
1977	C	12,100	2,187	3,575	68%	0.29		0.425		0.122	0.122	87.8%
1978	A	50,183	8,517	17,818	23%	0.23		0.787		0.178	0.178	82.2%
1979	B	42,044	8,301	14,774	24%	0.24		0.756		0.178	0.178	82.2%
1980	A	69,453	7,858	25,026	23%	0.23		0.731		0.166	0.166	83.4%
1981	D	29,674	7,328	10,148	24%	0.24		0.703		0.172	0.172	82.8%
1982	W	65,650	9,003	23,603	23%	0.23		0.793		0.180	0.180	82.0%
1983	W	82,917	6,356	30,061	22%	0.22		0.650		0.146	0.146	85.4%
1984	W	36,004	5,218	12,516	24%	0.24		0.588		0.141	0.141	85.9%
1985	D	18,978	8,931	6,148	60%	0.26		0.789		0.206	0.206	79.4%
1986	W	94,333	11,542	34,331	22%	0.22		0.930		0.207	0.207	79.3%
1987	D	23,030	5,526	7,663	58%	0.25		0.606		0.153	0.153	84.7%
1988	C	15,907	6,172	4,999	62%	0.27		0.640		0.173	0.173	82.7%
1989	D	13,054	2,863	3,932	65%	0.26		0.461		0.130	0.130	87.0%
1990	C	16,692	7,861	5,293	61%	0.27		0.731		0.195	0.195	80.5%
1991	C	11,164	1,422	3,225	68%	0.29		0.364		0.112	0.112	88.8%
1992	C	30,926	9,388	10,617	24%	0.24		0.814		0.198	0.198	80.2%

MARCH

Year	Sac River Flow	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	percent	X-Channel Closed	m1	m2	m3	m23	m123	Calculated Survivability s123
1922	31,551	7,953	10,850	0.24	0.24		0.826	0.144	0.310	0.310	69.0%
1923	17,939	7,693	5,759	0.80	0.26		0.812	0.144	0.320	0.320	68.0%
1924	12,409	3,757	3,691	0.66	0.28		0.800	0.144	0.274	0.274	72.6%
1925	31,307	7,709	10,759	0.24	0.24		0.813	0.144	0.307	0.307	69.3%
1926	18,768	7,628	6,069	0.60	0.26		0.809	0.144	0.318	0.318	68.2%
1927	43,863	7,497	15,455	0.23	0.23		0.801	0.144	0.298	0.298	70.2%
1928	86,229	8,750	31,300	0.22	0.22		0.869	0.144	0.307	0.307	69.3%
1929	14,361	6,148	4,421	0.63	0.28		0.729	0.144	0.305	0.305	69.5%
1930	30,348	9,238	10,400	0.24	0.24		0.895	0.144	0.327	0.327	67.3%
1931	8,880	3,741	2,371	0.72	0.31		0.599	0.144	0.285	0.285	71.5%
1932	11,677	5,172	3,417	0.67	0.29		0.676	0.144	0.298	0.298	70.2%
1933	9,937	4,700	2,766	0.70	0.30		0.650	0.144	0.296	0.296	70.4%
1934	14,588	4,570	4,506	0.63	0.27		0.643	0.144	0.281	0.281	71.9%
1935	24,918	11,368	8,366	0.57	0.25		1.000	0.144	0.358	0.358	64.2%
1936	33,698	8,522	11,653	0.24	0.24		0.857	0.144	0.316	0.316	68.4%
1937	38,203	7,937	13,336	0.24	0.24		0.825	0.144	0.306	0.306	69.4%
1938	78,634	8,294	28,459	0.22	0.22		0.845	0.144	0.302	0.302	69.8%
1939	16,394	6,717	5,181	0.61	0.27		0.759	0.144	0.309	0.309	69.1%
1940	58,939	8,912	21,093	0.23	0.23		0.878	0.144	0.312	0.312	68.8%
1941	58,581	8,164	20,959	0.23	0.23		0.836	0.144	0.303	0.303	69.7%
1942	27,095	8,327	9,183	0.25	0.25		0.846	0.144	0.318	0.318	68.2%
1943	64,598	8,378	23,210	0.23	0.23		0.849	0.144	0.305	0.305	69.5%
1944	25,094	8,327	8,436	0.25	0.25		0.846	0.144	0.320	0.320	68.0%
1945	26,036	8,473	8,788	0.25	0.25		0.854	0.144	0.321	0.321	67.9%
1946	23,728	8,750	7,924	0.57	0.25		0.869	0.144	0.327	0.327	67.3%
1947	22,297	8,278	7,389	0.58	0.25		0.844	0.144	0.322	0.322	67.8%
1948	19,061	7,741	6,179	0.60	0.26		0.815	0.144	0.319	0.319	68.1%
1949	41,765	10,734	14,670	0.24	0.24		0.976	0.144	0.340	0.340	66.0%
1950	22,411	9,221	7,432	0.58	0.25		0.895	0.144	0.335	0.335	66.5%
1951	30,071	9,026	10,297	0.24	0.24		0.864	0.144	0.325	0.325	67.5%
1952	57,524	8,262	20,564	0.23	0.23		0.843	0.144	0.304	0.304	69.6%
1953	24,899	7,725	8,362	0.57	0.25		0.814	0.144	0.312	0.312	68.8%
1954	49,538	9,010	17,577	0.23	0.23		0.863	0.144	0.316	0.316	68.4%
1955	18,345	7,432	5,911	0.60	0.26		0.798	0.144	0.316	0.316	68.4%
1956	38,674	8,912	12,766	0.24	0.24		0.878	0.144	0.319	0.319	68.1%
1957	44,363	8,666	15,649	0.23	0.23		0.865	0.144	0.313	0.313	68.7%
1958	93,612	8,392	34,061	0.22	0.22		0.850	0.144	0.302	0.302	69.8%
1959	23,354	7,364	7,785	0.57	0.25		0.795	0.144	0.309	0.309	69.1%
1960	21,566	7,302	7,115	0.58	0.26		0.791	0.144	0.310	0.310	69.0%
1961	20,752	8,115	6,611	0.59	0.26		0.835	0.144	0.322	0.322	67.8%
1962	27,599	7,872	9,372	0.25	0.25		0.822	0.144	0.311	0.311	68.9%
1963	32,641	8,688	11,258	0.24	0.24		0.865	0.144	0.318	0.318	68.2%
1964	18,557	7,579	5,990	0.60	0.26		0.806	0.144	0.318	0.318	68.2%
1965	21,126	8,571	6,951	0.58	0.26		0.859	0.144	0.328	0.328	67.2%
1966	26,689	8,750	9,780	0.25	0.25		0.869	0.144	0.322	0.322	67.8%
1967	54,483	7,611	19,426	0.23	0.23		0.806	0.144	0.297	0.297	70.3%
1968	36,788	7,205	12,809	0.24	0.24		0.786	0.144	0.297	0.297	70.3%
1969	45,326	6,961	16,002	0.23	0.23		0.773	0.144	0.291	0.291	70.9%
1970	35,812	7,253	12,444	0.24	0.24		0.788	0.144	0.298	0.298	70.2%
1971	50,970	9,026	18,113	0.23	0.23		0.884	0.144	0.316	0.316	68.4%
1972	32,933	8,636	11,367	0.24	0.24		0.863	0.144	0.318	0.318	68.2%
1973	47,554	8,782	16,835	0.23	0.23		0.871	0.144	0.313	0.313	68.7%
1974	100,199	8,750	36,524	0.22	0.22		0.869	0.144	0.305	0.305	69.5%
1975	76,999	9,010	27,474	0.23	0.23		0.883	0.144	0.311	0.311	68.9%
1976	20,020	8,067	6,536	0.59	0.26		0.832	0.144	0.322	0.322	67.8%
1977	7,319	2,098	1,787	0.77	0.33		0.510	0.144	0.263	0.263	73.7%
1978	45,521	8,115	16,075	0.23	0.23		0.727	0.144	0.280	0.280	72.0%
1979	32,592	8,327	11,239	0.24	0.24		0.848	0.144	0.314	0.314	68.6%
1980	36,479	6,131	12,693	0.24	0.24		0.728	0.144	0.284	0.284	71.6%
1981	32,494	7,205	11,203	0.24	0.24		0.786	0.144	0.299	0.299	70.1%
1982	69,067	8,977	24,869	0.23	0.23		0.881	0.144	0.311	0.311	68.9%
1983	81,935	4,765	29,694	0.22	0.22		0.654	0.144	0.259	0.259	74.1%
1984	36,499	7,302	12,699	0.24	0.24		0.791	0.144	0.299	0.299	70.1%
1985	20,720	8,571	6,799	0.59	0.26		0.859	0.144	0.328	0.328	67.2%
1986	72,535	8,506	26,178	0.23	0.23		0.856	0.144	0.305	0.305	69.5%
1987	29,762	6,440	10,181	0.24	0.24		0.744	0.144	0.291	0.291	70.9%
1988	10,913	3,622	3,131	0.66	0.29		0.603	0.144	0.279	0.279	72.1%
1989	41,911	11,303	14,725	0.24	0.24		1.000	0.144	0.346	0.346	65.4%
1990	14,598	5,965	4,506	0.63	0.27		0.720	0.144	0.302	0.302	69.8%
1991	29,681	11,515	10,151	0.24	0.24		1.000	0.144	0.354	0.354	64.6%
1992	19,711	8,327	6,422	0.59	0.26		0.846	0.144	0.327	0.327	67.3%

APRIL

Year	Sac River Flow	CVP + SW Exports	Calculated Steamboat & Sutter Slough flows	Percent	X-Channel Closed	Water temp f	m1	m2	m3	m23	m123	Calculated Survivability s123	Weighted Total Survival
1922	22,822	9,680	7,585	0.58	0.25	58.5	0.002	0.982	0.256	0.440	0.441	55.9%	66.37%
1923	22,772	10,335	7,567	0.58	0.25	58.3	0.000	1.000	0.250	0.440	0.440	56.0%	66.33%
1924	9,613	4,369	2,645	0.70	0.30	61.5	0.128	0.749	0.352	0.472	0.540	46.0%	65.46%
1925	20,336	9,579	6,865	0.59	0.26	59.1	0.027	0.988	0.275	0.459	0.474	52.6%	65.38%
1926	17,663	8,705	5,656	0.61	0.26	61.6	0.133	0.985	0.365	0.522	0.585	41.5%	61.35%
1927	48,215	9,665	17,062	0.23	0.23	56.6	0.000	0.962	0.202	0.379	0.379	62.1%	69.29%
1928	29,206	10,184	9,974	0.25	0.25	58.7	0.011	1.000	0.262	0.443	0.449	55.1%	66.58%
1929	9,613	3,529	2,645	0.70	0.30	56.3	0.000	0.611	0.186	0.314	0.314	68.6%	70.40%
1930	14,604	6,285	4,512	0.63	0.27	59.6	0.048	0.819	0.291	0.436	0.463	53.7%	65.00%
1931	11,142	4,857	3,217	0.66	0.29	62.8	0.183	0.799	0.393	0.512	0.601	39.9%	63.46%
1932	14,066	7,058	4,311	0.64	0.28	58.9	0.019	0.848	0.269	0.429	0.440	56.0%	66.77%
1933	15,327	6,605	4,762	0.62	0.27	60.1	0.069	0.845	0.307	0.453	0.491	50.9%	65.85%
1934	15,278	6,067	4,763	0.62	0.27	63.6	0.217	0.679	0.419	0.544	0.643	35.7%	62.31%
1935	24,318	10,537	8,145	0.57	0.25	58.9	0.019	1.000	0.269	0.453	0.463	53.7%	63.48%
1936	21,528	9,932	7,101	0.58	0.26	59.7	0.053	1.000	0.294	0.475	0.503	49.7%	63.97%
1937	23,259	8,067	7,749	0.57	0.25	58.8	0.016	0.901	0.266	0.426	0.436	56.5%	67.00%
1938	47,173	8,386	16,693	0.23	0.23	56.3	0.000	0.873	0.186	0.346	0.346	65.4%	70.22%
1939	14,486	6,453	4,468	0.63	0.26	63.3	0.204	0.894	0.409	0.543	0.636	36.4%	61.03%
1940	41,728	10,453	14,656	0.24	0.24	57.4	0.000	1.000	0.221	0.404	0.404	59.6%	67.06%
1941	42,367	9,411	14,895	0.24	0.24	56.9	0.000	0.939	0.205	0.378	0.378	62.2%	68.82%
1942	43,308	9,747	15,247	0.23	0.23	56.5	0.000	0.950	0.192	0.370	0.370	63.0%	68.58%
1943	29,410	9,784	10,049	0.24	0.24	58.8	0.015	0.992	0.266	0.444	0.452	54.8%	66.80%
1944	10,705	5,598	3,054	0.68	0.29	58.4	0.000	0.780	0.253	0.402	0.402	59.8%	67.34%
1945	12,520	7,210	3,733	0.66	0.28	60.6	0.080	0.887	0.323	0.463	0.530	47.0%	63.49%
1946	12,218	6,369	3,619	0.66	0.29	60.7	0.095	0.843	0.326	0.474	0.524	47.6%	63.13%
1947	15,444	5,748	4,826	0.62	0.27	62.5	0.170	0.842	0.384	0.508	0.592	40.8%	61.35%
1948	22,788	9,983	7,573	0.58	0.25	56.6	0.000	0.984	0.195	0.390	0.390	61.0%	67.88%
1949	13,209	6,252	3,990	0.65	0.28	61.7	0.137	0.855	0.358	0.498	0.566	43.4%	60.93%
1950	19,024	8,638	6,165	0.60	0.26	61.3	0.120	0.976	0.346	0.510	0.569	43.1%	60.86%
1951	18,083	8,268	5,813	0.60	0.26	59.9	0.061	0.931	0.301	0.467	0.499	50.1%	64.13%
1952	56,852	8,873	20,238	0.23	0.23	55.5	0.000	0.885	0.160	0.327	0.327	67.3%	70.85%
1953	16,184	7,260	5,103	0.62	0.27	58.8	0.015	0.857	0.266	0.425	0.433	56.7%	66.79%
1954	39,863	10,453	13,969	0.24	0.24	58.4	0.000	1.000	0.253	0.430	0.430	57.0%	66.75%
1955	9,478	4,638	2,595	0.71	0.30	56.4	0.000	0.672	0.189	0.336	0.336	66.4%	69.33%
1956	20,436	9,310	6,693	0.59	0.26	59.7	0.053	0.984	0.294	0.472	0.500	50.0%	64.46%
1957	24,503	8,621	8,214	0.57	0.25	60.5	0.086	0.961	0.320	0.481	0.526	47.4%	63.90%
1958	52,282	9,764	18,603	0.23	0.23	57.4	0.000	0.967	0.221	0.393	0.393	60.7%	68.75%
1959	12,705	5,613	3,802	0.65	0.28	63	0.191	0.843	0.400	0.525	0.616	38.4%	61.62%
1960	14,201	4,353	4,361	0.64	0.28	59.5	0.044	0.713	0.288	0.405	0.432	56.8%	66.42%
1961	13,495	4,185	4,097	0.64	0.28	60.1	0.069	0.714	0.307	0.421	0.461	53.9%	64.89%
1962	17,612	8,134	5,637	0.61	0.26	61.8	0.141	0.958	0.362	0.520	0.587	41.3%	61.56%
1963	69,457	10,218	25,027	0.23	0.23	53.7	0.000	0.925	0.103	0.289	0.289	71.1%	70.19%
1964	9,125	4,369	2,463	0.72	0.31	59.3	0.036	0.710	0.282	0.413	0.434	56.6%	66.40%
1965	45,661	9,747	16,127	0.23	0.23	58.9	0.000	0.957	0.205	0.381	0.381	61.9%	67.27%
1966	12,991	5,932	3,909	0.65	0.28	61.9	0.145	0.841	0.365	0.499	0.572	42.8%	61.97%
1967	39,930	9,646	13,984	0.24	0.24	53.8	0.000	0.896	0.106	0.293	0.293	70.7%	72.10%
1968	19,646	8,134	6,397	0.59	0.26	61.5	0.128	0.963	0.352	0.508	0.571	42.9%	63.91%
1969	44,787	7,613	15,800	0.23	0.23	56.4	0.000	0.833	0.189	0.340	0.340	66.0%	71.10%
1970	19,629	8,571	6,391	0.59	0.26	58.6	0.015	0.928	0.266	0.438	0.446	55.4%	67.84%
1971	25,713	9,193	8,666	0.25	0.25	58.7	0.011	0.960	0.262	0.436	0.442	55.8%	66.27%
1972	14,402	6,201	4,436	0.63	0.26	58.5	0.002	0.794	0.256	0.404	0.406	59.4%	67.19%
1973	19,511	9,663	6,347	0.59	0.26	61.3	0.120	1.000	0.348	0.516	0.574	42.6%	62.82%
1974	33,206	10,201	11,470	0.24	0.24	56.8	0.000	0.980	0.202	0.390	0.390	61.0%	68.53%
1975	25,763	10,487	8,685	0.25	0.25	56.8	0.000	0.995	0.202	0.399	0.399	60.1%	67.96%
1976	10,302	4,201	2,903	0.69	0.30	58.9	0.019	0.694	0.269	0.395	0.407	59.3%	66.88%
1977	11,260	4,941	3,261	0.67	0.29	64.3	0.246	0.831	0.441	0.565	0.664	33.6%	63.48%
1978	38,703	7,613	13,525	0.24	0.24	56.9	0.000	0.842	0.205	0.356	0.356	64.4%	71.02%
1979	18,537	8,420	5,983	0.60	0.26	59.8	0.057	0.938	0.298	0.466	0.496	50.4%	64.91%
1980	19,814	7,008	6,460	0.59	0.26	57.1	0.000	0.813	0.211	0.367	0.367	63.3%	70.06%
1981	20,301	8,403	6,643	0.59	0.26	61.5	0.128	0.987	0.352	0.511	0.574	42.6%	63.49%
1982	75,843	9,226	27,415	0.23	0.23	54.1	0.000	0.879	0.115	0.287	0.287	71.3%	71.29%
1983	68,296	7,075	24,593	0.23	0.23	55	0.000	0.779	0.144	0.288	0.288	71.2%	74.72%
1984	20,940	8,453	6,881	0.59	0.26	59.7	0.053	0.938	0.294	0.480	0.488	51.2%	66.50%
1985	13,327	5,983	4,034	0.65	0.28	60.8	0.098	0.824	0.330	0.468	0.521	47.9%	62.98%
1986	20,536	7,495	6,731	0.59	0.26	60.4	0.082	0.898	0.317	0.467	0.511	48.9%	64.60%
1987	14,856	6,134	4,606	0.63	0.27	65.7	0.305	0.920	0.486	0.605	0.725	27.5%	59.66%
1988	10,319	4,470	2,909	0.69	0.30	59.9	0.061	0.726	0.301	0.427	0.462	53.8%	66.01%
1989	23,629	9,293	7,687	0.57	0.25	61.4	0.124	1.000	0.349	0.513	0.574	42.6%	61.40%
1990	15,310	6,420	4,776	0.62	0.27	61.6	0.133	0.862	0.355	0.493	0.560	44.0%	63.42%
1991	18,772	6,974	5,323	0.61	0.27	60.6	0.099	0.877	0.330	0.476	0.528	47.2%	62.56%
1992	14,736	6,151	4,562	0.63	0.27	61.2	0.116	0.840	0.342	0.479	0.539	46.1%	62.64%
												Average	64.96%

Formulas: Winter Run Salmon Smolt Survival Model

C10 ='Study 519A Flow Data'!E7
D10 ='Study 519A Flow Data'!O7 (HIDDEN)
E10 ='Study 519A Flow Data'!Y7 (HIDDEN)
F10 =(D9+E9)
G10 =0.374*C9-950
H10 =IF(C9>$G$2,(0.133*C9+829)/(C9-G9),(0.293*C9+2090)/(C9-G9))
I10 =(0.133*C9+829)/(C9-G9)
K10 =(-0.5916024)+(0.017968*$M$1)+(0.000054*F9)
M10 =(K9*I9)+L9*(1-I9)
N10 =J9+M9-(J9*M9)
O10 =1-N9

Q10 ='Study 519A Flow Data'!F7
R10 ='Study 519A Flow Data'!P7 (HIDDEN)
S10 ='Study 519A Flow Data'!Z7 (HIDDEN)
T10 =(R9+S9)
U10 =0.374*Q9-950
V10 =IF(Q9>$G$2,(0.133*Q9+829)/(Q9-U9),(0.293*Q9+2090)/(Q9-U9))
Y10 =(0.133*Q9+829)/(Q9-U9)
W10 =IF(((-0.5916024)+(0.017968*$M$2)+(0.000054*T9))>1,1,((-0.5916024)+(0.017968*$M$2)+(0.000054*T9)))
Z10 =-1.613493+(0.0319584*$M$2)
AA10 =(Y9*W9)+Z9*(1-W9)
AB10 =X9+AA9-(X9*AA9)
AC10 =1-AB9

AE10 ='Study 519A Flow Data'!G7
AF10 ='Study 519A Flow Data'!Q7 (HIDDEN)
AG10 ='Study 519A Flow Data'!AA7 (HIDDEN)
AH10 =AF9+AG9
AI10 =0.374*AE9-950
AJ10 =IF(AE9>$G$2,(0.133*AE9+829)/(AE9-AI9),(0.293*AE9+2090)/(AE9-AI9))
AK10 =(0.133*AE9+829)/(AE9-AI9)
AM10 =IF((-2.45925+(0.0420748*AL9))<0,0,(-2.45925+(0.0420748*AL9)))
AN10 =IF(((-0.5916024)+(0.017968*AL9)+(0.000054*AH9))>1,1,((-0.5916024)+(0.017968*AL9)+(0.000054*AH9)))
AO10 =-1.613493+(0.0319584*AL9)
AP10 =(AN9*AK9)+(AO9*(1-AK9))
AQ10 =AM9+AP9-(AM9*AP9)
AR10 =1-AQ9
AS10 =(0.13*O9)+(0.57*AC9)+(0.3*AR9)

C — 0 3 2 4 0 1

STUDY: 1995C06F-SWRC[illegible] DWRSIM: recirc818-h, 03 Sep 97
CP # 137, SACRAMENTO RIVER AT FREEPORT, DOWNSTREAM FLOW (TAF to CFS)

Project: /1995C06F-SWRCB-519A/137/FLOW-DOWNSTREAM//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	11814	17142	17499	34463	31551	22822	46530	34720
1923	17226	34365	32283	24092	17939	22772	14214	18234
1924	10756	10051	14377	16898	12409	9613	8392	10033
1925	7025	11254	10197	44709	31307	20335	10962	16016
1926	10083	10295	18768	35958	18768	17553	13352	18016
1927	20284	14296	29469	86465	43863	48215	26786	19494
1928	21830	16572	25208	25521	86229	29206	18313	18251
1929	12369	13206	14767	17538	14361	9613	8733	9781
1930	7159	14881	21273	16169	30348	14804	11758	18889
1931	9814	9351	11970	11092	8880	11142	8864	12453
1932	7683	14653	17256	13995	11677	14066	10929	18822
1933	9478	8457	12604	12730	9937	15327	7465	10453
1934	8033	12474	16101	12748	14588	15276	7839	14806
1935	9209	8506	25469	12334	24916	24318	26201	17612
1936	11865	13287	32413	49269	33698	21528	14100	17915
1937	11411	12458	15971	33203	38203	23259	15971	17763
1938	23948	49929	31535	82269	78634	47173	57426	35510
1939	19444	18687	18410	19032	16394	14486	8148	19814
1940	8436	7839	23452	39134	58939	41728	17613	16184
1941	13663	34706	71998	75031	58581	42367	39488	20805
1942	18184	65823	63265	78344	27095	43308	36040	27124
1943	21914	28803	58060	52253	64598	29410	20134	17696
1944	14318	13775	17678	28268	25094	10705	9075	19713
1945	13764	15824	12409	40045	26038	12520	11498	17074
1946	19629	54678	43228	24074	23728	12218	12620	18906
1947	13781	18134	14979	21067	22297	15444	9839	18923
1948	10201	9238	14653	15664	19061	22788	26542	23007
1949	14453	15564	14930	16187	41765	13209	13141	19864
1950	11377	10978	20427	35220	22411	19024	13954	20284
1951	41846	68095	62208	60572	30071	18083	16914	18167
1952	16453	43537	67233	62499	57524	56652	59557	38972
1953	16537	42334	64078	28341	24899	16184	26867	25881
1954	19679	14914	33421	57151	49538	39863	22639	18503
1955	17965	25517	22004	16295	18345	9478	10278	19696
1956	10722	25160	84017	61543	36674	20436	39000	22301
1957	15478	14149	18638	33149	44383	24503	15320	20284
1958	19259	23745	36381	61130	93612	52282	43488	33930
1959	16133	14621	35162	50075	23354	12705	9173	19242
1960	11377	10978	13515	25121	21565	14201	10913	18755
1961	13495	17499	14263	31168	20752	13495	10116	19209
1962	9781	16703	12653	44421	27599	17612	13238	19108
1963	20923	27550	17548	57349	32641	69457	29095	20150
1964	28653	14849	24200	18932	18557	9125	11352	18721
1965	13394	24265	81236	33077	21126	45661	23029	18637
1966	25427	16995	29632	26775	28689	12991	13190	18368
1967	14537	38609	35210	43106	54483	39930	44790	39342
1968	16234	16686	30640	54520	36788	19646	9384	18570
1969	13562	23842	66761	67486	45326	44787	45538	24133
1970	17646	50156	92669	57565	35812	19629	12149	16301
1971	20940	53734	45245	29116	50970	25713	25973	23629
1972	15343	18378	20394	24217	32933	14402	9628	18637
1973	22015	26200	49002	70961	47554	19511	15743	18940
1974	55005	61590	78422	41918	100199	33208	26949	21780
1975	17579	17613	18670	58807	75999	25763	28542	24788
1976	19226	16768	16768	19523	20020	10302	8864	19326
1977	8235	8050	7660	12100	7319	11260	7010	9613
1978	6924	12279	43066	50183	45521	38703	21061	16352
1979	14537	12751	27241	42044	32592	18537	12442	19881
1980	16301	20833	61053	69453	36479	19814	14783	16453
1981	13024	15613	27843	29674	32494	20301	8750	19158
1982	30284	67623	51165	65650	69087	75843	38431	24418
1983	39107	55410	59150	82917	81935	68298	54515	55576
1984	62802	82944	47359	36004	36495	20940	12084	19007
1985	33578	23875	18800	18978	20720	13327	11856	18671
1986	9546	15467	21500	94333	72535	20636	13125	12655
1987	11125	13417	16735	23030	29762	14856	7481	20318
1988	8453	15841	25534	15907	10913	10319	8587	14486
1989	8588	8847	12002	13054	41911	23629	13027	18234
1990	11512	14540	21338	16692	14588	15310	6896	19578
1991	8134	8620	6847	11164	29681	16772	8685	11327
1992	7462	7449	11889	30928	19711	14738	7969	14369

STUDY: 1995C06F-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CVP, TOTAL CVP EXPORT (TAF converted to CFS)

Project: /1995C06F-SWRCB-519A/CVP/EXPORT-TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4470	4342	4326	4339	3806	4521	2488	4874
1923	4487	4342	4326	4375	4326	4655	2114	4403
1924	3512	3627	4326	4172	1659	2151	309	420
1925	1529	4375	3757	4375	4147	4706	1740	4790
1926	4470	4342	4326	4321	4326	4403	1399	4806
1927	4420	4342	4326	2521	3350	4706	2082	4874
1928	4470	4342	4326	4207	4326	4689	1675	4857
1929	4453	4342	4326	4321	3318	1597	1740	2033
1930	2487	4375	4342	3529	4326	3159	1041	4874
1931	2840	2374	4326	3529	2114	2319	992	2084
1932	1865	4375	4342	4242	2586	3613	1903	4622
1933	3260	2700	4342	3799	1724	2857	1317	1378
1934	1681	4375	4342	1855	2358	3294	1008	4756
1935	2773	3464	4342	1296	4326	4588	3204	4437
1936	4453	4342	4326	4190	4326	4706	2570	4806
1937	4470	4342	4326	4339	3936	3092	3171	2857
1938	4470	4342	4326	4357	4326	4017	4212	4874
1939	4487	4342	4326	2683	2732	3277	1350	4874
1940	3025	1643	4326	4190	4326	4706	2472	4050
1941	4453	4342	4326	4393	4326	4706	4814	4874
1942	4487	4342	4326	4375	4326	4706	2992	4874
1943	4470	4342	4326	4375	4326	4706	3188	4874
1944	4470	4342	4326	4190	4326	2857	1708	4823
1945	4437	4342	4326	4339	4326	3664	2244	3865
1946	4470	4342	4326	4375	4326	3243	2000	4521
1947	4453	4342	4326	4339	4326	2033	1285	4874
1948	2975	2472	4326	4172	4326	4487	1789	4874
1949	4453	4342	4326	4339	3594	2521	1610	4874
1950	4470	4342	4326	4339	4326	4369	1561	4874
1951	4453	4342	4326	4375	4326	4185	1903	4874
1952	4453	4342	4326	4242	4326	4706	4814	4874
1953	4487	4342	4326	4375	3610	3680	1561	4874
1954	4470	4342	4326	4357	4326	4672	1659	4874
1955	4453	4342	4326	4357	4326	2370	1366	4874
1956	3025	4342	4326	4225	4212	4706	3155	4874
1957	4487	4342	4326	4339	4326	4672	1626	4874
1958	4453	4342	4326	4357	4326	4706	4814	4874
1959	4487	4342	4326	4357	4326	2857	1252	4874
1960	4453	4342	4326	4172	3301	487	1122	4874
1961	4437	4342	4326	4339	3578	403	1008	4874
1962	2874	4342	4326	4339	4326	4117	1626	4874
1963	4453	4342	4326	4375	4326	4689	2472	4874
1964	4453	4342	4326	4225	4326	2235	1301	4874
1965	4050	4342	4326	4357	4326	4638	2244	4874
1966	4470	4342	4326	4375	4326	3025	1513	4874
1967	4453	4342	4326	4375	4326	4706	4814	4874
1968	4487	4342	4326	2851	3090	4269	1301	4874
1969	4453	4342	4326	4393	3708	3445	4196	4874
1970	4487	4342	4277	1278	3139	4706	2000	4538
1971	4470	4342	4326	4393	4326	4706	1545	4874
1972	4453	4342	4326	4207	4326	3159	1203	4874
1973	4453	4342	4326	4357	4326	4706	2846	2655
1974	4470	4342	4326	4357	4326	4706	2814	4874
1975	4487	4342	4326	4339	4326	4706	2423	4874
1976	4470	4342	4326	4190	4424	521	1041	4672
1977	2891	1919	2277	792	813	992	260	286
1978	2689	4375	1545	1837	2212	3546	4326	4874
1979	4487	4342	4326	4339	4326	4672	2423	3916
1980	4453	4342	4326	4190	2781	3059	3399	4874
1981	4470	4342	4326	3259	3090	4538	1285	4874
1982	4453	4342	4326	4375	4326	3664	4245	4874
1983	4487	4342	4326	3565	2131	3428	4163	4874
1984	3512	3139	1447	1495	3301	4706	1870	4672
1985	4470	4342	4326	4357	4326	3042	1317	4874
1986	2723	4342	4326	4339	4326	2269	2814	4134
1987	4437	4342	1220	1314	2309	3126	1057	4874
1988	3159	4342	4326	3807	2049	2286	1008	4739
1989	2571	3025	4212	1026	4326	4538	1025	4823
1990	4420	4342	2765	1296	2326	3243	992	4756
1991	2706	1756	1822	468	4424	2218	1155	3075
1992	3328	3171	4342	2121	2196	3361	1073	4050

STUDY: 1995C06F-SWRCB-519A DWRSIM: recirc81[illegible] Sep 97
SWP, SWP EXPORT AT BANKS PP (TAF converted to CFS)

Project: /1995C06F-SWRCB-519A/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1922	4386	7123	7644	6176	4147	5159	2277	6672
1923	6672	5058	3643	2377	3367	5680	1903	3395
1924	3764	3139	6554	4659	2098	2218	472	622
1925	3227	4944	3204	7671	3562	4874	1529	1580
1926	2336	2700	7123	7599	3301	4302	1187	2504
1927	6672	7075	7335	6716	4147	5159	1870	3529
1928	6672	5839	3643	4225	4424	5495	1464	2672
1929	4991	5936	6701	4916	2830	1933	130	101
1930	1781	6619	7123	3655	4912	3126	829	2622
1931	3311	3025	4944	1963	1626	2538	748	1428
1932	1664	7221	7904	5859	2586	3445	1675	2756
1933	2605	2391	5839	3295	2976	3748	846	101
1934	1681	5578	7140	4375	2212	2773	764	1126
1935	4336	3464	7758	4033	7042	5949	2537	3496
1936	4017	5855	7530	8206	4196	5227	2358	3311
1937	3496	5676	7644	4844	4001	4974	4066	4857
1938	6672	7563	3562	3943	3968	4369	5448	6672
1939	6000	3741	3236	3961	3985	3176	1138	3042
1940	1781	2732	8115	8206	4586	5748	2261	3092
1941	6235	7481	8506	6194	3838	4706	4749	6168
1942	6487	3610	3236	3961	4001	5042	2781	6672
1943	6672	3773	3301	3997	4050	5058	2976	3042
1944	6655	6570	3269	3825	4001	2739	1496	3143
1945	6672	6993	4912	3997	4147	3546	2033	3596
1946	6672	7595	3643	4213	4424	3126	1789	3479
1947	6672	7205	6993	3943	3952	3714	1073	2689
1948	3647	3025	6392	1756	3415	5495	1578	4353
1949	6268	6912	6896	4213	7140	3731	1399	3159
1950	3395	3090	7253	7599	4895	4269	1350	3529
1951	6672	7595	7026	4682	4700	4084	1691	2807
1952	6672	7156	8132	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	3580	1350	5445
1954	6672	4651	3838	4646	4684	5781	1447	2739
1955	6672	6928	7270	3673	3106	2269	1138	3025
1956	4269	7595	8164	4520	4700	4605	2944	6672
1957	6672	6619	3887	4646	4342	3949	1399	3445
1958	6672	6944	4098	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3058	2756	1041	2874
1960	3075	2797	5822	7110	4001	3865	911	2638
1961	5764	6912	6652	7130	4538	3781	797	2739
1962	3378	6896	3985	8499	3545	4017	1415	2874
1963	6672	6912	7319	8499	4342	5529	2261	3983
1964	6672	6229	3822	3529	3253	2134	1090	2605
1965	6353	7465	8506	5456	4245	5109	2033	3546
1966	6672	6180	3659	4375	4424	2907	1285	2622
1967	6672	7156	7758	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	3865	1090	2672
1969	5916	7010	7888	3169	3253	4168	5025	6638
1970	4084	3480	3334	4051	4115	3865	1789	2622
1971	6672	7075	6473	4357	4700	4487	1334	4689
1972	6672	7107	3887	4433	4310	3042	992	2723
1973	6672	6928	6245	4429	4456	4958	2635	5512
1974	6672	7400	3643	4375	4424	5495	2602	4538
1975	6672	4310	3854	4628	4684	5781	2212	6672
1976	6672	6164	3806	4068	3843	3680	813	2941
1977	3277	2992	2472	1404	1285	3949	358	387
1978	1714	5562	7855	6680	3903	4067	4098	3899
1979	6672	3676	3269	3961	4001	3748	2212	4403
1980	6672	7010	3155	3668	3350	3949	3188	4000
1981	5579	4668	3350	4069	4115	3865	1073	2790
1982	6672	7026	8506	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3847	3594	4689
1984	3630	3106	2879	3720	4001	3748	1659	3361
1985	6672	7026	3871	4574	4245	2941	1106	2638
1986	4218	6977	7319	7202	4180	5227	5286	3764
1987	3798	6099	6457	4213	4131	3008	846	3143
1988	1882	6879	7075	2364	1773	2185	797	992
1989	3378	3594	4684	1837	6977	4756	813	2487
1990	3344	6196	7091	6554	3659	3176	764	2907
1991	2386	3155	1708	954	7091	4756	911	1059
1992	1412	1643	4668	7267	6131	2790	846	1681

C-032402

Study 469 Sacramento River Fall Run Smolt Survival Model

Cross Channel closed over 25,000 cfs

Cross Channel Closed Apr to May 20, 14 d May 21-Jun 15

Sacramento River temperatures based on limited historical data from USBR

Year	Water Year Type	APRIL Sac River Flows	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	X-Channe Percent Closed	observed temp f	m1	Calculated Mortality m2	m3	m123	Calculated Survival s123
1922	A	22,822	8,467	7,585	56%	0.25	58.5	0.002	0.826	0.256	0.401	0.402	59.8%
1923	B	22,721	8,033	7,548	56%	0.25	58.3	0.000	0.806	0.250	0.391	0.391	60.9%
1924	C	8,067	2,958	2,067	74%	0.32	61.5	0.128	0.642	0.352	0.444	0.515	48.5%
1925	D	22,654	7,058	7,623	56%	0.25	59.1	0.027	0.777	0.275	0.403	0.419	58.1%
1926	D	21,511	6,789	7,095	56%	0.26	61.6	0.133	0.610	0.355	0.472	0.542	46.8%
1927	W	48,215	8,201	17,062	23%	0.23	56.8	0.000	0.786	0.202	0.337	0.337	66.3%
1928	A	29,208	7,462	9,974	25%	0.25	58.7	0.011	0.787	0.262	0.391	0.397	60.3%
1929	C	8,537	2,855	2,243	73%	0.31	56.3	0.000	0.535	0.186	0.295	0.295	70.5%
1930	D	12,638	4,017	3,777	66%	0.26	59.6	0.048	0.654	0.291	0.394	0.423	67.7%
1931	C	9,193	3,143	2,466	71%	0.31	62.8	0.183	0.673	0.363	0.479	0.574	42.6%
1932	D	13,075	5,546	3,949	65%	0.26	58.9	0.019	0.707	0.269	0.362	0.404	60.6%
1933	C	12,736	4,302	3,814	65%	0.26	60.1	0.069	0.675	0.307	0.411	0.462	54.3%
1934	C	12,856	3,748	3,858	65%	0.26	63.6	0.217	0.714	0.419	0.502	0.610	38.9%
1935	B	24,200	8,739	8,101	57%	0.25	56.9	0.019	0.646	0.269	0.414	0.425	57.5%
1936	B	21,276	8,470	7,007	58%	0.26	59.7	0.053	0.649	0.284	0.437	0.466	53.4%
1937	B	23,511	8,117	7,843	57%	0.25	56.6	0.015	0.817	0.266	0.405	0.414	58.6%
1938	W	47,173	8,504	16,693	23%	0.23	56.3	0.000	0.789	0.186	0.326	0.326	67.4%
1939	D	12,234	4,252	3,626	66%	0.29	63.3	0.204	0.730	0.409	0.501	0.603	39.7%
1940	A	41,728	8,366	14,656	24%	0.24	57.4	0.000	0.804	0.221	0.358	0.358	64.2%
1941	W	42,367	9,411	14,896	24%	0.24	56.9	0.000	0.838	0.205	0.354	0.354	64.6%
1942	W	43,306	9,025	15,247	23%	0.23	56.5	0.000	0.815	0.192	0.338	0.338	68.2%
1943	W	29,410	9,562	10,049	24%	0.24	58.6	0.015	0.880	0.266	0.416	0.425	57.5%
1944	D	9,814	4,353	2,721	70%	0.30	58.4	0.000	0.647	0.253	0.371	0.371	62.9%
1945	B	11,747	6,369	3,443	67%	0.29	60.6	0.060	0.774	0.323	0.453	0.502	49.8%
1946	B	12,218	6,087	3,619	66%	0.29	60.7	0.095	0.762	0.326	0.451	0.503	49.7%
1947	D	13,797	5,008	4,210	64%	0.28	62.5	0.170	0.749	0.364	0.485	0.573	42.7%
1948	B	23,040	6,924	7,867	58%	0.25	56.6	0.000	0.728	0.195	0.330	0.330	67.9%
1949	D	13,209	5,193	3,960	65%	0.28	61.7	0.137	0.742	0.358	0.468	0.539	46.1%
1950	B	19,276	6,353	6,259	59%	0.26	61.3	0.120	0.788	0.346	0.460	0.525	47.6%
1951	A	14,772	6,487	4,575	63%	0.27	59.9	0.061	0.766	0.301	0.428	0.463	53.7%
1952	W	66,852	8,873	20,238	23%	0.23	55.5	0.000	0.791	0.180	0.305	0.305	69.5%
1953	W	16,184	5,746	5,103	62%	0.27	58.8	0.015	0.714	0.266	0.386	0.395	60.5%
1954	A	39,863	7,462	13,958	24%	0.24	58.4	0.000	0.782	0.253	0.378	0.378	62.2%
1955	D	9,478	3,781	2,595	71%	0.30	58.4	0.000	0.586	0.189	0.309	0.309	68.1%
1956	W	20,436	8,083	6,693	59%	0.26	59.7	0.053	0.832	0.294	0.433	0.453	53.7%
1957	A	21,192	8,554	6,976	58%	0.26	60.5	0.086	0.780	0.320	0.438	0.486	51.4%
1958	W	52,282	9,764	18,603	23%	0.23	57.4	0.000	0.864	0.221	0.369	0.369	63.1%
1959	B	10,487	3,899	2,972	69%	0.30	63	0.191	0.710	0.400	0.492	0.589	41.1%
1960	D	13,545	4,134	4,116	64%	0.28	59.5	0.044	0.657	0.286	0.391	0.418	58.2%
1961	D	12,789	3,647	3,833	65%	0.28	60.1	0.069	0.647	0.307	0.403	0.446	56.8%
1962	D	15,411	5,897	4,814	62%	0.27	61.8	0.141	0.786	0.362	0.471	0.546	46.4%
1963	D	20,457	8,201	25,027	23%	0.23	53.7	0.000	0.728	0.103	0.245	0.245	78.8%
1964	D	8,957	3,613	2,400	72%	0.31	59.3	0.036	0.631	0.282	0.389	0.411	58.9%
1965	D	45,173	8,636	15,945	23%	0.23	56.9	0.000	0.808	0.205	0.345	0.345	65.8%
1966	D	12,805	5,075	3,839	65%	0.26	61.9	0.146	0.741	0.365	0.471	0.548	44.2%
1967	W	39,930	9,646	13,984	24%	0.24	53.8	0.000	0.794	0.106	0.269	0.269	73.1%
1968	B	15,829	5,361	4,895	62%	0.27	61.5	0.128	0.748	0.352	0.459	0.528	47.2%
1969	W	44,787	7,613	15,800	23%	0.23	56.4	0.000	0.752	0.189	0.321	0.321	67.9%
1970	W	16,604	6,705	5,260	61%	0.27	58.8	0.015	0.758	0.266	0.397	0.408	59.4%
1971	W	21,948	6,705	7,259	58%	0.26	58.7	0.011	0.754	0.262	0.388	0.394	60.6%
1972	B	12,453	4,806	3,707	66%	0.28	58.5	0.002	0.668	0.256	0.373	0.374	62.6%
1973	A	19,511	7,546	6,347	59%	0.26	61.3	0.120	0.837	0.346	0.473	0.537	46.3%
1974	W	33,206	9,428	11,470	24%	0.24	56.8	0.000	0.838	0.202	0.355	0.355	64.8%
1975	W	25,763	8,873	8,685	25%	0.25	56.8	0.000	0.814	0.202	0.354	0.354	64.6%
1976	C	9,428	3,176	2,576	71%	0.30	58.9	0.019	0.806	0.269	0.371	0.383	61.7%
1977	C	9,142	3,159	2,489	71%	0.31	84.3	0.248	0.701	0.441	0.521	0.639	36.1%
1978	A	38,703	7,613	13,525	24%	0.24	56.9	0.000	0.761	0.205	0.337	0.337	66.3%
1979	B	17,696	6,958	5,868	60%	0.26	59.8	0.057	0.785	0.298	0.427	0.459	54.1%
1980	A	19,814	7,058	6,460	59%	0.26	57.1	0.000	0.741	0.211	0.349	0.349	68.1%
1981	D	16,990	5,563	5,404	61%	0.27	61.5	0.128	0.758	0.352	0.459	0.529	47.1%
1982	W	75,843	9,277	27,415	23%	0.23	54.1	0.000	0.783	0.115	0.266	0.266	73.4%
1983	W	68,298	7,075	24,593	23%	0.23	55	0.000	0.704	0.144	0.271	0.271	72.9%
1984	W	17,864	6,958	5,731	60%	0.26	59.7	0.053	0.783	0.294	0.423	0.454	54.6%
1985	D	13,327	4,353	4,034	65%	0.28	60.8	0.099	0.690	0.330	0.430	0.467	51.3%
1986	W	20,772	7,863	6,819	59%	0.26	60.4	0.082	0.828	0.317	0.448	0.493	50.7%
1987	D	12,369	3,613	3,676	66%	0.28	65.7	0.305	0.746	0.486	0.560	0.694	30.6%
1988	C	8,621	2,958	2,274	73%	0.31	59.9	0.061	0.613	0.301	0.396	0.435	56.5%
1989	D	23,629	5,764	7,867	57%	0.25	61.4	0.124	0.782	0.349	0.453	0.521	47.9%
1990	C	12,436	3,697	3,701	66%	0.28	61.6	0.133	0.676	0.355	0.446	0.520	48.0%
1991	C	15,276	4,420	4,763	62%	0.27	60.8	0.099	0.693	0.330	0.428	0.485	51.5%
1992	C	12,470	3,869	3,714	66%	0.28	61.2	0.116	0.677	0.342	0.437	0.503	49.7%

Year	MAY Sac River Flows	CVP + SWP Exports	Calculated Steamboat & Sutter Slough Q	Percent	X-channel Closed	USBR observed temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	46,530	8,896	16,452	0.23	0.23	61.2	0.116	0.694	0.342	0.471	0.532	46.8%
1923	14,214	6,457	4,366	0.64	0.33	62.4	0.166	0.810	0.381	0.524	0.603	39.7%
1924	8,359	1,073	2,176	0.73	0.36	69.2	0.452	0.686	0.586	0.636	0.801	19.9%
1925	12,067	5,253	3,563	0.66	0.35	63.2	0.200	0.772	0.408	0.533	0.626	37.4%
1926	13,598	5,090	4,135	0.64	0.34	65.7	0.305	0.810	0.486	0.595	0.719	28.1%
1927	26,786	8,536	9,068	0.25	0.25	62.6	0.175	0.904	0.387	0.515	0.600	40.0%
1928	20,655	6,587	6,775	0.59	0.31	66.6	0.343	0.891	0.515	0.632	0.758	24.2%
1929	9,839	3,334	2,730	0.70	0.36	66.1	0.322	0.741	0.498	0.587	0.720	28.0%
1930	12,036	3,757	3,551	0.66	0.35	63.1	0.196	0.705	0.403	0.508	0.604	39.6%
1931	10,083	3,432	2,821	0.69	0.36	70.5	0.507	0.824	0.640	0.706	0.865	14.5%
1932	12,019	5,074	3,545	0.66	0.35	65.5	0.297	0.806	0.480	0.583	0.714	28.6%
1933	7,969	3,171	2,030	0.75	0.39	63.7	0.221	0.691	0.422	0.526	0.631	36.9%
1934	8,860	3,253	2,371	0.72	0.37	68.3	0.414	0.777	0.568	0.647	0.793	20.7%
1935	28,864	5,936	9,853	0.25	0.25	64	0.234	0.818	0.432	0.526	0.637	36.3%
1936	14,100	6,522	4,324	0.64	0.33	64.9	0.271	0.858	0.461	0.583	0.704	29.6%
1937	16,198	6,961	5,106	0.62	0.32	64.5	0.255	0.869	0.448	0.585	0.690	31.0%
1938	57,426	9,660	20,527	0.23	0.23	62.5	0.170	0.951	0.384	0.514	0.597	40.3%
1939	8,571	3,692	2,256	0.73	0.38	68	0.402	0.790	0.560	0.647	0.789	21.1%
1940	18,264	6,473	5,881	0.60	0.32	65.6	0.301	0.868	0.483	0.605	0.724	27.6%
1941	39,468	9,937	13,818	0.24	0.24	61.8	0.133	0.946	0.356	0.495	0.562	43.8%
1942	36,040	8,898	12,529	0.24	0.24	60.1	0.089	0.874	0.307	0.443	0.482	51.8%
1943	21,077	8,555	6,933	0.58	0.31	65.4	0.292	0.955	0.477	0.624	0.734	26.6%
1944	8,912	3,952	2,383	0.72	0.37	65.9	0.313	0.764	0.483	0.594	0.721	27.9%
1945	13,222	5,448	3,995	0.65	0.34	63.1	0.196	0.779	0.403	0.530	0.622	37.8%
1946	13,694	5,481	4,171	0.64	0.34	63.9	0.229	0.794	0.429	0.552	0.654	34.6%
1947	8,864	3,692	2,365	0.72	0.37	68.7	0.431	0.803	0.582	0.665	0.809	19.1%
1948	28,835	7,888	9,834	0.25	0.25	62.3	0.162	0.870	0.378	0.498	0.580	42.0%
1949	14,914	4,960	4,628	0.63	0.33	65.2	0.284	0.795	0.470	0.577	0.697	30.3%
1950	13,824	5,481	4,220	0.64	0.34	64.3	0.246	0.802	0.441	0.562	0.670	33.0%
1951	18,833	7,335	6,084	0.60	0.32	64.4	0.250	0.864	0.446	0.583	0.686	31.2%
1952	59,557	9,921	21,324	0.23	0.23	61.7	0.137	0.948	0.354	0.493	0.563	43.7%
1953	26,867	7,888	9,086	0.25	0.25	60.9	0.103	0.845	0.333	0.480	0.515	48.5%
1954	25,403	7,644	8,551	0.25	0.25	65.9	0.313	0.924	0.493	0.600	0.728	27.4%
1955	11,271	4,180	3,285	0.67	0.35	66.9	0.356	0.792	0.525	0.619	0.754	24.6%
1956	38,000	8,961	13,636	0.24	0.24	61.4	0.124	0.901	0.348	0.480	0.544	46.6%
1957	16,816	6,164	5,339	0.61	0.32	64	0.234	0.826	0.432	0.559	0.652	33.8%
1958	43,468	10,867	15,315	0.23	0.23	62.9	0.187	1.011	0.367	0.541	0.627	37.3%
1959	9,417	3,867	2,572	0.71	0.37	65.9	0.313	0.761	0.493	0.592	0.720	28.0%
1960	10,913	3,562	3,131	0.68	0.35	65.9	0.313	0.747	0.493	0.583	0.714	28.6%
1961	9,238	3,204	2,505	0.71	0.37	64.3	0.246	0.703	0.441	0.538	0.652	34.8%
1962	14,735	5,548	4,561	0.63	0.33	64.8	0.267	0.813	0.457	0.575	0.689	31.1%
1963	26,095	8,538	9,932	0.25	0.25	62.5	0.170	0.902	0.384	0.511	0.594	40.6%
1964	10,295	3,952	2,900	0.69	0.36	65.2	0.284	0.751	0.470	0.571	0.693	30.7%
1965	24,460	7,953	8,198	0.57	0.30	63.6	0.217	0.886	0.419	0.583	0.658	34.2%
1966	14,830	4,993	4,634	0.63	0.33	67.3	0.372	0.834	0.537	0.635	0.771	22.9%
1967	44,790	10,262	15,801	0.23	0.23	62.1	0.154	0.970	0.371	0.511	0.586	41.4%
1968	9,364	3,854	2,560	0.71	0.37	66.1	0.322	0.763	0.499	0.597	0.726	27.4%
1969	45,538	9,221	16,081	0.23	0.23	63.2	0.200	0.944	0.408	0.532	0.626	37.4%
1970	12,149	6,131	3,594	0.66	0.35	66.6	0.427	0.907	0.579	0.692	0.824	17.6%
1971	29,404	7,888	10,047	0.24	0.24	61	0.107	0.847	0.336	0.461	0.519	48.1%
1972	10,799	4,098	3,089	0.68	0.36	67.3	0.372	0.796	0.537	0.629	0.767	23.3%
1973	15,743	6,717	4,938	0.62	0.33	66.9	0.356	0.902	0.528	0.648	0.773	22.7%
1974	26,949	8,696	9,129	0.25	0.25	63.4	0.208	0.934	0.413	0.542	0.637	36.3%
1975	28,542	8,896	9,725	0.25	0.25	63.8	0.225	0.941	0.426	0.552	0.653	34.7%
1976	10,067	3,367	2,815	0.69	0.36	69.6	0.469	0.805	0.611	0.681	0.831	16.9%
1977	6,993	960	1,865	0.78	0.40	64	0.234	0.600	0.432	0.499	0.616	38.4%
1978	21,061	8,408	6,927	0.58	0.31	63	0.191	0.905	0.400	0.556	0.641	34.9%
1979	12,572	6,213	3,752	0.65	0.34	63.8	0.225	0.824	0.426	0.562	0.661	33.9%
1980	14,783	7,693	4,579	0.63	0.33	63.6	0.217	0.885	0.419	0.573	0.666	33.4%
1981	8,750	3,724	2,322	0.72	0.38	66.7	0.347	0.766	0.518	0.612	0.747	25.3%
1982	38,431	10,913	13,423	0.24	0.24	61.1	0.112	0.980	0.339	0.491	0.546	46.2%
1983	54,515	7,758	19,439	0.23	0.23	60.1	0.069	0.825	0.307	0.426	0.466	53.4%
1984	13,417	6,359	4,068	0.64	0.34	66.5	0.339	0.879	0.512	0.636	0.759	24.1%
1985	13,141	4,456	3,985	0.65	0.34	65.6	0.309	0.784	0.489	0.589	0.716	28.4%
1986	13,125	6,343	3,959	0.65	0.34	66.2	0.326	0.960	0.502	0.658	0.769	23.1%
1987	8,457	3,041	2,213	0.73	0.38	70.5	0.507	0.807	0.640	0.703	0.854	14.6%
1988	9,758	3,269	2,700	0.70	0.37	65.8	0.309	0.733	0.489	0.578	0.709	29.1%
1989	14,329	4,147	4,409	0.63	0.33	64.7	0.263	0.751	0.454	0.553	0.671	32.9%
1990	7,676	2,976	1,921	0.75	0.39	66.4	0.335	0.731	0.509	0.595	0.731	26.9%
1991	8,685	3,171	2,296	0.73	0.38	65.7	0.305	0.727	0.486	0.577	0.706	29.4%
1992	8,977	3,236	2,406	0.72	0.37	66	0.318	0.735	0.496	0.585	0.717	28.3%

Year	JUNE Sac River Flow	CVP + SWP exports	Caculated Steamboat & Sutter Slough Q	percent	X-channel closed	USBR observed temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	34,720	11,545	12,035	24%	0.24	65.9	0.313	1.000	0.493	0.614	0.735	26.5%	46.3%
1923	18,150	7,899	5,838	60%	0.51	65.3	0.288	0.925	0.473	0.704	0.789	21.1%	40.9%
1924	10,218	1,227	2,871	69%	0.59	70.6	0.511	0.730	0.643	0.904	0.850	15.0%	23.3%
1925	18,251	6,586	5,128	62%	0.52	68.3	0.414	0.922	0.569	0.753	0.856	14.4%	36.8%
1926	15,226	6,338	4,744	63%	0.53	71.2	0.538	0.983	0.862	0.821	0.917	8.3%	27.8%
1927	18,889	8,621	6,115	60%	0.51	68.1	0.406	1.000	0.563	0.784	0.872	12.8%	39.6%
1928	13,764	5,998	4,198	64%	0.54	69.7	0.473	0.920	0.614	0.780	0.884	11.6%	28.1%
1929	10,981	3,361	3,161	68%	0.57	70.1	0.490	0.814	0.627	0.734	0.864	13.6%	32.6%
1930	18,116	7,226	5,826	60%	0.51	69.8	0.469	0.973	0.611	0.795	0.891	10.9%	37.8%
1931	12,722	3,781	3,808	65%	0.55	70.7	0.515	0.843	0.646	0.756	0.881	11.9%	18.8%
1932	19,293	7,899	6,265	59%	0.50	69.5	0.465	1.000	0.608	0.805	0.896	10.4%	30.6%
1933	11,108	2,454	3,205	68%	0.57	69.8	0.478	0.789	0.617	0.704	0.845	15.5%	36.1%
1934	14,520	5,598	4,480	63%	0.54	70.7	0.515	0.922	0.646	0.794	0.900	10.0%	21.9%
1935	17,681	8,100	5,738	60%	0.51	71	0.528	1.000	0.656	0.832	0.921	7.9%	34.8%
1936	19,058	8,235	6,178	60%	0.51	69.2	0.452	1.000	0.596	0.801	0.891	10.9%	30.3%
1937	18,150	7,932	5,838	60%	0.51	69.7	0.473	1.000	0.614	0.811	0.900	10.0%	31.9%
1938	35,510	11,545	12,331	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	41.4%
1939	18,587	7,863	6,002	60%	0.51	71	0.528	1.000	0.656	0.831	0.920	8.0%	21.9%
1940	15,343	7,445	4,788	62%	0.53	71.5	0.549	1.000	0.672	0.845	0.930	7.0%	30.1%
1941	20,805	11,178	6,831	59%	0.50	69	0.444	1.000	0.582	0.795	0.886	11.4%	41.8%
1942	27,124	11,545	9,194	25%	0.25	67.8	0.393	1.000	0.563	0.664	0.796	20.4%	48.8%
1943	16,856	8,018	5,354	61%	0.52	66.6	0.343	0.953	0.515	0.742	0.830	17.0%	30.1%
1944	18,217	7,613	5,863	60%	0.51	67.8	0.393	0.957	0.553	0.759	0.854	14.6%	31.4%
1945	16,671	7,462	5,285	61%	0.52	70.6	0.511	1.000	0.643	0.828	0.916	8.4%	34.5%
1946	16,285	7,243	5,140	62%	0.52	68.1	0.406	0.946	0.563	0.783	0.859	14.1%	33.4%
1947	18,822	7,529	6,060	60%	0.51	70	0.486	0.993	0.624	0.811	0.903	9.7%	21.4%
1948	23,259	9,394	7,749	57%	0.49	69	0.444	1.000	0.582	0.791	0.884	11.6%	40.8%
1949	17,091	7,075	5,442	61%	0.52	70.9	0.524	0.989	0.652	0.826	0.917	8.3%	29.8%
1950	20,284	8,403	6,636	59%	0.50	68.9	0.440	1.000	0.588	0.794	0.885	11.5%	31.5%
1951	17,646	7,897	5,650	61%	0.51	70.3	0.499	1.000	0.633	0.821	0.910	8.9%	31.9%
1952	38,972	11,545	13,626	24%	0.24	65	0.276	1.000	0.464	0.591	0.704	28.6%	46.6%
1953	25,881	10,855	8,729	25%	0.25	66.2	0.326	1.000	0.502	0.626	0.748	26.2%	46.3%
1954	14,234	6,302	4,374	63%	0.54	68.7	0.431	0.916	0.582	0.762	0.865	13.5%	30.8%
1955	18,100	7,344	5,819	60%	0.51	70.1	0.490	0.987	0.627	0.811	0.903	9.7%	29.5%
1956	22,301	11,545	7,391	58%	0.49	68.7	0.431	1.000	0.582	0.787	0.879	12.1%	40.9%
1957	19,108	8,235	8,196	60%	0.51	72	0.570	1.000	0.688	0.845	0.934	6.6%	31.9%
1958	33,930	11,545	11,740	24%	0.24	67.7	0.389	1.000	0.550	0.658	0.791	20.9%	38.7%
1959	17,915	7,462	5,750	60%	0.51	72.1	0.574	1.000	0.691	0.849	0.936	6.4%	26.4%
1960	18,217	7,327	5,863	60%	0.51	72.7	0.600	1.000	0.710	0.858	0.943	5.7%	29.6%
1961	19,797	7,831	6,454	59%	0.50	73.2	0.621	1.000	0.726	0.863	0.948	5.2%	33.9%
1962	17,158	7,092	5,467	61%	0.52	70.4	0.503	0.981	0.636	0.814	0.906	9.2%	29.6%
1963	19,562	8,890	6,386	59%	0.50	69	0.444	1.000	0.582	0.797	0.887	11.3%	41.2%
1964	18,016	7,277	5,788	60%	0.51	69.5	0.465	0.973	0.608	0.794	0.890	11.0%	31.9%
1965	18,167	8,586	5,844	60%	0.51	67.1	0.364	0.987	0.531	0.764	0.850	15.0%	38.1%
1966	15,562	6,521	4,870	62%	0.53	70.4	0.503	0.956	0.636	0.805	0.903	9.7%	34.3%
1967	39,342	11,545	13,764	24%	0.24	66.5	0.339	1.000	0.512	0.627	0.754	24.6%	43.8%
1968	17,394	7,294	5,555	61%	0.51	72	0.570	1.000	0.688	0.848	0.935	6.5%	27.9%
1969	24,133	11,512	8,078	57%	0.48	68.3	0.414	1.000	0.569	0.778	0.870	13.0%	38.2%
1970	15,512	7,075	4,851	62%	0.53	70.7	0.515	0.986	0.646	0.825	0.915	8.5%	23.1%
1971	23,629	9,915	7,867	57%	0.49	68.1	0.406	1.000	0.563	0.775	0.867	13.3%	44.8%
1972	17,125	7,075	5,455	61%	0.52	70.7	0.515	0.986	0.646	0.821	0.913	8.7%	27.3%
1973	19,427	8,319	6,316	59%	0.50	70.1	0.490	1.000	0.627	0.815

Study 469 Sacramento River Late Fall Run Smolt Survival Model

Modified m2 by changing the slope to 0.000054

Cross Channel closed for 45 consecutive days, Dec 18-Jan 31

Cross Channel Closed when Sacramento River flow exceeds 25,000 cfs

November Sacramento River Temp 53 degrees F

December Sacramento River Temp 47 degrees F

January Sacramento River Temp 47 degrees F

NOVEMBER Year	Water Year Type	Sac River Flow	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	A	11,814	8,780	3,469	67%	0.29		0.835	0.080	0.583	0.583	41.7%
1923	B	18,133	11,159	5,832	60%	0.26		0.983	0.080	0.812	0.812	38.8%
1924	C	11,243	7,747	3,255	67%	0.29		0.779	0.080	0.551	0.551	44.9%
1925	D	7,025	4,708	1,677	78%	0.33		0.615	0.080	0.495	0.495	50.5%
1926	D	10,924	7,579	3,135	68%	0.29		0.770	0.080	0.549	0.549	45.1%
1927	W	20,284	11,092	6,836	59%	0.26		0.960	0.080	0.598	0.598	40.2%
1928	A	22,940	11,142	7,629	58%	0.25		0.982	0.080	0.588	0.588	41.2%
1929	C	12,858	9,915	3,858	65%	0.28		0.898	0.080	0.611	0.611	38.9%
1930	D	7,159	4,235	1,726	77%	0.33		0.589	0.080	0.473	0.473	52.7%
1931	C	9,781	6,084	2,708	70%	0.30		0.889	0.080	0.507	0.507	49.3%
1932	D	8,050	3,042	2,061	74%	0.32		0.525	0.080	0.411	0.411	58.9%
1933	C	9,512	5,848	2,607	71%	0.30		0.877	0.080	0.501	0.501	49.9%
1934	C	8,554	3,280	2,249	73%	0.31		0.537	0.080	0.413	0.413	58.7%
1935	B	9,209	7,008	2,484	71%	0.31		0.739	0.080	0.550	0.550	45.0%
1936	B	11,361	7,869	3,299	67%	0.29		0.787	0.080	0.555	0.555	44.5%
1937	B	11,663	8,134	3,412	67%	0.29		0.800	0.080	0.561	0.561	43.9%
1938	W	23,696	11,142	7,912	57%	0.25		0.982	0.080	0.585	0.585	41.5%
1939	D	19,444	9,764	6,322	59%	0.26		0.898	0.080	0.580	0.580	44.0%
1940	A	8,436	4,722	2,205	73%	0.31		0.616	0.080	0.472	0.472	52.8%
1941	W	13,764	10,554	4,198	64%	0.28		0.931	0.080	0.625	0.625	37.5%
1942	W	18,184	10,655	5,851	60%	0.26		0.936	0.080	0.595	0.595	40.5%
1943	W	21,914	11,008	7,246	58%	0.26		0.955	0.080	0.588	0.588	41.2%
1944	D	14,907	11,142	4,625	63%	0.27		0.982	0.080	0.634	0.634	36.6%
1945	B	13,764	11,058	4,198	64%	0.28		0.958	0.080	0.642	0.642	35.8%
1946	B	20,637	11,142	6,768	59%	0.26		0.982	0.080	0.598	0.598	40.2%
1947	D	13,781	11,075	4,204	64%	0.28		0.959	0.080	0.642	0.642	35.8%
1948	B	10,453	6,840	2,959	69%	0.30		0.730	0.080	0.527	0.527	47.3%
1949	D	14,453	10,688	4,455	63%	0.28		0.938	0.080	0.623	0.623	37.7%
1950	B	11,428	7,865	3,324	67%	0.29		0.785	0.080	0.553	0.553	44.7%
1951	A	41,879	11,125	14,713	24%	0.24		0.961	0.080	0.288	0.288	71.2%
1952	W	16,772	11,125	5,323	61%	0.27		0.961	0.080	0.619	0.619	38.1%
1953	W	18,537	8,571	5,235	61%	0.27		0.824	0.080	0.536	0.536	46.4%
1954	A	20,923	11,142	6,875	59%	0.26		0.982	0.080	0.596	0.596	40.4%
1955	D	20,858	11,125	6,850	59%	0.26		0.961	0.080	0.598	0.598	40.4%
1956	W	12,184	8,655	3,607	66%	0.29		0.826	0.080	0.574	0.574	42.6%
1957	A	15,478	11,159	4,839	62%	0.27		0.963	0.080	0.630	0.630	37.0%
1958	W	19,259	11,125	6,253	59%	0.26		0.961	0.080	0.604	0.604	39.6%
1959	B	16,133	8,672	5,084	62%	0.27		0.829	0.080	0.542	0.542	45.8%
1960	D	11,411	7,529	3,318	67%	0.29		0.787	0.080	0.541	0.541	45.9%
1961	D	14,251	10,672	4,380	63%	0.28		0.937	0.080	0.624	0.624	37.6%
1962	B	9,831	6,252	2,727	70%	0.30		0.698	0.080	0.513	0.513	48.7%
1963	W	21,242	11,125	6,995	58%	0.26		0.961	0.080	0.564	0.564	40.6%
1964	D	28,653	11,125	9,788	25%	0.25		0.961	0.080	0.297	0.297	70.3%
1965	W	13,646	10,503	4,154	64%	0.28		0.928	0.080	0.624	0.624	37.6%
1966	B	28,250	11,142	8,868	25%	0.25		0.982	0.080	0.300	0.300	70.0%
1967	W	16,066	11,125	5,059	62%	0.27		0.961	0.080	0.624	0.624	37.6%
1968	B	16,234	8,537	5,122	62%	0.27		0.822	0.080	0.537	0.537	46.3%
1969	W	14,318	10,808	4,405	63%	0.28		0.944	0.080	0.628	0.628	37.2%
1970	W	17,646	8,571	5,650	61%	0.26		0.824	0.080	0.530	0.530	47.0%
1971	W	23,545	11,142	7,856	57%	0.25		0.982	0.080	0.586	0.586	41.4%
1972	B	15,343	11,125	4,788	62%	0.27		0.961	0.080	0.630	0.630	37.0%
1973	A	23,528	11,125	7,849	57%	0.25		0.961	0.080	0.585	0.585	41.5%
1974	W	54,289	11,125	19,358	23%	0.23		0.961	0.080	0.283	0.283	71.7%
1975	W	17,579	8,898	5,624	61%	0.26		0.895	0.080	0.574	0.574	42.6%
1976	C	19,226	11,142	6,240	59%	0.26		0.962	0.080	0.605	0.605	39.5%
1977	C	8,302	6,201	2,155	74%	0.31		0.698	0.080	0.533	0.533	46.7%
1978	A	6,924	4,353	1,640	78%	0.33		0.598	0.080	0.482	0.482	51.8%
1979	B	14,386	11,058	4,430	63%	0.28		0.958	0.080	0.636	0.636	36.4%
1980	A	18,940	11,125	5,386	61%	0.27		0.961	0.080	0.618	0.618	38.2%
1981	D	13,024	10,050	3,921	65%	0.28		0.903	0.080	0.614	0.614	38.6%
1982	W	33,258	11,125	11,489	24%	0.24		0.961	0.080	0.293	0.293	70.7%
1983	W	39,107	11,159	13,676	24%	0.24		0.983	0.080	0.290	0.290	71.0%
1984	W	62,802	7,142	22,538	23%	0.23		0.746	0.080	0.232	0.232	76.8%
1985	D	33,998	11,142	11,766	24%	0.24		0.982	0.080	0.293	0.293	70.7%
1986	W	9,548	6,840	2,620	71%	0.30		0.730	0.080	0.539	0.539	46.1%
1987	D	11,209	7,932	3,242	67%	0.29		0.789	0.080	0.558	0.558	44.2%
1988	C	8,453	5,008	2,211	73%	0.31		0.831	0.080	0.483	0.483	51.7%
1989	D	8,588	5,916	2,262	73%	0.31		0.880	0.080	0.517	0.517	48.3%
1990	C	11,764	7,983	3,450	67%	0.29		0.792	0.080	0.554	0.554	44.6%
1991	C	8,134	5,058	2,092	74%	0.32		0.634	0.080	0.490	0.490	51.0%
1992	C	7,546	4,756	1,872	76%	0.32		0.618	0.080	0.488	0.488	51.2%

DECEMBER Year	Sac River Flows	SWP+CVP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123
1922	17,142	11,449	5,461	81%	0.45		0.871		0.396	0.396	60.4%
1923	34,544	8,847	11,989	24%	0.24		0.731		0.178	0.178	82.4%
1924	13,873	10,490	4,238	84%	0.48		0.819		0.390	0.390	61.0%
1925	11,254	9,221	3,259	67%	0.50		0.751		0.377	0.377	62.3%
1926	11,547	8,164	3,369	67%	0.50		0.694		0.346	0.346	65.4%
1927	14,296	11,336	4,397	63%	0.47		0.865		0.409	0.409	59.1%
1928	16,572	10,311	5,248	61%	0.46		0.810		0.371	0.371	62.9%
1929	13,710	10,522	4,178	84%	0.48		0.821		0.392	0.392	60.8%
1930	14,442	10,669	4,451	63%	0.47		0.829		0.391	0.391	60.9%
1931	9,336	5,302	2,541	71%	0.53		0.539		0.285	0.285	71.5%
1932	14,653	11,563	4,530	63%	0.47		0.877		0.413	0.413	58.7%
1933	8,181	4,700	2,110	74%	0.55		0.507		0.278	0.278	72.2%
1934	12,474	9,888	3,715	86%	0.49		0.787		0.384	0.384	61.6%
1935	8,506	6,782	2,231	73%	0.54		0.619		0.336	0.336	66.4%
1936	10,880	7,628	3,119	68%	0.51		0.665		0.336	0.336	66.4%
1937	12,702	10,083	3,800	85%	0.49		0.787		0.388	0.388	61.2%
1938	48,010	11,872	17,008	23%	0.23		0.894		0.208	0.208	79.2%
1939	18,887	8,083	6,039	60%	0.45		0.689		0.308	0.308	69.2%
1940	7,839	4,281	1,982	75%	0.56		0.483		0.268	0.268	73.2%
1941	35,975	11,677	12,505	24%	0.24		0.863		0.211	0.211	78.9%
1942	65,623	7,953	23,593	23%	0.23		0.682		0.155	0.155	84.5%
1943	28,803	8,115	9,822	25%	0.25		0.691		0.170	0.170	83.0%
1944	13,775	10,766	4,202	64%	0.48		0.834		0.398	0.398	60.2%
1945	15,824	11,303	4,968	62%	0.46		0.863		0.389	0.389	60.1%
1946	54,840	11,937	19,580	23%	0.23		0.898		0.207	0.207	79.3%
1947	18,134	11,462	5,832	60%	0.45		0.873		0.392	0.392	60.8%
1948	9,400	5,530	2,568	71%	0.53		0.551		0.290	0.290	71.0%
1949	15,564	11,238	4,871	62%	0.46		0.860		0.389	0.389	60.1%
1950	11,449	7,790	3,332	67%	0.50		0.674		0.336	0.336	66.4%
1951	68,095	11,937	24,518	23%	0.23		0.898		0.204	0.204	79.6%
1952	46,741	11,449	16,531	23%	0.23		0.871		0.203	0.203	79.7%
1953	42,334	8,083	14,883	24%	0.24		0.689		0.162	0.162	83.8%
1954	14,914	8,246	4,628	63%	0.47		0.698		0.327	0.327	67.3%
1955	26,022	11,254	8,782	25%	0.25		0.861		0.214	0.214	78.6%
1956	25,322	11,937	8,520	25%	0.25		0.898		0.224	0.224	77.6%
1957	14,149	10,148	4,342	64%	0.47		0.801		0.380	0.380	62.0%
1958	23,745	11,271	7,930	57%	0.43		0.862		0.369	0.369	63.1%
1959	14,621	8,197	4,518	63%	0.47		0.696		0.327	0.327	67.3%
1960	11,075	7,140	3,182	68%	0.50		0.638		0.322	0.322	67.8%
1961	18,329	11,238	5,905	60%	0.45		0.860		0.388	0.388	61.4%
1962	16,703	11,222	5,297	61%	0.46		0.859		0.393	0.393	60.7%
1963	27,550	11,238	9,354	25%	0.25		0.860		0.212	0.212	78.8%
1964	14,849	10,392	4,603	63%	0.47		0.814		0.382	0.382	61.8%
1965	28,022	11,677	9,530	25%	0.25		0.883		0.218	0.218	78.2%
1966	16,995	10,230	5,408	61%	0.46		0.805		0.367	0.367	63.3%
1967	39,748	11,466	13,916	24%	0.24		0.872		0.208	0.208	79.4%
1968	16,686	8,083	5,291	61%	0.46		0.689		0.315	0.315	68.5%
1969	24,981	11,319	8,393	57%	0.42		0.864		0.367	0.367	63.3%
1970	50,156	7,823	17,809	23%	0.23		0.675		0.157	0.157	84.3%
1971	54,141	11,384	19,299	23%	0.23		0.868		0.200	0.200	80.0%
1972	20,004	10,539	6,532	59%	0.44		0.822		0.363	0.363	63.7%
1973	26,200	11,238	8,849	25%	0.25		0.860		0.214	0.214	78.6%
1974	81,560	11,482	22,085	23%	0.23		0.873		0.199	0.199	80.1%
1975	17,613	8,587	5,637	61%	0.45		0.717		0.324	0.324	67.6%
1976	16,768	8,994	5,321	61%	0.46		0.739		0.337	0.337	66.3%
1977	8,132	4,895	2,091	74%	0.55		0.517		0.264	0.264	71.6%
1978	12,279	9,839	3,842	66%	0.49		0.784		0.385	0.385	61.5%
1979	12,751	8,034	3,819	65%	0.49		0.667		0.334	0.334	66.6%
1980	20,833	11,336	6,842	59%	0.44		0.865		0.379	0.379	62.1%
1981	15,613	8,457	4,889	62%	0.46		0.710		0.329	0.329	67.1%
1982	68,569	11,352	24,706	23%	0.23		0.886		0.196	0.196	80.4%
1983	55,410	8,766	19,773	23%	0.23		0.726		0.167	0.167	83.3%
1984	82,944	6,245	30,071	22%	0.22		0.590		0.132	0.132	86.8%
1985	23,875	10,982	7,979	57%	0.43		0.845		0.361	0.361	63.9%
1986	15,727	11,287	4,932	62%	0.46		0.862		0.389	0.389	60.1%
1987	13,791	10,441	4,206	64%	0.48		0.817		0.360	0.360	61.0%
1988	15,841	11,222	4,974	62%	0.46		0.859		0.397	0.397	60.3%
1989	8,847	5,887	2,350	72%	0.54		0.571		0.308	0.308	69.4%
1990	14,837	10,539	4,524	63%	0.47		0.822		0.387	0.387	61.3%
1991	8,782	5,000	2,335	72%	0.54		0.523		0.281	0.281	71.9%
1992	7,465	4,749	1,842	76%	0.56		0.509		0.287	0.287	71.3%

JANUARY Year	Sac River Flows	CVP+SWP exports	Calculated Steamboat & Sutter Slough Q	percent	xchannel closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survival s123	Weighted Total Survival
1922	17,499	11,905	5,585	61%	0.27		0.896		0.238	0.238	76.2%	68.7%
1923	32,283	7,989	11,124	24%	0.24		0.683		0.185	0.185	83.5%	71.8%
1924	14,621	10,978	4,518	63%	0.27		0.646		0.232	0.232	76.8%	60.9%
1925	10,213	6,847	2,870	69%	0.30		0.623		0.185	0.185	81.5%	64.2%
1926	19,776	11,417	6,446	56%	0.26		0.869		0.226	0.226	77.4%	63.4%
1927	29,551	11,598	10,102	24%	0.24		0.879		0.215	0.215	78.5%	59.2%
1928	26,087	7,989	8,808	25%	0.25		0.683		0.170	0.170	83.0%	62.5%
1929	15,515	11,417	4,853	62%	0.27		0.869		0.236	0.236	76.4%	59.2%
1930	20,788	11,433	6,817	59%	0.26		0.870		0.224	0.224	77.6%	63.0%
1931	11,970	9,221	3,527	66%	0.29		0.751		0.215	0.215	78.5%	67.7%
1932	17,256	12,165	5,504	61%	0.27		0.910		0.242	0.242	75.8%	63.1%
1933	12,100	9,758	3,575	66%	0.29		0.780		0.223	0.223	77.7%	68.0%
1934	16,101	11,433	5,072	62%	0.27		0.870		0.234	0.234	76.6%	64.6%
1935	25,469	12,002	8,575	25%	0.25		0.901		0.225	0.225	77.5%	63.8%
1936	32,446	11,775	11,185	24%	0.24		0.889		0.215	0.215	78.5%	63.9%
1937	16,215	11,905	5,114	62%	0.27		0.896		0.241	0.241	75.9%	60.6%
1938	31,437	8,262	10,808	24%	0.24		0.699		0.170	0.170	83.0%	70.7%
1939	18,410	7,563	5,935	60%	0.26		0.661		0.174	0.174	82.6%	66.3%
1940	23,452	12,344	7,821	57%	0.25		0.919		0.232	0.232	76.8%	69.0%
1941	72,307	12,474	26,093	23%	0.23		0.926		0.209	0.209	79.1%	68.8%
1942	63,265	7,563	22,711	23%	0.23		0.661		0.151	0.151	84.9%	73.6%
1943	58,090	7,626	20,765	23%	0.23		0.665		0.152	0.152	84.8%	73.0%
1944	17,678	7,595	5,662	60%	0.26		0.663		0.175	0.175	82.5%	59.9%
1945	12,555	9,384	3,746	65%	0.28		0.760		0.215	0.215	78.5%	58.6%
1946	43,228	7,989	15,217	23%	0.23		0.683		0.160	0.160	84.0%	70.7%
1947	15,223	11,010	4,743	63%	0.27		0.847		0.231	0.231	76.9%	58.6%
1948	14,897	10,848	4,622	63%	0.27		0.839		0.229	0.229	77.1%	68.6%
1949	14,930	11,140	4,634	63%	0.27		0.854		0.234	0.234	76.6%	58.6%
1950	20,931	11,498	6,878	56%	0.26		0.874		0.225	0.225	77.5%	63.7%
1951	62,208	11,498	22,316	23%	0.23		0.874		0.199	0.199	80.1%	77.6%
1952	67,347	11,189	24,238	23%	0.23		0.857		0.195	0.195	80.5%	69.5%
1953	64,078	7,660	23,015	23%	0.23		0.667		0.152	0.152	84.8%	74.7%
1954	33,421	8,164	11,550	24%	0.24		0.694		0.167	0.167	83.3%	64.6%
1955	22,265	10,344	7,377	58%	0.25		0.811		0.207	0.207	79.3%	69.2%
1956	83,708	12,344	30,357	22%	0.22		0.919		0.206	0.206	79.4%	69.3%
1957	18,638	8,213	6,021	60%	0.26		0.696		0.183	0.183	81.7%	60.7%
1958	36,463	7,709	12,687	24%	0.24		0.669		0.160	0.160	84.0%	62.5%
1959	35,182	7,660	12,200	24%	0.24		0.667		0.160	0.160	84.0%	66.1%
1960	14,523	10,734	4,482	63%	0.27		0.833		0.229	0.229	77.1%	64.7%
1961	15,011	11,401	4,664	63%	0.27		0.869		0.237	0.237	76.3%	59.2%
1962	12,853	8,246	3,782	65%	0.28		0.698		0.198	0.198	80.2%	62.6%
1963	18,052	11,580	5,802	60%	0.26		0.878		0.232	0.232	76.8%	68.7%
1964	25,534	8,197	8,800	25%	0.25		0.696		0.174	0.174	82.6%	69.2%
1965	41,236	12,832	29,432	22%	0.22		0.946		0.212	0.212	78.8%	68.2%
1966	29,632	7,985	10,132	24%	0.24		0.684		0.167	0.167	83.3%	70.0%
1967	34,625	12,002	12,000	24%	0.24		0.901		0.216	0.216	78.4%	68.7%
1968	30,640	7,660	10,509	24%	0.24		0.667		0.162	0.162	83.8%	66.8%
1969	68,502	9,612	24,670	23%	0.23		0.772		0.175	0.175	82.5%	61.6%
1970	92,669	7,611	33,708	22%	0.22		0.664		0.148	0.148	85.2%	75.2%
1971	46,888	9,791	16,586	23%	0.23		0.782		0.182	0.182	81.8%	70.8%
1972	20,394	8,213	6,677	56%	0.26		0.696		0.180	0.180	82.0%	61.6%
1973	49,392	10,799	17,523	23%	0.23		0.836		0.194	0.194	80.6%	69.8%
1974	78,422	7,989	28,380	22%	0.22		0.683		0.154	0.154	84.6%	79.1%
1975	18,670	8,181	6,033	60%	0.26		0.695		0.182	0.182	81.8%	64.9%
1976	18,768	8,115	5,321	61%	0.27		0.691		0.185	0.185	81.5%	63.4%
1977	7,660	4,684	1,915	75%	0.32		0.506		0.163	0.163	83.7%	66.4%
1978	43,066	10,441	15,157	23%	0.23		0.817		0.192	0.192	80.8%	63.9%
1979	27,241	7,595	9,238	25%	0.25		0.663		0.164	0.164	83.6%	63.3%
1980	63,623	7,481	22,845	23%	0.23		0.657		0.150	0.150	85.0%	61.9%
1981	28,607	7,676	9,749	25%	0.25		0.667		0.164	0.164	83.6%	64.1%
1982	51,165	11,970	18,186	23%	0.23		0.899		0.208	0.208	79.2%	77.7%
1983	59,150	6,977	21,172	23%	0.23		0.630		0.144	0.144	85.6%	80.8%
1984	47,359	4,326	16,782	23%	0.23		0.487		0.113	0.113	88.7%	84.7%
1985	18,800	8,197	5,333	61%	0.27		0.696		0.186	0.186	81.4%	70.0%
1986	21,500	11,861	7,091	58%	0.26		0.883		0.226	0.226	77.4%	60.9%
1987	18,735	7,725	5,309	61%	0.27		0.670		0.179	0.179	82.1%	62.1%
1988	25,534	11,384	8,600	25%	0.25		0.868		0.216	0.216	78.4%	62.7%
1989	12,002	8,831	3,539	68%	0.29		0.730		0.209	0.209	79.1%	68.5%
1990	21,582	9,709	7,122	58%	0.26		0.777		0.199	0.199	80.1%	61.8%
1991	6,847	3,545	1,611	78%	0.33		0.444		0.148	0.148	85.2%	70.0%
1992	12,133	9,124	3,588	66%	0.29		0.746		0.213	0.213	78.7%	68.1%
											Average:	66.46%

Formulas: Sacramento River Late Fall Run Smolt Survival Model

C10 ='Study 469 Flow Data'!B7

D10 ='Study 469 Flow Data'!L7 (HIDDEN)

E10 ='Study 469 Flow Data'!V7 (HIDDEN)

F10 =(D10+E10)

G10 =0.374*C10-950

H10 =IF(C10>$K$4,(0.133*C10+829)/(C10-G10),(0.293*C10+2090)/(C10-G10))

I10 =(0.133*C10+829)/(C10-G10)

K10 =(-0.5916024)+(0.017968*$T$1)+(0.000054*F10)

L10 =-1.613493+(0.0319584*$T$1)

M10 =(K10*H10)+(L10*(1-H10))

N10 =J10+M10-(J10*M10)

O10 =1-N10

Q10 ='Study 469 Flow Data'!C7

R10 ='Study 469 Flow Data'!M7 (HIDDEN)

S10 ='Study 469 Flow Data'!W7 (HIDDEN)

T10 =(R10+S10)

U10 =0.374*Q10-950

V10 =IF(Q10>$K$4,(0.133*Q10+829)/(Q10-U10),(0.293*Q10+2090)/(Q10-U10))

W10 =(0.45*(0.133*Q10+829)/(Q10-U10))+(0.55*V10)

Y10 =(-0.5916024)+(0.017968*$T$2)+(0.000054*T10)

AA10 =(Y10*W10)+(Z10*(1-W10))

AB10 =X10+AA10-(X10*AA10)

AC10 =1-AB10

AE10 ='Study 469 Flow Data'!D7

AF10 ='Study 469 Flow Data'!N7 (HIDDEN)

AG10 ='Study 469 Flow Data'!X7 (HIDDEN)

AH10 =(AF10+AG10)

AI10 =0.374*AE10-950

AJ10 =IF(AE10>$K$4,(0.133*AE10+829)/(AE10-AI10),(0.293*AE10+2090)/(AE10-AI10))

AK10 =(0.133*AE10+829)/(AE10-AI10)

AM10 =(-0.5916024)+(0.017968*$T$3)+(0.000054*AH10)

AO10 =(AM10*AK10)+(AN10*(1-AK10))

AP10 =AL10+AO10-(AL10*AO10)

AQ10 =1-AP10

AS10 =(O10*0.25)+(AC10*0.5)+(AQ10*0.25)

C-032404

C—032404

C-032405

Study 469 Win[illegible] Smolt Survival Model — February Water Temp 50 F — April Water Temperatures based on limited historical data fro[illegible]

Cross Cha[illegible]d Over 25000 cfs — March Water Temp 55 F

Cross Channel Closed[illegible] to Apr when DOI greater than 12,000 cfs

Year	Water Year Type	FEBRUARY Sac River Flow	CVP + SWP Exports	Calculated Sutter & Steamboat Slough Q	Percent	X-Channel Closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123	MARCH Sac River Flow	CVP + SWP exports	Calculated Sutter & Steamboat Slough Q	percent	X-Channel Closed	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123
1922	A	34,409	10,896	11,919	24%	0.24		0.884		0.213	0.213	78.7%	31,561	8,018	10,850	0.24	0.24		0.830	0.144	0.311	0.311	68.9%
1923	B	24,326	6,752	8,148	57%	0.25		0.671		0.169	0.169	83.1%	17,174	7,893	5,473	0.61	0.27		0.812	0.144	0.322	0.322	67.8%
1924	C	16,896	8,797	5,370	61%	0.27		0.782		0.209	0.209	79.1%	12,116	3,367	3,581	0.66	0.29		0.578	0.144	0.268	0.268	73.2%
1925	D	44,691	11,956	15,764	23%	0.23		0.952		0.223	0.223	77.7%	18,557	7,966	5,990	0.60	0.26		0.828	0.144	0.324	0.324	67.6%
1926	D	36,714	11,830	12,781	24%	0.24		0.946		0.226	0.226	77.4%	18,947	7,823	6,136	0.60	0.26		0.819	0.144	0.321	0.321	67.9%
1927	W	87,636	11,596	31,825	22%	0.22		0.933		0.209	0.209	79.1%	43,863	7,481	15,455	0.23	0.23		0.801	0.144	0.298	0.298	70.2%
1928	A	27,364	8,432	9,264	25%	0.25		0.762		0.188	0.188	81.2%	86,229	8,750	31,300	0.22	0.22		0.869	0.144	0.307	0.307	69.3%
1929	C	18,528	8,065	5,980	60%	0.26		0.743		0.195	0.195	80.5%	16,930	7,010	5,382	0.61	0.27		0.775	0.144	0.313	0.313	68.7%
1930	D	15,683	6,932	4,916	62%	0.27		0.681		0.184	0.184	81.6%	30,087	7,091	10,303	0.24	0.24		0.780	0.144	0.299	0.299	70.1%
1931	C	11,092	5,330	3,196	68%	0.29		0.595		0.174	0.174	82.6%	8,766	3,529	2,328	0.72	0.31		0.587	0.144	0.281	0.281	71.9%
1932	D	13,906	9,927	4,264	64%	0.28		0.843		0.234	0.234	76.6%	12,064	5,399	3,569	0.66	0.29		0.686	0.144	0.300	0.300	70.0%
1933	C	11,974	6,898	3,528	68%	0.29		0.669		0.192	0.192	80.8%	10,392	4,830	2,937	0.69	0.30		0.657	0.144	0.296	0.296	70.4%
1934	C	12,748	5,942	3,818	65%	0.28		0.626		0.177	0.177	82.3%	14,783	4,716	4,579	0.63	0.27		0.651	0.144	0.283	0.283	71.7%
1935	B	12,442	5,258	3,703	66%	0.28		0.591		0.168	0.168	83.2%	24,916	11,303	8,366	0.57	0.25		1.000	0.144	0.358	0.358	64.2%
1936	B	48,939	12,413	17,353	23%	0.23		0.977		0.227	0.227	77.3%	33,454	11,368	11,562	0.24	0.24		1.000	0.144	0.351	0.351	64.9%
1937	B	33,455	9,383	11,562	24%	0.24		0.812		0.196	0.196	80.4%	36,463	8,197	13,436	0.24	0.24		0.839	0.144	0.309	0.309	69.1%
1938	W	82,359	6,319	29,852	22%	0.22		0.756		0.170	0.170	83.0%	78,634	8,294	28,459	0.22	0.22		0.845	0.144	0.302	0.302	69.8%
1939	D	19,032	6,662	6,168	60%	0.26		0.667		0.174	0.174	82.6%	18,394	6,766	5,181	0.61	0.27		0.762	0.144	0.310	0.310	69.0%
1940	A	42,646	12,398	14,999	24%	0.24		0.976		0.230	0.230	77.0%	59,101	8,977	21,154	0.23	0.23		0.881	0.144	0.313	0.313	68.7%
1941	W	75,031	11,272	27,112	23%	0.23		0.915		0.206	0.206	79.4%	58,581	8,164	20,959	0.23	0.23		0.838	0.144	0.303	0.303	69.7%
1942	W	78,344	8,337	28,351	23%	0.23		0.757		0.170	0.170	83.0%	27,095	8,327	9,183	0.25	0.25		0.846	0.144	0.318	0.318	68.2%
1943	W	52,253	8,373	18,593	23%	0.23		0.759		0.175	0.175	82.5%	64,596	8,376	23,210	0.23	0.23		0.849	0.144	0.305	0.305	69.5%
1944	D	29,837	8,015	10,246	24%	0.24		0.740		0.181	0.181	81.9%	25,094	8,327	8,435	0.25	0.25		0.846	0.144	0.320	0.320	68.0%
1945	B	40,621	8,337	14,242	24%	0.24		0.757		0.179	0.179	82.1%	27,030	8,457	9,159	0.25	0.25		0.853	0.144	0.320	0.320	68.0%
1946	B	24,362	8,355	8,161	57%	0.25		0.758		0.190	0.190	81.0%	23,647	8,750	7,894	0.57	0.25		0.869	0.144	0.327	0.327	67.3%
1947	D	21,571	8,337	7,118	58%	0.26		0.757		0.194	0.194	80.6%	22,509	8,294	7,466	0.56	0.25		0.845	0.144	0.322	0.322	67.8%
1948	B	15,560	5,946	4,869	62%	0.27		0.626		0.170	0.170	83.0%	19,240	7,758	6,246	0.59	0.26		0.816	0.144	0.319	0.319	68.1%
1949	D	16,277	8,517	5,138	62%	0.27		0.787		0.206	0.206	79.4%	41,716	10,978	14,652	0.24	0.24		0.989	0.144	0.343	0.343	65.7%
1950	B	35,166	11,886	12,202	24%	0.24		0.946		0.227	0.227	77.3%	22,655	8,945	7,523	0.58	0.25		0.880	0.144	0.331	0.331	66.9%
1951	A	60,572	9,057	21,704	23%	0.23		0.796		0.182	0.182	81.8%	29,827	9,026	10,205	0.24	0.24		0.864	0.144	0.325	0.325	67.5%
1952	W	62,499	8,015	22,425	23%	0.23		0.740		0.169	0.169	83.1%	57,524	8,262	20,564	0.23	0.23		0.843	0.144	0.304	0.304	69.6%
1953	W	28,341	8,427	9,650	25%	0.25		0.762		0.187	0.187	81.3%	24,899	7,644	8,362	0.57	0.25		0.809	0.144	0.311	0.311	68.9%
1954	A	57,151	9,003	20,424	23%	0.23		0.793		0.182	0.182	81.8%	49,536	9,010	17,577	0.23	0.23		0.883	0.144	0.316	0.316	68.4%
1955	D	16,295	8,247	5,144	62%	0.27		0.752		0.202	0.202	79.8%	17,678	7,351	5,662	0.60	0.26		0.794	0.144	0.316	0.316	68.4%
1956	W	61,543	8,745	22,067	23%	0.23		0.779		0.178	0.178	82.2%	36,674	7,286	12,766	0.24	0.24		0.790	0.144	0.298	0.298	70.2%
1957	A	33,149	8,965	11,448	24%	0.24		0.792		0.191	0.191	80.9%	44,383	8,717	15,649	0.23	0.23		0.867	0.144	0.314	0.314	68.6%
1958	W	82,967	8,409	22,800	23%	0.23		0.761		0.173	0.173	82.7%	93,612	8,392	34,061	0.22	0.22		0.850	0.144	0.302	0.302	69.8%
1959	B	50,075	8,409	17,778	23%	0.23		0.761		0.176	0.176	82.4%	23,371	7,367	7,791	0.57	0.25		0.794	0.144	0.309	0.309	69.1%
1960	D	26,234	11,231	8,862	25%	0.25		0.913		0.227	0.227	77.3%	22,806	7,595	7,505	0.58	0.25		0.807	0.144	0.313	0.313	68.7%
1961	D	32,843	11,452	11,333	24%	0.24		0.925		0.224	0.224	77.6%	20,947	8,148	6,864	0.59	0.26		0.837	0.144	0.322	0.322	67.8%
1962	B	45,213	12,836	15,960	23%	0.23		1.000		0.234	0.234	76.6%	27,664	7,823	9,396	0.25	0.25		0.819	0.144	0.311	0.311	68.9%
1963	W	58,699	12,840	21,004	23%	0.23		0.989		0.227	0.227	77.3%	32,641	8,912	11,258	0.24	0.24		0.878	0.144	0.322	0.322	67.8%
1964	D	19,019	7,736	6,163	60%	0.26		0.725		0.189	0.189	81.1%	17,190	7,091	5,479	0.61	0.27		0.760	0.144	0.313	0.313	68.7%
1965	W	33,329	10,119	11,515	24%	0.24		0.853		0.206	0.206	79.4%	21,366	8,620	7,049	0.58	0.26		0.862	0.144	0.328	0.328	67.2%
1966	B	26,775	8,751	9,064	25%	0.25		0.779		0.193	0.193	80.7%	26,689	8,750	9,780	0.25	0.25		0.869	0.144	0.322	0.322	67.8%
1967	W	43,106	7,599	15,172	23%	0.23		0.717		0.168	0.168	83.2%	54,483	7,611	19,426	0.23	0.23		0.808	0.144	0.297	0.297	70.3%
1968	B	54,520	6,693	19,440	23%	0.23		0.668		0.154	0.154	84.6%	36,788	7,205	12,809	0.24	0.24		0.786	0.144	0.297	0.297	70.3%
1969	W	67,486	7,563	24,290	23%	0.23		0.715		0.162	0.162	83.8%	45,326	6,993	16,002	0.23	0.23		0.774	0.144	0.292	0.292	70.8%
1970	W	57,565	5,368	20,579	23%	0.23		0.597		0.137	0.137	86.3%	35,812	7,319	12,444	0.24	0.24		0.792	0.144	0.299	0.299	70.1%
1971	W	29,206	8,679	9,973	25%	0.25		0.775		0.190	0.190	81.0%	50,868	9,026	18,082	0.23	0.23		0.884	0.144	0.316	0.316	68.4%
1972	B	24,217	8,693	8,107	57%	0.25		0.776		0.195	0.195	80.5%	32,933	8,197	11,367	0.24	0.24		0.839	0.144	0.312	0.312	68.8%
1973	A	70,961	8,805	25,590	23%	0.23		0.782		0.177	0.177	82.3%	47,554	8,782	16,835	0.23	0.23		0.871	0.144	0.313	0.313	68.7%
1974	W	41,918	8,733	14,727	24%	0.24		0.778		0.183	0.183	81.7%	100,199	8,750	36,524	0.22	0.22		0.869	0.144	0.305	0.305	69.5%
1975	W	56,807	8,987	21,044	23%	0.23		0.791		0.181	0.181	81.9%	75,999	9,010	27,474	0.23	0.23		0.863	0.144	0.311	0.311	68.9%
1976	C	19,523	8,293	6,352	59%	0.26		0.766		0.196	0.196	80.4%	20,069	8,050	6,556	0.59	0.26		0.831	0.144	0.322	0.322	67.8%
1977	C	12,190	2,233	3,609	66%	0.29		0.427		0.122	0.122	87.8%	7,546	2,228	1,872	0.76	0.32		0.517	0.144	0.265	0.265	73.5%
1978	A	49,876	9,201	17,704	23%	0.23		0.804		0.186	0.186	81.4%	46,204	6,115	16,330	0.23	0.23		0.727	0.144	0.280	0.280	72.0%
1979	B	42,044	8,301	14,774	24%	0.24		0.755		0.178	0.178	82.2%	32,592	8,327	11,239	0.24	0.24		0.846	0.144	0.314	0.314	68.6%
1980	A	68,453	7,841	25,026	23%	0.23		0.730		0.165	0.165	83.5%	36,479	7,205	12,693	0.24	0.24		0.786	0.144	0.297	0.297	70.3%
1981	D	29,674	7,004	10,148	24%	0.24		0.685		0.168	0.168	83.2%	32,494	7,205	11,203	0.24	0.24		0.786	0.144	0.299	0.299	70.1%
1982	W	65,650	9,003	23,603	23%	0.23		0.793		0.180	0.180	82.0%	60,087	8,977	24,869	0.23	0.23		0.881	0.144	0.311	0.311	68.9%
1983	W	82,917	6,302	30,061	22%	0.22		0.647		0.145	0.145	85.5%	81,935	4,765	29,894	0.22	0.22		0.654	0.144	0.259	0.259	74.1%
1984	W	36,004	5,268	12,516	24%	0.24		0.591		0.141	0.141	85.9%	36,495	7,302	12,699	0.24	0.24		0.791	0.144	0.299	0.299	70.1%
1985	D	20,131	9,003	6,579	59%	0.26		0.793		0.205	0.205	79.5%	21,809	8,945	7,207	0.58	0.26		0.880	0.144	0.332	0.332	66.8%
1986	W	95,486	11,704	34,762	22%	0.22		0.939		0.209	0.209	79.1%	72,535	8,506	26,178	0.23	0.23		0.856	0.144	0.305	0.305	69.5%
1987	D	23,030	5,582	7,663	58%	0.25		0.608		0.154	0.154	84.6%	29,551	6,570	10,102	0.24	0.24		0.751	0.144	0.293	0.293	70.7%
1988	C	17,072	6,624	5,435	61%	0.27		0.664		0.177	0.177	82.3%	11,010	3,871	3,168	0.68	0.29		0.606	0.144	0.279	0.279	72.1%
1989	D	11,884	2,827	3,495	66%	0.29		0.459		0.132	0.132	86.8%	42,480	11,267	14,936	0.24	0.24		1.000	0.144	0.346	0.346	65.4%
1990	C	16,944	7,887	5,387	61%	0.27		0.733		0.195	0.195	80.5%	14,832	6,050	4,597	0.63	0.27		0.723	0.144	0.303	0.303	69.7%
1991	C	11,002	1,386	3,165	68%	0.29		0.382		0.112	0.112	88.8%	29,681	11,498	10,151	0.24	0.24		1.000	0.144	0.354	0.354	64.6%
1992	C	31,415	8,345	10,799	24%	0.24		0.757		0.184	0.184	81.6%	20,102	8,441	6,568	0.59	0.26		0.852	0.144	0.328	0.328	67.2%

Year	APRIL Sac River Flow	CVP + SW Exports	Calculated Steamboat & Sutter Slough flows	Percent	X-Channel Closed	Water temp f	m1	Calculated Mortality m2	m3	m23	m123	Calculated Survivability s123	Weighted Total Survival
1922	22,822	8,467	7,585	0.58	0.25	58.5	0.002	0.918	0.256	0.424	0.425	57.5%	68.75%
1923	22,721	8,033	7,546	0.58	0.25	58.3	0.000	0.890	0.250	0.412	0.412	58.8%	67.10%
1924	8,067	2,958	2,067	0.74	0.32	61.5	0.128	0.673	0.362	0.454	0.524	47.6%	68.27%
1925	22,654	7,056	7,523	0.58	0.25	59.1	0.027	0.851	0.275	0.422	0.437	56.3%	65.54%
1926	21,511	6,789	7,095	0.58	0.26	61.6	0.133	0.882	0.355	0.490	0.558	44.2%	62.06%
1927	48,215	8,201	17,062	0.23	0.23	56.8	0.000	0.872	0.202	0.356	0.356	64.4%	68.56%
1928	29,208	7,462	9,974	0.25	0.25	58.7	0.011	0.866	0.282	0.410	0.417	58.3%	67.58%
1929	8,537	2,656	2,243	0.73	0.31	56.3	0.000	0.563	0.186	0.304	0.304	69.6%	70.54%
1930	12,638	4,017	3,777	0.65	0.28	59.6	0.048	0.896	0.291	0.408	0.435	56.5%	67.50%
1931	9,193	3,143	2,468	0.71	0.31	62.8	0.183	0.706	0.393	0.489	0.583	41.7%	64.22%
1932	13,075	5,546	3,940	0.65	0.28	58.9	0.019	0.766	0.269	0.409	0.420	58.0%	67.29%
1933	12,739	4,302	3,814	0.65	0.28	60.1	0.069	0.721	0.307	0.424	0.464	53.6%	66.09%
1934	12,856	3,748	3,858	0.65	0.28	63.6	0.217	0.754	0.419	0.513	0.619	38.1%	62.99%
1935	24,200	8,739	8,101	0.57	0.25	58.9	0.019	0.938	0.289	0.437	0.448	55.2%	63.96%
1936	21,276	8,470	7,007	0.58	0.26	59.7	0.053	0.938	0.294	0.460	0.488	51.2%	62.43%
1937	23,511	8,117	7,843	0.57	0.25	58.8	0.015	0.903	0.266	0.427	0.435	56.5%	66.77%
1938	47,173	8,504	16,693	0.23	0.23	58.3	0.000	0.879	0.186	0.347	0.347	65.3%	70.17%
1939	12,234	4,252	3,626	0.66	0.29	63.3	0.204	0.775	0.409	0.514	0.613	38.7%	61.67%
1940	41,728	8,386	14,656	0.24	0.24	57.4	0.000	0.893	0.221	0.379	0.379	62.1%	67.80%
1941	42,367	9,411	14,895	0.24	0.24	56.9	0.000	0.939	0.206	0.378	0.378	62.2%	68.71%
1942	43,308	9,025	15,247	0.23	0.23	56.5	0.000	0.911	0.192	0.361	0.361	63.9%	68.83%
1943	29,410	9,562	10,049	0.24	0.24	58.8	0.015	0.961	0.266	0.441	0.449	55.1%	66.88%
1944	9,814	4,353	2,721	0.70	0.30	58.4	0.000	0.693	0.253	0.385	0.385	61.5%	67.86%
1945	11,747	6,369	3,443	0.67	0.29	60.6	0.090	0.841	0.323	0.472	0.520	48.0%	63.85%
1946	12,218	6,067	3,619	0.66	0.29	60.7	0.095	0.827	0.326	0.469	0.519	48.1%	63.30%
1947	13,797	5,006	4,210	0.64	0.28	62.5	0.170	0.802	0.364	0.500	0.585	41.5%	61.56%
1948	23,040	6,924	7,667	0.58	0.25	56.6	0.000	0.799	0.196	0.348	0.348	65.2%	69.14%
1949	13,209	5,193	3,990	0.65	0.28	61.7	0.137	0.797	0.358	0.482	0.552	44.8%	61.18%
1950	19,276	6,353	6,259	0.59	0.26	61.3	0.120	0.853	0.346	0.478	0.540	46.0%	61.97%
1951	14,772	6,487	4,575	0.63	0.27	59.9	0.061	0.836	0.301	0.447	0.481	51.9%	64.68%
1952	56,662	8,873	20,236	0.23	0.23	55.5	0.000	0.885	0.160	0.327	0.327	67.3%	70.65%
1953	16,164	5,746	5,103	0.62	0.27	58.8	0.015	0.775	0.266	0.403	0.412	58.8%	67.50%
1954	39,863	7,462	13,959	0.24	0.24	58.4	0.000	0.861	0.253	0.397	0.397	60.3%	67.74%
1955	9,478	3,781	2,595	0.71	0.30	56.4	0.000	0.626	0.189	0.322	0.322	67.8%	69.71%
1956	20,436	8,063	6,693	0.59	0.26	59.7	0.053	0.918	0.294	0.455	0.484	51.6%	66.16%
1957	21,192	6,564	6,976	0.58	0.26	60.5	0.086	0.849	0.320	0.456	0.503	49.7%	64.55%
1958	52,262	9,764	18,603	0.23	0.23	57.4	0.000	0.967	0.221	0.393	0.393	60.7%	68.76%
1959	10,487	3,899	2,972	0.69	0.30	63	0.191	0.751	0.400	0.504	0.599	40.1%	62.16%
1960	13,546	4,134	4,116	0.64	0.26	59.5	0.044	0.701	0.266	0.403	0.430	57.0%	68.35%
1961	12,789	3,647	3,833	0.65	0.28	60.1	0.069	0.665	0.307	0.414	0.455	54.5%	65.09%
1962	15,411	5,697	4,814	0.62	0.27	61.8	0.141	0.826	0.362	0.488	0.560	44.0%	62.44%
1963	69,457	8,201	25,027	0.23	0.23	53.7	0.000	0.816	0.103	0.264	0.264	73.6%	70.79%
1964	8,957	3,613	2,400	0.72	0.31	59.3	0.036	0.669	0.262	0.401	0.422	57.8%	67.01%
1965	45,173	8,636	15,945	0.23	0.23	58.9	0.000	0.807	0.206	0.367	0.367	63.3%	67.61%
1966	12,806	5,075	3,839	0.65	0.28	61.9	0.145	0.795	0.365	0.486	0.561	43.9%	62.38%
1967	39,930	9,646	13,984	0.24	0.24	53.8	0.000	0.896	0.106	0.293	0.293	70.7%	72.09%
1968	15,629	5,381	4,895	0.62	0.27	61.5	0.128	0.803	0.352	0.474	0.542	45.8%	64.81%
1969	44,787	7,613	15,800	0.23	0.23	56.4	0.000	0.833	0.189	0.340	0.340	66.0%	71.06%
1970	16,604	6,705	5,260	0.61	0.27	58.8	0.015	0.827	0.266	0.416	0.425	57.5%	68.43%
1971	21,948	6,705	7,259	0.58	0.26	58.7	0.011	0.825	0.262	0.406	0.412	58.8%	67.17%
1972	12,453	4,806	3,707	0.66	0.28	58.5	0.002	0.719	0.256	0.388	0.389	61.1%	68.01%
1973	19,511	7,546	6,347	0.59	0.26	61.3	0.120	0.917	0.346	0.494	0.555	44.5%	63.18%
1974	33,208	9,428	11,470	0.24	0.24	56.8	0.000	0.938	0.202	0.379	0.379	62.1%	68.83%
1975	25,763	8,873	8,685	0.25	0.25	56.8	0.000	0.908	0.202	0.378	0.378	62.2%	68.60%
1976	9,426	3,176	2,576	0.71	0.30	58.9	0.019	0.638	0.269	0.381	0.393	60.7%	67.30%
1977	9,142	3,159	2,469	0.71	0.31	64.3	0.246	0.734	0.441	0.531	0.647	35.3%	63.93%
1978	38,703	7,613	13,525	0.24	0.24	56.9	0.000	0.842	0.206	0.356	0.356	64.4%	70.92%
1979	17,686	6,958	5,668	0.60	0.26	59.8	0.057	0.859	0.298	0.446	0.478	52.2%	65.46%
1980	19,814	7,058	6,460	0.59	0.26	57.1	0.000	0.816	0.211	0.368	0.368	63.2%	69.85%
1981	16,980	5,563	5,404	0.61	0.27	61.5	0.128	0.814	0.352	0.475	0.542	45.8%	64.48%
1982	75,843	9,277	27,415	0.23	0.23	54.1	0.000	0.881	0.115	0.288	0.288	71.2%	71.27%
1983	68,298	7,075	24,593	0.23	0.23	56	0.000	0.779	0.144	0.288	0.288	71.2%	74.73%
1984	17,864	6,958	5,731	0.60	0.26	59.7	0.053	0.857	0.294	0.443	0.472	52.8%	66.97%
1985	13,327	4,353	4,034	0.65	0.28	60.8	0.099	0.736	0.330	0.443	0.498	50.2%	63.45%
1986	20,772	7,663	6,819	0.59	0.26	60.4	0.082	0.807	0.317	0.469	0.512	48.8%	64.52%
1987	12,369	3,613	3,676	0.66	0.28	65.7	0.306	0.784	0.486	0.571	0.702	29.8%	60.26%
1988	6,621	2,956	2,274	0.73	0.31	59.9	0.061	0.844	0.301	0.408	0.444	55.6%	68.47%
1989	23,629	5,764	7,887	0.57	0.25	61.4	0.124	0.823	0.349	0.468	0.534	46.6%	62.56%
1990	12,436	3,897	3,701	0.66	0.28	61.6	0.133	0.715	0.355	0.457	0.529	47.1%	64.32%
1991	15,276	4,420	4,763	0.62	0.27	60.8	0.099	0.740	0.330	0.441	0.496	50.4%	63.51%
1992	12,470	3,899	3,714	0.66	0.28	61.2	0.116	0.719	0.342	0.449	0.513	48.7%	63.55%
												Average	65.44%

Formulas Winter Run Salmon Smolt Survival Model

C10 ='Study 469 Flow Data'!E7
D10 ='Study 469 Flow Data'!O7 (HIDDEN)
E10 ='Study 469 Flow Data'!Y7 (HIDDEN)
F10 =(D9+E9)
G10 =0.374*C9-950
H10 =IF(C9>$G$2,(0.133*C9+829)/(C9-G9),(0.293*C9+2090)/(C9-G9))
I10 =(0.133*C9+829)/(C9-G9)
K10 =(-0.5916024)+(0.017968*$M$1)+(0.000054*F9)
M10 =(K9*I9)+L9*(1-I9)
N10 =J9+M9-(J9*M9)
O10 =1-N9

Q10 ='Study 469 Flow Data'!F7
R10 ='Study 469 Flow Data'!P7 (HIDDEN)
S10 ='Study 469 Flow Data'!Z7 (HIDDEN)
T10 =(R9+S9)
U10 =0.374*Q9-950
V10 =IF(Q9>$G$2,(0.133*Q9+829)/(Q9-U9),(0.293*Q9+2090)/(Q9-U9))
Y10 =(0.133*Q9+829)/(Q9-U9)
W10 =IF(((-0.5916024)+(0.017968*$M$2)+(0.000054*T9))>1,1,((-0.5916024)+(0.017968*$M$2)+(0.000054*T9)))
Z10 =-1.613493+(0.0319584*$M$2)
AA10 =(Y9*W9)+Z9*(1-W9)
AB10 =X9+AA9-(X9*AA9)
AC10 =1-AB9

AE10 ='Study 469 Flow Data'!G7
AF10 ='Study 469 Flow Data'!Q7 (HIDDEN)
AG10 ='Study 469 Flow Data'!AA7 (HIDDEN)
AH10 =AF9+AG9
AI10 =0.374*AE9-950
AJ10 =IF(AE9>$G$2,(0.133*AE9+829)/(AE9-AI9),(0.293*AE9+2090)/(AE9-AI9))
AK10 =(0.133*AE9+829)/(AE9-AI9)
AM10 =IF((-2.45925+(0.0420748*AL9))<0,0,(-2.45925+(0.0420748*AL9)))
AN10 =IF(((-0.5916024)+(0.017968*AL9)+(0.000054*AH9))>1,1,((-0.5916024)+(0.017968*AL9)+(0.000054*AH9)))
AO10 =-1.613493+(0.0319584*AL9)
AP10 =(AN9*AK9)+(AO9*(1-AK9))
AQ10 =AM9+AP9-(AM9*AP9)
AR10 =1-AQ9
AS10 =(0.13*O9)+(0.57*AC9)+(0.3*AR9)

STUDY: 1995C06F-SW[illegible]69 DWRSIM: recirc818-f, 17 Jun 97

CP # 137, SACRAMENTO RIVER AT FREEPORT, DOWNSTREAM FLOW (TAF converted to

Project: /1995C06F-SWRCB-469/137/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	11814	17142	17499	34409	31551	22822	46530	34720
1923	18133	34544	32283	24326	17174	22721	14214	18150
1924	11243	13873	14621	16898	12116	8067	8359	10218
1925	7025	11254	10213	44691	18557	22654	12067	16251
1926	10924	11547	19776	36714	18947	21511	13596	15226
1927	20284	14296	29551	87635	43863	48215	26786	18889
1928	22940	16572	26087	27384	86229	29206	20655	13764
1929	12856	13710	15515	18528	18930	8537	9839	10991
1930	7159	14442	20768	15683	30087	12638	12035	18116
1931	9781	9335	11970	11092	8766	9193	10083	12722
1932	8050	14653	17256	13995	12084	13075	12019	19293
1933	9512	8181	12100	11974	10392	12739	7969	11108
1934	8554	12474	16101	12748	14783	12856	8880	14520
1935	9209	8506	25469	12442	24916	24200	28884	17881
1936	11361	10880	32448	48939	33454	21276	14100	19058
1937	11663	12702	16215	33455	38483	23511	16198	18150
1938	23696	48010	31437	82359	78634	47173	57426	35510
1939	19444	18687	18410	19032	16394	12234	8571	18587
1940	8436	7839	23452	42646	59101	41728	18264	15343
1941	13764	35975	72307	75031	58581	42367	39488	20805
1942	18184	65623	63265	78344	27095	43308	36040	27124
1943	21914	28803	58060	52253	64598	29410	21077	16856
1944	14907	13775	17878	29937	25094	9814	8912	18217
1945	13764	15824	12555	40621	27030	11747	13222	16671
1946	20637	54840	43228	24362	23647	12218	13694	16285
1947	13781	18134	15223	21571	22509	13797	8864	18822
1948	10453	9400	14897	15580	19240	23040	28835	23259
1949	14453	15564	14930	16277	41716	13209	14914	17091
1950	11428	11449	20931	35166	22655	19276	13824	20284
1951	41879	68095	62208	60572	29827	14772	18833	17646
1952	16772	46741	67347	62499	57524	56652	59557	38972
1953	16537	42334	64078	28341	24899	16184	26867	25881
1954	20923	14914	33421	57151	49538	39863	25403	14234
1955	20856	26022	22265	16295	17678	9478	11271	18100
1956	12184	25322	83708	61543	36874	20436	39000	22301
1957	15478	14149	18638	33149	44383	21192	16816	19108
1958	19259	23745	36463	62967	93612	52282	43488	33930
1959	16133	14621	35162	50075	23371	10487	9417	17915
1960	11411	11075	14523	26234	22606	13545	10913	18217
1961	14251	18329	15011	32843	20947	12789	9238	19797
1962	9831	16703	12653	45213	27664	15411	14735	17158
1963	21242	27550	18052	58699	32641	69457	29095	19562
1964	28653	14849	25534	19019	17190	8957	10295	18016
1965	13646	28022	81236	33329	21386	45173	24460	18167
1966	26250	16995	29632	26775	28689	12806	14930	15562
1967	16066	39748	34625	43106	54483	39930	44790	39342
1968	16234	16686	30640	54520	36788	15829	9384	17394
1969	14318	24981	68502	67486	45326	44787	45538	24133
1970	17646	50156	92669	57565	35812	16604	12149	15512
1971	23545	54141	46888	29206	50888	21948	29404	23629
1972	15343	20004	20394	24217	32933	12453	10799	17125
1973	23528	26200	49392	70961	47554	19511	15743	19427
1974	54299	61590	78422	41918	100199	33208	26949	21629
1975	17579	17613	18670	58807	75999	25763	28542	24788
1976	19226	16768	16768	19523	20069	9428	10067	19360
1977	8302	8132	7660	12190	7546	9142	6993	9579
1978	6924	12279	43066	49876	46204	38703	21061	16469
1979	14386	12751	27241	42044	32592	17696	12572	19427
1980	16940	20833	63623	69453	36479	19814	14783	16268
1981	13024	15613	28607	29674	32494	16990	8750	18066
1982	33258	68599	51165	65650	69087	75843	38431	24418
1983	39107	55410	59150	82917	81935	68298	54515	55576
1984	62802	82944	47359	36004	36495	17864	13417	18436
1985	33998	23875	16800	20131	21809	13327	13141	16638
1986	9546	15727	21500	95486	72535	20772	13125	12789
1987	11209	13791	16735	23030	29551	12369	8457	20318
1988	8453	15841	25534	17072	11010	8621	9758	14856
1989	8588	8847	12002	11884	42480	23629	14328	16873
1990	11764	14637	21582	16944	14832	12436	7676	19629
1991	8134	8782	6847	11002	29681	15276	8685	10621
1992	7546	7465	12133	31415	20102	12470	8977	14033

STUDY: 1995C06F-SWRCB-469 /RSIM: recirc818-f, 17 Jun 97

CVP, TOTAL CVP EXPORT (TAF)

Project: /1995C06F-SWRCB-469/CVP/EXPORT-TOTAL//1MON/OUTPUT/

YEAR	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	4470	4342	4326	4339	3871	4302	4554	4874
1923	4487	4342	4326	4375	4326	4067	3334	4504
1924	4000	4066	4326	4172	1691	1563	699	739
1925	1496	4375	3692	4375	3871	3580	2732	3748
1926	4470	4342	4326	4321	4326	3445	2651	3848
1927	4420	4342	4326	3133	3334	4151	4375	4874
1928	4470	4342	4326	4207	4326	3781	3204	3294
1929	4453	4342	4326	4339	4245	823	3220	3260
1930	2470	4375	4342	2935	3025	2067	1984	4554
1931	2823	2326	4326	3439	1887	1664	2065	2386
1932	1378	4375	4342	4242	2667	2655	2651	3848
1933	3243	2196	4342	3997	488	2235	2098	2185
1934	1681	4342	4342	1404	2423	1966	2228	4269
1935	2723	3383	4342	1314	4326	4420	3204	4369
1936	4453	4342	4326	4207	4326	4285	3367	4874
1937	4470	4342	4326	4339	4196	3143	2895	3311
1938	4470	4342	4326	4375	4326	4134	4212	4874
1939	4487	4342	4326	2701	2781	2185	1952	4588
1940	2975	1578	4326	4190	4326	4252	3204	4353
1941	4453	4342	4326	4393	4326	4706	4814	4874
1942	4487	4342	4326	4375	4326	4571	4554	4874
1943	4487	4342	4326	4375	4326	4706	4391	4874
1944	4470	4342	4326	4190	4326	2235	2082	4437
1945	4453	4342	4326	4339	4326	3243	2830	3684
1946	4470	4342	4326	4375	4326	3092	2846	3647
1947	4453	4342	4326	4339	4326	2554	1952	4571
1948	3210	2423	4326	4190	4326	3512	4050	4874
1949	4453	4342	4326	4339	3871	2655	2586	3916
1950	4470	4342	4326	4339	4326	3227	2846	4874
1951	4453	4342	4326	4375	4326	3294	3773	4874
1952	4453	4342	4326	4242	4326	4706	4851	4874
1953	4487	4342	4326	4375	3529	2924	4050	4874
1954	4470	4342	4326	4375	4326	3781	3204	3563
1955	4453	4342	4326	4357	4326	1949	2196	4319
1956	4437	4342	4326	4225	2586	4101	4586	4874
1957	4487	4342	4326	4339	4326	3328	3188	4773
1958	4453	4342	4326	4357	4326	4706	4814	4874
1959	4487	4342	4326	4357	4326	2000	2049	4470
1960	4453	4342	4326	4190	3562	403	1887	4638
1961	4437	4342	4326	4339	3594	403	1708	4823
1962	2857	4342	4326	4339	4326	2907	2879	4218
1963	4453	4342	4326	4375	4326	4151	4375	4874
1964	4453	4342	4326	4225	3741	1865	2082	4437
1965	4252	4342	4326	4357	4326	4369	3204	4874
1966	4470	4342	4326	4375	4326	2588	2602	3899
1967	4453	4342	4326	4393	4326	4706	4814	4874
1968	4487	4342	4326	2782	3090	2739	2033	4487
1969	4453	4342	4326	4393	3741	3445	4196	4874
1970	4487	4342	4277	1314	3204	3412	3171	4453
1971	4470	4342	4326	4393	4326	3412	4050	4874
1972	4453	4342	4326	4207	3838	2454	2163	4369
1973	4453	4342	4326	4375	4326	3832	3464	2739
1974	4453	4342	4326	4357	4326	4706	4554	4874
1975	4487	4342	4326	4339	4326	4487	4554	4874
1976	4470	4342	4326	4190	4424	807	1805	4689
1977	2874	1870	2244	810	976	1210	520	286
1978	2655	4310	2667	1855	2212	3546	4310	4874
1979	4487	4342	4326	4339	4326	3529	3220	3092
1980	4453	4342	4326	4207	3854	3109	3806	4874
1981	4470	4342	4326	2935	3090	2840	1968	4571
1982	4453	4342	4326	4375	4326	3714	4228	4874
1983	4487	4342	4326	3511	2131	3428	4163	4874
1984	3512	3139	1447	1547	3301	3529	3285	4672
1985	4470	4342	4326	4357	4326	2235	2342	4168
1986	2672	4342	4326	4339	4326	2454	2879	4252
1987	4437	4342	1350	1368	2440	437	1626	4874
1988	3143	4342	4326	4085	2114	1529	1740	4756
1989	2554	2618	4310	1062	4326	2941	2179	4336
1990	4420	4342	2651	1332	2423	1933	1610	4773
1991	2689	1822	1838	558	4424	2252	1756	2151
1992	3294	3139	4342	1147	2212	2033	2228	4067

STUDY: 1995C06F-SWRCB-469 DWRSIM: recirc81[illegible] un 97

SWP, SWP EXPORT AT BANKS PP (TAF converted to CFS)

Project: /1995C06F-SWRCB-469/SWP/EXPORT-BANKS_TOTAL//1MON/OUTPUT/

YEAR	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	4319	7107	7579	6356	4147	4185	4342	6672
1923	6672	4505	3643	2377	3367	3966	3123	3395
1924	3748	6424	6652	4624	1675	1395	374	487
1925	3210	4847	3155	7581	4115	3479	2521	2840
1926	3109	3822	7091	7508	3497	3344	2440	2487
1927	6672	6993	7270	8463	4147	4050	4163	3748
1928	6672	5969	3643	4225	4424	3680	3383	2672
1929	5462	6180	7091	3745	2765	1832	114	101
1930	1765	6294	7091	3997	4066	1949	1773	2672
1931	3260	2976	4895	1891	1643	1479	1366	1395
1932	1664	7188	7823	5685	2732	2891	2423	4050
1933	2605	2505	5416	2701	4342	2067	1073	269
1934	1580	5546	7091	4538	2293	1781	1025	1328
1935	4285	3399	7660	3943	6977	4319	2732	3731
1936	3445	3285	7449	8206	7042	4185	3155	3361
1937	3664	5741	7579	5024	4001	4974	4066	4622
1938	6672	7530	3938	3943	3968	4369	5448	6672
1939	5277	3741	3236	3961	3985	2067	1740	3075
1940	1748	2683	8018	8206	4651	4134	3269	3092
1941	6100	7335	8148	6878	3838	4706	5123	6302
1942	6168	3610	3236	3961	4001	4453	4342	6672
1943	6521	3773	3301	3997	4050	4857	4163	3143
1944	6672	6424	3269	3825	4001	2118	1870	3176
1945	6605	6961	5058	3997	4131	3126	2618	3798
1946	6672	7595	3643	3979	4424	2975	2635	3596
1947	6621	7140	6684	3997	3968	2454	1740	2958
1948	3630	3106	6522	1756	3432	3412	3838	4521
1949	6235	6896	6814	4177	7107	2538	2374	3159
1950	3395	3448	7172	7526	4619	3126	2635	3529
1951	6672	7595	7172	4682	4700	3193	3582	2823
1952	6672	7107	6863	3773	3936	4168	5269	6672
1953	4084	3741	3334	4051	4115	2823	3838	5781
1954	6672	3903	3838	4628	4684	3680	4440	2739
1955	6672	6912	6017	3889	3025	1832	1984	3025
1956	4218	7595	8018	4520	4700	3983	4375	6672
1957	6672	5806	3887	4646	4391	3227	2976	3462
1958	6672	6928	3383	4051	4066	5058	6083	6672
1959	4185	3854	3334	4051	3041	1899	1838	2991
1960	3075	2797	6408	7041	4033	3731	1675	2689
1961	6235	6896	7075	7112	4554	3243	1496	3008
1962	3395	6879	3919	8499	3497	2790	2667	2874
1963	6672	6896	7253	8265	4586	4050	4163	4017
1964	6672	6050	3871	3512	3350	1748	1870	2840
1965	6252	7335	8506	5762	4294	4269	4749	3714
1966	6672	5887	3659	4375	4424	2487	2391	2622
1967	6672	7123	7676	3205	3285	4941	5448	6672
1968	4050	3741	3334	3912	4115	2622	1822	2807
1969	6353	6977	5286	3169	3253	4168	5025	6838
1970	4084	3480	3334	4051	4115	3294	2960	2622
1971	6672	7042	5465	4285	4700	3294	3838	5042
1972	6672	6196	3887	4485	4359	2353	1935	2706
1973	6672	6896	6473	4429	4456	3714	3253	5579
1974	6672	7140	3643	4375	4424	4722	4342	4924
1975	5411	4245	3854	4628	4684	4386	4342	6672
1976	6672	4651	3789	4103	3627	2370	1561	2941
1977	3328	3025	2440	1422	1252	1949	439	387
1978	1697	5530	7774	7346	3903	4067	4098	3899
1979	6571	3692	3269	3961	4001	3428	2992	5227
1980	6672	6993	3155	3633	3350	3949	3887	4067
1981	5579	4115	3350	4069	4115	2723	1756	2891
1982	6672	7010	7644	4628	4651	5563	6684	6672
1983	6672	4424	2651	2791	2635	3647	3594	4689
1984	3630	3106	2879	3720	4001	3428	3074	3361
1985	6672	6619	3871	4646	4619	2118	2114	2622
1986	4168	6944	7335	7364	4180	5210	5465	3848
1987	3496	6099	6375	4213	4131	3176	1415	3143
1988	1865	6879	7058	2538	1756	1428	1529	1311
1989	3361	3269	4521	1765	6961	2823	1968	2487
1990	3563	6196	7058	6554	3627	1765	1366	2907
1991	2370	3188	1708	828	7075	2168	1415	1210
1992	1482	1610	4781	7197	6229	1865	1008	1328

C-032406

C—032406

Recommended Flows from "*Working Paper on Restoration Needs - Habitat Restoration Actions to Double Natural Production of Anadromous Fish in the Central Valley of California - Vol III*" Prepared for USFWS 1995

Location: Upper Sacramento Rver Below Keswick
CP # 62, Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS
SALMONIDS
Objective: Enhance rearing, maintain spawning habitat, & temperature control Page 3-Xa-14, Vol III

Shasta Reservoir October 1st Carryover Storage (MAF)	AFRP Working Paper Recommended Flow for October - April
< 2.2	3,250
>= 2.2	3,500
>= 2.3	3,750
>= 2.4	4,000
>= 2.5	4,250
>= 2.6	4,500
>= 2.7	4,750
>= 2.8	5,000
>= 2.9	5,250
>= 3.0	5,500

Location: Feather River at Nicolaus CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective: Enhance rearing & maintain spawning habitat, Page: 3-Xc-11, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective: provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2,500	2,500	2,500	1,700												2,500	2,500	2,500	1,700	
Nov	2,500	2,500	2,500	1,700												2,500	2,500	2,500	1,700	
Dec	2,500	2,500	2,500	1,700												2,500	2,500	2,500	1,700	
Jan	2,500	2,500	2,500	1,700												2,500	2,500	2,500	1,700	
Feb	2,500	2,500	2,500	1,700							11,500	11,500				11,500	11,500	2,500	1,700	
Mar	2,500	2,500	2,500	1,700							11,500	11,500				11,500	11,500	2,500	1,700	
Apr	3,000	3,000	3,000	2,100		17,500	13,400	12,600	9,000	4,200	11,500	11,500				17,500	13,400	12,600	9,000	4,200
May	3,000	3,000	3,000	2,100		17,100	12,100	10,100	6,600	3,600	11,500	11,500				17,100	12,100	10,100	6,600	3,600
June	1,000	1,000	1,000	1,000		9,800	5,700	4,900	3,300	2,500						9,800	5,700	4,900	3,300	2,500
July	1,000	1,000	1,000	1,000												1,000	1,000	1,000	1,000	
Aug	1,000	1,000	1,000	1,000												1,000	1,000	1,000	1,000	
Sept	2,500	2,500	2,500	1,400												2,500	2,500	2,500	1,400	

Location: Yuba River at Marysville DEPLETION AREA 67, DOWNSTREAM FLOW

	SALMONIDS Objective: Optimize migration, spawning and incubation, Page 3-Xc-14-25					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	700	700	700	700	700											700	700	700	700	700
Nov	700	700	700	700	700											700	700	700	700	700
Dec	700	700	700	700	700											700	700	700	700	700
Jan	700	700	700	700	700											700	700	700	700	700
Feb	700	700	700	700	700											700	700	700	700	700
Mar	700	700	700	700	700						No Working Paper flow recommendations					700	700	700	700	700
Apr	1,000	1,000	1,000	1,000	1,000	8,200	7,100	7,200	5,500	2,800						8,200	7,100	7,200	5,500	2,800
Mary	2,000	2,000	2,000	2,000	2,000	9,900	8,100	7,100	4,900	2,600						9,900	8,100	7,100	4,900	2,600
June	1,500	1,500	1,500	1,500	1,500	6,400	3,900	3,200	2,000	1,400						6,400	3,900	3,200	2,000	1,500
July	450	450	450	450	450											450	450	450	450	450
Aug	450	450	450	450	450											450	450	450	450	450
Sept	450	450	450	450	450											450	450	450	450	450

Location: Sacramento River at Verona (RM 80) (Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)

	SALMONIDS Objective:					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective: provide attraction passage, spawning, and larval transport, Page: 3-Xh-8, Vol III					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb											31,100	31,100				31,100	31,100			
Mar	No Working Paper flow recommendations					No Working Paper flow recommendations					31,100	31,100				31,100	31,100			
Apr											31,100	31,100				31,100	31,100			
May											31,100	31,100				31,100	31,100			
June																				
July																				
Aug																				
Sept																				

Location: Lower American River at H Street Bridge CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective: optimize conditions in lower Am River for all life stages, Page 3-Xc-42, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2500	2000	2000	1750	800											2,500	2,000	2,000	1,750	800
Nov	2500	2000	2000	1750	1200											2,500	2,000	2,000	1,750	1,200
Dec	2500	2000	2000	1750	1200											2,500	2,000	2,000	1,750	1,200
Jan	2500	2000	2000	1750	1200											2,500	2,000	2,000	1,750	1,200
Feb	2500	2000	2000	1750	1200											2,500	2,000	2,000	1,750	1,200
Mar	4500	3000	3000	2000	1500											4,500	3,000	3,000	2,000	1,500
Apr	4500	3000	3000	2000	1500	10200	8400	8600	6500	3100	No Working Paper flow recommendations					10,200	8,400	8,600	6,500	3,100
May	4500	3000	3000	2000	1500	12200	9600	8700	6100	3100						12,200	9,600	8,700	6,100	3,100
June	4500	3000	3000	2000	500	8100	4800	4200	2700	1700						8,100	4,800	4,200	2,700	1,700
July	2500	2500	2500	1500	500											2,500	2,500	2,500	1,500	500
Aug	2500	2000	2000	1000	500											2,500	2,000	2,000	1,000	500
Sept	2500	1500	1500	500	500											2,500	1,500	1,500	500	500

Location: San Joaquin River at Vernalis CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective: benefit all life stages of fall-run chinook salmon, Page: 3-Xd-47, 3-Xe-20, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival. Page: 3-Xg-19, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page 3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1,450	950	900	700	650											1,450	950	900	700	650
Nov	2,000	1,500	950	900	650											2,000	1,500	950	900	650
Dec	2,850	2,250	950	950	700											2,850	2,250	950	950	700
Jan	3,950	2,550	1,100	1,000	750											3,950	2,550	1,100	1,000	750
Feb	5,000	3,900	2,150	1,450	1,050						14,000	14,000				14,000	14,000	2,150	1,450	1,050
Mar	5,350	3,900	2,750	2,100	1,850						14,000	14,000				14,000	14,000	2,750	2,100	1,850
Apr	21,000	12,000	8,000	6,000	4,500	5,200	4,400	4,600	3,500	2,200	14,000	14,000				21,000	14,000	8,000	6,000	4,500
May	21,000	12,000	10,200	7,400	5,200	10,200	8,900	7,400	5,400	3,100	14,000	14,000				21,000	14,000	10,200	7,400	5,200
June	21,000	12,000	8,000	6,000	4,500	10,300	8,200	5,700	3,900	2,400						21,000	12,000	8,000	6,000	4,500
July	4,200	1,700	1,250	650	650											4,200	1,700	1,250	650	650
Aug	1,150	800	600	500	450											1,150	800	600	500	450
Sept	1,050	750	650	500	450											1,050	750	650	500	450

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective: Double natural production, Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-21, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	350	350	250	250	200						No Working Paper flow recommendations					350	350	250	250	200
Nov	400	350	300	275	250											400	350	300	275	250
Dec	400	350	300	275	250											400	350	300	275	250
Jan	400	350	300	275	250											400	350	300	275	250
Feb	400	350	300	275	250											400	350	300	275	250
Mar	400	350	300	275	250											400	350	300	275	250
Apr	1,500	1,500	1,500	900	900	4,200	3,700	3,800	3,000	1,600						4,200	3,700	3,800	3,000	1,600
May	1,500	1,500	900	900	900	6,800	5,700	5,000	3,400	1,800						6,800	5,700	5,000	3,400	1,800
June	1,500	800	250	200	200	5,100	3,400	2,800	1,800	1,000						5,100	3,400	2,800	1,800	1,000
July	300	300	250	200	200											300	300	250	200	200
Aug	300	300	250	200	200											300	300	250	200	200
Sept	300	300	250	200	200											300	300	250	200	200

Location: Tuolumne River from LaGrange Dam to the SJR confluence CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective: Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	750	300	300	200	150	No Working Paper flow recommendations					No Working Paper flow recommendations					750	300	300	200	150
Nov	1,250	800	350	300	150											1,250	800	350	300	150
Dec	1,400	1,050	350	350	200											1,400	1,050	350	350	200
Jan	1,700	1,150	500	400	250											1,700	1,150	500	400	250
Feb	2,100	1,700	950	700	500											2,100	1,700	950	700	500
Mar	2,300	1,700	1,300	1,000	900											2,300	1,700	1,300	1,000	900
Apr	2,950	2,450	2,350	1,900	1,500											2,950	2,450	2,350	1,900	1,500
May	5,150	4,200	3,350	2,500	1,850											5,150	4,200	3,350	2,500	1,850
June	5,000	3,250	2,600	1,550	1,000											5,000	3,250	2,600	1,550	1,000
July	2,150	900	650	250	200											2,150	900	650	250	200
Aug	450	200	100	100	50											450	200	100	100	50
Sept	350	150	150	100	50											350	150	150	100	50

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective: Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	350	300	300	250	250	No Working Paper flow recommendations					No Working Paper flow recommendations					350	300	300	250	250
Nov	350	350	300	300	250											350	350	300	300	250
Dec	600	550	300	300	250											600	550	300	300	250
Jan	1,100	600	300	300	250											1,100	600	300	300	250
Feb	1,450	1,050	500	300	250											1,450	1,050	500	300	250
Mar	1,500	1,050	600	450	400											1,500	1,050	600	450	400
Apr	1,800	1,350	1,150	950	750											1,800	1,350	1,150	950	750
May	2,950	2,300	1,750	1,200	850											2,950	2,300	1,750	1,200	850
June	2,850	1,450	1,150	650	450											2,850	1,450	1,150	650	450
July	1,150	400	250	200	200											1,150	400	250	200	200
Aug	350	300	250	200	200											350	300	250	200	200
Sept	350	300	250	200	200											350	300	250	200	200

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective: benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective					WHITE AND GREEN STURGEON Objective.					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct						No Working Paper flow recommendations					No Working Paper flow recommendations									
Nov																				
Dec																				
Jan																				
Feb																				
Mar																				
Apr	5,150	2,650	2,050	1,750	1,250											5,150	2,650	2,050	1,750	1,250
May	7,000	4,450	3,050	2,300	1,600											7,000	4,450	3,050	2,300	1,600
June	6,800	3,450	2,600	1,700	1,050											6,800	3,450	2,600	1,700	1,050
July																				
Aug																				
Sept																				

Comparison of DWRSIM Study 467 (Flow Alternative 1) flows at various control points with recommended flows from AFRP Working Paper Vol III

Location: Upper Sacramento Rver Below Keswick
CP # 62, Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS

SALMONIDS
Objective: Enhance rearing, maintain spawning habitat, & temperature control Page 3-Xa-14, Vol III

Shasta Reservoir Oct 1st Carryover Storage (MAF)	AFRP Working Pap Recommended Flow	October thru April Average Flows (cfs)	Years included in Average flow Calculations	Ratio
< 2.2	3,250	4,678	1925, 27, 30, 32, 33, 34, 35, 45, 46, 78, 82, 93	1.44
>= 2.2	3,500	6,924	1924, 1940, 1965, 1989	1.98
>= 2.3	3,750	10,691	1938, 86, 88	2.85
>= 2.4	4,000	5,720	1937, 51, 91	1.43
>= 2.5	4,250	7,988	1931, 56, 77	1.88
>= 2.6	4,500	4,592	1926	1.02
>= 2.7	4,750		No Years Included in this category	
>= 2.8	5,000	5,019	1929, 47	1.00
>= 2.9	5,250	10,156	1936, 41, 46, 50, 82	1.93
>= 3	5,500	9,894	1923, 28, 39, 42, 43, 44, 49, 52, 53, 54, 55, 57, 58 59, 60, 61, 62, 63, 64, 66, 67, 68, 69, 70, 71, 72 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 90, 94	1.80

Location: Feather River at Nicolaus CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective Enhance rearing & maintain spawning habitat, Page: 3-Xc-11, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.24	0.79	0.80	1.24												1.24	0.79	0.80	1.24	
Nov	1.90	1.29	0.81	0.91												1.90	1.29	0.81	0.91	
Dec	5.36	1.98	1.45	1.13												5.36	1.98	1.45	1.13	
Jan	8.84	5.32	2.87	2.52												8.84	5.32	2.87	2.52	
Feb	10.35	5.92	4.19	2.82							2.25	1.29				2.25	1.29	4.19	2.82	
Mar	9.43	6.02	3.56	3.50							2.05	1.74				2.05	1.74	3.56	3.50	
Apr	5.34	3.44	1.39	1.56		0.92	0.77	0.33	0.36	0.54	1.39	0.90				0.92	0.77	0.33	0.36	0.54
May	4.33	2.08	1.98	1.34		0.76	0.52	0.59	0.43	0.20	1.13	0.54				0.76	0.52	0.59	0.43	0.20
June	9.30	5.62	3.67	2.35		0.95	1.02	0.75	0.71	0.65						0.95	1.02	0.75	0.71	0.65
July	5.33	4.65	4.28	4.27												5.33	4.65	4.28	4.27	
Aug	3.02	4.37	4.63	3.63												3.02	4.37	4.63	3.63	
Sept	0.88	0.57	0.59	1.10												0.88	0.57	0.59	1.10	
															April-May-June Average:	0.87	0.77	0.56	0.50	0.46

Location: Yuba River at Marysville DEPLETION AREA 67, DOWNSTREAM FLOW

	SALMONIDS Objective Optimize migration, spawning and incubation, Page 3-Xc-14-25					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.05	0.81	0.65	0.64	0.74						No Working Paper flow recommendations					1.05	0.81	0.65	0.64	0.74
Nov	2.67	2.10	1.02	1.17	0.76											2.67	2.10	1.02	1.17	0.76
Dec	6.21	2.85	1.86	1.27	0.84											6.21	2.85	1.86	1.27	0.84
Jan	8.26	5.93	3.81	2.42	2.03											8.26	5.93	3.81	2.42	2.03
Feb	9.11	7.12	5.00	3.61	2.53											9.11	7.12	5.00	3.61	2.53
Mar	8.61	7.52	4.08	3.74	2.09											8.61	7.52	4.08	3.74	2.09
Apr	5.19	3.83	2.40	1.60	0.66	0.63	0.54	0.33	0.29	0.24						0.63	0.54	0.33	0.29	0.24
Mary	2.59	1.69	0.88	0.36	0.15	0.52	0.42	0.25	0.15	0.12						0.52	0.42	0.25	0.15	0.12
June	3.03	1.66	1.06	0.35	0.13	0.71	0.64	0.50	0.26	0.14						0.71	0.64	0.50	0.26	0.13
July	5.21	2.07	1.02	0.31	0.16											5.21	2.07	1.02	0.31	0.16
Aug	2.68	2.02	1.20	0.43	0.27											2.68	2.02	1.20	0.43	0.27
Sept	1.60	1.24	0.91	0.44	0.22											1.60	1.24	0.91	0.44	0.22
															April-May-June Average:	0.62	0.53	0.36	0.23	0.16

Location: Sacramento River at Verona (RM 80) (Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)

	SALMONIDS Objective:					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective provide attraction passage, spawning, an larval transport, Page: 3-Xh-8, Vol III					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb											1.58	1.35				1.58	1.35			
Mar	No Working Paper flow recommendations					No Working Paper flow recommendations					1.54	1.31				1.54	1.31			
Apr											1.06	0.74				1.06	0.74			
May											0.87	0.52				0.87	0.52			
June																				
July																				
Aug																				
Sept																				
															April-May Average.	0.97	0.63			

Location: Lower American River at H Street Bridge CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective optimize conditions in lower Am. River for all life stages, Page: 3-Xc-42, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.92	0.97	1.05	1.01	2.42						No Working Paper flow recommendations					0.92	0.97	1.05	1.01	2.42
Nov	1.40	1.61	1.10	1.17	1.43											1.40	1.61	1.10	1.17	1.43
Dec	2.55	1.67	1.53	1.10	1.48											2.55	1.67	1.53	1.10	1.48
Jan	3.38	2.58	1.34	1.04	1.34											3.38	2.58	1.34	1.04	1.34
Feb	3.67	3.18	2.11	1.34	1.27											3.67	3.18	2.11	1.34	1.27
Mar	1.35	2.04	0.98	1.20	0.93											1.35	2.04	0.98	1.20	0.93
Apr	1.29	1.38	1.11	1.08	0.94	0.57	0.49	0.39	0.33	0.45						0.57	0.49	0.39	0.33	0.45
May	1.24	1.15	0.92	0.94	0.60	0.46	0.36	0.32	0.31	0.29						0.46	0.36	0.32	0.31	0.29
June	1.26	1.37	1.08	1.24	3.38	0.70	0.86	0.77	0.92	0.99						0.70	0.86	0.77	0.92	0.99
July	1.38	1.36	1.46	2.01	5.04											1.38	1.36	1.46	2.01	5.04
Aug	1.23	1.19	1.17	2.87	2.65											1.23	1.19	1.17	2.87	2.65
Sept	1.36	1.36	0.81	0.94	0.84											1.36	1.36	0.81	0.94	0.84
															April-May-June Average.	0.58	0.57	0.49	0.52	0.58

Location: San Joaquin River at Vernalis CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-47, 3-Xe-20, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page. 3-Xg-19 Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page 3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.15	3.67	3.55	6.13	3.35											2.15	3.67	3.55	6.13	3.35
Nov	1.07	1.96	1.93	2.10	2.38											1.07	1.96	1.93	2.10	2.38
Dec	1.41	2.05	2.19	1.97	2.06											1.41	2.05	2.19	1.97	2.06
Jan	2.16	2.24	2.05	1.97	1.88											2.16	2.24	2.05	1.97	1.88
Feb	2.67	2.01	1.59	1.97	1.67						1.02	0.56				1.02	0.56	1.59	1.97	1.67
Mar	2.59	1.52	1.13	1.13	0.93						0.99	0.42				0.99	0.42	1.13	1.13	0.93
Apr	0.54	0.44	0.42	0.41	0.43	2.17	1.20	0.73	0.70	0.88	0.81	0.38				0.54	0.38	0.42	0.41	0.43
May	0.51	0.33	0.23	0.24	0.27	1.05	0.44	0.32	0.33	0.46	0.76	0.28				0.51	0.28	0.23	0.24	0.27
June	0.46	0.18	0.19	0.21	0.25	0.93	0.27	0.26	0.32	0.46						0.46	0.18	0.19	0.21	0.25
July	0.77	0.89	1.02	1.73	1.72											0.77	0.89	1.02	1.73	1.72
Aug	1.37	1.87	2.20	2.39	2.51											1.37	1.87	2.20	2.39	2.51
Sept	2.38	2.61	2.57	3.03	3.16											2.38	2.61	2.57	3.03	3.16
															April-May-June Average	0.50	0.28	0.28	0.28	0.32

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective Double natural production, Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page. 3-Xg-21. Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.23	2.78	3.41	5.93	2.02						No Working Paper flow recommendations					2.23	2.78	3.41	5.93	2.02
Nov	1.37	1.81	1.57	1.88	1.75											1.37	1.81	1.57	1.88	1.75
Dec	1.44	2.77	1.55	1.83	1.69											1.44	2.77	1.55	1.83	1.69
Jan	2.64	2.79	1.78	1.93	1.73											2.64	2.79	1.78	1.93	1.73
Feb	5.19	2.58	2.16	2.61	1.66											5.19	2.58	2.16	2.61	1.66
Mar	4.11	1.53	1.12	1.18	1.43											4.11	1.53	1.12	1.18	1.43
Apr	1.10	0.75	0.59	0.95	0.91	0.39	0.30	0.23	0.29	0.51						0.39	0.30	0.23	0.29	0.51
May	0.77	0.51	0.69	0.67	0.67	0.17	0.13	0.12	0.18	0.33						0.17	0.13	0.12	0.18	0.33
June	1.04	0.59	2.29	3.28	3.41	0.31	0.16	0.20	0.36	0.68						0.31	0.16	0.20	0.36	0.68
July	2.29	1.84	2.40	3.26	3.26											2.29	1.84	2.40	3.26	3.26
Aug	1.90	1.90	2.34	3.19	3.27											1.90	1.90	2.34	3.19	3.27
Sept	2.10	1.96	2.35	2.93	2.87											2.10	1.96	2.35	2.93	2.87
															April-May-June Average:	0.29	0.20	0.19	0.28	0.51

Location: Tuolumne River from LaGrange Dam to the SJR confluence CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.94	1.84	1.74	3.25	2.25	No Working Paper flow recommendations					No Working Paper flow recommendations					0.94	1.84	1.74	3.25	2.25
Nov	0.50	0.93	1.35	1.41	2.11											0.50	0.93	1.35	1.41	2.11
Dec	0.60	1.08	1.63	1.20	1.56											0.60	1.08	1.63	1.20	1.56
Jan	1.57	1.40	1.24	1.08	1.23											1.57	1.40	1.24	1.08	1.23
Feb	1.88	1.14	0.93	0.76	0.69											1.88	1.14	0.93	0.76	0.69
Mar	1.89	1.31	0.80	0.83	0.36											1.89	1.31	0.80	0.83	0.36
Apr	1.05	0.59	0.43	0.35	0.29											1.05	0.59	0.43	0.35	0.29
May	0.42	0.30	0.24	0.23	0.23											0.42	0.30	0.24	0.23	0.23
June	0.65	0.16	0.09	0.12	0.14											0.65	0.16	0.09	0.12	0.14
July	0.67	0.50	0.37	0.66	0.68											0.67	0.50	0.37	0.66	0.68
Aug	1.15	2.18	2.43	1.67	2.79											1.15	2.18	2.43	1.67	2.79
Sept	2.50	2.91	1.59	1.83	3.03											2.50	2.91	1.59	1.83	3.03
															April-May-June Average:	0.71	0.35	0.26	0.23	0.22

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective.					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.60	3.90	3.80	5.76	2.70	No Working Paper flow recommendations					No Working Paper flow recommendations					2.60	3.90	3.80	5.76	2.70
Nov	0.88	1.62	0.81	0.86	0.61											0.88	1.62	0.81	0.86	0.61
Dec	1.53	1.77	1.00	0.92	0.63											1.53	1.77	1.00	0.92	0.63
Jan	1.54	1.55	1.15	1.14	0.61											1.54	1.55	1.15	1.14	0.61
Feb	1.74	1.92	0.95	2.18	0.98											1.74	1.92	0.95	2.18	0.98
Mar	1.04	0.39	0.34	0.35	0.40											1.04	0.39	0.34	0.35	0.40
Apr	0.29	0.16	0.08	0.07	0.09											0.29	0.16	0.08	0.07	0.09
May	0.58	0.19	0.05	0.05	0.08											0.58	0.19	0.05	0.05	0.08
June	0.82	0.14	0.03	0.04	0.08											0.82	0.14	0.03	0.04	0.08
July	0.28	0.08	0.15	0.50	0.92											0.28	0.08	0.15	0.50	0.92
Aug	0.15	0.32	0.52	0.81	0.73											0.15	0.32	0.52	0.81	0.73
Sept	1.08	0.61	0.46	0.50	0.57											1.08	0.61	0.46	0.50	0.57
															April-May-June Average:	0.56	0.16	0.05	0.06	0.08

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct						No Working Paper flow recommendations					No Working Paper flow recommendations									
Nov																				
Dec																				
Jan																				
Feb																				
Mar																				
Apr	0.64	0.28	0.26	0.26	0.28											0.64	0.28	0.26	0.26	0.28
May	0.64	0.12	0.14	0.18	0.22											0.64	0.12	0.14	0.18	0.22
June	0.31	0.15	0.17	0.25	0.36											0.31	0.15	0.17	0.25	0.36
July																				
Aug																				
Sept																				
															April-May-June Average:	0.53	0.18	0.19	0.23	0.29

Feather River at Nicolaus

STUDY 1995C6F-SWRCB-487 DWRSIM rsco6818-I 17 Jun 97

CP # 37 DEPLETION AREA 13, DOWNSTREAM FLOW (CFS)

Project /1995C6F-SWRCB-487/37/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,659	906	1,431	4,086	9,165	12,133	8,636	26,006	18,973	6,424	3,480	403
1923	867	823	7,205	11,287	2,539	4,928	7,630	2,781	4,386	3,480	4,440	1,428
1924	1,854	1,731	4,803	6,928	2,489	374	1,126	1,626	2,437	3,080	195	151
1925	2,086	454	618	2,586	11,308	5,269	3,916	2,228	4,286	3,545	563	454
1926	1,360	1,076	746	5,058	5,906	5,204	4,890	1,431	2,823	4,814	325	2,168
1927	3,903	6,487	3,080	9,693	36,912	18,345	12,705	9,628	7,764	6,717	4,786	252
1928	1,220	1,882	699	8,034	2,280	43,797	6,823	2,391	2,941	5,025	5,513	1,076
1929	2,927	1,311	797	3,676	2,269	2,980	235	911	1,986	3,480	1,203	34
1930	1,968	1,042	2,876	7,790	1,224	10,327	4,521	3,123	3,089	4,228	2,440	891
1931	2,486	2,536	2,895	1,504	2,629	1,122	2,756	1,584	2,235	4,391	943	1,445
1932	2,883	1,445	2,277	8,278	4,259	980	3,428	1,724	3,075	2,244	276	266
1933	1,334	639	1,659	2,179	4,367	2,785	1,280	195	2,571	2,749	748	639
1934	2,277	1,082	1,529	4,928	1,134	2,486	1,862	1,706	2,386	2,927	781	1,781
1935	3,168	536	1,025	8,799	1,082	7,432	8,362	7,886	5,485	3,968	732	2,958
1936	1,756	2,033	3,399	8,977	24,895	17,483	7,714	3,578	3,832	4,033	5,172	67
1937	716	1,546	3,480	2,781	11,452	13,531	6,437	3,676	3,714	4,001	2,749	84
1938	1,156	2,288	25,257	11,384	26,586	37,280	27,158	26,542	17,797	5,025	1,057	3,059
1939	5,139	4,974	5,253	5,416	5,528	5,253	2,588	228	2,487	5,139	5,448	303
1940	2,358	1,210	585	4,814	5,288	41,000	31,779	5,741	5,579	4,883	5,876	1,344
1941	2,212	2,538	4,993	20,567	29,602	24,037	7,226	14,572	6,470	5,757	1,220	738
1942	4,001	3,176	20,752	18,606	36,472	10,278	22,452	13,515	11,687	6,408	3,025	504
1943	982	5,528	10,718	24,863	18,586	25,647	11,579	5,680	5,882	5,351	4,326	822
1944	1,106	1,193	1,529	2,927	6,971	8,050	1,529	6,375	1,126	4,749	5,008	0
1945	1,773	2,780	2,982	2,472	11,066	10,604	2,891	2,082	4,084	4,245	5,204	252
1946	811	2,805	10,539	16,198	8,373	8,441	1,865	4,082	4,353	4,814	5,465	1,294
1947	2,381	1,748	2,749	1,887	3,439	4,407	3,059	4,131	1,815	4,359	5,172	2,437
1948	2,486	1,294	2,082	1,447	1,513	2,423	6,537	8,378	5,386	5,936	6,424	3,563
1949	3,578	1,311	1,805	2,781	2,289	7,583	1,781	1,610	1,832	3,513	4,115	891
1950	2,179	975	813	4,277	7,941	4,570	3,889	3,123	4,289	5,107	4,814	982
1951	894	18,251	31,828	26,038	20,781	11,448	4,151	2,879	1,089	4,554	6,281	1,731
1952	2,472	2,921	9,774	25,241	21,888	16,459	27,107	33,421	17,088	5,074	2,198	3,731
1953	4,163	2,151	9,486	21,760	6,481	8,798	4,790	6,652	8,941	6,944	3,827	891
1954	1,171	4,117	2,618	8,506	15,083	16,816	13,041	2,423	4,554	5,074	5,432	3,178
1955	2,017	1,380	3,448	4,342	2,161	1,936	1,126	3,871	1,916	4,863	5,361	606
1956	1,984	739	5,725	42,496	19,715	18,589	6,016	16,019	8,117	6,701	2,283	891
1957	4,716	1,289	1,984	4,521	14,361	17,386	2,958	2,911	5,875	4,180	4,785	2,118
1958	1,528	723	2,802	9,804	28,206	31,421	25,986	18,963	11,680	4,440	1,887	3,009
1959	4,326	1,888	2,082	10,798	17,486	5,586	1,865	4,980	2,218	4,684	4,814	941
1960	1,822	706	1,903	2,553	4,807	3,156	1,326	4,082	2,907	5,389	2,374	2,504
1961	2,586	1,580	618	1,724	5,078	1,529	1,462	4,342	3,009	5,107	5,351	521
1962	2,880	471	851	1,122	12,180	6,375	1,311	4,733	5,813	4,277	4,944	3,042
1963	8,921	3,949	5,643	862	25,929	12,279	26,738	11,824	7,126	5,741	4,183	1,178
1964	1,386	4,487	1,252	9,026	2,225	3,952	5,159	5,351	1,042	4,883	5,465	3,227
1965	2,882	1,849	8,587	43,131	12,406	8,278	11,277	6,388	5,786	4,570	4,030	1,210
1966	887	7,344	4,554	6,717	5,080	6,083	1,849	4,883	2,622	4,147	5,481	1,344
1967	2,882	1,210	6,928	7,172	23,138	19,965	9,176	14,383	16,957	4,564	2,000	3,042
1968	4,183	1,486	3,139	9,937	14,882	16,166	2,218	4,080	2,807	5,080	4,277	0
1969	732	1,210	1,836	34,486	31,853	19,142	14,251	20,459	7,082	1,675	183	6,383
1970	2,326	2,638	22,346	63,736	40,513	13,678	2,773	33	1,781	3,074	5,876	874
1971	797	941	16,930	10,604	8,859	16,751	9,613	10,480	8,463	6,733	4,424	1,445
1972	1,464	2,437	6,798	5,882	9,482	9,464	2,319	4,700	2,218	3,415	5,204	3,583
1973	3,887	3,983	4,733	17,190	25,785	20,246	5,485	3,204	5,381	4,506	5,025	1,887
1974	1,546	16,100	19,337	36,888	15,448	37,084	27,679	10,425	7,788	5,586	1,675	2,857
1975	3,919	2,087	2,781	3,610	24,820	20,498	7,327	9,886	10,187	5,253	1,822	1,833
1976	5,725	3,381	4,147	3,836	4,294	3,627	1,482	183	823	3,513	3,838	1,284
1977	3,882	1,412	2,651	2,802	380	374	6,033	718	823	65	179	319
1978	179	386	1,447	11,775	8,536	12,230	9,781	3,487	4,000	3,659	2,786	1,311
1979	748	2,151	1,982	9,986	18,880	11,531	3,479	1,484	437	2,785	5,042	1,180
1980	1,389	1,788	3,188	40,919	37,743	21,972	6,857	4,082	3,788	4,088	797	976
1981	797	622	1,106	6,457	8,461	9,839	4,885	927	2,867	3,610	4,738	1,042
1982	2,374	8,773	33,881	31,880	32,579	34,580	46,770	18,557	8,286	5,448	1,773	4,236
1983	7,351	11,831	19,923	18,507	37,254	56,523	24,771	21,029	23,276	6,538	4,245	6,873
1984	5,107	21,586	46,839	25,046	15,525	14,491	3,887	2,586	2,033	4,679	5,009	908
1985	289	4,101	2,895	3,080	7,418	7,953	2,823	4,277	2,198	4,884	5,432	5,411
1986	3,025	1,887	3,822	5,513	50,389	53,632	7,310	2,082	1,042	5,383	4,086	1,887
1987	1,220	672	976	2,618	4,582	7,237	1,886	342	1,006	3,025	4,570	34
1988	3,448	1,513	1,301	4,196	1,166	33	2,151	553	1,391	3,659	4,440	17
1989	3,286	672	683	1,852	1,332	12,468	8,218	1,080	2,282	4,163	1,529	3,731
1990	4,086	2,000	4,879	5,221	4,123	3,156	2,302	211	1,311	4,564	2,309	218
1991	2,911	1,798	2,848	2,423	1,224	8,197	3,781	325	882	2,749	1,870	0
1992	1,659	1,661	1,447	2,749	9,457	3,610	2,773	283	1,386	1,758	374	0
1993	2,261	872	902	7,042	8,273	3,529	13,747	9,417	6,873	4,017	3,986	318
1994	867	1,244	3,806	3,350	8,121	2,261	1,280	485	1,244	4,983	4,505	0

Flow recommendations are based on water year types as defined on p 23-24 of the SWRCB 1995 WQCP for the Bay Delta

Sacramento Basin 40-30-30 Index
Wet - 1927, 38, 41, 42, 43, 52, 53, 56, 58, 63, 65, 67, 69, 70, 71, 74, 75, 82, 83, 84, & 86
Above Normal - 1922, 28, 40, 51, 54, 57, 73, 78, 80, & 93
Below Normal - 1923, 35, 36, 37, 45, 46, 48, 50, 59, 62, 66, 68, 72, & 79
Dry - 1925, 26, 30, 32, 39, 44, 47, 49, 55, 60, 61, 64, 81, 85, 87, & 89
Critical - 1924, 29, 31, 33, 34, 76, 77, 88, 90, 91, 92, 94

San Joaquin Basin 60-20-20 Index
Wet - 1922, 37, 38, 41, 42, 43, 52, 56, 58, 65, 67, 69, 74, 75, 78, 80, 82, 83, 86, & 93
Above Normal - 1923, 27, 32, 35, 36, 40, 45, 46, 51, 63, 70, 73, 79, & 84
Below Normal - 1925, 28, 44, 48, 49, 50, 53, 54, 57, 62, 66, & 71
Dry - 1926, 33, 39, 47, 55, 59, 64, 68, 72, 81, & 85
Critical - 1924, 29, 30, 31, 34, 60, 61, 76, 77, 87, 88, 89, 90, 91, 92, 94

Mean Monthly Flow in cfs by Water Year Type

73-year Flow Averages by Month and Water Year Type
Feather River at Nicolaus - CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	3,106	1,974	2,000	2,106	2,754
NOV	4,782	3,233	2,029	1,540	1,693
DEC	13,399	4,951	3,622	1,927	2,713
JAN	22,092	13,290	7,178	4,280	3,848
FEB	25,864	14,810	10,472	4,800	3,467
MAR	23,584	20,058	8,904	5,943	2,580
APR	16,020	10,327	4,189	3,272	2,252
MAY	13,003	6,256	5,944	2,821	729
JUN	9,295	5,821	3,674	2,354	1,620
JUL	5,327	4,646	4,283	4,288	3,161
AUG	3,023	4,368	4,626	3,634	1,782
SEP	2,207	1,415	1,478	1,535	492

CP 15 Yuba River at Marysville, Regulated Flow

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	423	521	876	1,822	4,574	2,811	3,714	8,796	8,033	2,980	2,583	471
1923	465	807	3,986	3,074	1,961	1,870	2,165	1,584	2,064	828	683	571
1924	504	536	680	1,306	1,878	748	286	179	188	65	65	67
1925	276	353	784	1,171	4,826	2,277	1,798	1,675	801	380	585	454
1926	423	536	718	1,486	4,447	2,846	2,218	380	252	65	65	67
1927	423	4,033	2,386	3,741	8,580	5,448	5,781	5,253	4,571	2,244	618	487
1928	423	1,816	1,643	3,074	2,277	7,432	4,420	3,155	790	438	553	454
1929	423	536	683	1,301	1,729	1,431	1,025	342	302	65	65	67
1930	325	319	1,431	2,830	3,205	2,846	1,445	520	286	65	130	471
1931	423	622	504	1,513	1,830	1,203	252	179	188	65	65	67
1932	276	303	1,286	1,529	1,965	2,472	2,084	1,415	2,807	585	634	403
1933	423	454	553	1,301	1,458	1,643	1,160	851	202	65	65	67
1934	342	336	716	1,610	2,251	1,306	454	195	202	65	65	67
1935	325	504	585	1,546	1,747	2,131	4,638	3,584	3,344	618	618	420
1936	472	454	953	4,505	6,180	4,505	4,101	3,334	2,773	887	634	487
1937	423	420	537	1,285	3,151	2,879	2,706	3,236	1,746	488	589	403
1938	423	1,482	4,488	3,708	5,680	6,343	6,151	8,733	7,847	3,156	2,033	538
1939	520	865	589	1,306	1,585	1,858	672	179	188	65	65	67
1940	276	286	293	3,253	5,320	7,400	5,176	4,749	2,090	407	618	504
1941	455	807	3,360	4,538	6,826	5,485	4,389	5,009	3,344	2,586	797	805
1942	520	840	4,245	4,886	7,004	4,835	5,411	5,237	5,026	2,885	842	521
1943	423	2,000	3,448	6,115	5,008	7,221	5,008	4,131	2,805	889	797	536
1944	438	471	802	1,447	2,225	2,283	1,482	784	353	65	65	118
1945	423	1,412	1,724	1,835	4,700	3,724	1,714	1,386	1,084	589	888	487
1946	585	1,546	4,619	4,051	4,231	2,368	2,134	2,170	1,176	537	663	454
1947	423	1,244	1,156	1,285	2,983	2,521	1,328	342	336	65	65	67
1948	423	487	520	2,131	1,443	1,854	3,126	2,131	3,075	813	732	454
1949	423	487	943	1,334	1,873	3,367	2,134	797	262	65	438	454
1950	423	487	537	3,513	4,828	3,236	3,042	2,488	2,282	618	883	471
1951	828	6,000	8,571	6,844	6,158	5,172	4,571	3,415	1,513	589	883	471
1952	784	1,344	4,245	5,985	5,511	5,363	6,201	8,282	8,388	3,780	2,911	1,126
1953	423	487	1,513	5,643	4,123	3,318	2,363	2,163	3,887	2,781	829	521
1954	504	906	732	2,980	3,817	4,017	3,529	829	805	407	618	454
1955	423	566	1,334	2,163	1,765	1,810	1,284	1,006	370	65	65	67
1956	423	585	9,433	10,213	6,676	4,814	3,865	5,302	4,336	2,342	678	622
1957	784	638	953	1,529	4,249	4,115	1,280	2,000	1,833	585	716	536
1958	880	790	1,756	3,318	7,883	6,198	6,706	6,610	6,336	2,944	1,236	823
1959	423	504	553	3,058	3,583	1,789	1,058	407	336	65	65	101
1960	423	454	553	1,773	3,561	2,879	1,328	618	370	65	65	84
1961	423	706	813	1,350	2,288	1,822	841	342	202	65	65	67
1962	342	336	683	1,136	4,966	3,265	2,706	678	1,714	537	716	521
1963	4,131	3,058	3,123	4,196	5,456	4,570	4,874	5,904	3,344	829	884	855
1964	602	2,756	878	2,700	1,878	1,740	1,580	880	454	65	65	67
1965	423	739	10,815	9,758	5,924	4,310	5,485	4,886	3,361	1,626	1,008	672
1966	472	1,178	982	2,553	1,908	2,244	1,781	455	286	65	65	67
1967	423	1,462	3,643	4,928	4,700	4,785	3,008	4,879	5,848	3,285	2,586	622
1968	585	571	894	2,067	4,250	4,017	1,143	472	336	65	65	67
1969	423	706	1,317	10,002	8,734	5,302	5,385	7,123	5,746	2,716	813	555
1970	618	566	4,228	11,027	7,346	5,418	3,529	851	867	602	718	471
1971	618	2,420	4,538	4,472	3,475	4,570	1,714	3,171	3,378	2,618	876	738
1972	586	706	1,513	2,635	2,798	2,976	1,513	683	286	65	634	880
1973	813	1,786	2,797	5,351	6,536	5,080	3,361	2,277	1,109	585	732	706
1974	828	4,986	5,936	7,205	4,718	8,441	7,280	5,887	3,986	2,785	843	805
1975	589	885	634	1,870	4,718	5,367	2,202	3,286	4,185	2,486	1,008	773
1976	1,106	1,193	887	1,362	1,617	1,073	370	179	188	65	65	67
1977	276	286	308	716	828	716	188	179	188	65	130	67
1978	228	151	732	4,228	4,357	5,123	4,470	3,318	3,143	1,464	878	891
1979	485	622	585	2,618	3,367	3,080	1,798	1,822	1,108	520	718	521
1980	813	1,042	1,643	6,229	7,587	6,131	3,833	3,822	3,243	980	613	521
1981	520	471	748	2,309	2,181	2,488	1,428	380	336	65	65	67
1982	423	4,420	7,823	5,822	7,743	7,676	11,814	9,075	5,781	2,618	811	1,126
1983	1,025	2,738	4,261	5,811	7,761	9,708	7,613	7,725	8,310	4,977	2,944	1,513
1984	911	4,437	9,254	5,123	4,888	4,977	3,882	2,326	1,796	683	797	855
1985	683	2,470	1,203	1,610	2,125	2,082	1,479	438	336	65	65	67
1986	423	756	911	3,204	13,486	10,820	6,386	3,545	2,017	602	732	908
1987	683	437	553	1,389	2,251	1,828	487	211	202	65	65	67
1988	342	370	1,008	1,773	1,321	1,122	807	195	202	65	65	67
1989	342	924	887	1,301	1,883	7,400	3,948	1,826	773	380	818	806
1990	1,138	[illegible]	[illegible]	[illegible]	[illegible]	1,854	655	618	235	65	65	67
1991	342	383	423	862	1,082	2,806	1,244	465	202	163	618	403
1992	407	454	455	1,334	3,946	2,017	840	196	202	65	65	67

Sacramento Basin 40-30-30 Index
Yuba River at Marysville gage

Month	W	AN	BN	D	C
OCT	732	584	457	460	520
NOV	1888	1470	717	817	530
DEC	4348	1983	1306	886	587
JAN	5780	4154	2885	1881	1424
FEB	6360	4867	3486	2527	1771
MAR	6026	5266	2864	2620	1461
APR	5191	3636	2403	1602	880
MAY	5186	3374	1780	714	306
JUN	4548	2485	1586	524	193
JUL	2345	931	461	138	74
AUG	1204	807	540	195	121
SEP	718	566	406	200	96

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Sacramento River at Verone

STUDY 1995C06F-SWRCB-467 DWRSIM recirc618-d 21 May 97

ALT 1 - SACRAMENTO RIVER FLOW AT VERONA (CFS)

CP 43 def - CP 64 def - CP 43 In

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	8701	7714	11824	14133	28738	25647	17915	36495	25612	13157	9969	8033
1923	10018	12268	24151	26087	14531	14800	19209	9937	10867	11401	10913	7411
1924	6668	7764	11236	14832	12830	6554	6907	7497	8016	11954	5383	6134
1925	7156	5648	7937	9286	36732	15060	17629	9173	12503	13222	7449	7058
1926	8587	7109	7806	15158	30700	14003	14890	8522	10487	11986	6782	9781
1927	10311	16684	12897	25094	71592	37503	39140	21175	14336	16377	11238	7630
1928	9628	17259	12279	21191	21523	70665	23141	9677	10015	15369	13320	8537
1929	10457	10235	10376	13011	15701	12230	5932	7123	7867	9677	5635	6285
1930	8685	7495	12084	18784	14639	26184	11125	10295	10369	12165	9626	7615
1931	9059	8436	9042	10669	10227	7530	9142	7205	7478	11069	9319	7260
1932	7237	6218	11092	16003	10761	7091	8554	6614	8016	6782	5009	5983
1933	6733	5210	7172	9872	10660	8799	6857	5627	7546	8880	6359	6050
1934	7481	5798	9254	14702	11398	10669	7058	7058	7226	7790	11189	7294
1935	9807	7546	7042	23110	11146	20573	15965	13564	10838	13726	7741	9445
1936	10100	9327	11628	26396	36474	29177	16385	10555	10302	13287	11856	7579
1937	8099	8067	10653	11059	27387	31828	17985	10864	10285	11531	9270	7495
1938	8424	18738	41504	26428	69287	68631	39796	46221	27023	12214	7465	13327
1939	19044	16234	15369	15206	15773	13499	9462	5985	8537	12181	11672	5815
1940	9563	7210	7123	23110	37952	51230	35292	12702	12880	14442	12442	8739
1941	10148	10419	25436	66371	64821	51376	37527	35145	15649	15239	7693	11596
1942	17727	14690	56207	53165	65886	23273	37813	30559	21797	15271	9496	8537
1943	14263	17327	23631	46481	44763	51962	24385	16719	12487	16086	10799	8151
1944	9660	9579	10506	13938	22409	22183	8134	13434	7615	11905	11496	7596
1945	8556	11596	13894	10815	28323	23175	9798	9612	10772	13389	11710	7596
1946	9042	12923	43440	36788	20023	19965	9176	11872	12218	14442	12539	8453
1947	10002	10184	13808	10474	16403	17711	10218	11222	8520	11531	11596	9932
1948	8896	8319	8311	12881	8136	12490	18604	25810	18637	15080	13157	10722
1949	12360	10436	11319	12380	12802	36544	10756	9042	8453	11366	11417	8403
1950	10327	6655	8945	17646	26577	17207	11495	10181	10856	12767	11238	8117
1951	8766	21996	45489	49717	49174	25078	11310	13303	7831	13385	13222	9092
1952	10962	12772	41797	54905	52294	48270	48114	48205	26570	11589	8847	15713
1953	17597	13495	38089	56174	24920	21842	13444	22069	20839	16296	10132	10974
1954	14605	18419	12279	30299	52289	44204	35174	13141	13982	15597	12978	10621
1955	11173	17461	20831	18361	13324	12165	9176	11075	9856	12230	12620	7781
1956	9514	9646	15710	67802	54137	33812	18217	33259	16789	14914	8847	12167
1957	18410	12772	10913	15515	29422	39325	10856	17028	11814	13320	11173	7983
1958	20411	16469	20720	37959	53082	84066	37779	33865	25175	13596	10360	17612
1959	18524	13192	11336	30787	45736	19464	9680	12279	8890	12084	12718	7428
1960	11010	8268	9754	13108	24270	18914	7764	11547	9932	13854	10067	10201
1961	10035	11260	17256	11580	31150	19863	10823	11661	10890	13608	13856	8168
1962	11336	8823	15743	11889	41072	24330	8470	12328	12886	13905	12133	10705
1963	18199	16722	23586	12246	42224	29437	62063	22187	14187	15824	10929	9041
1964	13629	22990	11303	21728	13300	13320	12033	12718	7830	11970	11970	10352
1965	9644	12066	8246	67640	26829	18443	38787	15894	12671	14751	10457	8756
1966	11027	26519	13791	26298	23426	26786	11512	12100	10235	12897	14247	9209
1967	11319	14201	35568	29339	36606	47083	33964	35389	29946	12539	8782	15108
1968	17646	13092	13515	26379	46435	34086	9293	11496	9646	12887	12198	7549
1969	9563	11512	23940	55149	55314	40041	37023	36186	16402	10067	6766	19562
1970	16377	14268	43456	70681	50039	32868	11629	7563	9846	12978	13710	8868
1971	9496	18738	48920	41342	23552	46680	17192	25176	19007	17125	11092	12050
1972	15792	14184	17792	17613	21036	28721	10756	11807	10235	12133	13499	9730
1973	13027	22049	22639	36235	61112	42187	16906	11742	13747	15867	11515	9176
1974	11189	52349	54108	65574	35310	90051	24654	21744	16553	16312	10148	18016
1975	16410	14755	14377	15076	51677	69603	21276	23696	19091	14149	9496	14923
1976	20703	14823	13369	13791	16916	15662	8369	6944	7869	12653	11027	7411
1977	10441	7344	8311	9677	6680	6489	15982	6083	8886	8652	5578	5529
1978	5461	4622	11366	43001	43718	37943	32888	16410	8880	11791	8766	11243
1979	13060	11764	9839	22704	37470	27323	13982	9026	7025	13344	12279	8638
1980	10799	12856	17369	51100	58380	33015	16772	11336	10403	10490	7253	8655
1981	13743	10302	12198	24151	26109	29974	15276	7985	10738	11742	12816	7781
1982	10887	31811	53906	41390	50417	60370	61441	27589	17511	13043	8750	16772
1983	21939	27988	49423	49197	68669	59248	58660	44066	41342	17871	14962	22806
1984	22688	47306	66648	39992	30267	33991	13681	12165	8705	15268	12328	6907
1985	14279	26620	19044	14182	19302	19353	10957	11466	9546	12067	11937	11361
1986	9837	8184	13743	18589	62877	61866	17394	9254	7647	11677	10571	8067
1987	10246	8252	10002	14068	20023	26802	8168	7530	8941	12425	14718	6504
1988	11222	6991	14052	23175	10327	5871	7915	8619	7932	13125	15646	6050
1989	9791	8063	7611	11189	7743	39967	18721	8294	10319	12019	8327	9963
1990	13694	9880	13466	18573	14567	13417	7983	7188	8420	13043	8803	6722
1991	9465	8907	9189	10116	7669	25696	13428	6375	6838	8164	7579	6470
1992	6229	5731	8131	10002	27784	17402	10739	6261	8016	9221	8115	6487
1993	9303	6880	10568	41114	38577	39309	29729	21435	22419	14036	11449	8436
1994	9335	15764	14491	13775	23688	13547	8362	8406	8804	13710	10262	7327

Sacramento Basin 40-30-30 Index

Sacramento River at Verona - CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow

Month	W	AN	BN	D	C
OCT	13,763	10,828	11,586	11 040	10,291
NOV	19,055	13,179	11,877	11 771	8,723
DEC	33,668	16,187	14,991	12 376	10,508
JAN	44,790	32,542	21,461	14,974	13,516
FEB	49,280	41 968	27 898	19,715	14,029
MAR	48,028	40,860	23,567	20 715	11,989
APR	33,009	22,966	13 021	11 480	9,055
MAY	27,077	16,327	12,245	9 796	8,669
JUN	18 741	13,760	10,806	9 458	7 647
JUL	14,457	13 757	12,846	11 960	10,494
AUG	10,137	11,209	11,821	10 723	8,967
SEP	12,786	9 051	8,577	8 407	8,585

American River at H Street Bridge

STUDY 1995C06F-SWRCB-467 DWRSIM recirc618-I 17 Jun 97

CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-467/64/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,870	2,403	2,440	2,196	4,806	4,407	4,369	8 359	8 470	2 667	3 253	3,613
1923	2,374	2,403	6,961	5,090	3 529	2,407	3,933	4,375	3 496	5 660	2 781	1 361
1924	3,090	2,403	3,350	2,196	1,876	1,513	674	211	1 160	390	244	269
1925	423	521	520	456	5,078	2,407	4,689	4 310	5 109	5 361	3 480	1,529
1926	1 122	1 412	1 867	1 187	1 188	1 415	2,000	1 317	2,756	3 074	2 456	269
1927	1,317	1,412	1 724	4,050	13,667	4,926	8 164	3 667	4 252	4 066	2 000	3,277
1928	2,374	2 874	2,635	2,440	2,347	12,572	5 613	2 309	2 186	3 460	2 749	773
1929	1,936	1 916	1,952	1 952	1,945	1,513	1 126	1 073	1,496	4 261	2 196	269
1930	878	504	504	439	2,053	2,944	2 370	2 309	2 396	2,797	2 505	269
1931	1,643	1 916	1 952	1 691	1 440	1,122	4,564	163	1 445	1 252	537	303
1932	423	504	504	456	3,825	2,407	2,370	2,814	4 252	6 213	5 676	269
1933	2 049	1,916	1 952	1 952	1 945	1,513	3 176	1 187	2 266	3 706	1 220	269
1934	2 179	566	504	439	720	1 203	1 378	1 362	3 227	5 839	244	269
1935	1,025	504	504	439	1 456	2,911	5,546	3 318	4 252	5 316	3 627	1 529
1936	1,870	2,403	2 440	4,066	13,213	4 294	5 714	3 562	4 252	5,237	3 056	1 260
1937	2,374	2 403	2,440	2,440	2,431	4 115	4 420	3 919	3 496	3 610	2 163	1 479
1938	2,374	2 403	6,278	3,367	10,263	10,978	8,067	9 075	7 999	3 106	3 903	3 933
1939	2,374	2 403	2,440	2,440	2,431	1,903	1,496	1 057	1 546	2 879	3 318	269
1940	1 952	504	2 114	439	9,614	10,457	6,467	2,309	3 075	3 965	2 244	1 260
1941	1 870	2 403	4,212	5,904	8,265	4,830	3,815	4 570	4 252	3 236	2,000	3,075
1942	2,374	2 403	5,318	9 742	10,407	3,659	5,277	6 148	5,986	3 936	2 976	3 899
1943	2,374	3,815	4,879	11,433	7 346	12,474	5,294	2 614	3 496	4 294	2 000	1 748
1944	2,374	2 403	2,440	2 440	2 347	1,903	2,370	1 317	2 000	2 570	3 123	269
1945	1,870	1,916	1,952	1,952	8,391	2,407	2,504	3 009	3 496	3 789	2 000	1 664
1946	2,374	3,546	8,929	5,627	2 971	3,123	4 252	2 749	3 983	4 082	2 326	773
1947	2,082	2,403	2,440	2,196	1,945	1 773	1 378	2,309	2 118	2 765	3 367	269
1948	2,261	1 412	3,156	1,480	1,147	2,407	2,370	2,309	3 496	3 529	2 179	1 963
1949	2,374	2,403	2,440	2,440	2,431	2,407	2 370	2 472	2,756	3 074	2,732	773
1950	2,423	2 403	2,440	2,635	5,978	3,253	5,143	2,992	4 252	4 066	2 000	2,286
1951	3,367	16,336	15,467	10,457	8,517	3,497	3,109	3 399	3 496	3 529	2 374	1,260
1952	2,374	2 840	6,146	9,254	9,353	6,066	9,109	10 132	10 302	4 082	4 375	4,134
1953	2,374	2,403	2,749	7 758	2,755	2,407	2,991	3 562	4 252	3,724	2 895	3,865
1954	2,374	2,403	2,440	2 440	3,277	4 538	4,756	2 309	2 941	3 009	2 082	773
1955	1,870	1,916	1,952	1 952	1 945	2,407	2,773	1 317	2 000	2 293	2 781	269
1956	3,220	1 916	13,547	16 768	5 894	2 911	3 830	4 619	5 344	3 123	3,513	3 846
1957	2,374	2,403	2,440	2,440	3 223	4,661	2,370	2 309	3 496	3 497	2,000	1 983
1958	2,374	2,403	2,440	2,781	10,269	6,717	10,436	9 156	7 142	2,765	4 017	3,949
1959	2,374	2 403	2,440	2 440	2,521	1 903	1 412	1 317	2 000	2 000	1 805	269
1960	1,919	1 916	1,952	1 891	1,391	2 732	1 529	2 309	2 134	2 374	1 870	773
1961	1 667	1 916	1 952	1 952	1 945	1 513	924	602	1 496	1 480	613	269
1962	1 008	1 412	1,447	1 187	2,503	2 407	3 563	2 309	2 823	3 838	2 049	773
1963	3 204	4 403	3 594	4 115	11 580	2 911	6 689	6 229	3 496	3 919	2 000	2,370
1964	2,374	4 134	2,440	3 074	2,347	1 903	1 378	2 309	2 000	2 911	4 050	269
1965	2,911	1 412	18 540	12 887	5,384	2 407	4,218	3 562	4 252	4 180	2 000	3 042
1966	2,374	2 571	2 440	2 618	2 431	1 903	1,378	1 317	2 319	2 391	2 017	773
1967	2,082	1 916	1 952	7 010	4 772	6,213	4,538	7 790	8 696	3 757	4 017	4 050
1968	2,374	2,571	2,440	2,618	6,780	2,521	1,428	1 317	2,101	2 147	1 789	773
1969	1,870	1 916	1 952	15 532	9,561	4 407	7 042	7 611	5 796	2 496	3 741	3 862
1970	2,374	2 403	5,596	21 842	6 176	2 407	2,840	2 309	2,504	3 106	2,033	807
1971	1 870	1 916	5,936	5,269	3,745	4 050	2 941	3 562	4 252	3 041	2 537	3 680
1972	2,374	2 403	2 927	2,440	3,042	4 294	2 470	2 309	2,504	2 505	2,537	773
1973	1 870	1,916	2,506	9 693	7,653	3,952	2,756	3 708	4 185	4 375	1 740	773
1974	1,870	6 266	7,335	12 702	3,781	9 482	6 789	4 082	4 252	2 440	3 952	4,017
1975	2,374	2,403	2,440	2,440	3,133	4 586	3 630	4 017	5 294	2 423	3 773	3,781
1976	2 374	3 277	2 440	2 440	2,347	1 903	622	781	1 563	2 667	1 706	269
1977	746	504	764	894	432	325	689	130	437	260	276	303
1978	390	504	504	1 415	5 080	5,806	4 403	3 220	4 252	3 562	2 566	2,554
1979	2,374	2 403	2 440	2 440	2,809	3,399	2 370	3 708	2,739	2 976	2,423	1 260
1980	2 374	2 403	2 440	18,638	12 917	3 286	2 865	2 814	4 252	2 309	2 472	3,781
1981	2 374	2,403	2,440	2 440	2,431	1 903	1 126	1 057	2 363	2 131	1 399	269
1982	663	4,336	14,621	8,246	15 071	7 172	14 167	9 579	[illegible]	[illegible]	[illegible]	[illegible]
1983	2 374	8,453	8,912	7 920	12 820	16 231	7 109	9 254	14 150	5 790	4 684	4 739
1984	2,374	15,310	14 832	6 749	5,581	2 407	2 437	2 814	3,496	4 017	2 407	1 294
1985	2,374	4,134	2,927	2 440	2,431	1,903	2,370	1 317	2,566	3 064	3,654	269
1986	3,480	908	943	1 622	33,023	10 506	2 370	2 814	4 252	2 226	2,000	3,983
1987	2,374	2 403	2 440	2 440	2,431	1 903	622	862	1 798	2,293	2 586	689
1988	846	908	504	439	417	1 156	1 210	1 171	2 235	1 564	781	1 513
1989	1 057	1 412	1 496	1 203	1 166	7 123	4 636	2 309	2 487	2 976	1 936	773
1990	2,374	2 403	2 440	2 440	2 431	1 903	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1991	1,708	504	1,080	456	432	1,156	1,378	1,317	2,000	1,610	1 936	773
1992	1,867	1,916	1,952	1,952	1,878	1,513	622	862	1,646	3,269	1 317	269
1993	374	504	504	1 350	6,104	8 146	4 790	3,773	4,874	3,643	2 326	3,580
1994	2,374	2 403	2,440	2 440	2,431	1 903	672	667	1,042	2 732	2,309	269

Sacramento Basin 40-30-30 Index.

American River at H Street bridge - CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

Year Typ	W	AN	BN	D	C
OCT	2,282	1,932	2,104	1,788	1,934
NOV	3,506	3,225	2,197	2,049	1,721
DEC	6,378	3,349	3,066	1,923	1,778
JAN	8,457	5,151	2,678	1,828	1,807
FEB	9,184	6,352	4,229	2,336	1,525
MAR	6,063	6,131	2,953	2,409	1,363
APR	5,789	4,131	3,321	2,150	1,410
MAY	5,599	3,451	2,751	1,874	883
JUN	5,680	4,122	3,229	2,486	1,690
JUL	3,458	3,406	3,853	3,015	2,518
AUG	3,065	2,383	2,340	2,872	1,325
SEP	3,411	2,035	1,211	486	420

A2-72

C-032412

C-032412

San Joaquin River at Vernalis

STUDY 1995C8F-SWRCB-467 DWRSIM rscrd18-1 17 Jun 97

CP # 662. SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (CFS)

Project /1995C8F-SWRCB-467/662/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1.667	1.697	2.486	2.683	6.770	5.351	5.697	4.180	7.294	1.626	1.581	1.916
1923	3.966	2.101	3.741	4.196	4.267	2.586	4.467	3.369	2.185	1.576	1.464	1.849
1924	3.136	1.513	1.513	1.460	1.634	1.708	1.697	1.236	1.108	1.080	1.080	1.361
1925	1.464	1.462	1.415	1.382	2.719	2.423	3.596	2.687	1.897	1.334	1.301	1.647
1926	1.724	1.479	1.464	1.464	2.843	1.773	3.092	2.098	1.344	1.025	1.057	1.479
1927	1.675	1.949	2.179	1.789	5.474	3.578	4.941	3.318	1.889	1.431	1.399	2.773
1928	4.375	1.849	2.326	2.277	2.590	3.671	4.470	2.342	1.395	1.205	1.220	1.546
1929	1.513	1.479	1.431	1.382	1.603	1.708	2.033	1.513	1.082	943	992	1.361
1930	1.526	1.412	1.350	1.399	1.667	1.935	2.198	1.545	1.076	943	1.025	1.378
1931	1.952	1.365	1.350	1.350	1.587	1.447	1.587	1.220	1.025	1.122	1.122	1.378
1932	1.480	1.445	3.074	3.432	8.571	4.564	4.521	2.765	2.118	1.350	1.334	1.746
1933	3.529	1.496	1.447	1.610	2.035	2.085	2.302	1.756	1.176	1.025	1.171	1.428
1934	1.496	1.428	1.399	1.496	2.467	1.675	1.832	1.252	1.039	1.108	1.108	1.412
1935	1.496	1.479	1.464	2.944	3.259	3.513	7.243	6.066	3.833	1.643	1.480	1.885
1936	3.188	1.548	1.578	2.309	12.413	5.757	6.420	4.359	2.805	1.513	1.480	1.885
1937	3.058	1.543	1.870	2.700	15.017	11.010	7.832	8.132	2.672	1.658	1.626	1.949
1938	3.155	1.798	5.080	6.993	23.984	33.340	18.049	24.265	15.784	3.843	1.659	2.638
1939	9.075	2.319	2.293	2.505	3.655	2.765	2.891	1.952	1.311	1.269	1.285	1.580
1940	1.610	1.513	1.464	4.001	8.084	10.522	6.470	4.635	1.916	1.545	1.594	1.908
1941	2.505	1.765	4.050	4.489	16.007	11.970	10.093	9.579	8.288	1.903	1.691	1.882
1942	4.912	2.353	5.318	9.173	10.371	5.936	6.907	5.741	5.630	2.342	1.724	2.101
1943	7.237	3.082	3.545	11.157	10.884	17.743	7.915	6.164	2.656	1.724	1.643	1.963
1944	3.415	1.815	1.835	2.147	3.581	3.108	3.428	2.570	1.546	1.317	1.366	1.781
1945	1.756	1.832	1.891	1.708	8.931	8.034	6.537	4.180	2.288	1.643	1.561	2.000
1946	3.988	2.252	5.692	6.522	6.212	4.391	4.924	3.708	1.885	1.513	1.610	1.983
1947	2.277	2.353	2.718	2.196	2.701	1.903	2.292	1.675	1.210	1.122	1.220	1.563
1948	1.513	1.445	1.382	1.317	1.443	1.756	3.647	2.879	1.832	1.350	1.399	1.748
1949	1.578	1.496	1.431	1.382	1.621	2.586	2.975	2.212	1.378	1.236	1.334	1.691
1950	1.578	1.496	1.431	1.496	2.575	2.293	3.042	2.112	1.378	1.220	1.334	1.684
1951	1.578	6.134	13.987	12.523	9.921	6.196	3.563	2.662	1.597	1.382	1.480	1.885
1952	1.870	1.697	2.537	7.725	7.942	12.295	10.823	15.487	11.208	2.716	1.594	2.202
1953	8.571	2.188	3.041	4.944	5.744	3.627	2.857	2.277	1.482	1.285	1.366	1.714
1954	1.626	1.513	1.464	1.431	1.920	2.407	3.949	2.505	1.482	1.269	1.382	1.714
1955	1.594	1.496	1.447	1.529	1.675	1.740	2.266	1.984	1.344	1.171	1.252	1.597
1956	1.561	1.496	12.383	21.744	15.264	6.473	4.780	6.131	7.546	1.935	1.529	1.949
1957	6.310	1.988	2.082	2.085	3.331	3.155	2.706	2.423	1.546	1.317	1.317	1.864
1958	1.691	1.548	1.496	1.626	4.177	11.496	14.907	13.180	12.923	1.919	1.691	2.134
1959	7.666	2.118	1.903	2.309	4.356	3.643	2.218	1.594	1.176	1.187	1.203	1.496
1960	1.513	1.445	1.382	1.366	1.808	1.919	2.269	1.643	1.227	1.187	1.187	1.513
1961	1.480	1.445	1.415	1.382	1.531	1.464	1.687	1.269	1.109	1.155	1.155	1.428
1962	1.496	1.428	1.399	1.334	5.978	4.489	4.218	2.440	1.344	1.187	1.220	1.630
1963	1.561	1.479	1.415	1.724	6.266	2.700	5.361	4.183	2.855	1.740	1.513	1.882
1964	3.058	2.151	1.805	1.854	1.625	2.163	2.106	1.708	1.193	1.025	1.155	1.445
1965	1.546	1.647	4.064	11.854	7.906	4.781	6.956	4.326	2.874	1.610	1.480	1.765
1966	4.619	3.582	4.980	5.009	5.726	3.708	2.454	1.670	1.311	1.220	1.285	1.567
1967	1.675	1.546	2.635	2.980	4.105	6.977	13.613	18.033	15.747	9.547	1.529	2.874
1968	9.205	2.050	2.196	2.281	4.088	2.797	2.370	1.740	1.244	1.236	1.220	1.546
1969	1.643	1.513	1.724	14.800	32.753	21.045	20.923	26.217	16.398	4.131	1.578	2.584
1970	8.587	2.554	3.594	17.044	9.489	7.432	4.017	3.074	1.613	1.399	1.496	1.899
1971	1.822	1.731	2.147	2.326	3.708	4.017	2.891	2.358	1.445	1.301	1.317	1.897
1972	1.626	1.479	1.546	1.464	1.985	1.854	1.953	1.464	1.109	1.041	1.171	1.412
1973	1.545	1.479	1.447	2.851	7.977	9.075	6.571	5.448	2.336	1.513	1.431	1.882
1974	3.432	2.470	2.865	9.059	7.078	8.441	7.647	5.418	2.538	1.561	1.513	1.933
1975	4.082	2.084	2.407	2.596	6.580	8.831	6.621	4.651	6.285	1.675	1.561	1.882
1976	4.088	1.832	1.822	1.789	2.434	1.724	1.882	1.368	1.076	1.106	1.108	1.428
1977	2.830	2.118	1.610	1.366	1.476	1.366	1.529	1.269	1.076	1.138	1.155	1.378
1978	1.513	1.462	1.464	3.269	7.184	11.010	14.957	10.884	7.088	2.781	1.529	2.089
1979	4.226	1.833	1.891	4.085	9.369	8.888	5.327	4.082	1.915	1.399	1.362	1.832
1980	2.646	1.714	1.822	15.467	23.981	14.572	6.722	6.836	6.184	3.724	1.415	2.622
1981	5.416	2.084	2.086	2.976	2.773	2.980	2.807	1.822	1.244	1.138	1.203	1.583
1982	1.691	1.630	2.000	8.368	19.026	15.304	27.023	15.158	9.885	3.220	1.594	3.933
1983	12.985	6.621	18.044	24.867	36.534	41.114	20.738	18.697	36.451	13.580	1.317	6.897
1984	12.116	13.545	21.500	15.190	9.718	6.017	3.980	2.848	1.647	1.513	1.708	2.000
1985	1.822	1.781	1.708	1.529	3.259	2.358	2.470	1.805	1.284	1.155	1.220	1.583
1986	1.643	1.597	1.545	1.984	26.721	26.386	9.798	8.067	7.630	1.545	1.513	1.988
1987	3.480	1.731	1.545	1.464	1.873	1.935	2.033	1.447	1.126	1.171	1.187	1.496
1988	1.480	1.428	1.350	1.334	1.408	1.431	1.798	1.334	1.092	1.138	1.171	1.428
1989	1.480	1.365	1.382	1.366	1.484	1.643	2.067	1.496	1.039	1.108	1.122	1.412
1990	1.480	1.365	1.334	1.334	1.513	1.480	1.785	1.285	1.025	1.057	1.080	1.365
1991	1.464	1.365	1.334	1.365	1.404	2.407	2.454	1.859	1.126	1.057	1.041	1.381
1992	1.480	1.496	1.350	1.334	2.277	2.085	2.289	1.480	1.193	1.285	1.252	1.529
1993	1.578	1.513	1.496	6.050	3.673	2.862	3.428	4.554	5.092	1.740	1.659	2.050
1994	4.294	1.849	1.496	1.447	1.981	1.561	1.833	1.610	1.311	1.301	1.236	1.496

San Joaquin Basin 60-20-20 Index

San Joaquin River at Vernalis - CP # 662. SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	3,110	3,483	3,187	4,288	2,175
NOV	2,140	2,948	1,828	1,881	1,547
DEC	4,025	4,606	2,062	1,875	1,441
JAN	6,533	5,721	2,259	1,972	1,411
FEB	14,330	7,856	3,410	2,651	1,756
MAR	13,846	5,930	3,120	2,386	1,719
APR	11,277	5,290	3,353	2,440	1,939
MAY	10,881	3,922	2,366	1,782	1,414
JUN	8,603	2,175	1,483	1,241	1,111
JUL	3,228	1,511	1,270	1,127	1,119
AUG	1,570	1,485	1,320	1,198	1,127
SEP	2,486	1,956	1,874	1,516	1,422

Stanislaus River from Goodwin Dam downstream to confluence with San Joaquin River

STUDY 1995C8F-SWRCB-467 DWRSIM rscrd18-1 17 Jun 97

CP # 675 STANISLAUS RIVER AT MOUTH, DOWNSTREAM FLOW (CFS)

Project /1995C8F-SWRCB-467/675/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	325	353	280	228	504	325	857	602	555	553	589	586
1923	325	353	342	228	234	325	857	602	555	553	589	586
1924	325	387	276	293	226	308	857	634	689	667	667	586
1925	436	403	380	423	386	325	857	602	555	589	585	586
1926	325	420	342	325	252	325	857	602	605	667	667	586
1927	325	336	280	228	386	325	857	602	555	553	589	586
1928	325	353	280	228	226	325	857	602	571	634	634	586
1929	407	420	380	423	380	325	823	586	689	667	667	605
1930	308	471	488	380	288	325	857	602	689	667	667	586
1931	325	504	488	455	414	438	823	634	689	667	667	586
1932	423	454	244	228	313	325	857	602	555	553	589	586
1933	325	387	380	228	234	325	857	602	689	667	651	586
1934	423	471	439	276	234	325	823	634	689	667	667	571
1935	407	387	342	228	218	325	857	602	555	553	589	586
1936	325	353	280	228	782	325	857	602	555	553	589	586
1937	325	353	280	228	488	325	857	602	555	553	589	586
1938	325	353	280	228	2,251	2,781	1,849	1,496	4,564	553	589	586
1939	4,228	639	732	797	626	325	840	602	639	602	602	571
1940	325	353	325	244	298	423	1,830	1,073	555	553	589	586
1941	472	403	380	342	1,728	992	1,849	1,203	555	553	589	586
1942	504	586	1,301	1,982	1,927	488	1,849	1,203	555	553	589	586
1943	2,982	1,008	1,073	2,944	2,449	3,448	1,849	1,203	555	553	589	586
1944	504	454	423	537	817	325	857	602	555	589	589	586
1945	325	353	280	228	342	423	1,613	1,073	555	553	589	586
1946	472	403	380	1,285	1,531	488	1,815	1,187	555	553	589	586
1947	504	437	423	380	386	325	857	602	672	667	634	586
1948	380	437	439	488	504	325	857	602	555	553	589	586
1949	325	403	407	423	380	325	857	602	586	618	589	586
1950	325	403	407	280	252	325	857	602	589	634	589	586
1951	325	370	3,808	2,179	2,197	980	908	634	555	553	589	586
1952	342	370	276	1,334	2,121	1,431	1,849	1,203	3,764	553	589	586
1953	4,277	723	943	1,480	1,242	358	975	667	555	585	589	586
1954	342	403	342	358	252	325	857	602	555	602	589	586
1955	325	403	374	228	252	325	857	602	605	651	618	586
1956	325	370	553	862	2,573	862	1,849	1,203	555	553	589	586
1957	2,048	756	784	797	1,242	358	857	602	555	589	589	586
1958	325	353	308	228	378	1,389	1,849	1,220	3,294	553	589	586
1959	3,545	773	746	927	1,513	325	857	602	689	651	634	586
1960	407	437	455	439	226	325	840	602	672	634	634	586
1961	439	437	407	423	466	423	823	618	689	651	651	555
1962	407	454	455	472	378	325	857	602	605	634	634	586
1963	325	420	423	228	234	325	857	602	555	553	589	586
1964	325	353	280	228	226	325	857	602	672	667	651	586
1965	308	336	455	308	234	488	1,849	1,203	555	553	589	586
1966	504	454	423	380	758	325	857	602	602	634	602	586
1967	325	353	280	293	234	488	1,849	1,203	2,504	1,269	589	586
1968	4,847	756	784	862	1,852	325	857	602	605	618	634	589
1969	325	353	280	228	2,701	1,838	1,849	2,423	3,479	553	589	586
1970	3,757	823	1,431	5,009	2,737	1,106	975	667	555	553	589	586
1971	342	403	309	569	1,350	374	1,180	781	555	585	589	586
1972	374	420	309	325	643	325	857	602	689	667	651	586
1973	358	403	374	342	432	438	1,714	1,136	555	553	589	586
1974	486	420	407	2,261	1,945	1,708	1,849	1,203	585	553	589	586
1975	1,057	823	927	943	1,729	1,171	1,849	1,203	585	553	589	586
1976	504	454	455	651	652	325	823	585	689	667	667	555
1977	308	319	244	439	540	472	773	618	689	651	651	571
1978	358	403	325	308	770	325	857	602	555	553	589	586
1979	325	353	280	228	380	325	857	602	555	553	589	586
1980	325	353	280	3,383	4,903	992	1,849	1,203	555	553	589	586
1981	1,122	723	876	1,269	736	325	857	602	656	667	634	586
1982	325	336	280	228	5,086	3,090	1,849	1,203	1,597	553	589	586
1983	5,446	2,739	3,106	4,310	4,834	5,497	1,849	1,203	4,860	2,521	589	1,445
1984	5,627	3,512	4,979	2,781	2,556	1,362	1,076	732	555	553	589	586
1985	374	387	308	280	1,170	325	857	602	639	651	634	586
1986	325	336	280	228	4,736	4,944	1,849	1,203	555	553	589	586
1987	504	454	423	380	386	325	823	585	689	651	651	555
1988	438	454	472	488	522	438	807	589	689	651	651	538
1989	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	570	689	[illegible]	[illegible]	[illegible]
1990	455	487	488	472	504	380	823	602	689	667	667	571
1991	472	487	504	520	584	325	823	585	689	667	667	605
1992	423	370	472	472	298	325	823	585	672	602	618	555
1993	325	353	276	211	342	325	857	602	555	553	589	586
1994	308	353	308	325	234	325	823	585	622	585	618	571

San Joaquin Basin 60-20-20 Index

Stanislaus River from Goodwin Dam to the San Joaquin River confluence - CP # 675 - STANISLAUS RIVER AT MOUTH

Month	W	AN	BN	D	C
OCT	780	975	852	1,481	405
NOV	548	834	471	518	436
DEC	574	971	484	523	422
JAN	1,055	978	535	531	432
FEB	2,078	902	648	719	416
MAR	1,646	538	335	325	358
APR	1,850	1,124	882	856	823
MAY	1,180	786	622	602	602
JUN	1,596	505	571	655	663
JUL	667	553	589	652	652
AUG	589	589	584	637	655
SEP	631	586	586	587	575

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Prepared by Kevin Long

Vol III CP Comparisons 467.xls

C-032413

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Tuolumne River from La Grange Dam downstream to the confluence with the San Joaquin River
STUDY 1995C6F-SWRCB-467 DWRSIM recrc818-f 17 Jun 97
CP # 665 TUOLUMNE RETURN W/O TURLOCK DOWNSTREAM FLOW (CFS)

Project /1995C6F-SWRCB-467/665/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	651	571	667	634	954	764	1428	1366	536	504	520	521
1923	569	504	602	602	594	520	1395	1265	487	455	439	437
1924	504	457	439	423	435	423	336	325	134	130	130	151
1925	276	303	309	293	450	342	941	894	269	260	260	252
1926	342	319	325	309	360	309	706	565	185	179	179	185
1927	309	387	374	358	630	439	1361	1269	454	455	439	437
1928	537	521	488	488	522	1480	1662	667	235	228	244	235
1929	325	319	309	309	324	309	536	520	134	130	130	151
1930	260	299	260	276	308	309	536	520	134	130	146	151
1931	260	299	260	260	288	260	353	342	134	146	146	151
1932	293	336	520	455	800	407	1294	1269	454	455	439	437
1933	520	454	439	455	468	472	605	618	185	163	179	185
1934	309	303	309	309	360	293	353	325	134	130	130	151
1935	293	336	342	504	432	488	1546	1317	487	472	439	437
1936	569	504	504	520	1147	618	1378	1285	1143	456	439	437
1937	651	511	585	585	3367	4294	2236	1366	823	520	520	521
1938	651	571	911	2944	7797	8050	4101	5839	4117	1708	520	874
1939	1171	454	455	618	1096	829	807	585	185	163	179	185
1940	325	336	342	585	1165	5318	2118	1285	454	439	439	437
1941	651	571	683	683	5384	4765	3075	1382	2521	537	520	521
1942	1025	568	878	3806	4285	2982	2655	2085	1597	911	537	538
1943	980	588	992	3708	4411	6115	2353	1366	1108	520	520	521
1944	537	487	472	455	522	569	891	862	252	244	244	235
1945	390	403	390	374	2017	3334	1580	1269	471	439	423	437
1946	569	504	2553	3390	2863	2440	1529	1269	454	455	439	437
1947	520	471	488	439	486	439	566	569	185	163	163	185
1948	293	303	293	293	313	342	975	894	269	260	260	252
1949	358	353	342	325	360	439	672	667	235	228	228	235
1950	358	353	342	374	450	358	891	562	235	244	244	235
1951	390	605	1513	4033	3871	3074	1277	1269	454	456	439	437
1952	651	571	667	894	1182	4765	4101	2563	4487	1578	520	823
1953	927	487	504	1106	2719	2000	941	862	252	244	244	236
1954	358	353	342	342	398	407	1597	862	235	244	244	235
1955	342	319	325	342	324	309	622	602	202	179	179	186
1956	390	403	1073	7969	4346	3025	1513	1382	4269	781	520	822
1957	1006	471	472	456	504	1594	874	894	269	244	244	235
1958	488	454	439	472	1044	5188	5344	2749	4840	618	537	857
1959	927	454	439	439	738	2065	568	569	185	163	163	185
1960	260	269	260	260	330	293	437	439	134	130	146	151
1961	228	269	276	260	288	260	353	342	134	146	146	151
1962	260	303	293	293	738	423	674	846	218	228	228	235
1963	390	370	374	423	540	423	1479	1334	487	472	455	437
1964	520	487	456	458	435	862	605	569	185	163	163	185
1965	390	437	602	5676	3987	2602	2739	1366	536	520	520	521
1966	629	1260	2456	2553	2871	1984	655	667	235	228	226	235
1967	455	454	569	520	540	2980	4265	1496	5042	4521	520	1042
1968	943	454	455	439	695	1301	672	569	185	163	163	186
1969	390	403	439	4245	7400	5042	4857	6749	7462	1968	520	891
1970	1285	504	764	6050	3745	3432	1277	1269	454	439	423	437
1971	537	487	520	488	648	2505	674	862	252	244	244	235
1972	342	319	342	325	330	651	536	537	151	146	130	168
1973	309	336	342	390	1170	3638	1344	1269	454	439	423	437
1974	651	586	602	3399	2835	3757	2605	1350	521	520	520	521
1975	651	571	569	569	774	4098	1630	1382	2656	504	504	521
1976	667	454	439	423	539	423	420	423	134	130	146	151
1977	390	299	260	260	270	260	353	356	134	146	146	151
1978	358	403	407	585	846	732	1714	1431	536	520	520	521
1979	569	504	504	699	4375	3985	1546	1285	521	439	423	437
1980	651	588	569	5042	7736	4131	2151	1350	3428	2440	520	992
1981	1008	454	455	472	466	1236	941	602	185	163	163	186
1982	439	454	455	4570	7220	5952	7831	3285	4420	2085	520	2151
1983	3318	2773	4863	6050	7869	8880	3983	1480	11125	7036	520	3479
1984	1460	4773	6684	4131	3842	2879	1277	1252	454	456	439	437
1985	520	471	455	439	466	699	622	585	185	179	179	185
1986	390	420	423	407	6284	7335	1798	1626	4571	504	504	521
1987	504	437	423	423	450	439	420	423	134	130	146	151
1988	228	269	260	260	261	260	437	423	134	130	146	151
1989	228	268	276	260	288	293	555	520	134	146	146	151
1990	260	269	260	260	268	276	420	407	134	130	130	151
1991	228	269	260	260	270	390	437	407	151	130	130	151
1992	228	299	260	260	385	293	437	407	151	146	130	151
1993	358	403	407	781	612	569	1395	1334	536	504	504	521
1994	520	437	439	423	450	407	536	520	151	130	130	151

San Joaquin Basin 60-20-20 Index
Tuolumne River from LaGrange Dam to the SJR confluence - CP # 665 TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	708	563	523	651	337
NOV	619	743	473	423	317
DEC	840	1 129	569	421	312
JAN	2 677	1,609	622	430	306
FEB	3 940	1 942	883	535	345
MAR	4 340	2 228	1,037	834	324
APR	3 080	1 457	1,006	663	433
MAY	2 146	1,280	820	581	418
JUN	3 257	516	246	183	138
JUL	1 440	452	241	166	135
AUG	520	436	243	167	139
SEP	874	437	238	163	151

Merced River from Crocker Huffman Diversion downstream to confluence with San Joaquin River
STUDY 1995C6F-SWRCB-467 DWRSIM recrc818-f 17 Jun 97
CP # 649 LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW (CFS)

Project /1995C6F-SWRCB-467/649/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	130	151	228	211	414	276	101	81	2 403	33	33	50
1923	2,423	363	1 106	1 220	1,098	163	134	81	34	33	33	34
1924	1 581	151	211	195	313	146	67	65	118	211	163	118
1925	114	151	146	130	270	195	101	81	34	33	33	67
1926	309	151	211	309	1,332	146	101	65	17	33	16	101
1927	374	218	488	195	1,098	228	134	81	34	33	33	1 143
1928	3 041	134	602	553	608	244	84	81	34	33	33	34
1929	49	168	163	146	144	163	67	65	17	16	16	17
1930	407	151	130	146	144	195	67	65	17	16	16	17
1931	716	84	130	146	288	146	67	65	34	211	163	118
1932	146	134	278	228	1,704	195	84	81	565	33	65	118
1933	2 000	151	146	276	414	179	67	65	17	33	195	118
1934	130	134	146	342	864	146	67	65	34	211	163	134
1935	130	151	146	260	234	228	1 227	1 415	1 395	33	114	134
1936	1 626	202	228	748	4 903	309	471	1 041	34	33	81	118
1937	1 431	151	407	520	4 465	927	134	2 196	319	33	146	134
1938	1 464	151	2 423	1 269	4,736	4 603	639	3 367	4 453	130	33	606
1939	2 911	336	358	358	578	179	67	65	34	211	196	84
1940	130	134	146	325	2,469	1 122	84	829	34	33	179	134
1941	563	151	1 594	1 350	2,971	1 317	185	2 049	2 087	33	33	67
1942	2 683	336	1 415	1,561	1 603	211	101	634	2 388	33	33	185
1943	2 683	672	732	2,468	1 783	2 700	454	862	34	33	65	67
1944	1 578	168	260	407	921	244	84	81	34	33	98	134
1945	179	166	163	308	3 637	618	101	81	252	33	33	101
1946	2,244	756	1 605	976	738	195	64	146	34	33	179	134
1947	472	639	829	565	828	146	67	65	34	98	195	134
1948	114	134	130	114	122	179	134	81	34	33	130	134
1949	130	151	146	146	144	244	84	81	34	33	179	134
1950	146	151	146	163	216	179	84	81	34	33	195	134
1951	130	2 823	4 570	1 626	1 404	211	84	81	34	33	179	134
1952	130	151	228	1 594	1,252	1 399	252	3 432	2 165	33	33	252
1953	2,716	151	618	1 073	566	163	84	81	34	33	163	134
1954	130	151	163	146	162	211	84	81	34	33	195	134
1955	146	151	146	179	162	146	67	65	17	33	195	134
1956	130	134	3,724	3 871	1 495	146	84	618	1 882	33	33	67
1957	2 716	218	244	293	828	195	84	81	34	33	146	134
1958	130	151	163	179	792	1 480	1 277	2 895	2 000	33	33	34
1959	2 732	151	146	390	1 080	146	67	65	34	211	195	84
1960	114	151	130	130	156	163	67	65	34	211	195	134
1961	130	151	146	130	126	146	67	65	34	211	163	118
1962	146	134	130	130	496	244	84	81	34	33	98	134
1963	130	151	146	228	3 385	179	202	98	34	33	49	118
1964	1 496	636	407	520	489	146	67	65	17	49	196	101
1965	130	151	1 594	3,058	1 188	163	168	81	622	33	33	50
1966	2 732	1 210	813	829	738	179	84	81	34	81	163	84
1967	130	151	244	228	954	1 464	656	2 163	4 218	1 594	33	723
1968	2 749	134	293	309	887	163	67	65	34	211	163	84
1969	163	134	163	3,659	4,357	1 480	1 260	5 367	3 986	179	33	538
1970	2 927	420	667	2 683	1 314	456	84	81	34	33	130	118
1971	130	151	196	183	630	163	84	81	34	33	114	118
1972	163	151	163	183	156	146	67	65	17	81	179	17
1973	114	134	146	862	2 611	651	101	1 269	403	33	33	84
1974	1 504	1 042	1 138	1 724	756	829	185	829	437	33	49	101
1975	1 675	151	325	488	2 251	846	118	81	2 134	33	114	34
1976	2,326	370	309	146	365	146	67	65	34	211	130	134
1977	228	151	179	130	108	130	67	65	34	211	195	134
1978	163	134	146	280	432	356	303	179	3 949	488	33	1 277
1979	2 814	336	293	1 708	2 125	1 008	101	634	34	33	65	84
1980	1 203	218	390	4 489	4 572	1 334	84	407	1 849	65	33	586
1981	2 732	151	163	455	612	179	67	65	34	81	114	101
1982	114	151	602	2 440	3 745	1 773	4 285	2 960	1 479	33	33	736
1983	3,383	1 861	2 521	3 383	4 321	5 351	118	2 602	7,683	3 448	33	1 781
1984	3 025	1 966	3 464	1 675	1 480	228	84	81	34	33	179	118
1985	130	168	163	228	668	179	67	65	17	49	146	134
1986	163	151	146	634	6 932	3 432	84	1 090	958	33	33	101
1987	1 854	151	146	146	252	163	67	65	34	211	163	134
1988	114	151	130	130	104	163	67	65	17	211	163	101
1989	163	84	146	130	126	163	67	65	34	211	163	118
1990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34	195	163	134
1991	130	134	130	114	108	228	67	65	34	195		
1992	130	134	130	114	181	163	67	65	34	195	163	134
1993	130	134	146	423	1 332	1 252	84	2 147	1,647	211	163	134
1994	2 635	151	163	163	522	146	67	65	34	211	163	134

San Joaquin Basin 60-20-20 Index:
Merced River, Crocker-Huffman Diversion to San Joaquin River confluence - CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	908	1,171	1,141	1,440	676
NOV	308	566	242	257	153
DEC	916	975	300	275	158
JAN	1,891	832	346	343	152
FEB	2,518	2,013	474	653	246
MAR	1,587	414	203	180	180
APR	529	212	90	70	67
MAY	1,702	429	81	65	65
JUN	2,333	210	34	24	36
JUL	327	33	37	90	184
AUG	51	96	129	183	146
SEP	376	184	115	98	113

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San Joaquin River at Stevinson upstream of Merced River confluence

STUDY: 1995CBF-SWRCB-467 DWRSIM record618-7 17 Jun 97

CP # 664 SJR DIVERSION, NON-PROJECT DOWNSTREAM FLOW (CFS)

Project: /1995CBF-SWRCB-467/664/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	618	454	732	651	2 465	1 285	790	980	3 815	472	472	686
1923	634	807	1 025	1 008	828	716	974	563	955	472	455	706
1924	553	387	342	293	365	553	303	309	336	309	325	504
1925	472	370	293	260	792	697	536	436	437	390	390	605
1926	553	387	325	276	504	589	706	374	387	374	374	544
1927	520	555	407	342	1,693	846	773	439	437	390	390	605
1928	537	504	407	407	574	894	555	358	387	374	358	544
1929	520	353	309	260	414	569	336	342	353	342	342	555
1930	486	336	244	293	450	618	336	375	370	342	342	571
1931	486	336	244	244	306	455	269	276	319	293	293	504
1932	455	319	943	781	2,208	716	403	360	387	342	325	555
1933	486	319	244	309	396	585	336	342	319	309	309	521
1934	472	319	260	260	468	504	319	309	353	342	325	555
1935	504	370	309	862	898	1,004	1,277	585	437	374	342	544
1936	537	370	325	423	3,365	980	773	472	471	390	390	622
1937	553	387	358	1,080	4,754	1 826	1 143	2 846	471	407	390	622
1938	602	638	1,480	1,988	7,202	12 572	5 109	12 116	2 723	1,008	455	672
1939	813	823	423	390	846	797	536	472	487	455	455	689
1940	651	454	407	1 480	1 878	1 187	723	553	536	488	455	706
1941	651	487	813	1,008	3,835	1 675	1 328	3 074	2 521	520	488	723
1942	764	807	1 080	1 008	1 278	1 073	857	716	808	520	486	723
1943	651	874	472	1 659	1 082	3 741	790	1 504	571	504	488	723
1944	583	555	486	455	800	1 025	605	553	571	520	520	739
1945	583	605	486	439	1 855	1 431	840	618	622	553	537	773
1946	651	521	689	472	630	846	723	520	556	504	488	723
1947	585	504	486	356	558	618	437	423	454	423	423	636
1948	553	387	309	260	365	618	773	455	454	487	407	639
1949	553	387	325	293	468	678	471	407	420	407	407	622
1950	537	387	309	390	774	802	487	390	420	390	390	605
1951	537	1 143	2,860	3,058	810	781	471	455	420	407	390	622
1952	585	420	689	1,805	991	2 066	2 189	7 920	487	455	423	639
1953	699	756	553	732	540	618	471	455	487	439	439	655
1954	585	420	374	358	612	813	565	455	454	439	423	656
1955	569	403	358	423	498	602	454	504	437	423	407	639
1956	569	403	4 407	5,887	3,442	1 203	905	2 618	706	439	423	656
1957	553	454	358	293	504	867	420	504	454	407	390	622
1958	569	403	358	423	936	1 789	2 252	3 269	1 546	472	439	656
1959	699	706	342	342	738	589	403	407	437	407	407	639
1960	553	387	309	293	574	618	437	423	420	390	390	605
1961	504	370	293	244	378	468	336	325	370	358	358	571
1962	504	353	260	260	2 365	911	437	390	387	374	374	588
1963	504	336	276	439	900	883	1 059	602	555	390	358	588
1964	520	471	309	309	400	537	387	374	370	342	342	555
1965	520	454	1 006	1,480	576	651	962	520	471	390	390	605
1966	569	605	553	504	612	634	420	407	437	407	407	622
1967	585	420	781	716	1 116	1 236	3 885	9 059	2 235	2,179	455	672
1968	699	689	390	342	522	634	437	423	437	423	423	639
1969	618	454	520	4,749	14 621	8,278	10 836	12 087	4 033	1 594	472	689
1970	651	790	423	3,513	782	1,073	521	472	471	455	455	672
1971	602	471	585	488	558	634	454	472	504	439	439	672
1972	553	387	390	325	469	537	387	374	420	407	407	622
1973	585	420	374	537	1,945	1 447	739	520	672	439	423	655
1974	585	437	488	1,382	846	1,155	1 092	504	471	425	423	639
1975	585	437	390	356	1,088	1 289	908	602	521	455	423	672
1976	569	437	358	309	417	585	370	358	387	358	358	571
1977	1 041	370	293	276	324	472	303	342	336	325	325	504
1978	472	353	325	1,025	2 575	8,733	8 806	6 359	454	980	407	622
1979	553	739	342	911	1 278	1 301	706	488	437	407	407	622
1980	553	420	342	2,589	8,898	6,424	689	3,389	454	899	390	622
1981	569	706	358	423	504	716	454	390	437	407	407	639
1982	634	504	488	1,252	1,819	1 852	10 888	5 708	1 280	504	504	723
1983	829	1 781	8,262	9,758	17 070	16,394	9 988	12 246	14 318	976	504	571
1984	2 277	3 933	6,326	6,326	800	797	555	504	538	504	504	723
1985	585	487	407	325	576	699	471	423	471	423	423	639
1986	634	504	455	407	6,103	8 508	3 294	3 741	1 986	488	472	706
1987	569	571	325	309	486	651	403	390	437	407	407	622
1988	520	370	276	260	348	504	370	325	370	358	358	571
1989	486	336	276	244	324	569	319	309	336	325	325	538
1990	472	319	244	226	360	504	319	309	336	325	325	538
1991	472	303	226	179	252	846	336	276	319	276	260	471
1992	553	571	260	244	748	602	437	423	487	537	455	622
1993	634	471	439	2,374	954	438	437	569	2,773	504	504	739
1994	602	672	309	276	522	520	403	472	521	504	455	622

San Joaquin Basin 60-20-20 Index

San Joaquin River at Stevison - CP # 664, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	611	886	571	803	564
NOV	555	611	471	535	402
DEC	1,196	1,083	401	387	286
JAN	2,078	1,471	392	347	283
FEB	4,028	1,403	750	526	421
MAR	4,005	986	747	624	586
APR	3,321	749	524	455	350
MAY	4,484	512	440	410	345
JUN	2,120	507	451	423	378
JUL	888	437	416	399	362
AUG	480	423	412	386	353
SEP	888	654	634	619	558

C-032416

STUDY: 1995C6F-SWRCB-467 DWRSIM: recirc818-f, 17 Jun 97
CP # 4, SHASTA LAKE, EOP STORAGE (MAF)

Project: /1995C6F-SWRCB-467/4/STORAGE-EOP//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP*
1922	2.61	2.69	2.84	2.9	3.3	3.74	4.36	4.65	4.4	4	3.55	3.40
1923	3.36	3.25	3.29	3.4	3.42	3.47	3.75	3.58	3.3	2.8	2.32	2.30
1924	2.34	2.36	2.37	2.4	2.64	2.58	2.36	2.12	1.9	1.3	1.1	0.96
1925	1	1.15	1.27	1.4	2.89	3.05	3.79	3.99	3.7	3.1	2.73	2.67
1926	2.65	2.65	2.62	2.6	3.27	3.46	3.83	3.66	3.2	2.7	2.28	2.09
1927	2.07	2.57	3.1	3.7	3.48	4.14	4.55	4.55	4.4	3.8	3.42	3.39
1928	3.25	3.25	3.32	3.6	3.91	3.97	4.53	4.63	4.2	3.5	2.94	2.81
1929	2.76	2.75	2.74	2.7	2.85	2.98	3.1	3.04	2.9	2.5	2.22	2.09
1930	1.99	1.93	2.48	2.7	3.06	3.6	3.8	3.71	3.4	3	2.64	2.52
1931	2.48	2.44	2.38	2.4	2.45	2.59	2.37	2.2	2	1.7	1.33	1.19
1932	1.2	1.21	1.42	1.6	1.72	2.15	2.22	2.38	2.3	2	1.8	1.71
1933	1.58	1.69	1.7	1.7	1.78	2.37	2.53	2.6	2.5	2.2	1.77	1.66
1934	1.61	1.62	1.76	2.1	2.41	2.7	2.78	2.68	2.5	2.3	1.77	1.63
1935	1.51	1.66	1.72	2	2.38	2.8	3.81	4.21	4	3.5	3.06	2.92
1936	2.62	2.71	2.62	3.1	3.59	3.85	4.08	3.96	3.8	3.1	2.61	2.43
1937	2.32	2.25	2.2	2.2	2.22	2.85	3.57	3.73	3.6	3.1	2.57	2.36
1938	2.36	2.9	3.31	3.7	3.56	3.42	4.06	4.55	4.6	4.3	3.95	3.70
1939	3.4	3.25	3.33	3.4	3.4	3.77	3.64	3.47	3.1	2.7	2.26	2.21
1940	2.09	2.02	2.12	3	3.25	3.44	4.33	4.46	4.1	3.5	3.06	2.95
1941	2.93	2.84	3.29	3.3	3.42	3.94	4.46	4.55	4.8	4.2	3.9	3.70
1942	3.4	3.25	3.32	3.4	3.52	3.86	4.55	4.65	4.6	4.2	3.84	3.70
1943	3.4	3.25	3.36	3.5	3.85	4.12	4.55	4.55	4.4	3.8	3.43	3.30
1944	3.27	3.25	3.2	3.2	3.39	3.63	3.7	3.61	3.3	2.8	2.32	2.13
1945	2.11	2.32	2.65	2.9	3.66	4.03	4.35	4.47	4.3	3.6	3.14	2.97
1946	2.97	3.17	3.27	3.8	3.79	4.13	4.41	4.4	4.1	3.4	3	2.88
1947	2.83	2.87	2.91	2.9	3.05	3.53	3.74	3.42	3.3	2.8	2.32	2.15
1948	2.28	2.34	2.39	2.9	3.04	3.43	4.42	4.55	4.6	4	3.47	3.40
1949	3.33	3.25	3.22	3.1	3.23	4.07	4.44	4.47	4.1	3.6	3.07	2.95
1950	2.84	2.78	2.7	2.9	3.21	3.6	3.98	3.89	3.6	3	2.56	2.45
1951	2.74	3.16	3.32	3.6	3.79	4.31	4.49	4.56	4.2	3.8	3.19	3.14
1952	3.09	3.21	3.31	3.6	3.74	4.02	4.29	4.55	4.6	4.3	3.95	3.70
1953	3.4	3.25	3.35	3.4	3.63	4.1	4.49	4.56	4.6	4.2	3.84	3.70
1954	3.4	3.25	3.35	3.6	3.66	4.11	4.55	4.65	4.3	3.8	3.41	3.40
1955	3.38	3.25	3.36	3.4	3.48	3.59	3.81	3.97	3.6	3.1	2.64	2.59
1956	2.64	2.63	3.25	3.3	3.29	4.01	4.55	4.55	4.6	4.3	3.98	3.70
1957	3.4	3.25	3.23	3.3	3.68	4.13	4.63	4.55	4.4	3.9	3.58	3.64
1958	3.4	3.25	3.34	3.6	4.55	3.42	4.17	4.65	4.6	4.3	4	3.70
1959	3.4	3.25	3.26	3.6	3.78	4.15	4.23	4.15	3.8	3.4	2.94	3.03
1960	2.93	2.89	2.88	3	3.59	4.23	4.4	4.65	4.2	3.7	3.18	3.09
1961	3.04	3.06	3.35	3.5	3.91	4.28	4.42	4.51	4.2	3.7	3.14	3.10
1962	2.99	3.05	3.29	3.3	3.68	4.13	4.47	4.46	4.2	3.5	3.07	3.01
1963	3.4	3.25	3.35	3.4	3.94	4.23	4.14	4.55	4.5	4	3.62	3.57
1964	3.4	3.25	3.28	3.6	3.72	3.82	3.63	3.45	3.2	2.7	2.29	2.22
1965	2.2	2.35	3.25	3.4	3.81	4.12	4.5	4.55	4.4	3.8	3.59	3.55
1966	3.4	3.25	3.34	3.7	4.04	4.23	4.55	4.54	4.2	3.7	3.22	3.19
1967	3.1	3.25	3.34	3.6	3.92	4.03	4.48	4.55	4.6	4.3	3.98	3.70
1968	3.4	3.25	3.3	3.4	3.65	4.19	4.33	4.33	4	3.6	3.3	3.26
1969	3.25	3.25	3.35	3.4	3.48	4.03	4.43	4.56	4.6	4.3	4	3.70
1970	3.4	3.25	3.32	3.3	3.43	4.13	4.23	4.23	4	3.5	3.11	3.06
1971	3.07	3.25	3.32	3.5	3.84	3.87	4.61	4.55	4.6	4.2	3.9	3.70
1972	3.4	3.25	3.36	3.6	3.93	4.25	4.53	4.53	4.2	3.7	3.32	3.33
1973	3.36	3.25	3.35	3.6	3.84	4.16	4.5	4.55	4.2	3.6	3.35	3.32
1974	3.37	3.25	3.27	3.3	3.69	3.44	4.29	4.55	4.6	4.3	4	3.70
1975	3.4	3.25	3.36	3.4	3.94	3.76	4.39	4.55	4.6	4.3	4	3.70
1976	3.4	3.25	3.27	3.3	3.14	3.32	3.49	3.43	3.2	2.7	2.55	2.58
1977	2.58	2.6	2.58	2.5	2.52	2.51	2.04	1.94	1.6	1.3	1.09	1.13
1978	1.12	1.2	1.69	3.3	3.67	4	4.55	4.55	4.5	4.1	3.83	3.70
1979	3.4	3.25	3.21	3.3	3.52	3.96	4.17	4.35	4	3.6	3.24	3.18
1980	3.18	3.24	3.31	3.5	3.29	3.98	4.33	4.46	4.3	4	3.71	3.70
1981	3.4	3.25	3.32	3.5	3.86	4.26	4.48	4.38	3.9	3.4	2.98	2.91
1982	2.85	3.25	3.28	3.6	3.53	3.95	4.09	4.55	4.6	4.3	4	3.70
1983	3.4	3.25	3.33	3.4	3.25	3.83	4.07	4.55	4.6	4.3	4	3.70
1984	3.4	3.25	3.29	3.7	4.01	4.25	4.54	4.55	4.4	3.9	3.7	3.70
1985	3.4	3.25	3.36	3.4	3.49	3.65	3.86	3.84	3.2	2.7	2.38	2.38
1986	2.42	2.49	2.68	3.3	3.26	3.53	4	4.06	3.8	3.4	3.02	3.09
1987	3.09	3.07	3.05	3.1	3.32	3.87	4.06	3.9	3.5	2.9	2.4	2.39
1988	2.26	2.27	2.8	3.2	3.43	3.61	3.71	3.71	3.6	2.9	2.31	2.24
1989	2.15	2.36	2.48	2.6	2.67	3.84	4.38	4.3	4	3.5	3.23	3.24
1990	3.29	3.23	3.15	3.3	3.27	3.43	3.32	3.4	3.3	2.8	2.46	2.40
1991	2.29	2.28	2.18	2	2.06	2.48	2.81	2.81	2.4	2.2	1.95	1.83
1992	1.81	1.79	1.81	1.9	2.24	3.02	3.32	3.17	2.9	2.6	2.19	2.13
1993	2.02	2	2.26	2.9	[illegible]	[illegible]	[illegible]	4.55	4.6	4.1	3.82	3.75
1994	3.72	3.25	3.29	[illegible]	[illegible]	[illegible]	[illegible]	3.81	3.2	2.7	2.45	2.40

* EOM September storage used as October 1st of following year
Shading means "disregard"

Year	Oct 1st Storage	AFRP Vol III Recommended Keswick Release
1925	0.962	3250
1927	2.091	3250
1930	2.093	3250
1932	1.186	3250
1933	1.705	3250
1934	1.658	3250
1935	1.634	3250
1945	2.131	3250
1948	2.152	3250
1978	1.129	3250
1992	1.831	3250
1993	2.128	3250
1924	2.296	3500
1940	2.207	3500
1965	2.215	3500
1989	2.239	3500
1938	2.361	3750
1986	2.376	3750
1988	2.388	3750
1937	2.43	4000
1951	2.448	4000
1991	2.401	4000
1931	2.52	4250
1956	2.585	4250
1977	2.577	4250
1926	2.665	4500
<none>		4750
1929	2.814	5000
1947	2.881	5000
1936	2.923	5250
1941	2.947	5250
1946	2.972	5250
1950	2.946	5250
1982	2.905	5250
1923	3.4	5500
1928	3.296	5500
1939	3.7	5500
1942	3.7	5500
1943	3.7	5500
1944	3.296	5500
1949	3.399	5500
1952	3.142	5500
1953	3.7	5500
1954	3.7	5500
1955	3.401	5500
1957	3.7	5500
1958	3.639	5500
1959	3.7	5500
1960	3.029	5500
1961	3.094	5500
1962	3.103	5500
1963	3.01	5500
1964	3.571	5500
1966	3.551	5500
1967	3.186	5500
1968	3.7	5500
1969	3.257	5500
1970	3.7	5500
1971	3.059	5500
1972	3.7	5500
1973	3.331	5500
1974	3.316	5500
1975	3.7	5500
1976	3.7	5500
1979	3.7	5500
1980	3.179	5500
1981	3.7	5500
1983	3.7	5500
1984	3.7	5500
1985	3.696	5500
1987	3.091	5500
1990	3.242	5500
1994	3.75	5500

STUDY: 1995C6F-SWRCB-467 DWRSIM. recirc818-f, 17 Jun 97
CP # 62, KESWICK TOTAL RELEASE, DOWNSTREAM FLOW (CFS)

Project: /1995C6F-SWRCB-467/62/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	4,716	4,000	4,001	4,001	3,997	4,001	4,000	8,733	9,747	12,116	11,010	6,302
1923	5,497	6,756	5,497	5,497	5,492	5,497	5,495	9,823	10,638	12,946	10,929	3,949
1924	3,497	3,496	3,497	3,497	3,373	3,497	7,428	7,384	8,184	11,824	7,335	5,227
1925	3,253	3,243	3,253	3,253	3,241	3,253	3,243	4,863	10,571	13,759	10,035	4,857
1926	4,879	4,504	4,749	4,505	4,501	4,505	4,504	8,311	11,932	12,051	10,148	6,117
1927	4,115	3,243	3,253	3,301	30,520	4,424	12,923	10,831	9,915	14,962	11,043	6,218
1928	5,497	8,823	5,497	5,497	5,302	16,995	5,495	8,262	11,764	15,873	12,474	5,932
1929	5,042	5,008	4,993	5,009	5,006	4,993	5,058	6,847	6,991	9,888	8,620	5,210
1930	5,090	4,386	3,253	3,253	3,241	3,253	4,067	7,042	9,613	10,669	9,254	5,361
1931	4,245	4,252	4,245	4,245	4,249	4,245	8,184	6,538	6,571	8,473	9,677	5,243
1932	3,253	3,243	3,253	3,253	3,129	3,253	6,134	4,879	6,705	7,514	7,026	4,470
1933	3,545	3,243	3,253	3,253	3,241	3,253	5,395	6,229	6,974	9,156	10,246	4,840
1934	4,131	3,243	3,253	3,253	3,241	3,253	4,706	6,408	6,571	6,879	11,937	5,058
1935	5,367	3,243	3,253	3,253	3,241	3,253	3,243	3,578	8,504	13,320	9,774	5,327
1936	5,253	5,243	5,253	5,253	11,005	5,253	5,243	8,002	8,974	14,914	11,596	5,882
1937	5,009	4,235	4,001	4,001	3,997	4,001	4,000	7,172	9,411	13,043	11,433	6,420
1938	3,757	3,748	12,637	4,668	31,060	35,536	14,537	10,100	11,041	11,742	10,864	8,840
1939	10,539	8,201	5,497	5,497	5,492	5,497	9,546	8,311	10,335	11,693	10,295	4,588
1940	5,530	4,840	4,261	3,497	28,477	22,362	3,496	6,375	11,512	15,515	11,872	6,050
1941	5,253	5,243	13,775	25,420	23,696	14,881	16,822	14,897	10,940	14,523	11,368	10,403
1942	11,157	8,470	19,972	20,492	29,422	5,497	5,865	13,613	10,890	13,775	11,287	7,109
1943	10,213	8,840	6,603	12,994	8,679	12,978	6,924	9,726	9,546	16,068	11,222	6,907
1944	5,497	5,596	5,497	5,497	5,302	5,497	6,638	8,246	10,621	13,482	11,905	6,554
1945	4,521	3,243	3,253	3,253	3,241	3,253	3,664	7,644	9,915	15,710	11,807	6,638
1946	5,253	5,243	21,500	7,872	5,258	5,253	6,420	9,205	12,100	15,450	12,100	5,848
1947	5,156	5,008	4,993	4,993	5,006	4,993	5,008	10,815	9,999	13,125	11,238	6,117
1948	3,253	3,243	3,253	3,887	3,129	3,253	3,445	12,620	9,932	14,702	12,116	5,143
1949	5,497	6,067	5,497	5,497	5,492	6,782	5,495	8,132	11,058	13,596	11,661	5,495
1950	5,708	5,243	5,253	5,253	5,258	5,253	5,243	9,238	10,503	13,352	11,075	5,058
1951	4,554	4,000	14,393	8,376	16,385	4,001	6,991	9,124	11,209	14,995	11,466	4,790
1952	5,497	5,495	17,288	8,864	19,263	12,442	19,444	11,189	9,798	10,506	10,490	8,941
1953	9,937	7,563	10,653	29,404	5,492	5,497	5,832	11,840	12,150	13,856	10,246	7,159
1954	10,083	10,453	5,497	13,954	18,942	10,897	12,335	10,815	12,403	16,166	10,945	4,974
1955	5,497	9,310	7,790	5,497	5,492	5,497	7,344	7,010	11,176	12,962	11,905	4,974
1956	4,879	4,252	22,866	31,291	22,566	4,375	5,109	13,808	9,361	12,165	10,051	8,991
1957	10,815	7,932	5,497	5,497	9,471	11,010	5,495	13,417	9,092	14,035	10,522	4,201
1958	11,824	10,201	10,441	13,011	33,887	44,871	15,562	10,230	11,932	12,572	11,677	11,949
1959	11,352	8,369	5,497	10,848	14,585	5,497	8,991	8,945	11,428	12,962	11,645	3,899
1960	6,587	5,495	5,497	5,497	5,302	5,497	6,319	6,879	12,184	13,840	12,328	5,344
1961	5,497	5,495	6,961	5,497	8,463	7,611	7,277	8,148	11,327	14,442	12,588	4,857
1962	6,245	5,495	5,497	5,497	17,574	5,497	5,495	8,181	10,873	14,718	11,498	4,773
1963	5,497	8,537	9,612	5,497	8,787	7,774	32,065	7,611	8,789	14,377	10,604	5,512
1964	8,197	12,150	5,497	5,497	5,302	5,497	10,537	9,010	10,436	12,523	10,864	4,941
1965	4,619	3,496	13,450	21,793	3,493	3,497	12,890	8,912	9,125	14,718	9,026	5,092
1966	7,384	13,024	5,497	6,847	6,824	13,434	8,352	8,490	11,949	13,564	12,149	4,974
1967	6,161	8,033	15,109	9,872	8,193	16,589	12,201	16,328	10,806	11,824	10,376	9,831
1968	10,474	7,932	5,497	5,497	15,925	5,497	6,756	7,985	10,957	13,092	9,563	5,395
1969	5,497	5,815	8,050	25,290	22,237	7,351	13,999	13,482	10,016	11,596	9,888	10,386
1970	10,539	8,067	16,101	54,092	16,710	5,497	8,756	7,969	11,058	13,645	11,287	5,479
1971	5,497	9,546	16,930	15,239	5,492	19,044	5,495	13,060	11,646	13,775	9,726	8,067
1972	10,701	8,571	5,497	5,497	5,302	12,084	8,857	8,278	12,066	13,108	11,580	4,605
1973	5,497	10,940	8,181	15,434	19,699	8,620	5,495	8,815	11,310	15,434	9,270	5,126
1974	5,497	32,939	23,745	40,203	8,895	38,398	10,487	9,872	10,067	12,328	11,010	11,898
1975	11,189	9,041	5,497	5,497	7,310	29,160	5,495	12,263	10,806	11,596	10,522	10,167
1976	11,515	8,773	5,497	5,497	9,284	5,497	5,495	7,449	9,260	11,693	7,644	3,899
1977	4,733	4,252	4,716	4,977	4,249	4,245	11,579	5,855	10,151	8,750	6,944	3,630
1978	4,391	3,260	3,253	8,034	16,313	15,369	7,999	11,059	7,613	12,019	9,303	7,159
1979	9,774	7,579	5,497	5,497	5,492	5,497	5,495	6,847	10,621	11,889	9,547	4,773
1980	5,497	5,495	5,497	17,808	31,015	5,497	5,495	6,701	9,125	10,344	9,075	4,790
1981	9,612	8,117	5,497	5,497	5,492	8,262	5,495	8,945	12,083	12,393	10,766	4,874
1982	5,253	12,621	23,094	7,969	24,218	13,873	26,822	5,611	9,378	10,262	10,035	9,898
1983	10,962	9,932	14,084	20,866	37,470	41,325	21,595	13,287	14,184	13,190	12,718	13,041
1984	13,271	17,209	27,501	9,319	5,946	11,726	6,353	9,709	9,529	14,214	8,750	4,924
1985	10,571	14,268	6,847	5,497	5,492	5,497	5,495	9,726	12,201	12,181	10,067	4,487
1986	4,359	3,899	3,757	3,757	46,978	21,533	3,748	8,343	11,428	11,937	10,766	3,899
1987	5,497	5,495	5,497	5,497	5,492	5,497	5,512	9,482	11,814	13,238	12,328	4,134
1988	6,457	4,353	3,757	3,757	3,616	3,757	4,840	7,237	9,176	13,401	13,661	5,042
1989	5,221	3,496	3,497	3,497	3,493	7,188	3,496	8,132	10,235	11,059	8,847	3,899
1990	5,497	5,495	5,497	5,497	5,492	5,497	6,319	7,676	8,201	12,653	9,595	4,386
1991	5,546	4,000	4,847	5,790	3,997	4,001	4,000	6,213	7,378	7,628	7,514	5,025
1992	3,936	3,243	3,253	3,253	3,129	3,253	3,243	7,546	8,655	9,595	9,498	4,201
1993	5,643	4,151	3,253	3,253	3,241	28,689	3,243	8,733	11,260	13,190	9,465	5,579
1994	5,497	12,520	5,497	5,497	5,492	5,497	5,660	6,489	9,814	11,628	7,465	3,832

Location: Upper Sacramento Rver Below Keswick

CP # 62, Upper Sacramento River below Keswick

Shasta Reservoir Oct 1st Carryover Storage (MAF)	October thru April Average Flows (cfs)	Years included in Average flow Calculations
< 2.2	4,678	1925, 27, 30, 32, 33, 34, 35, 45, 48, 78, 82, 93
>=2.2	6,924	1924, 1940, 1965, 1989
>= 2.3	10,691	1938, 86, 88
>= 2.4	5,720	1937, 51, 91
>= 2.5	7,988	1931, 56, 77
>= 2.6	4,592	1926
>= 2.7		
>= 2.8	5,019	1929, 47
>= 2.9	10,156	1936, 41, 46, 50, 82
>= 3	9,894	1923, 28, 39, 42, 43, 44, 49, 52, 53, 54, 55, 57, 58 59, 60, 61, 62, 63, 64, 66, 67, 68, 69, 70, 71, 72 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 90, 94

C-032416

Comparison of DWRSIM Study 468 (Flow Alternative 2) flows at various control points with recommended flows from AFRP Working Paper Vol III

1Location: Upper Sacramento Rver Below Keswick

CP # 62, Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS

SALMONIDS

Objective: Enhance rearing, maintain spawning habitat, & temperature control Page 3-Xa-14, Vol III

Shasta Reservoir Oct 1st Carryover Storage (MAF)	AFRP Working Pap Recommended Flow	October thru April Average Flows (cfs)	Years included in Average flow Calculations	Ratio
< 2.2	3,250	5,004	1925, 27, 30, 32, 33, 34, 35, 40, 78, 88, 89, 91, 92,	1.54
>= 2.2	3,500	5,390	1945, 48, 65, 77	1.54
>= 2.3	3,750	4,987	1924, 86	1.33
>= 2.4	4,000	4,557	1931	1.14
>= 2.5	4,250	9,032	1956	2.13
>= 2.6	4,500	10,457	1936, 38	2.32
>= 2.7	4,750	7,113	1929, 51	1.50
>= 2.8	5,000	8,360	1937, 60, 62, 82	1.67
>= 2.9	5,250	5,251	1950	1.00
>= 3	5,500	10,054	1923, 26, 28, 39, 41, 42, 43, 44, 46, 47, 49, 52, 53, 55, 57, 58, 59, 61, 63, 64, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 90, 94	1.83

Location: Feather River at Nicolaus CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective Enhance rearing & maintain spawning habitat, Page: 3-Xc-11, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page. 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.12	0.62	0.71	0.78												1.12	0.62	0.71	0.78	
Nov	1.77	1.23	0.68	0.83												1.77	1.23	0.68	0.83	
Dec	5.06	1.93	1.16	1.15												5.06	1.93	1.16	1.15	
Jan	8.57	5.17	2.87	2.41												8.57	5.17	2.87	2.41	
Feb	10.33	5.96	4.20	2.91							2.25	1.30				2.25	1.30	4.20	2.91	
Mar	9.44	8.02	3.53	3.49							2.05	1.74				2.05	1.74	3.53	3.49	
Apr	5.36	3.51	1.49	1.83		0.92	0.79	0.35	0.43	0.57	1.40	0.92				0.92	0.79	0.35	0.43	0.57
May	4.42	2.54	1.67	0.79		0.78	0.63	0.50	0.25	0.20	1.15	0.66				0.78	0.63	0.50	0.25	0.20
June	9.14	6.61	5.61	4.14		0.93	1.16	1.15	1.26	0.81						0.93	1.16	1.15	1.26	0.81
July	6.57	6.95	7.25	6.63												6.57	6.95	7.25	6.63	
Aug	2.14	3.47	4.40	3.56												2.14	3.47	4.40	3.56	
Sept	0.89	0.44	0.41	0.94												0.89	0.44	0.41	0.94	
															April-May-June Average	0.88	0.86	0.67	0.64	0.52

Location: Yuba River at Marysville DEPLETION AREA 67, DOWNSTREAM FLOW

	SALMONIDS Objective Optimize migration, spawning and incubation, Page 3-Xc-14-25					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.05	0.81	0.65	0.64	0.74						No Working Paper flow recommendations					1.05	0.81	0.65	0.64	0.74
Nov	2.67	2.10	1.02	1.17	0.76											2.67	2.10	1.02	1.17	0.76
Dec	6.21	2.85	1.86	1.27	0.84											6.21	2.85	1.86	1.27	0.84
Jan	8.26	5.93	3.81	2.42	2.03											8.26	5.93	3.81	2.42	2.03
Feb	9.11	7.12	5.00	3.61	2.53											9.11	7.12	5.00	3.61	2.53
Mar	8.61	7.52	4.08	3.74	2.09											8.61	7.52	4.08	3.74	2.09
Apr	5.19	3.83	2.40	1.60	0.66	0.63	0.54	0.33	0.29	0.24						0.63	0.54	0.33	0.29	0.24
Mary	2.59	1.69	0.88	0.36	0.15	0.52	0.42	0.25	0.15	0.12						0.52	0.42	0.25	0.15	0.12
June	3.03	1.66	1.06	0.35	0.13	0.71	0.64	0.50	0.26	0.14						0.71	0.64	0.50	0.26	0.13
July	5.21	2.07	1.02	0.31	0.16											5.21	2.07	1.02	0.31	0.16
Aug	2.68	2.02	1.20	0.43	0.27											2.68	2.02	1.20	0.43	0.27
Sept	1.60	1.24	0.91	0.44	0.22											1.60	1.24	0.91	0.44	0.22
															April-May-June Average	0.62	0.53	0.36	0.23	0.16

Location: Sacramento River at Verona (RM 80) (Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)

	SALMONIDS Objective:					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective provide attraction passage, spawning, an larval transport, Page: 3-Xh-8, Vol III					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	No Working Paper flow recommendations					No Working Paper flow recommendations														
Nov																				
Dec																				
Jan																				
Feb											1.58	1.33				1.58	1.33			
Mar											1.54	1.30				1.54	1.30			
Apr											1.07	0.76				1.07	0.76			
May											0.88	0.57				0.88	0.57			
June																				
July																				
Aug																				
Sept																				
															April-May Average	0.97	0.86			

Location: Lower American River at H Street Bridge CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective optimize conditions in lower Am. River for all life stages, Page: 3-Xc-42, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.77	0.83	0.94	1.07	2.13						No Working Paper flow recommendations					0.77	0.83	0.94	1.07	2.13
Nov	1.34	1.70	0.99	1.23	1.48											1.34	1.70	0.99	1.23	1.48
Dec	2.45	1.61	1.36	1.08	1.15											2.45	1.61	1.36	1.08	1.15
Jan	3.34	2.51	1.23	1.03	1.08											3.34	2.51	1.23	1.03	1.08
Feb	3.67	3.18	2.20	1.28	1.20											3.67	3.18	2.20	1.28	1.20
Mar	1.35	2.04	1.03	1.25	1.03											1.35	2.04	1.03	1.25	1.03
Apr	1.29	1.41	1.12	1.06	0.98	0.57	0.51	0.39	0.33	0.47						0.57	0.51	0.39	0.33	0.47
May	1.24	1.22	1.00	0.93	0.75	0.46	0.38	0.34	0.31	0.36						0.46	0.38	0.34	0.31	0.36
June	1.31	1.43	1.29	2.02	7.04	0.73	0.90	0.92	1.50	2.07						0.73	0.90	0.92	1.50	2.07
July	1.18	1.22	1.34	2.36	2.47											1.18	1.22	1.34	2.36	2.47
Aug	1.28	1.13	1.00	2.15	0.82											1.28	1.13	1.00	2.15	0.82
Sept	1.43	1.38	1.07	2.08	1.57											1.43	1.38	1.07	2.08	1.57
															April-May-June Average	0.59	0.59	0.55	0.71	0.97

Location: San Joaquin River at Vernalis CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page 3-Xd-47, 3-Xe-20, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-19, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning and rearing flows, page:3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.18	3.78	3.54	5.20	3.48											2.18	3.78	3.54	5.20	3.48
Nov	1.05	1.94	1.84	2.01	2.22											1.05	1.94	1.84	2.01	2.22
Dec	1.38	1.92	2.06	1.86	1.85											1.38	1.92	2.06	1.86	1.85
Jan	2.07	2.16	1.89	1.88	1.65											2.07	2.16	1.89	1.88	1.65
Feb	2.67	1.97	1.47	1.93	1.52						0.95	0.55				0.95	0.55	1.47	1.93	1.52
Mar	2.52	1.53	1.13	1.21	0.90						0.96	0.43				0.96	0.43	1.13	1.21	0.90
Apr	0.54	0.46	0.50	0.53	0.47	2.20	1.27	0.87	0.92	0.96	0.82	0.40				0.54	0.40	0.50	0.53	0.47
May	0.52	0.41	0.35	0.37	0.36	1.08	0.56	0.49	0.51	0.60	0.78	0.35				0.52	0.35	0.35	0.37	0.36
June	0.44	0.22	0.24	0.26	0.27	0.89	0.32	0.34	0.40	0.50						0.44	0.22	0.24	0.26	0.27
July	0.79	1.04	1.25	2.11	1.89											0.79	1.04	1.25	2.11	1.89
Aug	1.59	2.19	2.69	2.92	2.77											1.59	2.19	2.69	2.92	2.77
Sept	2.36	2.58	2.56	3.00	3.01											2.36	2.58	2.56	3.00	3.01
															April-May-June Average	0.50	0.32	0.36	0.39	0.37

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective Double natural production, Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-21, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.41	3.11	3.39	3.37	2.54						No Working Paper flow recommendations					2.41	3.11	3.39	3.37	2.54
Nov	1.27	1.73	1.32	1.58	1.38											1.27	1.73	1.32	1.58	1.38
Dec	1.21	1.97	1.13	1.44	1.13											1.21	1.97	1.13	1.44	1.13
Jan	1.77	2.19	1.21	1.62	1.05											1.77	2.19	1.21	1.62	1.05
Feb	2.69	2.11	1.37	2.42	1.13											2.69	2.11	1.37	2.42	1.13
Mar	3.15	1.66	1.09	1.85	1.29											3.15	1.66	1.09	1.85	1.29
Apr	1.20	0.95	1.02	1.81	1.14	0.43	0.38	0.40	0.54	0.64						0.43	0.38	0.40	0.54	0.64
May	0.96	1.21	2.05	1.76	1.20	0.21	0.32	0.37	0.47	0.60						0.21	0.32	0.37	0.47	0.60
June	0.74	1.24	4.04	4.91	4.04	0.22	0.29	0.36	0.55	0.81						0.22	0.29	0.36	0.55	0.81
July	2.54	2.75	3.60	4.58	3.97											2.54	2.75	3.60	4.58	3.97
Aug	2.76	2.78	3.57	4.57	4.01											2.76	2.78	3.57	4.57	4.01
Sept	2.04	1.96	2.35	2.93	2.72											2.04	1.96	2.35	2.93	2.72
															April-May-June Average	0.29	0.33	0.38	0.52	0.68

Location: Tuolumne River from LaGrange Dam to the SJR confluence CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.94	1.84	1.74	3.25	2.25											0.94	1.84	1.74	3.25	2.25
Nov	0.50	0.93	1.35	1.41	2.11											0.50	0.93	1.35	1.41	2.11
Dec	0.60	1.08	1.63	1.20	1.56											0.60	1.08	1.63	1.20	1.56
Jan	1.57	1.40	1.24	1.08	1.23											1.57	1.40	1.24	1.08	1.23
Feb	1.88	1.14	0.93	0.76	0.69											1.88	1.14	0.93	0.76	0.69
Mar	1.89	1.31	0.80	0.83	0.36	No Working Paper flow recommendations					No Working Paper flow recommendations					1.89	1.31	0.80	0.83	0.36
Apr	1.05	0.59	0.43	0.35	0.29											1.05	0.59	0.43	0.35	0.29
May	0.42	0.30	0.24	0.23	0.23											0.42	0.30	0.24	0.23	0.23
June	0.65	0.16	0.09	0.12	0.14											0.65	0.16	0.09	0.12	0.14
July	0.67	0.50	0.37	0.66	0.68											0.67	0.50	0.37	0.66	0.68
Aug	1.15	2.18	2.43	1.67	2.79											1.15	2.18	2.43	1.67	2.79
Sept	2.50	2.91	1.59	1.63	3.03											2.50	2.91	1.59	1.63	3.03
															April-May-June Average:	0.71	0.35	0.26	0.23	0.22

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.60	3.90	3.80	5.76	2.70											2.60	3.90	3.80	5.76	2.70
Nov	0.88	1.62	0.81	0.86	0.61											0.88	1.62	0.81	0.86	0.61
Dec	1.53	1.77	1.00	0.92	0.63											1.53	1.77	1.00	0.92	0.63
Jan	1.54	1.55	1.15	1.14	0.61											1.54	1.55	1.15	1.14	0.61
Feb	1.74	1.92	0.95	2.18	0.98											1.74	1.92	0.95	2.18	0.98
Mar	1.04	0.39	0.34	0.35	0.40	No Working Paper flow recommendations					No Working Paper flow recommendations					1.04	0.39	0.34	0.35	0.40
Apr	0.29	0.16	0.08	0.07	0.09											0.29	0.16	0.08	0.07	0.09
May	0.58	0.19	0.05	0.05	0.08											0.58	0.19	0.05	0.05	0.08
June	0.82	0.14	0.03	0.04	0.08											0.82	0.14	0.03	0.04	0.08
July	0.28	0.08	0.15	0.50	0.92											0.28	0.08	0.15	0.50	0.92
Aug	0.15	0.32	0.52	0.81	0.73											0.15	0.32	0.52	0.81	0.73
Sept	1.08	0.61	0.46	0.50	0.57											1.08	0.61	0.46	0.50	0.57
															April-May-June Average:	0.56	0.16	0.05	0.06	0.08

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb																				
Mar						No Working Paper flow recommendations					No Working Paper flow recommendations									
Apr	0.64	0.28	0.25	0.26	0.27											0.64	0.28	0.25	0.26	0.27
May	0.64	0.11	0.14	0.18	0.21											0.64	0.11	0.14	0.18	0.21
June	0.31	0.14	0.17	0.25	0.34											0.31	0.14	0.17	0.25	0.34
July																				
Aug																				
Sept																				
															April-May-June Average:	0.53	0.18	0.19	0.23	0.27

Feather River at Nicolaus
STUDY 1995C06F-SWRCB-468 DWRSIM record18-I 17 Jun 97
CP # 37, DEPLETION AREA 13 DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-468/37/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,822	1,887	1,431	4,086	8,121	12,133	8,638	26,006	18,873	7,010	504	403
1923	2,017	1,529	7,546	11,287	5,330	3,952	7,008	2,570	6,084	7,026	5,042	706
1924	927	1,731	3,773	3,289	2,489	2,765	1,916	894	1,815	1,073	226	286
1925	1,057	454	618	2,566	11,308	5,269	3,916	2,228	5,088	3,334	553	556
1926	911	958	683	5,056	5,506	5,204	7,932	4,980	3,227	7,058	407	2,000
1927	1,675	6,487	3,090	9,693	37,022	18,580	12,706	9,628	5,210	9,319	1,988	252
1928	1,220	1,882	699	8,929	4,172	43,797	6,823	7,387	3,880	8,898	6,440	420
1929	1,388	1,311	797	3,676	2,268	2,980	982	342	1,126	1,008	276	289
1930	1,138	387	2,976	7,790	1,224	10,327	4,521	3,513	4,185	7,188	4,803	1,082
1931	1,858	2,780	2,797	1,594	2,829	1,643	2,084	1,773	2,536	1,073	342	336
1932	1,004	1,482	2,277	8,278	4,259	1,382	4,974	3,008	7,512	1,952	280	521
1933	1,156	1,832	1,881	2,179	4,485	2,766	2,571	0	1,786	1,080	472	387
1934	764	1,587	1,529	4,828	1,134	3,529	4,101	1,289	2,986	1,836	360	1,361
1935	2,488	538	1,008	8,790	1,082	7,432	8,352	12,702	8,804	3,903	568	2,723
1936	1,589	2,033	764	8,977	21,192	17,483	7,714	3,578	5,986	7,336	3,068	67
1937	716	1,546	1,138	2,761	11,452	13,531	6,437	5,822	7,882	3,919	1,643	84
1938	1,156	2,289	19,793	11,384	26,595	37,260	27,158	26,542	17,797	3,708	1,067	4,430
1939	5,139	4,974	5,253	5,416	5,528	5,253	2,891	1,301	4,453	7,828	5,808	805
1940	1,073	867	280	4,814	5,286	36,528	31,779	7,336	5,482	7,989	1,236	2,521
1941	2,537	2,886	4,983	18,979	29,602	24,037	7,226	14,572	6,470	4,733	1,236	739
1942	5,025	3,178	20,752	18,606	35,472	10,278	22,452	13,515	11,687	5,774	748	504
1943	3,334	6,117	10,718	24,883	18,586	25,847	11,579	6,803	3,428	7,042	2,082	289
1944	1,106	1,193	1,529	2,927	9,475	8,050	1,529	407	4,823	7,302	5,627	50
1945	911	2,790	2,982	2,472	11,038	10,804	2,891	407	6,087	7,808	4,098	252
1946	911	2,805	7,865	16,198	8,373	8,441	1,865	2,911	5,411	8,087	6,863	471
1947	980	1,746	2,748	1,887	3,438	4,407	3,038	16	3,284	7,416	5,204	34
1948	1,431	1,284	1,389	1,447	2,712	2,423	6,537	8,376	5,386	8,717	3,773	1,916
1949	1,286	874	1,806	1,805	2,289	7,563	1,781	2,277	4,437	7,693	4,440	891
1950	1,875	1,109	813	4,277	7,941	4,570	3,899	2,293	6,941	8,587	6,684	982
1951	864	13,438	31,826	26,036	20,761	11,449	3,798	2,879	2,649	6,880	6,567	1,193
1952	1,578	2,521	5,172	25,241	21,888	16,459	27,107	33,421	17,088	5,074	2,198	3,731
1953	4,163	2,151	9,498	21,780	8,461	8,799	4,790	8,852	8,941	9,839	797	891
1954	1,171	4,038	2,618	8,906	15,083	16,816	13,041	9,465	4,084	8,836	7,026	823
1955	1,041	1,280	3,448	4,342	2,161	1,936	1,126	882	4,866	7,497	1,887	856
1956	520	739	1,035	41,504	19,715	16,589	6,018	16,019	8,117	9,306	976	891
1957	3,383	1,280	1,984	4,521	14,281	17,386	5,479	2,886	6,873	8,886	5,407	1,244
1958	1,539	723	2,802	3,529	28,847	31,421	25,986	18,963	11,880	3,985	1,903	3,539
1959	4,326	1,889	2,082	10,799	17,486	5,586	1,482	380	4,087	7,725	6,284	941
1960	586	1,882	1,610	2,583	4,807	3,025	5,428	283	3,647	5,904	283	303
1961	1,576	1,580	818	1,724	5,078	1,539	3,687	146	4,571	7,872	4,554	521
1962	2,114	1,143	851	1,122	12,190	6,375	4,289	3,838	5,916	8,083	3,318	3,059
1963	8,921	3,849	5,643	1,317	30,266	12,984	36,736	11,824	7,008	8,847	2,814	1,176
1964	1,386	4,336	1,262	7,530	2,225	3,962	1,386	829	4,033	7,449	6,864	4,286
1965	1,643	1,849	10,181	43,131	12,408	8,278	11,277	10,815	4,088	7,140	2,818	1,210
1966	867	3,378	4,554	6,717	5,080	6,083	1,849	4,180	3,126	8,378	6,749	289
1967	1,108	1,210	6,928	4,684	23,136	19,986	9,178	14,383	16,987	4,554	2,000	3,042
1968	4,163	1,486	3,139	9,537	14,882	16,166	4,388	0	3,586	7,989	4,912	0
1969	732	1,210	1,836	32,186	31,863	19,142	14,251	20,489	7,082	1,875	183	6,363
1970	2,326	2,838	22,348	63,736	40,513	13,878	3,731	49	1,714	7,107	4,954	437
1971	787	841	14,231	9,963	6,858	16,751	9,813	10,490	8,483	8,612	5,289	1,446
1972	1,156	1,085	4,765	5,882	3,482	9,486	2,319	1,025	2,924	7,449	6,886	1,714
1973	1,584	3,983	4,733	18,524	25,786	20,248	5,486	3,204	8,286	7,878	3,789	1,887
1974	1,546	11,226	19,337	36,869	15,449	37,084	27,678	10,425	7,798	5,820	1,675	2,521
1975	3,019	2,087	2,781	3,610	24,920	20,459	7,327	9,856	10,187	7,930	1,578	1,933
1976	3,708	3,361	4,147	3,836	4,284	3,627	1,482	488	2,708	5,985	3,836	1,284
1977	1,484	1,378	2,147	1,480	2,306	980	1,446	716	888	146	86	1,128
1978	716	420	1,447	11,775	6,536	12,214	9,781	3,487	5,227	3,757	2,198	1,311
1979	748	1,428	1,982	9,986	14,680	11,531	3,479	1,484	6,891	8,554	1,740	1,180
1980	1,389	1,785	2,179	35,145	37,749	21,872	6,887	4,082	3,788	3,610	781	873
1981	787	622	1,106	6,863	8,481	9,839	4,806	716	3,486	6,688	5,882	1,042
1982	878	5,731	33,881	31,680	32,879	34,580	46,770	18,557	8,286	5,627	1,773	4,087
1983	7,381	11,831	19,923	16,507	37,254	55,823	24,771	21,020	23,276	8,538	4,245	6,873
1984	5,107	21,595	48,839	25,046	15,525	14,491	3,916	2,570	5,882	8,457	2,521	622
1985	283	2,236	2,886	2,244	5,186	7,983	2,823	2,927	2,984	7,804	8,847	5,579
1986	1,836	1,887	3,822	5,513	47,086	53,832	7,310	2,082	1,042	6,017	2,765	1,887
1987	1,220	786	1,903	2,818	4,582	8,912	3,446	195	3,227	6,184	2,586	94
1988	2,882	1,513	1,301	4,196	2,034	1,826	2,151	1,389	1,647	586	81	17
1989	1,805	672	883	1,952	3,331	12,458	8,218	2,944	2,723	7,010	1,981	2,780
1990	1,289	2,286	4,212	5,221	4,123	3,155	3,886	163	3,108	5,627	781	1,028
1991	2,906	1,798	2,846	1,171	2,647	8,197	3,781	325	1,781	2,570	883	858
1992	1,513	868	748	2,749	9,457	3,610	2,773	380	1,731	1,285	33	286
1993	2,309	1,344	982	7,042	9,273	7,937	13,747	9,417	6,873	4,359	887	319
1994	2,163	2,872	3,887	3,350	8,121	2,423	1,378	716	2,823	6,852	5,806	0

Flow recommendations are based on water year types as difined on p 23-24 of the SWRCB 1995 WQCP for the Bay Delta

Sacramento Basin 40-30-30 Index.
Wet - 1927, 38, 41, 42, 43, 52, 53, 56, 58, 63, 65, 67, 69, 70, 71, 74, 75, 82, 83, 84, & 86
Above Normal - 1922, 28, 40, 51, 54, 57, 73, 78, 80, & 93.
Below Normal - 1923, 35, 36, 37, 45, 46, 48, 50, 59, 62, 66, 68, 72, & 79
Dry - 1925, 26, 30, 32, 39, 44, 47, 49, 55, 60, 61, 64, 81, 85, 87, & 89
Critical - 1924, 29, 31, 33, 34, 76, 77, 88, 90, 91, 92, 94

San Joaquin Basin 60-20-20 Index
Wet - 1922, 37, 38, 41, 42, 43, 52, 56, 58, 65, 67, 69, 74, 75, 78, 80, 82, 83, 86, & 93
Above Normal - 1923, 27, 32, 35, 36, 40, 45, 46, 51, 63, 70, 73, 79 & 84
Below Normal - 1925, 28, 44, 48, 49, 50, 53, 54, 57, 62, 66, & 71
Dry - 1926, 33, 39, 47, 55, 59, 64, 68, 72, 81 & 85
Critical - 1924, 29, 30, 31, 34, 60, 61, 76, 77, 87, 88, 89, 90, 91, 92, 94

Mean Monthly Flow in cfs by Water Year Type

73-year Flow Averages by Month and Water Year Type
Feather River at Nicolaus - CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	2,794	1,558	1,775	1,331	1,782
NOV	4,418	3,067	1,701	1,418	1,935
DEC	12,843	4,617	2,904	1,983	2,490
JAN	21,428	12,936	7,178	4,086	3,146
FEB	25,824	14,807	10,491	4,941	3,829
MAR	23,610	20,048	8,836	5,941	3,105
APR	18,076	10,544	4,482	3,843	2,377
MAY	13,280	7,615	5,020	1,864	708
JUN	9,146	6,610	5,614	4,142	2,028
JUL	6,585	6,946	7,251	6,627	2,411
AUG	2,140	3,472	4,403	3,583	1,080
SEP	2,219	1,091	1,025	1,313	587

CP 16 Yuba River at Marysville, Regulated Flow

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	423	521	876	1,822	4,574	2,911	3,714	6,798	8,033	2,880	2,553	471
1923	455	807	3,885	3,074	1,961	1,870	2,185	1,584	2,084	829	863	571
1924	504	538	886	1,386	1,878	748	286	179	168	65	65	67
1925	278	353	784	1,171	4,826	2,277	1,798	1,675	891	380	585	454
1926	423	538	716	1,486	4,447	2,846	2,218	390	252	65	65	67
1927	423	4,035	2,308	3,741	8,589	5,448	5,761	5,253	4,571	2,244	618	487
1928	423	1,916	1,643	3,074	2,277	7,432	4,420	3,156	790	438	563	454
1929	423	538	883	1,301	1,729	1,431	1,025	342	202	65	65	67
1930	325	319	1,431	2,830	3,205	2,846	1,445	520	286	65	130	471
1931	423	822	504	1,513	1,838	1,203	252	179	168	65	65	67
1932	278	303	1,285	1,529	1,965	2,472	2,084	1,415	2,807	585	634	403
1933	423	454	553	1,301	1,458	1,643	1,160	651	202	65	65	67
1934	342	336	716	1,610	2,251	1,386	454	195	202	65	65	67
1935	325	504	585	1,545	1,747	2,131	4,836	3,584	3,344	618	618	420
1936	472	484	553	4,505	8,189	4,505	4,101	3,334	2,773	887	834	487
1937	423	420	537	1,286	3,151	2,879	2,706	3,236	1,748	468	589	403
1938	423	1,482	4,489	3,708	5,880	8,343	8,151	8,733	7,847	3,155	2,033	538
1939	520	566	589	1,386	1,565	1,059	672	179	168	65	65	67
1940	278	286	293	3,253	5,320	7,400	5,178	4,749	2,000	407	818	504
1941	455	807	3,350	4,538	6,826	5,465	4,389	5,009	3,344	2,566	797	805
1942	520	840	4,245	4,885	7,004	4,635	5,411	5,237	5,026	2,895	862	521
1943	423	2,000	3,446	6,115	5,006	7,221	5,008	4,131	2,805	898	797	538
1944	438	471	802	1,447	2,225	2,293	1,482	784	353	65	65	118
1945	423	1,412	1,724	1,936	4,700	3,724	1,714	1,308	1,884	589	888	487
1946	585	1,548	4,619	4,851	4,231	2,358	2,134	2,179	1,178	537	683	454
1947	423	1,244	1,156	1,286	2,583	2,521	1,328	342	336	65	65	67
1948	423	487	520	2,131	1,443	1,854	3,126	2,131	3,075	813	732	454
1949	423	467	843	1,334	1,873	3,367	2,134	797	252	65	438	454
1950	423	487	537	3,513	4,826	3,236	3,042	2,498	2,252	618	883	471
1951	829	6,000	8,571	6,944	6,158	5,172	4,571	3,415	1,513	589	883	471
1952	764	1,344	4,245	5,985	5,511	5,383	6,201	6,282	8,389	3,789	2,911	1,126
1953	423	487	1,513	5,843	4,123	3,318	2,353	2,183	3,887	2,781	828	521
1954	504	808	732	2,980	3,817	4,017	3,529	829	805	407	618	454
1955	423	586	1,334	2,183	1,765	1,610	1,284	1,008	370	65	65	67
1956	423	555	9,433	10,213	6,676	4,814	3,885	5,302	4,336	2,342	878	822
1957	764	839	553	1,529	4,249	4,115	1,280	2,000	1,833	585	716	538
1958	888	790	1,756	3,318	7,833	9,198	9,705	6,819	6,339	2,944	1,238	823
1959	423	504	553	3,058	3,583	1,789	1,059	407	336	65	65	101
1960	423	454	553	1,773	3,561	2,879	1,328	618	370	65	65	84
1961	423	706	613	1,350	2,286	1,622	941	342	202	65	65	67
1962	342	336	883	1,138	4,968	3,285	2,706	678	1,714	537	716	521
1963	4,131	3,050	3,123	4,196	5,456	4,570	4,674	5,804	3,344	829	884	855
1964	802	2,758	678	2,700	1,878	1,740	1,580	888	454	65	65	67
1965	423	739	10,815	9,758	5,824	4,310	5,486	4,868	3,361	1,628	1,008	672
1966	472	1,178	982	2,553	1,808	2,244	1,781	455	286	65	65	67
1967	423	1,482	3,643	4,928	4,700	4,765	3,008	4,879	5,848	3,285	2,586	822
1968	585	571	884	2,887	4,258	4,017	1,143	472	336	65	65	67
1969	423	708	1,317	10,002	8,734	5,302	5,385	7,123	5,748	2,716	813	556
1970	618	588	4,228	11,027	7,348	5,418	3,529	851	857	802	716	471
1971	618	2,420	4,538	4,472	3,475	4,570	1,714	3,171	3,378	2,818	876	738
1972	585	706	1,513	2,635	2,758	2,976	1,513	683	286	65	634	888
1973	813	1,785	2,797	5,361	6,536	5,080	3,361	2,277	1,108	585	732	708
1974	828	4,958	5,936	7,205	4,718	8,441	7,280	5,887	3,986	2,765	943	805
1975	589	865	834	1,870	4,718	5,387	2,202	3,285	4,185	2,488	1,008	773
1976	1,106	1,193	887	1,382	1,817	1,073	370	179	168	65	65	67
1977	278	286	308	716	828	716	168	179	168	65	130	67
1978	228	151	732	4,228	4,357	5,123	4,470	3,318	3,143	1,464	878	891
1979	455	622	585	2,618	3,367	3,090	1,798	1,822	1,108	520	716	521
1980	813	1,042	1,643	8,228	7,587	6,131	3,933	3,822	3,243	980	813	521
1981	520	471	746	2,308	2,161	2,488	1,428	380	336	65	65	67
1982	423	4,420	7,823	5,822	7,743	7,676	11,814	9,075	5,781	2,818	911	1,126
1983	1,025	2,738	4,261	5,611	7,761	9,709	7,613	7,725	9,310	4,977	2,944	1,513
1984	911	4,437	9,254	5,123	4,886	4,977	3,882	2,328	1,798	883	787	856
1985	883	2,470	1,203	1,610	2,125	2,082	1,478	438	336	65	65	67
1986	423	756	911	3,204	13,486	10,620	6,386	3,545	2,017	602	732	906
1987	683	437	553	1,389	2,251	1,828	487	211	202	65	65	67
1988	342	370	1,008	1,773	1,321	1,122	807	195	202	65	65	67
1989	342	924	887	1,301	1,883	7,400	3,949	1,626	773	380	618	805
1990	1,138	889	438	2,505	1,747	1,854	856	818	236	65	65	67
1991	342	353	423	882	1,082	2,886	1,244	486	202	183	618	403
1992	407	454	455	1,334	3,849	2,017	840	195	202	65	65	67

Sacramento Basin 40-30-30 Index
Yuba River at Marysville gage

Month	W	AN	BN	D	C
OCT	732	584	467	480	520
NOV	1868	1470	717	817	530
DEC	4348	1983	1305	886	967
JAN	5780	4154	2085	1881	1424
FEB	6380	4867	3488	2527	1771
MAR	8026	5286	2864	2820	1481
APR	5191	3826	2403	1602	880
MAY	5186	3374	1780	714	306
JUN	4548	2486	1586	524	193
JUL	2345	931	461	138	74
AUG	1204	907	540	195	121
SEP	716	556	406	200	96

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Sacramento River at Verona
STUDY 1995C06F-SWRCB-466 DWRSIM reoro618-d, 21 May 97

ALT 2 - SACRAMENTO RIVER FLOW AT VERONA (CFS)
CP 43 del - CP 64 del CP 43 in

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	8864	8504	11824	14133	27693	25647	17915	36495	25612	13287	8977	6033
1923	11368	13461	24493	29087	18978	14344	18587	8717	12873	13661	10539	9856
1924	7985	8016	10669	11417	13074	9465	7478	6756	7815	7058	5399	6705
1925	6115	5848	7929	9270	36714	15080	17377	7319	12520	10750	6310	7193
1926	8473	7697	8181	15841	31384	16231	18671	11368	11280	14084	5780	6369
1927	7758	16402	12588	24932	71376	37503	39140	21175	13478	18101	8441	7630
1928	9628	18553	12279	22086	23435	70685	23141	16821	11344	18719	13822	8067
1929	8668	9963	10115	12751	15449	13808	7344	7579	7747	6359	5465	6258
1930	6522	5899	11775	18475	14333	25840	10033	8945	13831	15450	10556	6353
1931	8213	8151	8392	10116	9669	7596	7630	7384	7615	8392	5808	6823
1932	8912	6554	11097	15003	10761	7514	10083	8099	12453	8505	5009	8201
1933	8229	7025	6879	9579	10479	8555	7613	5221	6566	7790	5172	5796
1934	5806	6604	9254	14702	11416	12214	10436	6814	8453	12734	8457	8033
1935	8343	7546	7026	23110	11146	20573	15948	21606	13764	11108	8294	8880
1936	9140	8571	8229	25664	30580	28428	15629	9563	12823	13791	8664	6586
1937	8083	8823	9303	12051	28395	32820	18957	12019	13797	10864	7361	8606
1938	9173	19494	39162	25428	69287	66631	39796	46221	27023	10897	7465	14668
1939	19044	16234	15369	15208	15773	13499	10769	7058	14486	14751	13580	8302
1940	7481	8974	6115	22866	32863	46741	35040	14556	11865	16117	6796	8873
1941	10718	10789	29256	64777	64821	51376	37527	35145	15848	11807	8408	13360
1942	18752	14890	58207	53165	65866	23273	37813	30559	21797	12637	7237	10588
1943	16569	17915	23631	46481	44763	51982	24385	17662	12201	13759	8555	7680
1944	9660	11663	10506	13936	24913	22183	7142	6469	14184	14688	11124	8672
1945	6664	11613	13694	10815	28323	23175	9378	9042	12368	15580	9893	8605
1946	9303	16268	42171	36788	20653	20215	8252	9791	12100	15776	12523	8974
1947	8929	10688	14312	10978	19308	18215	10705	6115	13528	15092	10636	8537
1948	8083	8571	7872	12507	11735	14296	18671	23127	16688	14946	9206	6151
1949	13808	11209	11319	11368	12892	36446	10503	9644	12318	15288	10230	7631
1950	8536	8016	6132	15633	25785	16247	11495	8359	13730	15239	12116	7142
1951	8750	21948	46369	49111	49174	25586	10756	13011	11949	16636	13027	8554
1952	10083	12772	36544	54905	52294	48270	48114	48205	26570	11889	8847	15713
1953	17597	13485	38069	56174	24920	21842	13125	22378	20839	17077	7319	13176
1954	14605	18335	12279	33299	52289	44204	35174	21614	11730	18052	13824	8436
1955	11824	17848	20847	16378	13324	14572	7327	7075	13669	15564	7806	7092
1956	7872	10235	9774	66810	54137	33812	16217	33259	16789	16784	7530	12857
1957	17093	12772	10913	15515	29422	38325	17259	13256	15007	17418	11905	7193
1958	19402	16469	20720	31564	50741	84086	37779	33665	25175	13157	10360	18083
1959	18524	13192	11336	30767	45735	20720	8453	6717	14117	16861	13369	7529
1960	9156	9781	9449	12604	23783	18280	11377	8489	13949	14328	8679	7394
1961	9156	11260	15824	11596	31166	19863	11949	7302	16436	17207	12087	7411
1962	9709	8722	14930	11075	39145	24623	11529	10004	13260	16003	9351	10403
1963	19240	16217	23062	12214	48077	29437	62083	22167	14806	15223	9579	9832
1964	15759	22839	11303	20232	14586	13954	7277	7205	12772	14458	12198	10520
1965	8473	12086	9807	67640	26829	18443	38787	20720	12873	15418	9042	8756
1966	10441	22563	13791	26298	23426	26786	11496	12523	12150	17223	13805	8789
1967	9774	12453	35569	26835	36606	47063	33964	35369	28848	12539	8782	15108
1968	17646	13082	13515	26379	48435	34066	12839	6457	13327	16263	11482	7764
1969	9547	11193	21777	52840	55314	40041	37023	36186	16402	10067	6766	19562
1970	16377	14268	43456	70681	50039	32868	13008	7563	11082	16849	11369	8201
1971	9498	18604	46204	40707	24056	46204	18083	24314	19007	18231	11966	13814
1972	15499	12772	15743	17613	21036	28721	10419	8067	13646	17223	13938	8134
1973	10718	19881	22639	37569	61112	42187	16906	11742	15528	17158	10278	9193
1974	13808	47694	54108	65574	35310	90051	24654	21744	16653	16654	10148	17679
1975	18410	14755	14377	15076	51677	69603	21276	23696	19091	16361	9286	14923
1976	18687	14823	13369	13791	16916	16963	8369	7790	15175	14865	9482	7411
1977	7416	7428	7491	7075	11596	7172	8672	8083	8117	5936	5465	7579
1978	7709	8302	11362	38414	42476	37943	32888	16410	11041	9791	7937	12756
1979	13060	11041	9839	22704	37470	27323	13982	8034	14891	14328	7808	8470
1980	10799	13512	16361	45440	56380	33015	16772	11336	11461	9904	7270	8319
1981	13222	10302	12198	24558	26109	29974	15276	6782	13982	15759	12556	7798
1982	9173	27511	53035	41390	50417	80370	61441	27599	17511	13222	8750	16804
1983	21939	27998	43423	49197	66608	59246	59080	44868	41348	17971	14862	22806
1984	22688	47308	66646	39992	30267	33991	15125	11189	14570	17727	8845	8604
1985	14344	26754	19044	13320	17052	19353	10957	10425	12150	15320	12637	10974
1986	8631	8166	13743	18589	58537	61866	17394	9254	7815	12286	9238	8067
1987	10246	8336	10929	14068	20023	26477	11310	7140	16722	15873	12067	8504
1988	9860	8756	13647	22671	14291	9318	7092	7808	11862	10132	5530	5546
1989	6814	7831	7367	10962	9607	35031	18217	10409	12604	15548	7172	8823
1990	10586	9863	12474	18248	14281	13173	10872	6424	15058	13824	6001	7512
1991	8522	7294	7823	6326	10461	24948	12671	8375	7445	7985	6406	7126
1992	6086	5008	5432	10002	27764	17402	11512	6814	9806	8034	5253	7647
1993	7969	7126	9774	40285	38785	39892	29729	21435	22418	13125	7158	7445
1994	11173	20133	14572	13775	23566	14686	8758	6847	15478	14830	14084	7579

Sacramento Basin 40-30-30 Index
Sacramento River at Verona - CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow

Month	W	AN	BN	D	C
OCT	13,805	10,361	11,030	10,624	9,084
NOV	18,805	13,381	11,731	11,921	9,232
DEC	33,009	16,050	14,291	12,346	10,001
JAN	44,095	31,632	21,338	14,800	12,538
FEB	48,159	41,386	27,774	19,952	14,914
MAR	48,007	40,528	23,740	20,775	12,942
APR	33,181	23,558	13,280	11,812	9,020
MAY	27,289	17,647	11,069	7,981	6,825
JUN	19,082	14,796	13,545	13,575	10,128
JUL	14,803	15,021	14,921	14,417	9,837
AUG	9,181	9,908	10,480	9,789	6,877
SEP	13,240	8,687	7,764	7,746	7,002

American River at H Street Bridge
STUDY 1995C06F-SWRCB-466 DWRSIM reoro618-f 17 Jun 97
CP # 64, D-893 MINIMUM REQUIRED FLOW DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-466/64/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,870	2,403	2,440	2,196	4,808	4,407	4,369	8,359	8,470	2,407	3,529	3,613
1923	2,374	2,403	6,961	5,090	4,367	2,700	2,857	4,375	4,756	4,912	2,082	1,613
1924	1,870	2,403	2,440	2,196	1,878	2,082	758	846	2,185	342	260	672
1925	486	606	504	455	4,556	2,407	4,669	3,415	4,773	3,852	2,851	1,697
1926	1,870	2,403	2,440	2,196	1,945	2,114	1,378	1,626	3,731	4,261	2,358	538
1927	846	504	504	3,285	13,867	4,928	8,184	3,867	5,006	2,486	2,309	3,796
1928	2,374	2,874	2,636	2,440	2,347	12,572	5,613	3,074	2,437	3,269	2,212	1,042
1929	1,952	1,916	1,952	1,952	1,945	2,196	1,076	1,691	3,378	2,521	260	975
1930	1,740	1,109	504	439	432	2,423	2,370	2,309	4,636	3,903	3,367	857
1931	878	958	520	439	432	456	1,882	1,610	4,564	651	472	856
1932	813	1,143	504	455	2,417	2,407	3,042	2,614	6,366	7,596	4,017	941
1933	2,663	2,118	504	439	774	1,155	5,075	1,496	4,101	374	716	1,412
1934	1,545	1,479	504	439	432	2,183	2,790	1,447	6,366	228	244	269
1935	669	504	504	439	432	2,911	6,487	5,562	3,466	4,651	3,155	2,118
1936	1,870	2,151	1,952	3,871	13,213	4,294	5,714	3,562	5,193	3,139	2,440	2,504
1937	2,374	2,403	2,440	2,440	2,863	4,310	4,420	3,919	3,714	3,594	2,374	1,613
1938	2,374	2,403	5,741	3,367	10,263	10,978	8,067	9,075	7,969	3,106	3,903	3,933
1939	2,374	2,403	2,440	2,440	2,431	1,903	1,832	553	4,101	3,643	325	975
1940	1,252	1,260	1,366	439	9,614	10,457	6,487	2,927	3,277	3,773	2,096	1,082
1941	1,870	2,403	3,952	5,904	8,265	4,830	3,815	4,570	4,252	2,228	2,244	3,646
1942	2,374	2,403	5,318	9,742	10,407	3,659	5,277	6,148	5,986	3,009	3,919	3,899
1943	2,374	3,815	4,879	11,433	7,346	12,474	5,294	2,814	4,353	2,440	2,000	2,723
1944	2,374	2,403	2,440	2,440	2,347	1,903	2,370	1,317	3,748	3,369	2,537	1,546
1945	1,724	504	504	781	9,579	2,407	2,504	2,866	3,748	3,432	2,033	1,849
1946	2,374	3,546	8,929	5,627	3,115	2,982	4,252	2,781	3,865	3,367	2,114	1,479
1947	2,374	2,403	2,440	2,440	2,431	1,903	1,378	1,317	4,366	3,318	2,749	1,025
1948	472	504	829	439	2,034	3,080	2,370	2,814	4,302	2,667	2,000	3,647
1949	2,374	2,403	2,440	2,440	2,485	2,407	2,370	2,927	3,781	2,865	2,212	1,385
1950	1,670	2,403	2,440	2,196	5,564	3,253	5,143	2,982	5,042	3,594	2,000	1,968
1951	2,423	17,327	15,467	10,457	8,517	3,497	3,042	3,464	4,538	2,980	2,000	1,260
1952	2,374	2,790	6,146	9,254	9,363	6,086	9,109	10,132	10,302	4,082	4,375	4,134
1953	2,374	2,403	2,749	7,758	2,758	2,407	2,874	3,562	4,252	2,814	3,903	3,865
1954	2,374	2,403	2,440	2,440	3,277	4,538	4,756	2,846	2,336	2,618	1,789	840
1955	1,870	2,403	2,440	2,196	1,945	2,505	1,378	2,309	3,462	3,074	2,505	1,445
1956	2,147	1,378	11,824	16,788	5,894	2,911	3,630	4,619	5,344	2,785	3,887	3,846
1957	2,374	2,403	2,440	2,440	3,223	4,651	3,583	2,309	4,017	3,236	2,000	1,284
1958	2,374	2,403	2,440	2,440	9,903	6,717	10,436	9,156	7,142	2,785	4,017	3,949
1959	2,374	2,403	2,440	2,440	2,521	2,293	1,445	1,317	3,326	2,277	1,057	336
1960	1,090	1,613	1,460	943	1,026	4,147	1,714	2,309	3,496	2,553	1,724	454
1961	1,447	1,916	1,952	1,691	1,440	1,108	790	553	2,606	1,675	943	471
1962	797	908	943	943	2,881	2,785	3,512	2,472	2,723	3,545	2,085	1,328
1963	2,602	4,403	3,564	4,115	11,560	2,911	6,689	6,229	3,615	2,226	2,000	3,796
1964	2,374	4,134	2,440	3,074	2,834	2,114	1,378	1,317	4,134	4,212	3,156	1,815
1965	1,171	504	17,581	12,897	5,384	2,407	4,218	3,806	5,075	3,253	2,000	2,924
1966	2,374	2,571	2,440	2,618	2,431	1,903	1,378	1,773	3,059	2,635	1,859	924
1967	1,025	1,412	2,000	7,286	4,772	6,213	4,536	7,790	6,686	3,757	4,017	4,050
1968	2,374	2,571	2,440	2,618	6,780	2,521	2,235	1,317	3,311	2,468	1,090	773
1969	1,362	1,916	1,952	14,474	9,561	4,407	7,042	7,611	5,798	2,468	3,741	3,862
1970	2,374	2,403	5,596	21,842	6,176	2,407	2,975	2,309	3,025	3,041	1,301	773
1971	1,870	2,403	5,676	5,269	3,925	3,887	3,243	3,582	4,252	2,228	3,058	3,680
1972	2,374	2,403	2,927	2,440	3,042	4,294	2,370	2,309	3,687	3,138	1,887	1,176
1973	1,362	1,916	1,962	9,335	7,663	3,952	2,756	3,708	3,731	3,529	2,000	1,260
1974	2,374	6,319	7,335	12,702	3,781	9,482	6,789	4,082	4,252	2,440	3,952	4,017
1975	2,374	2,403	2,440	2,440	3,133	4,566	3,630	4,017	5,294	2,407	3,606	3,781
1976	2,374	3,277	2,440	2,440	2,347	2,308	622	943	3,731	1,919	325	538
1977	1,073	666	504	439	432	325	188	130	437	260	276	303
1978	390	504	504	1,415	5,080	5,806	4,403	3,220	4,622	2,879	2,458	3,008
1979	2,374	2,403	2,440	2,440	2,809	3,369	2,370	3,708	3,846	3,497	1,984	1,244
1980	1,870	2,403	2,440	18,036	12,917	3,285	2,656	2,814	4,706	2,228	2,114	3,781
1981	2,374	2,403	2,440	2,440	2,431	1,903	1,126	1,067	3,294	2,049	862	840
1982	374	3,798	14,821	8,246	15,071	7,172	14,167	9,579	6,050	2,895	3,952	4,252
1983	2,374	8,453	8,912	7,920	12,820	18,231	7,109	9,254	14,150	5,790	4,684	4,739
1984	2,374	15,310	14,832	6,749	5,581	2,407	2,756	2,309	4,336	3,545	2,000	1,513
1985	2,374	4,186	2,927	2,440	2,431	1,903	2,370	2,049	4,403	3,919	3,000	1,210
1986	1,203	504	504	1,610	33,023	10,506	2,370	2,814	4,353	2,228	2,000	3,862
1987	2,374	2,403	2,440	2,440	2,431	1,903	1,069	797	3,781	2,749	244	586
1988	618	908	504	439	2,295	1,643	639	1,057	2,941	716	244	2,202
1989	1,561	504	504	439	2,181	6,944	4,636	3,156	3,983	3,432	1,756	807
1990	1,670	1,916	1,952	1,952	1,945	1,513	1,849	1,073	4,470	2,381	260	1,109
1991	1,268	739	862	439	450	1,156	1,378	1,317	3,126	1,594	1,252	773
1992	1,919	2,437	1,962	1,962	1,878	1,513	586	1,265	3,781	1,265	244	269
1993	374	504	504	1,008	6,104	8,146	4,790	3,773	4,874	3,497	2,488	3,580
1994	2,374	2,403	2,440	2,440	2,431	2,114	666	851	3,143	2,537	342	269

Sacramento Basin 40-30-30 Index.
American River at H Street bridge - CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

Year Typ	W	AN	BN	D	C
OCT	1,934	1,869	1,866	1,867	1,702
NOV	3,349	3,400	1,977	2,152	1,770
DEC	6,124	3,219	2,728	1,866	1,361
JAN	8,357	5,021	2,458	1,810	1,287
FEB	9,173	6,352	4,402	2,234	1,436
MAR	6,076	6,131	3,081	2,469	1,552
APR	5,820	4,243	3,361	2,118	1,466
MAY	5,587	3,650	2,986	1,864	1,129
JUN	5,891	4,301	3,863	4,044	3,519
JUL	2,952	3,040	3,353	3,539	1,235
AUG	3,194	2,269	1,966	2,151	406
SEP	3,585	2,077	1,612	1,036	787

A2-80

C-032420

C-032420

San Joaquin River at Vernalis
STUDY 1995C06F-SWRCB-468 DWRSIM mcro518-f, 17 Jun 97
CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-468/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	2 000	1 697	2,498	2 083	6 752	5 351	6,201	5 936	7 294	1 870	1 822	1 916
1923	3,998	2,101	3 741	4 196	4 267	3 415	5,344	5,156	2 188	1 822	1 773	1 815
1924	3 106	1 462	1,496	1 399	1 617	1 708	1 983	1,870	1 378	1 350	1 386	1 294
1925	1 756	1 361	1 252	1 171	2 701	2 423	3,983	3 822	1 949	1 675	1 643	1 664
1926	2 000	1 412	1 382	1 366	2 363	2 277	3 664	3 545	1 681	1 289	1 301	1 462
1927	2 000	1 933	2 179	1 789	5 474	3 578	5 344	5 156	3 428	1 740	1 708	2 756
1928	4 359	1,849	2 309	2 277	2 590	3 871	4 470	3 822	1 412	1 106	1 155	1 546
1929	1 867	1 398	1 301	1 203	1 458	1 691	2 017	1 870	891	781	846	1 277
1930	2 000	1 244	1,106	1 720	1 549	1 935	2,420	1 870	924	813	911	1 361
1931	1,862	1,193	1 106	1 122	1 360	1 317	1 983	1 870	840	980	976	1 311
1932	1 334	1 294	3,058	3 432	8 536	4 538	4 504	3 871	2 134	1 317	1 317	1 731
1933	3 513	1 462	1 317	1 610	2 017	2 086	2 807	2,683	1 412	862	1 057	1 395
1934	1 838	1,277	1 203	1 431	2 467	1 659	1 983	1 870	874	927	980	1 109
1935	1 301	1,398	1,360	2 944	3 223	3,513	7 226	6 080	3,916	1 870	1 789	1 640
1936	3,171	1 546	1 581	2 309	12 413	5 757	6 403	5,156	2 588	1 789	1 756	1 649
1937	3 058	1 583	1 870	2 683	15 317	11 010	7 932	8,132	2 872	1 887	1 670	1 949
1938	3,196	1,798	5,074	6 993	22 417	31 047	18 049	23 972	11 784	3 643	1 887	2 638
1939	4,636	2,319	2 293	2 505	3 637	2 766	2 891	2,683	1 630	1 594	1 610	1 983
1940	2 000	1,478	1,399	4 001	8 049	10 425	5 663	5,156	3 428	1 605	1 854	1 933
1941	2,326	1,697	3,903	4 369	14 549	11 482	10,083	9,579	8 285	2 017	1 903	1 899
1942	4,912	2,236	4,456	8 392	10 353	5 936	6,907	5 936	5,647	2 342	1 919	2 101
1943	6 679	3,092	3 582	11 157	10 894	17 780	7,915	6,180	3,428	1 919	1 870	1 986
1944	3,415	1 615	1 919	1 984	3 112	3 106	3,428	2 976	1 885	1 675	1 691	1 781
1945	2,000	1,832	1,691	1 736	6 985	7 937	5 781	3 871	2 262	1 870	1 822	1 986
1946	3,808	2,202	5 595	5 448	5 866	4 391	5,344	3,871	2 134	1 789	1 854	1 949
1947	2 261	2,336	2 716	2 179	2 683	2 277	3 664	2 683	1 529	1 415	1 529	1 563
1948	1 903	1,344	1 203	1 122	1 373	1 740	3 983	3 822	2,286	1 675	1 708	1 714
1949	2 000	1 426	1 266	1 171	1 476	2 586	3,983	2 976	1 731	1 561	1 675	1 661
1950	2 000	1,436	1 285	1 480	2 567	2 293	3 983	3 822	1 714	1 529	1 659	1 647
1951	2,000	6 134	10,571	10 636	7 941	5 562	5,344	5,156	2,134	1 708	1 773	1 649
1952	2,000	1,684	2,505	6 847	6 102	11 368	10 840	15,450	8,470	2 732	1 854	2 218
1953	6,343	2,185	3,058	4 980	5 744	3,627	3 983	3 822	2 286	1,626	1 691	1 697
1954	2,000	1,513	1,415	1 334	2 287	2,407	3,983	3 822	1 798	1 594	1 708	1 697
1955	2,000	1,426	1,334	1 529	2 287	2,277	2,807	2 683	1 681	1 447	1 561	1 583
1956	2,000	1,446	12,376	21 321	12 917	5 985	6,201	5,936	7,546	2,033	1 806	1 949
1957	4,635	1,597	1,626	1 529	2 341	3,139	3,983	3,822	2,286	1,643	1 659	1 664
1958	2,000	1,529	1,447	1 626	4 177	10,604	14,907	13 173	10 184	2,017	1 903	2 134
1959	4,830	1,798	1,578	2 183	4 519	3,643	2,807	2 683	1,482	1,480	1 496	1 479
1960	1 870	1,328	1 171	1 156	1 791	1 919	2,420	1,870	1,529	1 406	1 496	1 406
1961	1,806	1,344	1,236	1 171	1 278	1,380	1,983	1 870	1 378	1 447	1 447	1 426
1962	1,382	1,294	1,155	1 138	5,942	4 489	4,201	3 822	1,681	1 480	1 529	1 613
1963	2,000	1,412	1,252	1 724	6 286	3 415	5,344	5,156	3,428	1 919	1 773	1 832
1964	3,041	2,134	1,789	1,854	2,208	2,277	2,807	2 683	1,513	1 301	1 464	1 462
1965	1,966	1,647	4,684	11 954	7 905	4 619	6,201	5 936	3,428	1 854	1 773	1 748
1966	4 424	3,479	4,798	4 847	5 186	3 708	3 983	2,976	1,647	1 529	1 610	1 597
1967	2 000	1,346	2,636	2 980	4 106	6,831	12 772	15,463	13,797	8,831	1 806	2 874
1968	4 700	1,697	1 724	1 643	3 181	2 797	3,664	2,863	1 983	1 546	1 529	1 529
1969	2 000	1,479	1,724	14 800	30 556	19 695	20,923	26 036	18,398	4 131	1 836	2,586
1970	8,327	2,554	3,594	17 044	9 489	7 432	5,344	5,156	2 134	1 724	1 773	1 682
1971	2,000	1,731	2,147	2,000	2 611	3,998	3 983	3,822	2,286	1 626	1 859	1 681
1972	2,000	1,412	1,480	1 366	2 208	2,277	3,664	2 683	1,412	1 285	1 464	1 366
1973	1,592	1,365	1,317	2 651	7 977	8,945	5,880	5,156	2,302	1,789	1 740	1 649
1974	3,253	2,366	2,748	7 026	5 366	7 237	7 683	5 936	3,428	1 854	1 805	1 949
1975	3 545	1,731	1,935	2,033	5 366	6,831	6,621	5 936	6,286	1 903	1 854	1 882
1976	4,096	1,832	1,805	1 529	1,947	1 708	1,983	1,870	1,328	1,366	1 366	1 365
1977	2,814	2,101	1,610	1 156	1 242	1,203	1,983	1,870	1,280	1,360	1 366	1,180
1978	1,266	1,311	1,360	3,253	7 202	10 978	14,923	10,831	7,075	2 814	1 822	2,723
1979	4,246	1,933	1,691	4,086	9 361	8,652	5,344	5,156	2 134	1,708	1,691	1 781
1980	2,830	1,697	1,806	13,256	24,009	14 572	6,722	6 619	6 184	3,708	1 724	2,822
1981	5,080	2,084	2,086	2,980	2 773	2,980	3,664	2 683	1,583	1 431	1 513	1 583
1982	2,090	1,630	2,000	9 368	16 403	15,304	27,023	15,158	9,865	3 236	1 636	3 949
1983	12,442	8,621	10,044	34 667	38 594	41 114	20,736	19,677	30,481	13 589	1 689	6,594
1984	12,116	13,546	21,500	15,190	9 718	6 001	5,344	5 156	2,134	1 805	1 903	2,000
1985	2,000	1,781	1,691	1 529	2 369	2,358	2,807	2,683	1 613	1,431	1 529	1 546
1986	2,000	1,597	1,545	1 984	22 361	26,188	9 614	8,087	7 613	1,822	1 789	1,840
1987	3,464	1,714	1,545	1 464	1 656	1,919	2,033	1,870	1,412	1 464	1 480	1 406
1988	1,806	1,294	1,136	1 122	1 182	1 285	1,983	1,870	1,311	1,366	1 415	1 344
1989	1,301	1,176	1,171	1 155	1,280	1 626	2,420	1 870	1 328	1 382	1 399	1 366
1990	1,394	1,227	1,138	1 122	1 280	1 382	1,983	1 870	1,244	1,285	1 334	1 361
1991	1,286	1,210	1 122	1 090	1 162	2 356	2,437	1 870	968	894	911	1 277
1992	1,334	1,426	1,138	1 138	2,243	2,049	2,252	1,870	1,026	1 171	1 156	1 479
1993	1,561	1,479	1,484	6 034	3 665	3,415	6,201	5 936	5 092	1 936	1 887	2,050
1994	4 294	1,849	1,447	1 350	1 983	1 545	1 983	1 870	1 647	1,828	1 546	1 479

San Joaquin Basin 60-20-20 index
San Joaquin River at Vernalis - CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	3,181	3,587	3,185	3,643	2,282
NOV	2,082	2,911	1 752	1,806	1,442
DEC	3,831	4,321	1,954	1,784	1,296
JAN	8 180	5,510	2,084	1,882	1,238
FEB	13,333	7 886	3,180	2,794	1 801
MAR	13,465	5 988	3,113	2,543	1,686
APR	11,432	5 572	3,986	3,204	2,115
MAY	10,986	4,944	3,610	2,782	1,870
JUN	9,144	2,584	1 912	1,561	1,206
JUL	3,306	1,761	1 580	1,389	1,230
AUG	1,831	1,752	1,616	1,458	1,248
SEP	2,461	1,931	1 685	1,502	1,354

Stanislaus River from Goodwin Dam downstream to confluence with San Joaquin River
STUDY 1995C06F-SWRCB-468 DWRSIM mcro518-f, 17 Jun 97
CP # 675, STANISLAUS RIVER AT MOUTH, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-468/675/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	439	353	260	228	504	325	1 344	2,358	586	797	829	588
1923	325	353	342	228	234	1 171	1,731	2,374	571	829	862	588
1924	325	353	260	228	226	309	1,109	1 289	975	943	943	538
1925	748	319	244	228	396	325	1 227	1,756	807	911	980	588
1926	602	353	260	228	252	846	1 445	2,049	968	943	943	588
1927	651	336	260	228	396	325	1,260	2,472	2,084	878	894	586
1928	325	363	260	228	226	325	857	2,098	805	563	589	586
1929	781	353	260	228	234	325	823	976	538	537	553	571
1930	716	319	244	211	216	325	1,109	943	585	553	589	588
1931	325	319	244	211	216	325	1,227	1 317	538	537	553	555
1932	309	319	244	228	313	325	857	1 724	588	563	589	588
1933	325	353	260	228	234	325	1 378	1 546	958	563	589	588
1934	781	336	260	228	234	325	1 008	1 289	538	537	553	303
1935	228	319	244	226	216	325	857	602	565	797	662	588
1936	325	363	260	228	782	325	857	1 415	585	846	878	588
1937	325	353	260	228	488	325	857	602	586	781	797	588
1938	325	353	260	228	684	488	1,849	1 203	585	563	797	588
1939	3,789	639	732	797	828	325	840	1 334	975	943	927	571
1940	716	336	260	244	296	325	857	1 643	2,084	846	813	588
1941	325	353	260	228	270	488	1,849	1 203	585	651	764	588
1942	504	454	423	1 187	1 927	488	1 849	1 399	566	563	748	588
1943	2,618	1,008	1,073	2 944	2 449	3,448	1 849	1 203	1 328	764	797	588
1944	504	454	423	390	382	325	857	1 008	874	911	911	588
1945	569	363	260	228	342	325	857	781	595	797	846	588
1946	325	353	276	228	1 206	488	2 252	1 342	857	862	813	588
1947	504	437	423	390	396	699	2,286	1 610	992	980	943	544
1948	781	336	260	293	435	325	1 210	1 561	1,025	911	894	588
1949	764	353	260	228	234	325	1 665	1 350	941	943	943	588
1950	748	353	260	228	252	325	1 798	2 244	941	943	911	588
1951	764	370	407	293	234	325	2 706	2 944	1 109	894	862	588
1952	472	353	260	456	261	488	1 849	1 203	1,025	553	813	588
1953	4 033	723	943	1 460	1 242	366	2,101	2 212	1,378	927	911	588
1954	732	403	293	290	630	325	891	1,935	906	943	894	588
1955	748	363	260	228	864	678	1 385	1 317	958	980	943	588
1956	781	336	563	456	226	374	3 260	1 025	565	651	646	588
1957	374	387	309	276	270	325	2,134	2,017	1 294	927	911	586
1958	634	353	260	228	378	488	1 849	1 203	585	651	781	588
1959	504	454	423	797	1 513	325	1 445	1 691	992	960	960	588
1960	781	336	260	228	226	325	1 006	829	992	960	960	588
1961	781	319	244	228	252	325	1 109	1 220	975	960	960	555
1962	309	319	260	260	378	325	857	2 000	958	960	943	588
1963	781	353	260	228	234	1 057	857	1 610	1 381	764	862	588
1964	325	353	260	228	591	456	1 479	1 561	992	943	980	588
1965	781	336	456	358	234	325	1 092	2 830	1 109	813	862	586
1966	325	353	260	228	234	325	2 386	1 708	975	943	943	568
1967	651	353	260	293	234	358	1 008	683	568	553	846	588
1968	358	387	293	260	785	325	2 109	1 561	992	943	943	586
1969	699	336	260	228	504	488	1 849	2 244	3 479	563	829	588
1970	3 487	823	1 431	5 009	2 737	1 106	2 319	2 749	1 092	894	862	588
1971	537	403	309	290	252	325	2 252	2 261	1 412	927	911	588
1972	748	353	260	228	869	764	2 554	1 622	1 025	943	960	588
1973	781	336	260	342	432	325	857	862	565	862	878	588
1974	325	353	260	228	234	488	1 849	1 708	1 428	813	846	588
1975	504	454	423	390	540	1 171	1 849	2 505	555	781	878	588
1976	504	454	423	390	382	325	958	1 106	975	943	943	555
1977	309	319	244	244	324	309	1 294	1 285	941	943	943	504
1978	276	319	244	309	270	325	857	602	566	553	846	588
1979	325	353	260	228	390	325	891	1 708	908	894	911	588
1980	325	363	260	1 187	4 903	992	1 849	1 203	566	553	894	588
1981	797	723	878	1 288	738	325	1 714	1 464	992	980	980	588
1982	651	336	260	228	1 855	3 090	1 849	1 203	1 597	563	813	588
1983	5 204	2,739	3,108	4 310	4 934	5 487	1 849	1 203	4 880	2,521	927	1 092
1984	5 627	3 512	4 879	2 781	2 556	1 362	2 756	3 058	1 042	846	781	588
1985	563	387	309	260	270	325	1 183	1 480	975	980	943	588
1986	683	336	260	228	342	4 084	1 849	1 203	586	846	862	588
1987	504	454	423	390	396	325	823	1 008	975	960	960	555
1988	764	319	276	276	330	309	1 042	1 138	958	943	943	538
1989	293	319	244	244	270	325	1 227	992	975	960	980	588
1990	325	319	293	276	288	325	1,076	1,220	958	943	943	555
1991	708	319	293	325	414	325	823	813	538	537	563	571
1992	309	319	276	260	298	325	823	1 008	538	537	553	555
1993	325	319	244	228	342	878	3,630	1 984	956	748	797	588
1994	309	353	260	228	234	325	891	862	975	927	943	571

San Joaquin Basin 60-20-20 index
Stanislaus River from Goodwin Dam to the San Joaquin River confluence - CP # 675 - STANISLAUS RIVER AT MOUTH

Month	W	AN	BN	D	C
OCT	842	1,067	848	841	507
NOV	506	606	396	435	345
DEC	462	689	340	396	282
JAN	706	796	363	447	262
FEB	1,078	738	411	666	284
MAR	1,260	561	328	509	322
APR	1,804	1,422	1,536	1,627	1,022
MAY	1,438	1,809	1,846	1,566	1,078
JUN	1,103	984	1,010	982	809
JUL	782	828	900	915	795
AUG	829	835	882	914	802
SEP	613	588	586	567	543

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Tuolumne River from La Grange Dam downstream to the confluence with the San Joaquin River

STUDY 1995C06F-SWRCB-468 DWRSIM recirc818-f 17 Jun 97
CP # 665 TUOLUMNE RETURN W/O TURLOCK DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-468/665/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	651	571	667	634	954	764	1 428	1 366	538	504	520	521
1923	569	504	602	602	594	520	1 395	1 285	487	455	439	437
1924	504	437	439	423	435	423	336	325	134	130	130	151
1925	276	303	309	293	450	342	941	894	269	260	260	252
1926	342	319	325	309	360	309	706	585	185	179	179	185
1927	309	387	374	358	630	439	1 361	1 269	454	455	439	437
1928	537	521	488	488	522	1 480	1 882	667	235	228	244	235
1929	325	319	309	309	324	309	538	520	134	130	130	151
1930	260	269	260	276	306	309	538	520	134	130	146	151
1931	260	269	260	260	288	260	353	342	134	146	146	151
1932	293	336	520	455	600	407	1 294	1 269	454	455	439	437
1933	520	454	439	455	468	472	605	618	185	163	179	185
1934	309	303	309	309	360	293	353	325	134	130	130	151
1935	293	336	342	504	432	488	1 546	1 317	487	472	439	437
1936	569	504	504	520	1 147	618	1 378	1 285	1 143	455	439	437
1937	651	571	585	585	3 367	4 294	2 235	1 366	923	520	520	521
1938	651	571	911	2 944	7 797	8 050	4 101	5 639	4 117	1 708	520	874
1939	1 171	454	455	618	1 098	829	807	585	185	163	179	185
1940	325	336	342	585	1 165	5 318	2 118	1 285	454	439	439	437
1941	651	571	683	683	5 384	4 785	3 075	1 382	2 521	537	520	521
1942	1 025	586	878	3 806	4 285	2 992	2 655	2 085	1 597	911	537	538
1943	960	588	992	3 708	4 411	6 115	2 353	1 366	1 109	520	520	521
1944	537	487	472	455	522	569	991	862	252	244	244	235
1945	390	403	390	374	2 017	3 334	1 580	1 269	471	439	423	437
1946	569	504	2 553	3 399	2 663	2 440	1 529	1 269	454	455	439	437
1947	520	471	488	439	466	439	588	569	185	163	163	165
1948	293	303	293	293	313	342	975	894	269	260	260	252
1949	358	353	342	325	360	439	672	667	235	228	228	235
1950	358	353	342	374	450	358	891	862	235	244	244	235
1951	390	605	1 513	4 033	3 871	3 074	1 277	1 269	454	455	439	437
1952	651	571	667	894	1 182	4 785	4 101	2 553	4 487	1 578	520	823
1953	927	487	504	1 106	2 719	2 000	941	862	252	244	244	235
1954	358	353	342	342	396	407	1 597	862	235	244	244	235
1955	342	319	325	342	324	309	622	602	202	179	176	185
1956	390	403	1 073	7 969	4 346	3 029	1 513	1 382	4 269	781	520	622
1957	1,008	471	472	455	504	1 594	874	894	269	244	244	235
1958	466	454	439	472	1 044	5 188	5 344	2 749	4,840	618	537	857
1959	927	454	439	439	738	2 085	588	569	185	163	163	185
1960	260	269	260	260	330	293	437	439	134	130	146	151
1961	228	269	276	260	288	260	353	342	134	146	146	151
1962	260	303	293	293	736	423	874	846	218	228	228	235
1963	390	370	374	423	540	423	1 479	1 334	487	472	455	437
1964	520	487	455	455	435	862	605	569	185	163	163	185
1965	390	437	602	5 676	3 967	2 602	2 739	1 366	538	520	520	521
1966	829	1 260	2,456	2 553	2 971	1 984	655	667	235	228	226	235
1967	455	454	569	520	540	2 980	4 285	1 496	5 042	4 521	520	1 042
1968	943	454	455	439	695	1 301	672	569	185	163	163	186
1969	390	403	439	4 245	7 400	5 042	4 857	6 749	7 462	1 968	520	891
1970	1 285	504	764	6 050	3 745	3 432	1 277	1 269	454	439	423	437
1971	537	487	520	488	648	2 505	874	862	252	244	244	235
1972	342	319	342	325	330	651	538	537	151	146	130	168
1973	309	336	342	390	1 170	3 838	1 344	1 269	454	439	423	437
1974	651	588	602	3 399	2 935	3 757	2 605	1 350	521	520	520	521
1975	651	571	569	569	774	4 096	1 630	1 382	2 695	504	504	521
1976	667	454	439	423	539	423	420	423	134	130	146	151
1977	390	269	260	260	270	260	353	368	134	146	146	151
1978	358	403	407	585	846	732	1 714	1 431	538	520	520	521
1979	569	504	504	699	4 375	3 985	1,546	1 285	521	439	423	437
1980	651	588	569	5 042	7 736	4 131	2 151	1 350	3 428	2,440	520	992
1981	1,008	454	455	472	466	1,236	941	602	185	163	163	185
1982	439	454	455	4 570	7 220	5 952	7 831	3,285	4 420	2,065	520	2,151
1983	3,318	2,773	4,863	6 050	7 689	9 660	3 963	1 480	11 125	7 058	520	3 479
1984	1,480	4,773	6,684	4 131	3 842	2 879	1 277	1 252	454	455	439	437
1985	520	471	455	439	486	699	622	585	185	179	179	185
1986	390	420	423	407	6 264	7 335	1 798	1 626	4 571	504	504	521
1987	504	437	423	423	450	439	420	423	134	130	146	151
1988	228	269	260	260	261	260	437	423	134	130	146	151
1989	228	269	276	260	288	293	556	528	134	146	146	151
1990	260	269	260	260	288	276	420	407	134	130	130	151
1991	228	269	260	260	270	390	437	407	151	130	130	151
1992	228	269	260	260	365	293	437	407	151	146	130	151
1993	358	403	407	781	612	569	1 395	1 334	538	504	504	521
1994	520	437	439	423	450	407	538	520	151	130	130	151

San Joaquin Basin 60-20-20 index
Tuolumne River from LaGrange Dam to the SJR confluence - CP # 665 TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	708	553	523	651	337
NOV	619	743	473	423	317
DEC	840	1 129	569	421	312
JAN	2,677	1 809	622	430	308
FEB	3,940	1 942	683	535	345
MAR	4,340	2 226	1 037	634	324
APR	3 090	1 457	1 006	663	433
MAY	2,146	1,280	820	581	419
JUN	3,257	516	246	183	138
JUL	1,440	452	241	168	135
AUG	520	436	243	167	139
SEP	874	437	236	183	151

Merced River from Crocker Huffman Diversion downstream to confluence with San Joaquin River

STUDY 1995C06F-SWRCB-468 DWRSIM recirc818-f 17 Jun 97
CP # 649, LOWER MERCED RIVER DIVERSION DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-468/649/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	130	151	228	211	414	276	101	81	2,403	33	33	50
1923	2,423	363	1,106	1 220	1 098	163	134	81	34	33	33	34
1924	1,561	151	211	195	313	146	67	65	118	211	163	118
1925	114	151	146	130	270	195	101	81	34	33	33	67
1926	309	151	211	309	1 332	146	101	65	17	33	16	101
1927	374	218	488	195	1 098	228	134	81	34	33	33	1,143
1928	3,041	134	602	553	608	244	84	81	34	33	33	34
1929	49	168	163	146	144	163	67	65	17	16	16	17
1930	407	151	130	146	144	195	67	65	17	16	16	17
1931	716	84	130	146	266	146	67	65	34	211	163	118
1932	146	134	276	228	1 704	195	84	81	555	33	65	118
1933	2,000	151	146	276	414	179	67	65	17	33	195	118
1934	130	134	146	342	864	146	67	65	34	211	163	134
1935	130	151	146	260	234	228	1 227	1 415	1,396	33	114	134
1936	1,626	202	228	748	4 903	309	471	1 041	34	33	81	118
1937	1,431	151	407	520	4 465	927	134	2 196	319	33	146	134
1938	1,464	151	2 423	1 269	4 736	4 603	639	3 367	4 463	130	33	605
1939	2,911	336	358	358	576	179	67	65	34	211	195	84
1940	130	134	146	325	2 469	1 122	84	829	34	33	179	134
1941	553	151	1 594	1 350	2 971	1 317	185	2 049	2 087	33	33	67
1942	2,683	336	1 415	1,561	1 603	211	101	634	2,386	33	33	185
1943	2,683	672	732	2 488	1 783	2 700	454	862	34	33	65	67
1944	1,576	168	260	407	921	244	84	81	34	33	98	134
1945	179	168	163	309	3,637	618	101	81	252	33	33	101
1946	2,244	756	1,805	976	738	195	84	146	34	33	179	134
1947	472	639	829	585	828	146	67	65	34	98	195	134
1948	114	134	130	114	122	179	134	81	34	33	130	134
1949	130	151	146	146	144	244	84	81	34	33	179	134
1950	146	151	146	163	216	179	84	81	34	33	195	134
1951	130	2,823	4,570	1,626	1 404	211	84	81	34	33	179	134
1952	130	151	228	1 594	1 252	1 399	252	3,432	2,186	33	33	252
1953	2,716	151	618	1 073	558	163	84	81	34	33	163	134
1954	130	151	163	146	162	211	84	81	34	33	195	134
1955	146	151	146	179	162	146	67	65	17	33	195	134
1956	130	134	3,724	3,871	1 495	146	84	618	1 882	33	33	67
1957	2,716	218	244	293	826	195	84	81	34	33	146	134
1958	130	151	163	179	792	1 480	1 277	2 895	2,000	33	33	34
1959	2,732	151	146	390	1 080	146	67	65	34	211	195	84
1960	114	151	130	130	156	163	67	65	34	211	195	134
1961	130	151	146	130	126	146	67	65	34	211	163	118
1962	146	134	130	130	486	244	84	81	34	33	98	134
1963	130	151	146	228	3 385	179	202	98	34	33	49	118
1964	1,496	639	407	520	469	146	67	65	17	49	195	101
1965	130	151	1 594	3 056	1 186	163	168	81	822	33	33	50
1966	2,732	1,210	813	829	736	179	84	81	34	81	163	84
1967	130	151	244	228	954	1 464	655	2 163	4 218	1 594	33	723
1968	2,749	134	293	309	867	163	67	65	34	211	163	84
1969	163	134	163	3 659	4 357	1 480	1,260	5 367	3 986	179	33	538
1970	2,927	420	667	2 683	1 314	456	84	81	34	33	130	118
1971	130	151	195	163	630	163	84	81	34	33	114	118
1972	163	151	163	163	156	146	67	65	17	81	179	17
1973	114	134	146	862	2 611	651	101	1 269	403	33	33	84
1974	1,594	1,042	1 138	1 724	756	829	185	829	437	33	40	101
1975	1 675	151	325	488	2 251	848	118	81	2,134	33	114	34
1976	2 326	370	309	146	365	146	67	65	34	211	130	134
1977	228	151	179	130	108	130	67	65	34	211	195	134
1978	163	134	146	260	432	358	303	179	3 949	488	33	1 277
1979	2,814	336	293	1 708	2 125	1 008	101	634	34	33	65	84
1980	1,203	218	390	4 489	4 572	1 334	84	407	1 849	65	33	588
1981	2,732	151	163	455	612	179	67	65	34	81	114	101
1982	114	151	602	2 440	3 745	1 773	4 285	2 960	1 479	33	33	739
1983	3,363	1 661	2 521	3 383	4 321	5 351	118	2,602	7 663	3 448	33	1,781
1984	3,025	1 966	3 464	1 675	1 460	228	84	81	34	33	179	118
1985	130	168	163	226	666	179	67	65	17	49	146	134
1986	163	151	146	634	6 932	3 432	84	1 090	956	33	33	101
1987	1,854	151	146	146	252	163	67	65	34	211	163	134
1988	114	151	130	130	104	163	67	65	17	211	163	101
1989	163	84	146	130	126	163	67	65	34	211	163	118
1990	130	134	130	130	126	146	67	65	34	195	163	134
1991	130	134	130	114	108	228	67	65	34	195	163	134
1992	130	134	130	114	191	163	67	65	34	195	163	134
1993	130	134	146	423	1 332	1,252	84	2,147	1,647	211	163	134
1994	2,635	151	163	163	522	146	67	65	34	211	163	134

San Joaquin Basin 60-20-20 index
Merced River, Crocker-Huffman Diversion to San Joaquin River confluence - CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW .

Month	W	AN	BN	D	C
OCT	909	1 171	1 141	1,440	676
NOV	308	568	242	257	153
DEC	916	975	300	275	158
JAN	1,891	932	346	343	152
FEB	2,518	2,013	474	653	246
MAR	1,567	414	203	160	160
APR	529	212	90	70	67
MAY	1,702	429	81	65	65
JUN	2,333	210	34	24	36
JUL	327	33	37	98	184
AUG	51	96	129	163	146
SEP	376	184	115	98	113

A2-82

C-032422

C-032422

San Joaquin River at Stevinson upstream of Merced River confluence

STUDY: 1995C09F-SWRCB-498 OWRSIM record18-f 17 Jun 97

CP # 694 SJR DIVERSION NON-PROJECT DOWNSTREAM FLOW (CFS)

Project: /1995C09F-SWRCB-498/694/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	618	454	732	651	2 467	1 285	790	980	3 815	472	472	669
1923	634	807	1 025	1 008	828	716	908	553	538	455	456	669
1924	537	370	325	276	365	537	303	308	336	309	309	467
1925	455	353	276	260	774	667	630	455	454	407	374	622
1926	553	387	342	293	504	549	706	374	387	358	358	571
1927	504	555	407	342	1 693	846	756	438	437	360	374	605
1928	520	504	360	407	574	894	555	358	387	358	358	588
1929	520	353	309	260	366	553	303	325	319	293	309	504
1930	472	319	244	293	414	618	336	325	370	342	342	555
1931	488	336	244	244	306	455	269	276	303	276	276	471
1932	439	303	927	764	2 173	716	403	360	370	325	325	538
1933	472	319	244	309	378	589	319	325	303	276	276	471
1934	455	305	260	244	460	488	303	293	319	309	309	504
1935	488	370	309	846	630	992	1 277	585	437	358	358	571
1936	537	370	325	407	3 336	880	773	472	471	380	380	605
1937	537	387	358	1 080	4 754	1 826	1 143	2 846	471	407	380	622
1938	602	639	1 480	1 988	7 202	12 572	5 109	12 116	2,723	1 008	455	672
1939	613	823	423	380	648	797	538	472	487	455	455	689
1940	634	464	360	1 480	1 643	1 171	706	553	521	455	455	689
1941	634	471	797	1 008	3 835	1 675	1 328	3 074	2,538	537	504	723
1942	784	823	1 080	1 008	1 378	1 073	857	716	805	537	504	723
1943	667	874	472	1 659	1 082	3 757	790	1 610	571	488	488	706
1944	683	555	472	455	765	1 025	605	553	571	520	520	756
1945	683	605	488	439	1 891	1 431	840	618	622	537	537	756
1946	651	521	683	472	630	846	706	520	538	488	488	706
1947	585	504	472	342	540	618	437	423	437	423	423	639
1948	553	387	309	260	348	602	756	455	454	407	407	622
1949	553	387	309	293	450	878	471	407	437	407	380	622
1950	553	387	309	360	738	602	487	380	403	380	374	605
1951	537	1,143	2,844	3 041	782	764	454	439	403	380	380	605
1952	588	403	683	1 805	881	2 086	2,166	7 904	554	455	423	655
1953	718	756	589	732	522	618	471	455	487	439	423	655
1954	585	420	374	358	612	813	535	455	454	423	423	639
1955	588	403	358	423	486	602	454	486	420	407	407	622
1956	588	403	4,407	5 671	3,460	1 203	805	2,618	706	439	423	655
1957	503	454	358	283	486	667	420	504	454	380	380	622
1958	588	403	358	423	918	1 788	2 252	3,288	1 546	472	439	655
1959	689	706	342	342	738	589	403	407	420	407	407	622
1960	553	387	309	293	556	602	437	423	403	380	380	605
1961	504	370	283	244	380	486	336	325	370	358	342	571
1962	504	336	260	244	2 377	911	437	380	387	358	358	571
1963	504	336	260	439	900	663	1 042	585	588	374	342	595
1964	504	464	283	293	400	537	387	374	370	342	342	571
1965	520	454	1 008	1 486	576	651	975	520	471	380	374	605
1966	588	605	553	504	584	634	420	407	420	407	407	622
1967	585	420	781	716	1 134	1 236	3,885	9 059	2,218	2 178	455	672
1968	689	689	380	342	522	634	420	407	437	407	407	622
1969	602	454	504	4,733	14 621	8 278	10,621	12,067	4,033	1 584	472	689
1970	651	780	423	3 513	810	1 073	521	472	471	455	439	672
1971	602	471	585	472	558	634	454	472	487	439	439	655
1972	553	387	360	325	469	537	387	374	420	380	380	622
1973	588	420	358	537	1 945	1 447	723	504	655	423	423	639
1974	588	437	472	1,382	646	1 155	1,092	504	487	439	423	655
1975	602	437	360	358	1 080	1 249	908	602	521	455	407	672
1976	588	437	358	309	400	588	353	342	370	342	342	585
1977	1 025	370	276	276	308	430	252	276	269	260	260	353
1978	325	269	283	1,008	2 583	6,717	6,786	6,310	471	976	423	639
1979	588	738	358	911	1,242	1,301	689	472	403	380	380	605
1980	537	403	325	2,586	6 015	6,440	689	3,388	454	683	380	622
1981	689	706	358	423	504	716	454	380	437	407	407	622
1982	654	504	472	1 232	1 819	1 602	*10,000	5,708	1,277	504	504	723
1983	829	1 781	8,282	9 756	17,070	16 384	9,986	12,246	14,318	976	504	571
1984	2 277	3,853	6,326	6 326	800	797	538	504	521	504	504	773
1985	585	487	407	325	569	689	471	423	471	423	423	639
1986	634	504	439	407	8 157	6 522	3,311	3 757	1,986	472	472	689
1987	553	555	309	309	450	651	403	374	420	407	407	622
1988	520	353	276	260	313	472	336	293	336	309	309	521
1989	455	319	260	228	306	553	303	293	336	309	309	521
1990	472	319	228	228	324	488	303	276	319	293	293	504
1991	455	286	211	179	186	797	319	276	303	260	260	454
1992	520	555	244	244	730	585	420	407	464	504	439	588
1993	618	454	423	2 374	938	439	437	589	2,773	504	504	738
1994	602	672	309	276	504	520	387	455	504	472	439	588

San Joaquin Basin 60-20-20 Index

San Joaquin River at Stevinson - CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	588	691	571	600	544
NOV	549	810	488	533	394
DEC	1,187	1,067	387	365	279
JAN	2,074	1,486	388	346	260
FEB	4,051	1,384	733	521	388
MAR	4,008	982	745	622	551
APR	3,317	738	522	452	335
MAY	4,483	508	442	405	329
JUN	2,123	485	450	417	358
JUL	688	424	412	380	338
AUG	451	419	405	380	333
SEP	689	640	632	606	525

STUDY: 1995C06F-SWRCB-468 DWRSIM: recirc818-f, 17 Jun 97
CP # 4, SHASTA LAKE. EOP STORAGE (MAF)

Project: /1995C06F-SWRCB-468/4/STORAGE-EOP//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP*
1922	2.61	2.89	2.84	2.9	3.3	3.74	4.36	4.55	4.4	4	3.58	3.43
1923	3.38	3.25	3.29	3.4	3.3	3.35	3.63	3.52	3.2	2.8	2.36	2.36
1924	2.39	2.39	2.39	2.4	2.6	2.54	2.34	2.09	1.8	1.5	1.22	1.06
1925	1.1	1.25	1.37	1.5	2.8	3.14	3.89	4.19	3.9	3.5	3.14	3.05
1926	2.98	2.94	2.87	2.8	3.4	3.43	3.74	3.6	3.1	2.6	2.23	2.10
1927	2.98	2.58	3.11	3.7	3.5	4.14	4.55	4.55	4.3	3.9	3.49	3.37
1928	3.22	3.25	3.32	3.5	3.9	3.97	4.53	4.4	4	3.4	2.84	2.70
1929	2.86	2.67	2.87	2.7	2.8	2.65	2.92	2.77	2.6	2.2	1.93	1.80
1930	1.76	1.74	2.29	2.5	2.9	3.4	3.86	3.66	3.2	2.8	2.47	2.43
1931	2.38	2.34	2.3	2.3	2.4	2.55	2.38	2.21	2	1.7	1.46	1.29
1932	1.22	1.21	1.43	1.6	1.7	2.16	2.21	2.36	2.2	2	1.73	1.62
1933	1.9	1.86	1.56	1.6	1.8	2.23	2.42	2.51	2.3	2.1	1.84	1.72
1934	1.86	1.56	1.62	2.1	2.5	2.74	2.75	2.63	2.4	1.8	1.45	1.23
1935	1.15	1.3	1.36	1.7	2	2.44	3.45	3.64	3.5	3	2.73	2.62
1936	2.56	2.49	2.44	3	3.8	3.9	4.17	4.11	3.9	3.4	2.94	2.82
1937	2.71	2.6	2.49	2.4	2.4	2.98	3.61	3.84	3.7	3.2	2.8	2.64
1938	2.89	3.09	3.31	3.7	3.8	3.42	4.08	4.55	4.6	4.3	3.95	3.70
1939	3.4	3.25	3.33	3.4	3.4	3.77	3.50	3.42	2.8	2.4	1.88	1.82
1940	1.75	1.67	1.81	2.7	3.3	3.44	4.34	4.46	4.2	3.6	3.26	3.21
1941	3.38	3.17	3.29	3.3	3.4	3.94	4.46	4.55	4.6	4.3	4	3.70
1942	3.4	3.25	3.32	3.4	3.5	3.86	4.55	4.55	4.6	4.3	3.96	3.70
1943	3.4	3.25	3.36	3.5	3.8	4.12	4.55	4.55	4.3	3.9	3.55	3.42
1944	3.39	3.25	3.2	3.2	3.4	3.63	3.75	3.73	3.3	2.8	2.33	2.20
1945	2.23	2.45	2.77	3	3.8	4.16	4.5	4.55	4.4	3.9	3.38	3.27
1946	3.25	3.25	3.27	3.6	3.8	4.08	4.41	4.46	4.2	3.7	3.33	3.25
1947	3.18	3.19	3.2	3.1	3.3	3.73	3.91	3.65	3.3	2.8	2.57	2.26
1948	2.37	2.42	2.46	3	3	3.27	4.26	4.55	4.5	4.1	3.72	3.70
1949	3.4	3.25	3.22	3.1	3.2	4.07	4.44	4.46	4	3.5	3.04	2.94
1950	2.86	2.8	2.72	2.9	3.2	3.63	4	3.96	3.6	3.1	2.75	2.70
1951	3	3.25	3.32	3.6	3.8	4.28	4.47	4.55	4.1	3.6	3.15	3.10
1952	3.06	3.17	3.31	3.6	3.7	4.02	4.29	4.55	4.6	4.3	3.95	3.70
1953	3.4	3.25	3.35	3.4	3.6	4.1	4.51	4.55	4.6	4.3	3.97	3.70
1954	3.4	3.25	3.35	3.6	3.7	4.11	4.55	4.46	4.3	3.6	3.54	3.52
1955	3.4	3.25	3.36	3.4	3.5	3.45	3.77	3.99	3.5	3	2.55	2.54
1956	2.91	2.56	3.25	3.3	3.3	4.01	4.65	4.55	4.6	4.3	4	3.70
1957	3.06	3.25	3.23	3.3	3.7	4.13	4.3	4.55	4.4	3.9	3.52	3.58
1958	3.4	3.25	3.34	3.5	4.6	3.42	4.17	4.56	4.6	4.3	4	3.70
1959	3.4	3.25	3.26	3.6	3.8	4.07	4.2	4.19	3.7	3.1	2.72	2.81
1960	2.75	2.80	2.64	2.8	3.4	4.1	4.3	4.52	4	3.5	3.06	3.02
1961	2.95	2.99	3.35	3.5	3.9	4.26	4.47	4.55	4	3.4	2.92	2.89
1962	2.81	2.9	3.17	3.2	3.7	4.09	4.41	4.44	4.1	3.6	3.17	3.11
1963	3.4	3.25	3.36	3.4	3.9	4.23	4.14	4.55	4.4	4.1	3.8	3.70
1964	3.4	3.25	3.28	3.6	3.6	3.71	3.67	3.46	3.1	2.6	2.23	2.22
1965	2.2	2.37	3.25	3.4	3.8	4.12	4.5	4.52	4.2	3.6	3.55	3.52
1966	3.4	3.25	3.34	3.7	4	4.23	4.55	4.47	4	3.5	3.17	3.10
1967	2.99	3.25	3.34	3.6	3.9	4.03	4.48	4.55	4.6	4.3	3.99	3.70
1968	3.4	3.26	3.3	3.4	3.7	4.19	4.26	4.31	3.8	3.3	3.16	3.11
1969	3.1	3.12	3.35	3.4	3.5	4.03	4.43	4.55	4.6	4.3	4	3.70
1970	3.4	3.26	3.32	3.3	3.4	4.14	4.21	4.21	3.9	3.4	3.1	3.05
1971	3.06	3.25	3.32	3.5	3.8	3.87	4.45	4.55	4.6	4.3	4	3.70
1972	3.4	3.25	3.36	3.6	3.9	4.25	4.55	4.55	4.1	3.5	3.2	3.20
1973	3.23	3.25	3.35	3.6	3.6	4.16	4.5	4.55	4.3	3.8	3.54	3.51
1974	3.4	3.25	3.27	3.3	3.7	3.44	4.29	4.55	4.6	4.3	4	3.70
1975	3.4	3.25	3.35	3.4	3.9	3.78	4.39	4.55	4.6	4.3	4	3.70
1976	3.4	3.25	3.27	3.3	3.1	3.25	3.41	3.32	2.7	2.3	2.24	2.27
1977	2.32	2.34	2.34	2.4	2.2	2.19	1.87	1.77	1.4	1.2	1	0.97
1978	0.86	0.85	1.34	3.3	3.6	4	4.55	4.55	4.5	4.2	3.92	3.70
1979	3.4	3.25	3.21	3.3	3.5	3.96	4.17	4.42	4	3.6	3.28	3.23
1980	3.22	3.25	3.32	3.5	3.3	3.98	4.33	4.46	4.2	3.9	3.66	3.67
1981	3.4	3.25	3.32	3.5	3.9	4.26	4.48	4.42	3.8	3.3	2.9	2.83
1982	2.81	3.25	3.26	3.6	3.5	3.96	4.09	4.56	4.6	4.3	4	3.70
1983	3.4	3.25	3.33	3.4	3.3	3.93	4.07	4.55	4.6	4.3	4	3.70
1984	3.4	3.25	3.29	3.7	4	4.25	4.48	4.56	4.3	3.9	3.7	3.70
1985	3.4	3.25	3.36	3.4	3.6	3.65	3.86	3.62	3.1	2.6	2.29	2.32
1986	2.36	2.43	2.63	3.2	3.3	3.53	4	4.06	3.7	3.4	3.01	3.08
1987	3.08	3.06	3.04	3.1	3.3	3.96	3.98	3.81	3	2.5	2	1.88
1988	2.31	1.84	2.4	2.9	2.9	2.95	3.09	3.08	2.7	2.1	1.6	1.76
1989	1.77	1.99	2.11	2.2	2.4	3.76	4.31	4.2	3.8	3.3	3.01	3.03
1990	3.07	3.02	2.93	3.1	3.1	3.21	3.04	3.16	2.8	2.3	2.02	1.96
1991	1.80	1.86	1.84	1.9	1.8	2.25	2.44	2.44	2.3	2	1.78	1.66
1992	1.94	1.82	1.64	1.7	2.4	2.86	3.1	3.53	2.6	2.5	2.06	1.94
1993	1.87	1.83	2.08	2.7	3.6	3.89	4.32	4.55	4.6	4.2	3.95	3.95
1994	3.08	3.25	3.25	3.3	3.4	3.46	3.49	3.46	2.8	2.4	1.99	1.95

Year	Oct 1st Storage	AFRP Vol III Recommended Keswick Release
1925	1.06	3250
1927	2.10	3250
1930	1.80	3250
1932	1.29	3250
1933	1.62	3250
1934	1.72	3250
1935	1.23	3250
1940	1.82	3250
1978	0.97	3250
1988	1.88	3250
1989	1.76	3250
1991	1.96	3250
1992	1.66	3250
1993	1.94	3250
1945	2.20	3500
1948	2.26	3500
1965	2.22	3500
1977	2.27	3500
1924	2.36	3750
1986	2.32	3750
1931	2.43	4000
1958	2.54	4250
1936	2.62	4500
1938	2.64	4500
1929	2.70	4750
1951	2.70	4750
1937	2.82	5000
1960	2.81	5000
1962	2.89	5000
1982	2.83	5000
1950	2.94	5250
1923	3.43	5500
1928	3.05	5500
1928	3.37	5500
1939	3.70	5500
1941	3.21	5500
1942	3.70	5500
1943	3.70	5500
1944	3.42	5500
1946	3.70	5500
1949	3.70	5500
1952	3.10	5500
1953	3.70	5500
1954	3.70	5500
1955	3.52	5500
1957	3.70	5500
1958	3.58	5500
1959	3.70	5500
1961	3.02	5500
1963	3.70	5500
1964	3.70	5500
1966	3.52	5500
1967	3.10	5500
1968	3.70	5500
1969	3.11	5500
1970	3.70	5500
1971	3.05	5500
1972	3.70	5500
1973	3.20	5500
1974	3.51	5500
1975	3.70	5500
1976	3.70	5500
1979	3.70	5500
1980	3.23	5500
1981	3.67	5500
1983	3.70	5500
1984	3.70	5500
1985	3.70	5500
1987	3.08	5500
1990	3.03	5500
1994	3.95	5500

* EOM September storage used as October 1st of following year
Shading means "disregard"

STUDY: 1995C06F-SWRCB-468 DWRSIM: recirc818-f, 17 Jun 97
CP # 62, KESWICK TOTAL RELEASE, DOWNSTREAM FLOW (CFS)

Project: /1995C06F-SWRCB-468/62/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	4,716	4,000	4,001	4,001	3,997	4,001	4,000	8,733	9,747	11,845	11,010	6,302
1923	5,497	7,226	5,497	5,497	7,130	6,050	5,495	8,831	10,873	11,677	9,937	3,899
1924	3,757	3,748	3,757	3,757	3,616	4,617	7,210	7,384	8,604	8,945	7,335	5,663
1925	3,253	3,243	3,253	3,253	3,241	3,243	3,243	3,253	10,067	11,726	9,140	5,126
1926	5,497	5,495	5,497	5,497	5,492	6,977	5,495	7,888	12,554	12,149	9,319	5,126
1927	4,115	3,243	3,253	3,464	30,520	4,424	12,923	10,831	11,596	12,084	11,043	6,218
1928	5,497	10,134	5,497	5,497	5,302	16,985	5,495	10,230	12,352	15,336	12,181	6,100
1929	4,798	4,756	4,749	4,749	4,754	6,570	5,983	8,115	8,134	9,266	8,620	5,210
1930	4,066	3,784	3,253	3,253	3,241	3,253	3,243	5,546	12,201	11,222	8,262	3,949
1931	4,554	4,000	4,001	4,001	3,997	4,017	7,327	6,538	8,621	9,140	6,766	5,916
1932	4,586	3,580	3,253	3,253	3,129	3,253	6,386	5,123	8,958	7,758	7,286	4,722
1933	3,545	4,134	3,253	3,253	3,241	3,253	4,857	6,017	8,606	9,742	7,319	4,840
1934	3,968	3,445	3,253	3,253	3,241	3,741	5,865	6,603	7,478	12,913	9,742	6,201
1935	4,603	3,243	3,253	3,253	3,241	3,253	3,243	7,026	8,504	10,766	8,490	4,991
1936	4,505	4,504	4,505	4,505	8,797	4,505	4,504	7,010	9,697	12,116	10,701	4,890
1937	4,993	5,008	4,993	4,993	5,006	4,993	5,008	6,180	8,773	12,458	10,636	5,529
1938	4,505	4,504	15,759	4,668	31,060	35,536	14,537	10,100	11,041	11,742	10,864	8,840
1939	10,539	8,201	5,497	5,497	5,492	5,497	10,487	8,311	14,318	11,775	11,645	4,773
1940	4,733	4,974	3,594	3,253	23,418	22,362	3,243	6,635	10,588	14,231	10,685	5,042
1941	5,497	5,495	17,613	25,420	23,696	14,881	16,822	14,897	10,940	12,116	12,067	12,150
1942	11,157	8,470	19,972	20,492	29,422	5,497	5,865	13,613	10,890	11,775	11,287	9,159
1943	10,213	8,840	6,603	12,994	8,679	12,978	6,924	9,726	11,713	12,051	11,222	6,773
1944	5,497	7,680	5,497	5,497	5,302	5,497	5,647	7,253	13,293	13,726	10,913	5,563
1945	3,529	3,243	3,253	3,253	3,241	3,253	3,243	8,750	9,546	14,377	10,880	5,647
1946	5,497	8,604	22,899	7,872	5,888	5,497	5,495	8,294	10,924	13,515	10,885	5,176
1947	5,497	5,495	5,497	5,497	5,492	5,497	5,495	9,823	13,528	13,596	10,246	5,126
1948	3,497	3,496	3,497	3,497	5,528	5,074	3,496	9,937	10,067	11,791	10,815	4,235
1949	9,254	7,277	5,497	5,497	5,600	6,701	5,495	8,311	12,554	13,580	10,392	5,176
1950	5,253	5,243	5,253	5,253	5,258	5,253	5,243	8,246	10,705	12,328	10,083	4,067
1951	4,538	6,773	15,857	8,376	16,385	4,505	6,789	8,815	13,582	13,905	10,962	4,790
1952	5,497	5,495	16,638	8,864	19,263	12,442	19,444	11,189	9,798	10,506	10,490	8,941
1953	9,937	7,563	10,653	29,404	5,492	5,497	5,495	12,149	12,150	11,710	10,246	9,361
1954	10,063	10,453	5,497	13,954	18,942	10,897	12,335	12,246	10,621	15,044	10,197	5,143
1955	7,123	9,880	7,790	5,497	5,492	7,920	5,495	6,017	13,764	13,645	10,571	4,302
1956	4,700	4,840	21,647	31,291	22,566	4,375	5,109	13,808	9,361	11,368	10,051	9,798
1957	10,815	7,932	5,497	5,497	9,471	11,010	9,411	9,644	10,503	13,645	10,522	4,252
1958	10,799	10,201	10,441	13,011	33,887	44,871	15,562	10,230	11,932	12,572	11,677	11,949
1959	11,352	8,389	5,497	10,848	14,585	6,749	8,168	7,953	14,789	14,735	10,799	4,000
1960	5,969	5,832	5,481	4,993	4,833	4,993	5,832	5,595	15,461	13,710	11,222	4,739
1961	5,627	5,495	5,530	5,497	8,463	7,611	6,437	8,246	15,629	15,338	11,856	4,369
1962	5,774	5,008	4,993	4,993	15,953	6,050	5,865	7,611	11,411	13,255	10,588	4,722
1963	7,058	8,554	9,612	5,497	8,787	7,774	32,065	7,611	9,546	10,653	10,604	6,403
1964	10,311	12,150	5,497	5,497	6,606	6,131	9,546	8,018	12,571	12,409	9,872	4,050
1965	4,651	3,496	13,417	21,793	3,493	3,497	12,890	9,482	11,075	12,832	9,026	5,092
1966	6,798	13,024	5,497	6,847	8,824	13,434	8,336	9,595	13,344	13,645	10,506	5,596
1967	6,359	6,285	15,109	9,872	8,193	16,589	12,201	16,328	10,806	11,824	10,376	9,831
1968	10,474	7,932	5,497	5,497	15,925	5,497	8,117	6,993	13,831	13,596	8,213	5,613
1969	5,497	5,495	5,887	25,290	22,237	7,351	13,999	13,482	10,016	11,596	9,888	10,388
1970	10,539	8,067	16,101	54,092	16,710	5,497	9,178	7,969	12,571	13,466	10,067	5,411
1971	5,497	9,411	16,930	15,239	6,014	18,573	6,886	12,198	11,846	12,002	9,791	9,831
1972	10,701	8,571	5,497	5,497	5,302	12,084	8,520	8,213	14,772	14,165	10,311	4,840
1973	5,497	8,756	8,181	15,434	19,899	8,620	5,495	8,815	10,184	13,434	9,270	5,126
1974	8,115	33,174	23,745	40,203	8,895	38,398	10,487	9,872	10,067	12,328	11,010	11,898
1975	11,189	9,041	5,497	5,497	7,310	29,180	5,495	12,263	10,806	11,547	10,571	10,167
1976	11,515	8,773	5,497	5,497	9,284	6,798	5,495	7,953	14,671	11,433	6,034	3,899
1977	3,936	4,336	4,391	3,497	7,202	4,342	8,873	5,855	9,697	7,953	6,944	4,874
1978	6,083	4,806	3,253	3,432	15,071	15,369	7,999	11,059	8,537	9,921	9,042	8,672
1979	9,774	7,579	5,497	5,497	5,492	5,497	5,495	5,855	12,033	12,084	8,376	4,622
1980	5,497	6,151	5,497	17,939	31,015	5,497	5,495	6,701	10,184	10,165	9,075	4,453
1981	9,091	8,117	5,497	5,497	5,492	8,262	5,495	7,937	14,671	13,369	9,547	4,890
1982	4,993	11,562	23,094	7,969	24,218	13,873	26,822	5,611	9,376	10,262	10,035	9,898
1983	10,962	9,932	14,084	20,866	37,470	41,325	21,596	13,287	14,184	13,190	12,718	13,041
1984	13,271	17,209	27,501	9,319	5,946	11,726	7,378	8,717	11,596	13,076	7,855	4,907
1985	10,636	14,268	6,847	5,497	5,492	5,497	5,495	10,035	14,049	12,214	9,368	3,899
1986	4,424	3,899	3,757	3,757	45,969	21,533	3,748	8,343	11,596	11,937	10,766	3,899
1987	5,497	5,495	5,497	5,497	5,492	5,497	7,075	9,254	17,377	13,547	11,661	6,084
1988	5,481	4,117	3,253	3,253	6,711	5,611	4,033	7,595	12,856	13,499	8,018	4,538
1989	3,724	3,243	3,253	3,253	3,241	3,253	3,243	8,620	12,268	12,002	7,904	3,949
1990	5,497	5,495	5,497	5,497	5,492	5,497	7,482	6,961	13,024	12,376	8,538	4,388
1991	5,009	4,386	3,480	3,253	5,348	3,253	3,243	8,213	7,378	7,628	7,514	5,025
1992	3,936	3,243	3,253	3,253	3,129	3,253	4,033	8,002	10,251	8,896	6,961	5,058
1993	5,074	4,504	3,253	3,253	3,241	25,924	3,243	8,733	11,260	11,954	8,473	4,588
1994	5,822	15,461	5,497	5,497	5,492	6,489	5,714	6,408	14,856	10,929	9,742	3,832

Location: Upper Sacramento Rver Below Keswick
CP # 62, Upper Sacramento River below Keswick

Shasta Reservoir Oct 1st Carryove Storage (MAF)	October thru April Average Flows (cfs)	Years included in Average flow Calculations
< 2.2	5,004	1925, 27, 30, 32, 33, 34, 35, 40, 78, 88, 89, 91, 92, 93
>=2.2	5,390	1945, 48, 65, 77
>= 2.3	4,987	1924, 86
>= 2.4	4,557	1931
>= 2.5	9,032	1956
>= 2.6	10,457	1936, 38
>= 2.7	7,113	1929, 51
>= 2.8	8,360	1937, 60, 62, 82
>= 2.9	5,251	1950
>= 3	10,054	1923, 26, 28, 39, 41, 42, 43, 44, 46, 47, 49, 52, 53, 54, 55, 57, 58, 59, 61, 63, 64, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 90, 94

C-032424
C—032424

Comparison of DWRSIM Study 506 (Flow Alternative 3) flows at various control points with recommended flows from AFRP Working Paper Vol III

Location: Upper Sacramento River Below Keswick

CP # 62, Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS

SALMONIDS

Objective: Enhance rearing, maintain spawning habitat, & temperature control Page 3-Xa-14, Vol III

Shasta Reservoir Oct 1st Carryover Storage (MAF)	AFRP Working Pap Recommended Flow	October thru April Average Flows (cfs)	Years included in Average flow Calculations	Ratio
< 2.2	3,250	4,755	1925, 30, 32, 33, 34, 35, 40, 78, 88, 89, 91, 92, 93	1.46
>= 2.2	3,500	6,758	1927, 45, 65, 77	1.93
>= 2.3	3,750	4,255	1924, 48	1.13
>= 2.4	4,000	12,696	1,986	3.17
>= 2.5	4,250	9,175	1931, 56	2.16
>= 2.6	4,500	8,981	1,951	2.00
>= 2.7	4,750	8,952	1929, 36, 38	1.88
>= 2.8	5,000	8,771	1937, 60, 82	1.75
>= 2.9	5,250	7,084	1,962	1.35
>= 3	5,500	9,979	1923, 26, 28, 39, 41, 42, 43, 44, 46, 47, 49, 50, 52 53, 54, 55, 57, 58, 59, 61, 63, 64, 66, 67, 68, 69, 70 71, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 90, 94	1.81

Location: Feather River at Nicolaus CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective Enhance rearing & maintain spawning habitat, Page: 3-Xc-11, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.17	0.62	0.71	0.85												1.17	0.62	0.71	0.85	
Nov	1.81	1.30	0.70	0.84												1.81	1.30	0.70	0.84	
Dec	5.10	1.93	1.18	1.15												5.10	1.93	1.18	1.15	
Jan	8.61	5.25	2.87	2.42												8.61	5.25	2.87	2.42	
Feb	10.31	5.96	4.23	2.95							2.24	1.30				2.24	1.30	4.23	2.95	
Mar	9.42	8.04	3.53	3.49							2.05	1.75				2.05	1.75	3.53	3.49	
Apr	5.36	3.51	1.49	1.84		0.92	0.79	0.35	0.43	0.60	1.40	0.92				0.92	0.79	0.35	0.43	0.60
May	4.42	2.54	1.67	0.78		0.78	0.63	0.49	0.25	0.19	1.15	0.66				0.78	0.63	0.49	0.25	0.19
June	9.12	6.13	5.30	3.91		0.93	1.08	1.08	1.18	0.75						0.93	1.08	1.08	1.18	0.75
July	6.56	6.77	7.13	6.76												6.56	6.77	7.13	6.76	
Aug	2.09	3.64	4.33	3.77												2.09	3.64	4.33	3.77	
Sept	0.89	0.44	0.39	0.92												0.89	0.44	0.39	0.92	
															April-May-June Average:	0.87	0.83	0.64	0.62	0.51

Location: Yuba River at Marysville DEPLETION AREA 67, DOWNSTREAM FLOW

	SALMONIDS Objective Optimize migration, spawning and incubation, Page 3-Xc-14-25					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.05	0.81	0.65	0.64	0.74						No Working Paper flow recommendations					1.05	0.81	0.65	0.64	0.74
Nov	2.67	2.10	1.02	1.17	0.76											2.67	2.10	1.02	1.17	0.76
Dec	6.21	2.85	1.86	1.27	0.84											6.21	2.85	1.86	1.27	0.84
Jan	8.26	5.93	3.81	2.42	2.03											8.26	5.93	3.81	2.42	2.03
Feb	9.11	7.12	5.00	3.61	2.53											9.11	7.12	5.00	3.61	2.53
Mar	8.61	7.52	4.08	3.74	2.09											8.61	7.52	4.08	3.74	2.09
Apr	5.19	3.83	2.40	1.60	0.66	0.63	0.54	0.33	0.29	0.24						0.63	0.54	0.33	0.29	0.24
Mary	2.59	1.69	0.88	0.36	0.15	0.52	0.42	0.25	0.15	0.12						0.52	0.42	0.25	0.15	0.12
June	3.03	1.66	1.06	0.35	0.13	0.71	0.64	0.50	0.26	0.14						0.71	0.64	0.50	0.26	0.13
July	5.21	2.07	1.02	0.31	0.16											5.21	2.07	1.02	0.31	0.16
Aug	2.68	2.02	1.20	0.43	0.27											2.68	2.02	1.20	0.43	0.27
Sept	1.60	1.24	0.91	0.44	0.22											1.60	1.24	0.91	0.44	0.22
															April-May-June Average:	0.62	0.53	0.36	0.23	0.16

Location: Sacramento River at Verona (RM 80) (Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)

	SALMONIDS Objective:					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective provide attraction passage, spawning, an larval transport, Page: 3-Xh-8, Vol III					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb											1.58	1.34				1.58	1.34			
Mar	No Working Paper flow recommendations					No Working Paper flow recommendations					1.54	1.31				1.54	1.31			
Apr											1.07	0.76				1.07	0.76			
May											0.88	0.57				0.88	0.57			
June																				
July																				
Aug																				
Sept																				
															April-May Average:	0.97	0.66			

Location: Lower American River at H Street Bridge CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective optimize conditions in lower Am. River for all life stages, Page: 3-Xc-42, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.77	0.86	0.95	1.09	2.14						No Working Paper flow recommendations					0.77	0.86	0.95	1.09	2.14
Nov	1.36	1.70	1.01	1.25	1.43											1.36	1.70	1.01	1.25	1.43
Dec	2.47	1.61	1.44	1.10	1.15											2.47	1.61	1.44	1.10	1.15
Jan	3.40	2.52	1.27	1.05	1.08											3.40	2.52	1.27	1.05	1.08
Feb	3.67	3.18	2.23	1.31	1.18											3.67	3.18	2.23	1.31	1.18
Mar	1.35	2.04	1.02	1.25	1.07											1.35	2.04	1.02	1.25	1.07
Apr	1.29	1.41	1.11	1.05	0.90	0.57	0.50	0.39	0.32	0.44						0.57	0.50	0.39	0.32	0.44
May	1.24	1.22	0.99	0.95	0.78	0.46	0.38	0.34	0.31	0.38						0.46	0.38	0.34	0.31	0.38
June	1.31	1.44	1.26	1.87	6.72	0.73	0.90	0.90	1.39	1.98						0.73	0.90	0.90	1.39	1.98
July	1.17	1.13	1.27	2.24	3.32											1.17	1.13	1.27	2.24	3.32
Aug	1.28	1.13	0.97	2.02	0.78											1.28	1.13	0.97	2.02	0.78
Sept	1.45	1.44	1.09	2.04	1.53											1.45	1.44	1.09	2.04	1.53
															April-May-June Average	0.58	0.60	0.54	0.67	0.93

A2-85

Location: San Joaquin River at Vernalis CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-47, 3-Xe-20, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page 3-Xg-19, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows page:3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.13	3.85	3.57	6.10	3.33											2.13	3.85	3.57	6.10	3.33
Nov	1.05	1.81	1.88	2.08	2.19											1.05	1.81	1.88	2.08	2.19
Dec	1.33	1.87	2.10	1.93	1.86											1.33	1.87	2.10	1.93	1.86
Jan	1.97	2.13	1.93	1.93	1.64											1.97	2.13	1.93	1.93	1.64
Feb	2.64	1.86	1.49	1.95	1.48						0.94	0.52				0.94	0.52	1.49	1.95	1.48
Mar	2.53	1.54	1.07	1.20	0.90						0.97	0.43				0.97	0.43	1.07	1.20	0.90
Apr	0.55	0.47	0.49	0.55	0.47	2.21	1.28	0.86	0.94	0.97	0.82	0.40				0.55	0.40	0.49	0.55	0.47
May	0.52	0.41	0.35	0.38	0.38	1.08	0.56	0.49	0.53	0.64	0.79	0.35				0.52	0.35	0.35	0.38	0.38
June	0.45	0.30	0.34	0.35	0.49	0.92	0.43	0.47	0.53	0.91						0.45	0.30	0.34	0.35	0.49
July	0.84	1.22	1.52	2.83	2.75											0.84	1.22	1.52	2.83	2.75
Aug	1.62	2.38	2.99	3.37	3.58											1.62	2.38	2.99	3.37	3.58
Sept	2.38	2.48	2.56	3.01	3.06											2.38	2.48	2.56	3.01	3.06
															April-May-June Average	0.51	0.35	0.39	0.43	0.45

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective Double natural production, Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page. 3-Xg-21, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.37	3.23	3.47	5.93	2.78											2.37	3.23	3.47	5.93	2.78
Nov	1.27	1.73	1.42	1.83	1.38											1.27	1.73	1.42	1.83	1.38
Dec	1.33	2.00	1.26	1.72	1.14											1.33	2.00	1.26	1.72	1.14
Jan	1.97	2.80	1.36	1.88	1.06											1.97	2.80	1.36	1.88	1.06
Feb	3.80	2.58	1.74	2.86	1.14											3.80	2.58	1.74	2.86	1.14
Mar	3.94	1.79	1.11	1.75	1.29						No Working Paper flow recommendations					3.94	1.79	1.11	1.75	1.29
Apr	1.10	0.86	0.84	1.36	0.95	0.39	0.35	0.33	0.41	0.53						0.39	0.35	0.33	0.41	0.53
May	1.02	1.01	1.50	0.78	0.75	0.23	0.27	0.27	0.21	0.37						0.23	0.27	0.27	0.21	0.37
June	1.01	0.89	2.83	3.96	4.11	0.30	0.21	0.25	0.44	0.82						0.30	0.21	0.25	0.44	0.82
July	2.44	2.33	3.18	4.28	4.30											2.44	2.33	3.18	4.28	4.30
Aug	2.69	2.61	3.47	4.61	4.53											2.69	2.61	3.47	4.61	4.53
Sept	2.04	1.96	2.35	2.93	2.80											2.04	1.96	2.35	2.93	2.80
															April-May-June Average:	0.31	0.27	0.28	0.35	0.58

Location: Tuolumne River from LaGrange Dam to the SJR confluence CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.94	1.84	1.75	3.25	2.26											0.94	1.84	1.75	3.25	2.26
Nov	0.50	0.93	1.35	1.41	2.11											0.50	0.93	1.35	1.41	2.11
Dec	0.60	1.01	1.63	1.20	1.56											0.60	1.01	1.63	1.20	1.56
Jan	1.38	1.20	1.24	1.08	1.23											1.38	1.20	1.24	1.08	1.23
Feb	1.71	1.01	0.92	0.76	0.69											1.71	1.01	0.92	0.76	0.69
Mar	1.82	1.31	0.66	0.80	0.36	No Working Paper flow recommendations					No Working Paper flow recommendations					1.82	1.31	0.66	0.80	0.36
Apr	1.05	0.59	0.40	0.37	0.29											1.05	0.59	0.40	0.37	0.29
May	0.42	0.31	0.25	0.32	0.26											0.42	0.31	0.25	0.32	0.26
June	0.65	0.44	0.34	0.21	0.54											0.65	0.44	0.34	0.21	0.54
July	0.70	0.50	0.37	0.66	0.68											0.70	0.50	0.37	0.66	0.68
Aug	1.15	2.18	2.43	1.67	2.79											1.15	2.18	2.43	1.67	2.79
Sept	2.50	2.91	1.59	1.83	3.03											2.50	2.91	1.59	1.83	3.03
															April-May-June Average:	0.71	0.45	0.33	0.30	0.36

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.40	3.92	3.77	5.67	2.03											2.40	3.92	3.77	5.67	2.03
Nov	0.87	1.11	0.81	0.86	0.61											0.87	1.11	0.81	0.86	0.61
Dec	1.22	1.65	1.00	0.91	0.63											1.22	1.65	1.00	0.91	0.63
Jan	1.38	1.45	1.15	1.07	0.56											1.38	1.45	1.15	1.07	0.56
Feb	1.52	1.54	0.87	1.86	0.78											1.52	1.54	0.87	1.86	0.78
Mar	0.93	0.37	0.34	0.39	0.40	No Working Paper flow recommendations					No Working Paper flow recommendations					0.93	0.37	0.34	0.39	0.40
Apr	0.36	0.28	0.34	0.49	0.26											0.36	0.28	0.34	0.49	0.26
May	0.56	0.30	0.30	0.61	0.45											0.56	0.30	0.30	0.61	0.45
June	0.78	0.33	0.28	0.37	0.54											0.78	0.33	0.28	0.37	0.54
July	0.34	0.40	0.62	1.14	1.39											0.34	0.40	0.62	1.14	1.39
Aug	0.21	0.55	0.72	0.95	1.09											0.21	0.55	0.72	0.95	1.09
Sept	1.13	0.38	0.46	0.50	0.57											1.13	0.38	0.46	0.50	0.57
															April-May-June Average:	0.57	0.30	0.31	0.49	0.42

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb																				
Mar						No Working Paper flow recommendations					No Working Paper flow recommendations									
Apr	0.65	0.28	0.26	0.26	0.28											0.65	0.28	0.26	0.26	0.28
May	0.64	0.11	0.15	0.18	0.23											0.64	0.11	0.15	0.18	0.23
June	0.31	0.15	0.19	0.30	0.45											0.31	0.15	0.19	0.30	0.45
July																				
Aug																				
Sept																				
															April-May-June Average:	0.53	0.18	0.20	0.25	0.32

Feather River at Nicolaus

STUDY 1995C06F-SWRCB-506 DWRSIM recec818-I 17 Jun 97

CP # 37 DEPLETION AREA 13, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-506/37/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1 822	1 897	1 431	4 086	8 121	12 133	8 638	26 005	18,973	6 928	488	403
1923	2 131	1 529	7 546	11 287	5 330	3 962	7 008	2 563	5,227	6 961	4 377	706
1924	1 513	1 731	3,773	3 289	2 469	2 830	1 933	894	1,714	976	163	286
1925	1 067	454	618	2 586	11 308	5 269	3 916	2 244	4 000	3 139	537	672
1926	2 456	958	683	5 058	5 906	5 204	6 016	4 980	3 143	6 814	309	1 664
1927	4 212	6,487	3 090	9 693	35 004	18 589	12 705	9 628	5 210	9 319	1 545	252
1928	1 220	1 882	690	9 335	4 172	43 797	6 823	7 400	3 529	8 701	6 534	420
1929	1 386	1 311	797	3 676	2 289	2 980	1 042	342	756	781	98	299
1930	1 187	387	2 976	7 790	1 224	10 327	4 521	3 513	3,586	6 961	4 001	1 109
1931	1 870	2 756	2 765	1 594	2 629	1 935	2 087	2 049	3,042	1 236	195	336
1932	1 008	1 647	2,277	8 278	4 259	1 350	5 178	3 090	7 848	5 839	1 025	521
1933	1 155	1 832	1,659	2 179	4 485	2 765	2 586	0	1 785	716	325	387
1934	764	1 597	1 529	4 928	1 134	2 885	4 101	1 025	2 060	1 386	61	420
1935	2 049	538	1 008	8 799	1 082	7 432	8 352	12 864	8,638	3 627	589	2 017
1936	1 285	2,033	784	8 977	22 027	17 483	7 714	3 578	5,798	7 253	2 980	67
1937	716	1 546	1 138	2 781	11 452	13 531	6 437	5,676	7 428	3 988	1 613	84
1938	1 155	2 289	20 328	11 384	26 595	37 260	27 158	26 542	17 797	3 708	1 057	4 420
1939	5,139	4 974	5,253	5,416	5 528	5 253	2 991	1 156	4 420	7 530	5 774	605
1940	1 073	857	280	4 814	5 268	36 837	31 779	7 237	4 453	7 693	1 286	2 855
1941	2,830	2 638	4,980	19 858	29 602	24 037	7 226	14 572	6,470	4 884	1 236	773
1942	5,042	3 176	20,752	18 605	35 472	10 278	22 462	13 515	11,887	5 627	748	504
1943	3 480	6,117	10 716	24 883	16 585	25 647	11 579	6 603	3,428	6 944	1 964	269
1944	1 108	1 193	1 529	2 927	9 683	8 060	1 529	407	4 538	7 237	5 513	50
1945	911	2 790	2 982	2 472	11 580	10 604	2 891	407	6,084	7 741	3 643	252
1946	911	2,605	8 359	16 198	8 373	6 441	1 665	2,911	5,058	7 969	6 414	471
1947	980	1 748	2 749	1 887	3 439	4 407	3 059	0	3,082	7 188	6 392	34
1948	1 431	1 294	1,545	1,447	2 643	2 423	6 537	8 359	5,395	8 392	3 822	1 815
1949	1 286	874	1,805	1,805	2 289	7 563	1 781	2 293	4 134	7 611	5 676	891
1950	1 545	892	813	4 277	7 941	4 570	3 899	2 147	4,823	8 490	5 652	982
1951	894	15,192	31,828	26,036	20,761	11 449	3 764	2 879	2,286	8 815	6 522	1 193
1952	1 578	2,521	5,871	25,241	21 888	16 459	27 107	33,421	17,058	5 074	2 196	3 731
1953	4,163	2,151	9,486	21,780	8 481	8 799	4 790	6,652	8,941	9 823	797	891
1954	1 171	4,087	2,618	8,506	15,063	16 816	13,041	9,485	4,090	8 566	7 028	823
1955	1 041	1,280	3,448	4,342	2 161	1 935	1 128	862	4,286	7 400	1 301	665
1956	520	739	1 203	42,498	19 715	16 589	6 016	16,019	8,117	9 433	982	891
1957	3,318	1,280	1 984	4,521	14 261	17 386	5 426	2,895	6,873	8,587	6 326	1 244
1958	1 529	723	2,802	3,529	26,066	31 421	25 998	18 983	11 680	3 985	1 903	3 529
1959	4,326	1 889	2,082	10,799	17 486	5 596	1 462	374	4,017	7 644	6 245	941
1960	537	1,882	1,610	2 563	4 607	3 025	5 428	293	3,512	6 086	293	640
1961	1 610	1,580	618	1,724	5 078	1 529	3 697	146	4,407	7 780	5 774	521
1962	2 261	1 277	651	1 122	12 180	6 375	4 269	3,822	5,916	7 989	3 253	3 042
1963	9 821	3,949	5 643	862	29 134	12 984	26 738	11 824	7,095	8 766	2 732	1 176
1964	1 386	4 336	1 252	7 693	3,225	3 952	1 385	589	3,784	7 335	6 635	4 067
1965	1,626	1 849	11 075	43 131	12 408	8 278	11 277	10 831	4,083	7 449	2 905	1 210
1966	867	3,143	4,564	6 717	5 080	6,063	1 849	4 180	3,042	8 254	5 701	289
1967	1 106	1 210	6,928	4,912	23 138	19 965	9 176	14 393	16,987	4 554	2 000	3 042
1968	4 163	1 486	3,138	9,937	14 882	16 166	4 369	0	3,546	7 872	4 663	0
1969	732	1 210	1,638	32,361	31 863	19 142	14 251	20 458	7,089	1 675	163	6 353
1970	2,328	2,636	22,346	63 736	40 513	13 678	3 731	33	1,513	7 042	4 456	437
1971	787	941	14 231	10 327	8 869	16 751	9 613	10,480	8,463	9 496	5 269	1 445
1972	1 196	1 085	4,879	5,892	9 482	9 498	2 319	748	2,773	7 188	8 706	1 714
1973	1,594	3,983	4,733	19 305	25 785	20 248	5 486	3,204	6,746	7 481	4 068	1 687
1974	1 546	13,041	19,337	36,888	16,818	35 828	27 679	10 425	7,798	5 920	1 891	2,521
1975	3,919	2,087	2,781	3,610	24 920	20 489	7,327	9,868	10,167	7 481	1 578	1 933
1976	3,757	3,381	4,147	3,938	4 284	3,627	1 462	504	2,988	5,887	5 204	1 294
1977	1 884	1,486	2,244	1,480	2 305	878	1 385	716	571	81	65	1 128
1978	716	430	1,447	11,775	8,535	11 124	9 781	3,407	4,708	3 156	2 086	1 311
1979	1,252	2,186	1,962	9,986	18,690	11 531	3,479	1 464	6,420	6 473	1 724	1 180
1980	1,389	1 766	2,179	36,780	37 743	21 972	6,857	4 082	3,798	3 545	797	975
1981	797	822	1,106	6,928	8 481	9 839	4 655	716	3,482	6 570	5,643	1 042
1982	878	5,949	33,991	31 660	32,879	34 580	46 770	18 567	8,288	5,627	1 773	4 087
1983	7 361	11,831	19,928	16,507	37 254	96 523	24 771	21,029	23,276	6 536	4 248	6 873
1984	5,107	21 986	46,839	25,048	15 525	14 491	3 916	2 586	5,411	8 392	2 466	622
1985	283	2,235	2,886	2,244	5,726	7 953	2 823	2,846	2,888	7 660	6,688	5,042
1986	1 768	1 697	3,822	5,513	48,490	63 832	7 310	2 082	1,042	6,261	2 586	1 697
1987	1,220	739	1,887	2,618	4 592	6 879	3,462	211	3,143	6 085	3 285	84
1988	2,882	1,513	1 301	4 186	1 986	1 610	2 151	1,350	1,311	456	81	17
1989	2,049	672	683	1 952	3 781	12 458	8 218	2,980	2 386	6 912	1 561	2,773
1990	1 289	2,286	4,212	5 221	4 123	3,155	5,386	146	2,975	4 147	781	723
1991	2,456	1 798	2 787	1 171	2 847	8 197	3 781	325	1,428	2 505	586	635
1992	1 981	1 082	746	2 749	9 457	3 610	2 773	33	1,513	1 090	33	266
1993	2 356	1 412	982	7 042	9 273	9 173	13 747	9 417	6,873	4 261	951	319
1994	2 293	2 672	3,887	3 350	8 121	2 407	1 378	716	2 738	6 570	5 790	0

Flow recommendations are based on water year types as defined on p 23-24 of the SWRCB 1995 WQCP for the Bay Delta

Sacramento Basin 40-30-30 Index.

Wet - 1927, 38, 41, 42, 43, 52, 53, 56, 58, 63, 65, 67, 69, 70, 71, 74, 75, 82, 83, 84, & 86

Above Normal - 1922, 28, 40, 51, 54, 57, 73, 78, 80, & 93

Below Normal - 1923, 35, 36, 37, 45, 46, 48, 50, 59, 62, 66, 68, 72, & 79

Dry - 1925, 26, 30, 32, 39, 44, 47, 49, 55, 60, 61, 64, 81, 85, 87, & 89

Critical - 1924, 29, 31, 33, 34, 76, 77, 88, 90, 91, 92, 94

San Joaquin Basin 60-20-20 Index

Wet - 1922, 37, 38, 41, 42, 43, 52, 56, 58, 65, 67, 69, 74, 75, 78, 80, 82, 83, 86, & 93

Above Normal - 1923, 27, 32, 35, 36, 40, 45, 46, 51, 63, 70, 73, 79, & 84

Below Normal - 1925, 28, 44, 48, 49, 50, 53, 54, 57, 62, 66, & 71

Dry - 1926, 33, 39, 47, 55, 59, 64, 68, 72, 81, & 85

Critical - 1924, 29, 30, 31, 34, 60, 61, 76, 77, 87, 88, 89, 90, 91, 92, 94

Mean Monthly Flow in cfs by Water Year Type

73-year Flow Averages by Month and Water Year Type

Feather River at Nicolaus - CP # 37, DEPLETION AREA 13 DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	2,934	1,556	1 772	1 444	1,872
NOV	4,514	3,254	1,738	1 426	1 954
DEC	12,753	4,817	2,959	1,962	2,488
JAN	21,534	13,118	7,176	4 113	3,146
FEB	25,770	14,897	10,583	5,017	3,823
MAR	23,551	20,093	8,835	5,937	3,072
APR	16,076	10,535	4,461	3 862	2,506
MAY	13,261	7,608	4,996	1,642	675
JUN	9,116	6,129	5,297	3,906	1,871
JUL	6,582	6,772	7 132	6,755	2,151
AUG	2,092	3,637	4,328	3 774	1 117
SEP	2,221	1,104	966	1,266	463

CP 15 Yuba River at Marysville, Regulated Flow

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	423	521	976	1,822	4,574	2,811	3,714	6,796	8,033	2,980	2,553	471
1923	455	807	3,988	3,074	1,981	1,870	2,185	1,594	2,084	829	883	571
1924	504	538	689	1,306	1,878	748	286	179	168	65	65	67
1925	276	363	784	1,171	4,826	2,277	1,796	1,675	891	390	585	454
1926	423	538	716	1,498	4,447	2,846	2,218	390	252	65	65	67
1927	423	4,033	2,358	3,741	8,589	5,448	5,781	5,253	4,571	2,244	618	487
1928	423	1,916	1,643	3,074	2,277	7,432	4,430	3,155	790	438	553	454
1929	423	538	683	1,301	1,728	1,431	1,025	342	202	65	65	67
1930	325	319	1,431	2,830	3,205	2,846	1,445	520	286	65	130	471
1931	423	622	504	1,513	1,638	1,203	252	179	168	65	65	67
1932	276	303	1,285	1,529	1,986	2,472	2,084	1,415	2,807	585	634	403
1933	423	454	953	1,301	1,456	1,643	1,180	651	202	65	65	67
1934	342	336	716	1,610	2,251	1,306	454	195	202	65	65	67
1935	325	504	585	1,546	1,747	2,131	4,638	3,894	3,344	618	618	420
1936	472	454	953	4,505	6,188	4,505	4,101	3,334	2,773	867	634	487
1937	423	420	537	1,286	3,151	2,879	2,706	3,236	1,748	488	589	403
1938	423	1,462	4,488	3,708	5,890	8,343	6,151	8,733	7,847	3,155	2 033	538
1939	520	565	589	1,306	1,566	1,659	672	179	168	65	65	67
1940	276	286	293	3,253	5,320	7,400	5,178	4,749	2,000	407	618	504
1941	456	807	3,350	4,538	6,826	5,465	4,369	5,009	3,344	2,586	797	605
1942	520	840	4,245	4,885	7,004	4,636	5,411	5,237	5,025	2,895	862	521
1943	423	2,000	3,448	6,115	5,006	7,221	5,008	4,131	2,805	889	797	538
1944	438	471	602	1,447	2,225	2,293	1,462	764	383	65	65	118
1945	423	1,412	1,724	1,935	4,700	3,724	1,714	1,306	1,084	589	699	487
1946	585	1,546	4,619	4,651	4,231	2,358	2 134	2,179	1,176	537	683	454
1947	423	1,244	1,155	1,286	2,593	2,521	1,328	342	336	65	65	67
1948	423	487	520	2,131	1,443	1,854	3,126	2,131	3,075	813	732	454
1949	423	487	943	1,334	1,873	3,367	2,134	797	252	65	438	454
1950	423	487	537	3,513	4,828	3,236	3,042	2,488	2,252	618	683	471
1951	828	6,000	8,571	6,944	6,156	5,172	4 571	3,415	1,513	589	683	471
1952	764	1,344	4,245	5,965	5,511	5,383	6,201	8,282	8,389	3 789	2,811	1,126
1953	423	487	1,513	5,643	4,123	3,318	2,353	2,183	3,887	2,781	829	521
1954	504	906	732	2,980	3,817	4,017	3,529	829	605	407	618	454
1955	423	586	1,334	2,183	1,785	1,610	1,294	1,008	370	65	65	67
1956	423	556	9,433	10,213	6,676	4,814	3,865	5,302	4,336	2 342	878	622
1957	764	838	553	1,529	4,249	4,115	1,280	2,000	1,933	585	716	538
1958	699	790	1 756	3,318	7,833	6 196	6,705	6,619	6,336	2,944	1 236	823
1959	423	504	553	3,058	3 583	1,786	1,059	407	336	65	65	101
1960	423	454	553	1,773	3,581	2,879	1 328	618	370	65	65	84
1961	423	706	813	1,350	2,269	1,822	941	342	202	65	65	67
1962	342	336	683	1,138	4,988	3,285	2,706	678	1,714	537	716	521
1963	4,131	3,059	3,123	4,196	5,458	4,570	4,874	5,904	3,344	829	894	655
1964	902	2,756	878	2,700	1,878	1 740	1,580	889	454	65	65	67
1965	423	739	10,815	9,758	5 924	4,310	5,495	4,888	3,361	1 626	1 008	672
1966	472	1,176	982	2,563	1 909	2 244	1,781	455	286	65	65	67
1967	423	1,462	3,643	4,928	4,700	4 785	3,006	4,879	5,848	3 285	2,586	622
1968	586	571	884	2,867	4,259	4,017	1,143	472	336	65	65	67
1969	423	706	1,317	10,002	6,734	5,302	5,395	7,123	5,748	2,718	813	555
1970	618	586	4,228	11,027	7,346	5 416	3,529	651	857	602	716	471
1971	618	2,420	4,538	4,472	3,475	4 570	1,714	3,171	3,378	2,618	976	739
1972	585	706	1,513	2,635	2,790	2,976	1,513	683	286	65	634	669
1973	813	1,765	2,787	5,351	6,536	5,090	3,361	2,277	1,109	585	732	706
1974	828	4,958	5,806	7,205	4,718	8 441	7,280	5,887	3,986	2 765	943	605
1975	589	655	834	1,870	4,718	5,367	2,202	3,285	4,185	2 488	1 608	773
1976	1,106	1,193	867	1,362	1,617	1,073	370	179	168	65	65	67
1977	276	286	369	716	828	716	168	179	168	65	130	67
1978	228	151	732	4,228	4,357	5,123	4,470	3,318	3,143	1 464	878	891
1979	455	822	585	2,618	3,367	3 090	1,798	1,822	1,109	520	718	521
1980	813	1,042	1,643	6,229	7,587	6 131	3,933	3,822	3,243	980	813	521
1981	520	471	748	2,308	2,161	2,488	1 428	390	336	65	65	67
1982	423	4,420	7,823	5,822	7 743	7,676	11,814	9,075	5,781	2 618	911	1 126
1983	1,025	2,738	4,261	5,611	7 781	8,709	7,613	7,725	9 310	4 977	2,844	1 513
1984	811	4,437	9,254	5,123	4,868	4 977	3,862	2,326	1,796	683	797	655
1985	683	2,470	1,203	1,610	2,125	2,082	1,479	439	336	65	65	67
1986	423	756	911	3,204	13,488	10,820	6,388	3,545	2,017	602	732	904
1987	683	437	553	1,389	2,251	1 626	487	211	202	65	65	67
1988	342	370	1,008	1,773	1,321	1,122	807	195	202	65	65	67
1989	342	924	667	1 301	1 893	7 400	3 949	1 626	773	390	618	805
1990	1,138	689	438	2,505	1,747	1,854	655	618	235	65	65	67
1991	342	353	423	862	1,082	2,885	1,244	455	202	163	618	403
1992	407	454	455	1,334	3,846	2,017	840	195	202	65	65	67

Sacramento Basin 40-30-30 Index

Yuba River at Marysville gage

Month	W	AN	BN	D	C
OCT	732	564	457	450	530
NOV	1889	1470	717	617	530
DEC	4349	1993	1305	886	587
JAN	5780	4154	2085	1681	1424
FEB	6380	4867	3486	2527	1771
MAR	8036	5286	2854	2620	1461
APR	5191	3826	2403	1802	880
MAY	5188	3374	1780	714	306
JUN	4649	2486	1585	524	193
JUL	2346	931	461	138	74
AUG	1204	907	540	195	121
SEP	718	568	406	200	96

A2-87

C-032427

C-032427

Sacramento River at Verona

STUDY 1995C06F-SWRCB-506 DWRSIM recirc818-d 21 May 97

ALT 3 - SACRAMENTO RIVER FLOW AT VERONA (CFS)

CP 43 def - CP 64 def - CP 43 lo

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	8864	8504	11624	14133	27693	25647	17915	36486	25612	13206	6961	8033
1923	11486	13461	24493	26087	18978	14344	18587	8717	11915	13401	10457	6638
1924	8571	8016	10889	11417	13074	9547	7478	6762	7394	6863	5351	6705
1925	6131	5644	7920	9270	36714	15080	17377	7319	9831	10425	6089	7075
1926	10002	7597	8181	15841	31384	16263	18772	11364	11125	14100	5546	8033
1927	10311	19654	12846	27111	69377	37503	39140	21175	13478	15678	8034	7630
1928	9628	16670	12279	22509	23435	70695	23141	16670	10856	18117	13808	8083
1929	8620	9683	10116	12751	15449	13775	7579	7628	6954	5790	5286	6268
1930	6229	5896	11775	18475	14333	25940	10033	8845	12096	14995	10392	6537
1931	8262	8366	8803	10360	9921	8229	7630	7644	8285	7725	5399	6621
1932	6879	6739	11092	16003	10761	7481	10285	9197	12789	10376	5757	8201
1933	6229	7478	5863	9579	10461	8555	8369	5627	6823	6570	5009	5798
1934	5416	7008	9254	14702	11416	11742	10638	6766	7613	11157	8050	7058
1935	7660	7546	7026	23110	11146	20573	15848	22151	13797	11092	6180	8420
1936	9124	8823	8490	25908	32875	28672	15881	9563	13176	13547	8685	5571
1937	7839	8571	9059	11807	28143	32578	18721	11872	13380	10278	7140	6521
1938	9417	19747	41407	26509	69197	66631	39796	46221	27023	10897	7465	14688
1939	19044	16234	15369	15206	15773	13499	10789	6896	14100	14182	13417	6302
1940	7481	6974	6115	22866	33801	47050	35040	14458	11512	15615	6798	9025
1941	11010	10786	28981	65656	64821	51376	37527	35145	15848	11775	8408	13377
1942	18752	14890	58207	53165	65866	23273	37813	30559	21797	12474	7237	10588
1943	16751	17915	23831	46481	44763	51962	24385	17662	12201	13238	8441	7680
1944	9872	11842	10506	13936	25121	22163	7142	6489	13159	14556	11010	6672
1945	8684	11665	13954	11075	29080	23419	9630	8359	12366	15389	9156	6588
1946	9303	16456	42659	36788	20473	20215	8252	9791	11056	15515	12393	6924
1947	8929	10640	14312	10978	16908	18215	10705	6099	12890	14507	11807	6521
1948	8327	8823	8376	12751	11648	14540	18923	23322	18686	14117	9254	8571
1949	13808	11209	11319	11368	12892	36446	10503	9644	11344	14653	11401	7882
1950	8668	6151	8376	17093	26037	16507	11747	8213	11586	14962	12084	7126
1951	8750	23410	49969	49717	49174	25566	10888	13043	11512	16442	12962	8554
1952	10083	12772	37260	54905	52294	48270	48114	46205	26570	11689	8847	15713
1953	17597	13495	36089	56174	24920	21842	13125	22378	20839	17044	7319	13176
1954	14605	18366	12279	30299	52289	44204	35174	21614	11613	17780	13791	8436
1955	12116	17648	20947	18378	13324	14572	7327	7075	12838	15255	7351	7260
1956	8148	10067	10701	67802	54137	33812	16217	33259	16789	16849	7530	12957
1957	17012	12772	10913	15515	29422	39325	17175	13287	15024	17158	12751	7193
1958	19565	16469	20720	31584	49849	64086	37779	33665	25175	13157	10360	18063
1959	18524	13192	11336	30787	45735	20887	8453	6717	13865	16589	13238	7546
1960	9075	9798	9482	12604	23783	18280	11377	6489	13478	14296	6766	7865
1961	9124	11260	17028	11596	31168	19863	11986	7302	16066	16686	13141	7384
1962	9989	9109	15174	11319	39181	24688	11545	10604	13276	15710	9156	10403
1963	19500	16217	23062	11742	44943	29437	62083	22167	14806	15141	9482	9832
1964	15759	22839	11303	20394	14586	13531	7277	6944	12218	14442	12149	10688
1965	8457	12068	10913	67640	26829	16443	38787	20606	12688	15336	8929	6756
1966	11173	22316	13791	26298	23426	26786	11495	12523	11831	16896	13726	8789
1967	9319	13461	35568	27082	36806	47083	33964	35369	29846	12539	8782	15108
1968	17646	13092	13615	29379	46435	34088	12806	6457	13108	15954	11092	7798
1969	9547	11209	22460	53035	55314	40041	37023	36186	18402	10067	6768	19562
1970	16377	14268	43456	70681	50039	32868	13006	7563	10382	16654	11208	8201
1971	9498	19326	46204	41081	24146	46123	18217	24200	19007	18101	11986	13814
1972	15499	12772	15673	17613	21036	28721	10419	7806	13075	16410	13547	7989
1973	10734	21259	22639	38365	61112	42187	16906	11742	13176	15288	11157	9193
1974	15288	40626	54106	65574	36678	89189	24267	21744	16553	16654	10146	17679
1975	18410	14756	14377	15076	51677	69803	21276	23696	18091	16312	9288	14923
1976	18735	14623	13369	13791	16916	16963	8369	7741	14722	14914	10788	7411
1977	7546	7529	7579	7075	11598	7123	8672	6083	7647	5595	5465	7579
1978	7693	6302	11352	38398	43304	36853	32868	16410	10520	7953	7741	14100
1979	13584	11781	9839	22704	37470	27323	13982	8034	13209	14117	7628	8201
1980	10799	15276	16361	46091	56380	33015	16772	11336	11481	9839	7270	8319
1981	13222	10302	12198	24623	26109	29874	15276	6782	13784	15418	12442	7815
1982	9173	28217	53036	41390	50417	60370	61441	27599	17511	13222	8750	18604
1983	21939	27994	43423	49197	68089	59248	59860	44968	41342	17971	14982	22906
1984	22686	47308	66648	39982	30267	33981	15125	11189	13829	17532	8929	9243
1985	14344	28754	19044	13320	17610	19353	10957	10035	11310	14816	12165	10419
1986	8885	8268	13987	18649	60886	61866	17646	9254	8151	12555	9059	8067
1987	10246	8319	10929	14068	20023	26444	11327	7058	16288	15548	12588	8319
1988	9880	6756	13547	22671	14047	9384	7579	7806	11075	10051	5562	6050
1989	7058	7831	7384	10862	9839	35015	18217	10409	11582	15271	7221	8823
1990	10588	9863	12474	18248	14261	13173	11327	6131	14789	11954	6893	7210
1991	8896	7294	7839	6326	10515	24948	12671	6375	7092	7920	6294	7126
1992	6115	5143	5432	10002	27764	17402	11193	6343	9310	8750	5253	7647
1993	8099	7193	9774	40285	38785	41927	29729	21436	22419	11986	7140	7445
1994	12328	20133	14572	13775	23588	14886	8756	6847	15226	14556	14003	7579

Sacramento Basin 40-30-30 Index

Sacramento River at Verona - CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow

Month	W	AN	BN	D	C
OCT	13 834	10 366	11 103	10 740	9,247
NOV	18 829	13 903	11,856	11,958	9 351
DEC	33 290	16 050	14 426	12,424	10 026
JAN	44 319	31 818	21 406	14,814	12,558
FEB	49 154	41 550	27 976	20,027	14 917
MAR	47 962	40 644	23 796	20,745	12 961
APR	33 161	23 543	13 314	11 833	9 188
MAY	27 278	17 649	11 009	7 942	6 814
JUN	19 009	14 370	13 024	12,788	9 744
JUL	14 526	14 326	14 589	14,345	9 320
AUG	9 139	10 038	10 267	9,953	6 953
SEP	13 271	8 838	7 721	7 738	6 921

American River at H Street Bridge

STUDY 1995C06F-SWRCB-506 DWRSIM recirc818-f 17 Jun 97

CP # 64, D-893 MINIMUM REQUIRED FLOW DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-506/64/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1 870	2 403	2 440	2,196	4 808	4,407	4 369	8 359	8,470	2,407	3 629	3,613
1923	2 374	2 403	6,981	5 090	4 357	2,700	2 857	4 375	4 836	4 489	2 000	1 630
1924	1,870	2 403	2 440	2 196	1,878	2 114	672	1 171	2 538	342	260	672
1925	407	605	504	455	4 646	2 407	4 669	3 415	3 986	3 822	2 883	1 916
1926	1 870	2 403	2 440	2 196	1 945	2 082	1 378	1 610	3 512	3 610	3 106	538
1927	846	504	504	4 050	13 667	4 928	8 184	3 887	5 008	2 277	2,537	3,798
1928	2,374	2 874	2 635	2 440	2.347	12.572	5 613	3 074	2 288	3 090	1 968	1 025
1929	1 903	1 916	1 862	1 862	1 945	2 244	1 176	1 691	2 865	3 204	260	975
1930	2 196	1 109	504	439	432	2 423	2 370	2 309	3 798	3 448	2 423	672
1931	1 073	706	504	439	432	976	1 815	1 578	5 764	1 431	276	857
1932	829	1 160	504	455	2 417	4 017	2 823	2 716	6 386	7 107	3 659	941
1933	2 683	1 664	504	439	774	1 155	4 319	1 529	4 285	829	276	1 412
1934	1 935	1 529	504	439	432	2 131	2 588	1 513	5 714	716	244	303
1935	943	504	504	439	936	2 911	6 033	5 383	3,496	4 424	2 814	1 849
1936	1 870	2 403	2 440	4 115	13 213	4 294	5 714	3 582	5 294	3 025	2,358	2 605
1937	2 374	2 403	2 440	2 440	2,863	4 310	4 420	3 919	3 697	2 992	2 049	2 033
1938	2 374	2 403	6 278	3 367	10 263	10 978	8 067	9 075	7 989	3,106	3 903	3 933
1939	2 374	2 403	2 440	2 440	2 431	1 903	1 832	563	3 882	3 836	325	975
1940	1 252	1 260	1 386	439	9 614	10 457	6 487	2 911	3,563	3 643	2,082	1 076
1941	1 870	2 403	3,854	5 904	8 265	4 830	3 815	4 570	4 252	2,228	2,244	3,848
1942	2 374	2.403	5 318	9 742	10.407	3 659	5,277	6 148	5,986	3 009	3 919	3 609
1943	2.374	3,815	4 879	11 433	7 346	12 474	5 294	2 814	4 353	2,244	2,000	2 924
1944	2.374	2 403	2 440	2 440	2 347	1 903	2 370	1 317	3 385	3 253	2 374	1 882
1945	1 724	504	504	1 080	9 579	2,407	2 504	2 885	3 748	3 350	2 000	1 983
1946	2 374	3 546	6 829	5,627	3 025	3 058	4 252	2 781	3,563	3 269	2 085	1 546
1947	2 374	2 487	2 440	2 440	2,431	1 903	1 378	1 317	4 101	2 944	2 277	840
1948	374	908	2 391	943	2 051	2,976	2 370	2 814	4 302	2 423	2 000	3 210
1949	2,374	2 403	2 440	2 440	2 485	2 407	2.370	2 927	3 496	3 171	2,131	1,328
1950	1 870	2 403	2,440	2 196	5 708	3,253	5 143	2 982	5,058	3 480	2 000	2 084
1951	2 423	17 310	15 487	10 457	8,517	3 497	3 025	3 480	4 586	2 911	2 000	1 260
1952	2,374	2.807	6.148	9 254	9.353	6 086	9 109	10 132	10 302	4 082	4 375	4 134
1953	2.374	2 403	2 749	7 756	2 756	2 407	2 874	3 562	4 252	2 814	3 903	3,865
1954	2 374	2 403	2 440	2 440	3 277	4 538	4 756	2 846	2 302	2 563	1 789	840
1955	1 870	2 403	2 440	2 196	1 945	2 505	1 378	2 309	3 075	2 980	2 226	1 277
1956	1 870	1 546	12 962	16 768	5 894	2 911	3,830	4 619	5 344	2 765	3 887	3 848
1957	2 374	2 403	2 440	2 440	3.223	4 851	3 546	2 309	4 017	3 155	2.000	1 294
1958	2 374	2 403	2 440	2 440	9 993	6 717	10 436	9 156	7 142	2 765	4 017	3 949
1959	2 374	2 403	2 440	2 440	2 521	2 293	1 445	1 317	3 277	2 212	976	319
1960	1 041	1 597	1 447	943	1 339	4 147	1 714	2 309	3 378	2 472	1 675	420
1961	1 415	1 916	1 962	1 691	1 440	1 106	790	553	2 805	1 822	894	454
1962	716	908	943	943	3 223	2 700	3 496	2 472	2 723	3 464	1 984	1 328
1963	2 814	4 403	3 594	4 115	11 560	2 911	6 689	6 229	3 815	2 228	2 000	3 798
1964	2 374	4 134	2 440	3 074	2 834	1 984	1 378	2 309	3 714	3 741	2 976	2 033
1965	1 171	504	17 581	12 887	5 384	2,407	4 218	3 741	5 008	3 041	2 000	3 277
1966	2 374	2 571	2 440	2 618	2 431	1 903	1 378	1 773	3 004	2 570	1 626	924
1967	1 480	1 916	1 962	6 587	4 772	6 213	4 538	7 790	8 686	3 757	4 017	4 050
1968	2 374	2 571	2 440	2 618	6 780	2 521	2 235	1 317	3 260	2 423	1 447	739
1969	863	1 412	1 447	15 971	9 581	4 407	7 042	7 611	5 798	2 488	3 741	3 882
1970	2 374	2 403	5 595	21 842	6 176	2 407	2 975	2 308	2 823	2 976	1 285	773
1971	1 870	2 403	5 952	5 269	3,961	3 854	3 294	3 562	4,252	2 228	3 025	3 680
1972	2 374	2 403	2 927	2 440	3 042	4 294	2 370	2 309	3 563	2 944	1 773	1 109
1973	1 870	1 916	1 962	9 336	7 653	3 952	2 756	3,708	3 798	2 830	2 000	1 260
1974	2 374	6 974	7 336	12 702	3 781	9 579	6 688	4 082	4,252	2 440	3 962	4 017
1975	2 374	2 403	2 440	2 440	3 133	4 586	3 630	4 017	5 294	2 407	3 806	3 781
1976	2.374	3 277	2 440	2 440	2 347	2 309	622	927	3 596	2 085	325	538
1977	1 067	888	504	439	432	325	168	130	420	260	276	303
1978	390	504	504	1 431	5 080	5 806	4 403	3 220	4 822	2 342	2 179	3 646
1979	2 374	2 403	2 440	2 440	2 809	3 399	2 370	3 708	3 311	3 415	2 114	1 529
1980	1 870	2 403	2 440	18 215	12 917	3 285	2 655	2 814	4 706	2 228	2 114	3 781
1981	2 374	2 403	2 440	2 440	2 431	1 903	1 126	1 057	3 243	1 998	829	823
1982	374	3 949	14 621	8 246	15 071	7 172	14 167	9 579	6 050	2 895	3 952	4 252
1983	2 374	8 453	8 912	7 920	12 820	16 231	7 108	9 254	14 150	5 790	4 884	4 739
1984	2 374	15,310	14 832	6 749	5 581	2 407	2 756	2 309	4 117	3 497	2 000	1 781
1985	2 374	4 185	2 927	2,440	2 431	1 603	2 370	1 670	3 983	3 480	2,765	756
1986	1 285	504	504	3 220	33 023	10 506	2 370	2 814	4,564	2 228	2,000	3 680
1987	2 374	2 403	2 440	2 440	2 431	1 903	1 076	764	3 731	2 716	244	689
1988	618	908	504	439	2 104	1 843	622	911	2 907	797	244	1 697
1989	1,935	908	943	943	2 647	5 545	4 638	1 171	1 880	1 114	1 789	807
1990	1 870	1 916	1 962	1 862	1 945	1 513	1 294	1 388	4 269	3 236	851	1 109
1991	864	739	862	439	450	1 156	1 378	1 317	2,000	1 594	1 252	773
1992	1 819	2.437	1 962	1 962	1 878	1 513	908	1 187	3 092	2 814	244	269
1993	374	504	504	1 008	8 104	8,148	4 790	3,773	4 874	3 009	2,980	3,580
1994	2 374	2.403	2.440	2 440	2 431	2 114	869	651	3 075	2 602	342	269

Sacramento Basin 40-30-30 Index:

American River at H Street bridge - CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

Year Typ	W	AN	BN	D	C
OCT	1,923	1 717	1,892	1,910	1 714
NOV	3,396	3,396	2,024	2,183	1,716
DEC	6,186	3,219	2,874	1,921	1,380
JAN	8 506	5 040	2,531	1,842	1,297
FEB	9 179	6 352	4,467	2,289	1,421
MAR	6 079	6 131	3.073	2,503	1 589
APR	5 817	4 240	3.328	2,105	1,354
MAY	5,564	3.650	2,973	1 907	1 164
JUN	5 877	4 322	3.781	3,747	3 380
JUL	2,917	2 817	3.177	3,356	1 856
AUG	3 202	2 282	1 943	2.024	388
SEP	3 615	2 158	1.635	1 022	785

A2-88

C-032428

C-032428

San Joaquin River at Vernalis
STUDY 1995C06F-SWRCB-506 DWRSIM reoro818-f 17 Jun 97
CP # 682 SJR AT VERNALIS TOTAL FLOW DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-506/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	2 000	1 887	2 466	2 683	6 770	5 351	6,201	5 936	7 280	2 228	1 903	1 916
1923	4 001	1 800	3 741	4 136	4 267	3 415	5 344	5 156	4 363	2 082	1 984	1 832
1924	2 000	1 462	1 466	1 399	1 617	1 708	2 202	1 903	1 849	1 773	1 643	1 294
1925	1 968	1 381	1 252	[illegible]	2 719	2 423	3 983	3 822	5 210	2 017	1 870	1 664
1926	2 000	1 412	1 334	1 203	2 323	2 277	3,684	3,545	2 017	1 773	1 675	1 479
1927	2 000	1 616	2 147	1 786	5 438	3 578	5 344	5 158	3 428	2 017	1 903	1 748
1928	4 359	1 849	2 309	2 277	2 580	2 960	3,983	3 822	2 067	1 887	1 773	1 546
1929	2 000	1 385	1 301	1 203	1 456	1 691	2 017	1 870	2 420	1 691	1 561	1 277
1930	1 962	1 280	1 138	1 220	1 549	1 935	2 420	1 870	4 084	1 724	1 594	1 361
1931	1 415	1 210	1 136	1 136	1 280	1 334	2 118	2 017	1 781	1 773	1 659	1 328
1932	1 350	1 284	3 009	3 334	7 364	4 538	4 521	3 871	2 134	1 984	1 903	1 748
1933	3 529	1 462	1 317	1 610	2 036	2 085	2 807	2 683	1 462	1 740	1 691	1 395
1934	1 903	1 277	1 220	1 220	1 747	1 659	1 983	1 870	1 798	1 756	1 643	1 378
1935	2 000	1 395	1 380	2 944	3 723	3 513	6,739	6 050	3 899	2 228	1 984	1 840
1936	3 171	1 546	1 561	2 309	12 589	5 774	6,403	5 156	2 134	2 388	1 968	1 849
1937	3 088	1 583	1 870	2 983	13 080	8 587	7 932	8 132	2 672	2 277	2 098	1 949
1938	3 155	1 798	5 080	5 983	22 469	32 404	18 049	24,265	15 764	3 643	1 887	2 672
1939	8 864	2 319	2 280	2 505	3 937	2 785	2 891	3 058	1 983	1 962	1 789	1 563
1940	2,000	1 479	1 389	4 201	7 180	10 474	6,252	5 156	4 958	2 349	2 017	1 933
1941	2 033	1 714	3 871	4 440	13 072	12 116	10 083	9,579	8 286	2 179	1 935	1 983
1942	4,912	2 235	5 302	9 173	10 443	5,936	6,907	5 936	5 647	2 488	1 935	2 166
1943	6,912	3 082	3 562	11 157	10 966	17 776	7,915	6 180	3 428	2 277	2 098	1 966
1944	3 204	1 815	1 915	1 964	3 161	3 106	3 428	2 976	3 412	1 962	1 919	1 781
1945	2 000	1 832	1 691	1 546	7 364	8,002	6 336	4 033	2 252	2 163	2 000	1 966
1946	3 962	2 202	5 643	6 572	6 212	4 391	5 344	3 871	3 482	2 147	2 033	1 949
1947	2 131	2 353	2 716	2 196	2 701	2 277	3,684	2 683	1 933	1 636	1 740	1 563
1948	2 000	1 344	1 203	1 122	1 373	1 740	3 983	3 822	2 286	2 017	1 919	1 731
1949	2 000	1 445	1 285	[illegible]	1 476	2 586	3 983	2 976	3 008	1 919	1 854	1 661
1950	2.000	1 428	1 285	1 464	2 557	2 293	3,983	3 822	3 832	1 903	1 691	1 647
1951	2 000	3 630	6 660	9 344	9 921	6 180	5,344	5 156	2 756	1 968	1 822	1 849
1952	2 000	1 887	2 521	5 680	5 824	12 820	10,840	15 450	11 226	2 732	1 854	2 218
1953	8 343	2 185	3 066	4 980	5 744	3 627	3,983	3 822	2 286	1 708	1 724	1 887
1954	2 000	1 513	1 415	1 334	2 287	2 407	3,983	3 822	1 949	1 952	1 724	1 887
1955	2 000	1 428	1 334	1 529	2 287	2 277	2,807	2 683	3 714	1 870	1 756	1 583
1956	2,000	1 445	10 197	20 196	12,917	6 089	6 235	5,936	6 756	2 082	1 805	1 983
1957	4 886	1 933	2 082	2 385	3 313	3 155	3,983	3 822	2 286	1 984	1 724	1 684
1958	2,000	1 529	1 447	1 626	3 601	9 465	14,772	13 173	12 184	2 017	1 903	2 134
1959	7 983	2 118	1 903	2 309	4 536	3 643	2,807	2 683	1 882	1 854	1 708	1 479
1960	2,000	1 328	1 171	1 155	1 791	1,919	2,430	1,870	2,286	1 870	1 724	1 496
1961	1,984	1 344	1 236	1 171	1 278	1,380	1,983	1,870	1 848	1 822	1 708	1,412
1962	1 382	1 284	1 156	1 136	5.780	4 489	4,201	3 822	1 881	1 854	1 805	1 613
1963	2 000	1 412	1 252	1 891	4 772	3.415	5 344	5,156	3 428	2 281	1 805	1 832
1964	3,041	2 134	1 789	1 854	2.208	2.082	2,807	2 683	2.252	1 789	1 691	1 462
1965	2 000	1 647	3 741	11 433	7 805	4,618	6.201	5 936	3 428	2 147	1 773	1,765
1966	4 424	3 479	4 798	4 847	5 186	3 708	3,983	2 976	2 000	1 919	1 822	1 597
1967	2,000	1 546	2 635	2 980	3.421	5 481	13 861	18,003	13 787	4.831	1 805	2 874
1968	8 733	2 067	2 198	2 291	4 051	2 797	3.684	2,683	1 933	1 919	1 529	1 528
1969	2 000	1 479	1 724	13 462	31 474	21 045	20,923	26 217	18 386	4 196	1 838	2 588
1970	8 327	2 554	3 564	17 544	9 489	7 432	5,344	5 156	3 344	1 984	1 822	1 882
1971	2 000	1 731	2 147	2 300	2 287	2,732	3,983	3 822	2 286	1 740	1 691	1 681
1972	2 000	1 462	1 513	1 362	2 208	2.277	3,684	2 683	1 832	1 773	1 529	1 395
1973	2 000	1 395	1 317	1 962	5 872	8.620	5,880	5,156	5 830	2 082	1 805	1 849
1974	2 781	2 366	2 749	4 536	5 386	7 725	7 683	5,906	3,428	1 854	1 805	1 949
1975	3 383	1 731	1 835	2 277	6 572	8,831	6,621	5 936	8 016	1 952	1 854	1 882
1976	4 115	1 832	1 805	1 529	1 985	1 708	1 983	2 005	1 815	1 773	1 447	1 395
1977	2 830	2.101	1 610	1 155	1 242	1 203	1,983	1 870	1 748	1 881	1 415	1 176
1978	1 288	1 277	1 356	3 220	7 781	11,336	14,923	10 831	7 075	4 718	1 870	2 773
1979	4 228	1 933	1 891	3 986	8 157	8.652	5,344	5 156	4 453	1 964	1 724	1 781
1980	2 407	1 887	1 805	12 156	24 217	14 572	6,722	6,619	6 184	3,952	1 740	2 666
1981	5 107	2 084	2 086	2 980	2 791	2.980	3,664	2,683	1 916	1,854	1 610	1,583
1982	2 000	1 830	1 545	8 278	18 866	15,467	27,040	15 158	9 865	3,236	1 838	3,849
1983	12,442	8,621	19 061	24 867	36 534	41,114	20,738	18 077	36 491	13,580	1 658	6,504
1984	12 116	13,545	21 500	15 190	9 718	6,001	5,344	5 156	3,647	2 049	1 903	2 000
1985	2,000	1 781	1 691	1 431	2 287	2,277	3,664	3 139	1 986	1 854	1 805	1,546
1986	2 000	1 587	1 545	1 464	19 140	26 770	8 814	8,067	7 613	2 147	1 854	1 949
1987	3,480	1 731	1 545	1 464	1 865	1,919	2,033	2 131	1 865	1 822	1 740	1 496
1988	2,000	1 277	1 138	1 122	1 182	1,285	1,983	1 870	1 798	1 822	1 724	1,361
1989	1 317	1 176	1 171	1 156	1 280	1,826	2,430	1 870	2,672	1 773	1 496	1 412
1990	1,334	1 227	1 138	1 122	1 280	1 382	1 983	1,870	1 781	1 724	1 626	1,361
1991	1 266	1 210	1 122	1 060	1 170	2 366	2.437	1 870	3 378	1 724	1 366	1 294
1992	1 334	1 277	1 138	1 138	2 280	2.049	2.252	3 289	1 889	1 903	1 773	1 486
1993	1,581	1 479	1 464	6 017	3 421	3.415	6,201	5,936	3.479	2 277	1 887	2 080
1994	3 843	1 714	1 447	1 360	1 983	1 546	1 983	1 870	2 000	1 919	1 626	1 479

San Joaquin Basin 60-20-20 Index
San Joaquin River at Vernalis - CP # 682 SJR AT VERNALIS TOTAL FLOW DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	3 096	3,853	3,215	4,270	2,182
NOV	2 083	2 716	1 781	1,875	1,426
DEC	3 795	4 198	1 992	1 835	1,301
JAN	7 787	5 423	2 128	1 931	1,227
FEB	13 184	7,238	3,208	2,824	1,954
MAR	13.541	5 988	2,936	2 518	1,867
APR	11 483	5 620	3,955	3,282	2,137
MAY	11,015	4 956	3,610	2,837	1,987
JUN	9 446	3 583	2 882	2,081	2,180
JUL	3.541	2 078	1 904	1,836	1,785
AUG	1 867	1 905	1 793	1,684	1,608
SEP	2 498	1 862	1 867	1 503	1,376

Stanislaus River from Goodwin Dam downstream to confluence with San Joaquin River
STUDY 1995C06F-SWRCB-506 DWRSIM reoro818-f 17 Jun 97
CP # 675 STANISLAUS RIVER AT MOUTH DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-506/675/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	390	383	280	228	504	325	857	2,368	586	683	797	586
1923	325	353	342	228	234	1,008	857	2 212	586	683	732	586
1924	504	363	280	228	226	309	807	651	906	894	943	536
1925	884	319	244	226	386	325	1,227	1 756	571	716	862	586
1926	732	353	280	228	252	846	924	867	780	894	943	586
1927	829	336	280	228	386	325	1 280	2 472	956	699	813	586
1928	325	363	290	228	226	325	1 176	1 773	756	829	894	586
1929	862	353	280	226	234	325	823	618	585	764	716	571
1930	894	319	276	211	216	325	874	651	672	699	683	586
1931	325	319	276	260	288	325	823	867	941	894	943	555
1932	309	319	244	228	313	325	857	1 724	823	748	797	586
1933	325	363	280	226	234	325	975	746	822	911	927	586
1934	781	336	290	228	234	325	867	976	941	911	943	571
1935	862	319	244	228	216	325	857	602	595	683	716	586
1936	325	363	280	228	782	325	857	1 415	773	683	748	586
1937	325	353	280	228	488	325	857	602	586	683	683	586
1938	325	353	280	229	684	1 936	1,849	1 496	4 554	563	748	586
1939	4,060	639	732	797	828	325	840	861	807	764	878	571
1940	537	336	280	244	286	407	1 445	1 643	571	683	899	586
1941	439	370	358	309	1 134	982	1 849	1 203	886	534	748	586
1942	504	454	1 289	1 962	1 927	488	1 849	1 389	555	563	748	586
1943	2 851	1 006	1 073	2 944	2 449	3,446	1 849	1 203	1 082	683	683	586
1944	504	454	423	380	452	325	867	618	672	781	781	586
1945	537	368	280	228	342	407	1 412	943	586	683	716	586
1946	438	370	342	1 350	1 531	488	1 983	1 447	672	683	683	586
1947	504	437	423	390	386	899	1,496	618	874	862	911	586
1948	829	336	280	293	435	325	1 008	1,350	1 008	699	797	586
1949	899	353	280	228	234	325	908	911	672	797	846	586
1950	716	363	280	228	252	325	1,344	2 228	986	813	911	586
1951	899	370	504	2 179	2 215	960	1 765	1 773	672	748	846	586
1952	423	379	276	495	730	1 431	1 849	1 203	3 764	553	813	586
1953	4 033	723	945	1 480	1 242	358	1,210	1 643	605	878	894	586
1954	867	403	285	260	630	325	1 613	1 935	723	764	894	586
1955	699	353	280	228	864	374	1 210	634	672	846	884	586
1956	732	336	553	456	226	488	1 849	1 561	555	585	846	586
1957	634	756	764	797	1 242	358	1 983	651	586	732	894	586
1958	585	363	280	228	378	488	1 849	1 203	2 539	651	781	586
1959	3 253	773	748	927	1 513	325	874	1 203	891	862	927	586
1960	862	336	280	228	226	325	874	634	872	829	927	586
1961	894	319	244	228	252	325	857	634	924	862	927	556
1962	309	319	290	260	378	325	857	1 708	958	846	878	586
1963	732	353	280	229	234	1 057	857	1 610	1 361	683	846	586
1964	325	363	290	228	591	488	1 126	716	672	894	927	586
1965	764	336	456	358	234	325	1,092	2 781	1 143	683	862	586
1966	325	353	260	225	234	325	874	683	807	813	962	586
1967	602	353	280	293	286	488	1 849	1 203	565	563	846	586
1968	4 391	756	764	862	1 852	325	1 344	802	874	797	943	586
1969	867	336	280	228	1 422	1 830	1 849	2 423	3 479	553	829	586
1970	3 497	823	1 431	5 309	2 737	1 108	2 134	976	639	732	846	586
1971	472	403	309	280	958	358	2 000	927	571	878	911	586
1972	899	403	293	280	899	764	2 084	651	790	894	960	586
1973	764	336	280	342	432	325	857	1 903	627	683	846	586
1974	325	353	280	228	234	992	1 849	1 708	1 280	813	846	586
1975	504	464	423	634	1 729	1 171	1 849	2 212	966	732	878	586
1976	504	454	423	390	382	325	823	634	924	894	960	565
1977	309	319	244	244	306	309	1 089	960	958	927	943	504
1978	276	319	244	309	270	325	857	602	565	683	813	586
1979	325	353	260	228	380	325	891	1 708	472	732	894	586
1980	325	353	280	1 724	4 903	992	1 849	1 203	565	534	878	586
1981	813	723	878	1 269	738	325	874	634	874	846	943	586
1982	602	336	280	228	4 339	3 080	1 849	1 203	1 597	553	813	586
1983	5 204	2 739	3 106	4 310	4 934	5 497	1 849	1 203	4 890	2 521	927	1 092
1984	5 627	3 512	4 879	2 781	2 556	1 382	1 933	764	571	683	781	586
1985	504	387	309	260	702	504	1 731	602	840	846	878	586
1986	634	336	280	228	2 251	4,944	1 849	1 203	986	683	813	586
1987	504	454	423	390	386	325	823	634	906	862	911	565
1988	911	319	276	276	330	309	823	651	941	862	911	536
1989	293	319	244	244	270	325	891	634	672	911	960	586
1990	325	319	293	276	288	325	840	602	941	927	943	555
1991	309	319	293	325	386	325	823	618	506	927	900	571
1992	309	319	276	260	286	325	823	565	874	797	894	555
1993	325	319	244	211	1 314	1 908	1 580	2 863	986	683	797	586
1994	309	353	260	228	234	325	857	618	790	797	943	571

San Joaquin Basin 60-20-20 Index.
Stanislaus River from Goodwin Dam to the San Joaquin River confluence - CP # 675 - STANISLAUS RIVER AT MOUTH

Month	W	AN	BN	D	C
OCT	830	1 129	867	1,481	566
NOV	508	606	427	503	345
DEC	530	700	378	472	286
JAN	788	980	407	516	285
FEB	1 521	903	523	786	286
MAR	1 578	826	333	482	322
APR	1,648	1 283	1,258	1,225	855
MAY	1,533	1,514	1,349	702	873
JUN	1,521	714	707	791	822
JUL	733	700	798	656	880
AUG	807	783	889	921	807
SEP	613	586	586	587	580

A2-89

C-032429

C-032429

Tuolumne River from La Grange Dam downstream to the confluence with the San Joaquin River

STUDY 1995C06F-SWRCB-506 DWRSIM record18-1 17 Jun 97

CP # 665 TUOLUMNE RETURN W/O TURLOCK DOWNSTREAM FLOW (CFS)

CP665def = CP761div = Adj Tuolumne River Flow at AFRP Node

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	651	571	667	534	364	764	1428	1398	538	504	520	521
1923	589	504	602	602	564	520	1365	1285	2084	455	436	437
1924	520	437	439	423	435	423	336	325	134	130	130	151
1925	276	303	309	293	450	342	941	894	3176	295	291	151
1926	342	319	325	309	380	309	706	1867	185	179	179	166
1927	308	387	374	356	630	436	1361	1269	454	455	436	437
1928	553	521	488	444	522	566	1042	997	235	218	244	236
1929	325	319	309	309	324	309	538	520	1412	130	130	151
1930	260	269	260	276	306	309	538	618	2302	130	146	151
1931	260	269	260	260	288	260	353	342	134	146	146	151
1932	293	336	520	455	800	437	1294	1269	454	455	436	437
1933	520	454	439	455	464	472	605	618	185	163	179	185
1934	308	303	308	309	360	293	353	325	134	130	130	151
1935	293	336	342	504	432	466	1546	1317	487	472	436	437
1936	589	504	504	520	1147	618	1378	1285	471	455	436	437
1937	651	571	585	585	1186	1870	2235	1386	823	520	520	521
1938	651	571	911	2944	7797	8050	4101	5639	4117	1708	520	874
1939	1171	454	455	618	1066	829	807	1203	185	163	179	185
1940	325	336	342	585	906	5237	2118	1285	2640	436	436	437
1941	651	571	683	683	2861	4788	3075	1362	2521	537	520	521
1942	1025	588	878	3808	4265	2992	2655	2085	1587	911	537	538
1943	980	586	982	3708	4411	6115	2353	1366	1109	520	520	521
1944	537	487	472	455	522	569	881	862	1412	244	244	235
1945	360	403	360	374	815	3334	1580	1269	471	436	423	437
1946	589	504	2553	3386	2663	2440	1529	1269	1445	455	436	437
1947	520	471	488	438	466	438	588	569	185	163	163	185
1948	293	303	293	293	313	342	975	894	269	262	262	252
1949	358	353	342	325	380	439	706	667	1294	229	226	235
1950	358	353	342	374	452	358	881	862	2622	244	244	235
1951	360	605	616	894	3871	3074	1277	1269	1143	455	436	437
1952	651	571	667	894	4716	4570	4101	2553	4487	1579	520	823
1953	527	487	504	1108	2779	2000	1260	1171	353	244	244	235
1954	358	353	342	342	366	407	891	862	353	244	244	235
1955	342	319	325	342	324	553	622	602	1277	179	179	185
1956	360	403	1073	6603	4346	3025	1664	1382	4117	781	520	822
1957	1008	471	472	455	504	1564	881	911	269	244	244	235
1958	488	454	439	472	1025	5188	5344	2749	4840	618	537	897
1959	927	454	439	439	738	2095	586	569	185	163	163	185
1960	260	269	260	260	330	293	437	439	672	132	146	151
1961	228	269	276	260	288	260	353	342	134	146	146	151
1962	260	303	293	293	738	423	874	846	218	228	228	235
1963	360	370	374	423	540	423	1479	1334	487	472	455	437
1964	520	487	455	455	435	455	605	569	655	163	163	185
1965	360	437	602	5172	3897	2602	2139	1366	538	520	520	521
1966	829	1260	2456	2553	2971	1984	924	667	235	228	228	235
1967	455	454	569	520	540	2716	4285	1496	5042	4527	520	1042
1968	943	454	455	439	695	1301	975	1122	188	163	163	185
1969	360	403	439	3432	7400	5042	4857	6740	7462	1968	520	691
1970	1285	504	764	6050	3745	3432	1277	1269	1649	436	423	437
1971	537	487	520	488	488	1220	874	862	252	244	244	235
1972	342	319	342	325	330	651	622	537	151	146	130	168
1973	309	336	342	390	1360	3638	1344	1269	3075	436	423	437
1974	651	588	602	911	2935	3757	2605	1350	521	520	520	521
1975	651	571	569	569	774	4086	1630	1382	2855	504	504	521
1976	667	454	439	423	539	423	420	423	134	130	146	151
1977	360	269	260	260	270	260	353	358	134	146	146	151
1978	358	403	407	585	846	732	1714	1431	538	1670	520	521
1979	589	504	504	602	3025	3885	1546	1285	2218	436	423	437
1980	651	588	569	3444	7736	4131	2151	1350	3428	2440	520	982
1981	1008	454	455	472	488	1236	941	602	185	163	163	185
1982	439	454	455	4570	7220	5652	7831	3285	4420	2085	520	2151
1983	3318	2773	4863	6250	7889	6660	3083	1480	11125	7358	520	3479
1984	1480	4773	6684	4131	3842	2879	1277	1285	2420	455	436	437
1985	520	471	455	439	484	472	622	585	185	179	179	185
1986	360	420	423	407	4538	7335	1798	1626	4571	504	504	521
1987	504	437	423	423	450	439	420	423	134	130	146	151
1988	228	269	260	260	261	260	437	423	134	130	146	151
1989	228	269	276	260	288	293	555	520	1244	146	146	151
1990	260	269	260	260	288	276	420	407	134	130	130	151
1991	228	269	260	260	270	360	437	407	1462	130	130	151
1992	228	269	260	260	385	293	437	1334	151	146	130	151
1993	358	403	407	781	612	569	1513	1334	538	504	504	521
1994	520	437	439	423	450	407	538	520	151	130	136	151

San Joaquin Basin 60-20-20 Index

Tuolumne River from LaGrange Dam to the SJR confluence - CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	706	553	524	651	338
NOV	619	743	473	423	317
DEC	840	1 065	569	421	312
JAN	2,339	1 378	622	430	308
FEB	3,593	1 714	669	535	345
MAR	4,197	2,222	854	796	324
APR	3,103	1 457	930	696	433
MAY	2,146	1,282	847	606	463
JUN	3,248	1 428	891	324	538
JUL	1,506	452	241	196	135
AUG	520	436	243	167	139
SEP	874	437	238	163	151

Merced River from Crocker Huffman Diversion downstream to confluence with San Joaquin River

STUDY 1995C06F-SWRCB-506 DWRSIM record18-1 17 Jun 97

CP # 649, LOWER MERCED RIVER DIVERSION DOWNSTREAM FLOW (CFS)

CP649def = CP762div = Adj Merced River Flow at AFRP Node

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	146	151	228	211	414	276	151	81	2370	146	98	50
1923	2472	353	1108	1220	1088	163	858	81	622	163	146	34
1924	260	151	211	195	313	146	387	472	252	276	195	118
1925	130	151	146	130	270	195	101	81	504	163	130	67
1926	146	151	163	163	774	146	504	65	134	163	130	101
1927	146	185	439	195	1088	228	134	81	1176	146	81	151
1928	3041	134	602	553	808	244	101	407	134	146	81	34
1929	49	108	146	146	144	163	67	325	101	309	309	17
1930	130	151	130	146	144	195	252	211	487	374	342	17
1931	163	84	130	130	126	146	504	537	188	244	195	118
1932	146	134	276	228	522	195	84	81	319	163	179	118
1933	2020	151	146	276	414	179	471	797	319	163	195	118
1934	146	134	146	130	162	146	202	114	168	260	195	134
1935	146	151	146	260	234	228	723	1415	1365	163	228	134
1936	1626	202	228	748	4603	309	471	1041	34	163	195	118
1937	1431	151	407	520	4465	927	134	2196	319	163	260	134
1938	1464	151	2423	1269	4736	4603	639	3367	4453	130	33	655
1939	2911	336	358	358	576	179	67	325	168	358	195	84
1940	276	134	146	325	2138	1122	84	829	708	163	244	134
1941	146	151	1464	1350	2971	1317	185	2049	2087	130	65	151
1942	2883	336	1415	1561	1603	211	101	634	2386	114	33	252
1943	2883	672	732	2488	1783	2700	454	862	286	163	179	67
1944	1366	168	260	407	921	244	84	472	353	163	195	134
1945	179	168	163	146	3241	618	101	81	252	163	130	101
1946	2277	756	1805	976	738	195	353	81	134	163	244	134
1947	342	639	828	585	828	146	756	1057	168	244	195	134
1948	130	134	130	114	122	179	336	283	34	163	195	134
1949	146	151	146	146	144	244	1008	537	134	163	195	134
1950	163	151	146	163	216	179	538	81	134	163	195	134
1951	148	336	3882	1626	1404	211	924	1073	134	163	211	134
1952	146	151	228	407	889	1309	252	3432	2185	33	33	252
1953	2716	151	618	1073	558	163	672	179	680	130	195	134
1954	146	151	163	146	180	211	84	81	101	163	195	134
1955	163	151	163	179	162	293	151	651	790	163	195	134
1956	146	134	1529	3871	1495	146	1311	81	1244	65	33	84
1957	2716	218	244	293	828	195	118	1431	756	163	195	134
1958	146	151	146	179	252	325	1025	2995	2000	33	33	34
1959	2732	151	146	360	1080	146	639	358	168	276	195	84
1960	130	151	130	130	156	163	101	195	168	325	195	134
1961	148	151	146	130	126	146	303	358	168	276	211	118
1962	146	134	130	130	486	244	84	374	34	163	211	134
1963	146	151	146	179	1009	179	202	98	34	163	61	118
1964	1496	639	407	520	469	179	336	862	134	179	195	101
1965	146	151	889	3058	1188	163	168	146	586	146	33	84
1966	2732	1210	613	629	738	179	1328	1060	168	211	195	84
1967	146	151	244	228	198	211	504	2163	4216	1554	33	723
1968	2749	134	293	309	887	163	487	455	168	342	163	84
1969	163	134	163	2982	4357	1460	1260	5367	3696	211	33	538
1970	2927	420	867	2983	1314	455	168	1675	186	163	179	118
1971	146	151	195	163	144	163	235	1171	640	81	163	118
1972	179	151	163	163	156	146	353	1252	269	211	195	17
1973	146	134	146	179	396	309	101	228	1025	163	114	84
1974	1122	1042	1136	1724	756	829	185	829	622	33	49	101
1975	1513	151	325	488	2251	846	118	358	1865	81	114	34
1976	2342	370	309	146	365	146	67	380	168	292	179	134
1977	228	151	179	130	126	130	101	130	188	276	195	134
1978	130	101	146	260	432	358	303	179	3649	518	95	1328
1979	2614	336	293	1708	2125	1008	101	634	622	163	98	84
1980	781	218	380	4489	4572	1334	84	407	1849	179	33	639
1981	2732	151	163	455	612	179	908	904	168	211	195	101
1982	130	151	146	1334	3745	1773	4285	2960	1479	33	33	739
1983	3383	1681	2521	3383	4321	5351	118	2002	7883	3449	33	1781
1984	3025	1986	3484	1675	1480	238	807	2328	50	163	179	118
1985	146	168	163	146	162	179	403	1365	134	195	244	34
1986	179	151	146	130	3683	3432	84	1060	956	163	114	101
1987	1870	151	146	146	252	163	67	585	188	260	211	134
1988	130	151	130	130	104	163	235	423	134	342	276	101
1989	163	84	146	130	126	163	353	423	146	244	195	118
1990	130	134	130	130	126	146	269	663	168	244	195	134
1991	130	134	130	114	126	228	67	211	1882	244	195	134
1992	130	134	130	130	191	163	67	846	168	244	195	134
1993	130	134	146	423	126	163	1607	1447	34	260	163	134
1994	151	163	163	522	146	67	276	168	260	195	195	134

San Joaquin Basin 60-20-20 Index

Merced River, Crocker-Huffman Diversion to San Joaquin River confluence - CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	841	1,177	1 132	1,418	508
NOV	306	388	242	257	153
DEC	732	908	300	272	157
JAN	1,518	886	346	322	139
FEB	2,208	1 613	435	567	194
MAR	1,382	388	203	176	180
APR	653	372	381	461	194
MAY	1,657	605	516	735	388
JUN	2,225	477	324	238	245
JUL	367	161	156	228	277
AUG	73	165	179	191	218
SEP	384	113	115	98	113

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San Joaquin River at Stevinson upstream of Merced River confluence

STUDY 1995CD6F-SWRCB-506 DWRSIM recnt618-f 17 Jun 97

CP # 694 SJR DIVERSION NON-PROJECT DOWNSTREAM FLOW (CFS)

Project 1995CD6F-SWRCB-506/694/FLOW-DOWNSTREAM/MONOUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	618	454	732	651	2 485	1 265	790	980	3 815	553	472	566
1923	634	605	1 025	1 008	826	716	908	553	538	472	456	546
1924	537	370	325	276	365	537	370	358	454	423	325	447
1925	455	353	276	260	792	667	636	455	555	520	390	622
1926	553	387	342	293	504	569	706	374	504	486	390	568
1927	520	555	407	342	1 657	846	756	439	437	456	374	605
1928	520	504	390	407	574	864	555	358	504	472	374	568
1929	520	353	309	260	396	553	319	325	454	423	325	521
1930	472	319	244	293	432	618	338	325	487	456	342	571
1931	488	336	244	244	306	455	336	390	420	390	293	471
1932	439	303	878	683	2 191	716	403	390	370	374	325	538
1933	488	319	244	309	396	599	319	325	303	358	293	487
1934	455	319	260	244	468	488	303	342	454	423	325	521
1935	488	370	309	646	648	992	1 277	569	437	423	358	571
1936	537	370	325	407	3 494	992	773	472	471	455	390	605
1937	537	387	358	1 080	4 988	1 825	1 143	2 846	471	472	407	622
1938	602	638	1 480	1 988	7 274	12 572	5 109	12 116	2 723	1 008	455	672
1939	781	823	423	390	646	797	536	472	586	569	455	649
1940	634	454	407	1 480	1 643	1 236	706	537	521	456	456	646
1941	634	471	797	992	3 979	1 825	1 344	3 074	2 536	602	504	723
1942	794	823	1 080	1 025	1 388	1 573	857	716	605	585	504	723
1943	667	874	472	1 659	1 134	3 773	790	1 610	571	520	488	736
1944	683	555	472	455	782	1 025	905	553	571	520	537	756
1945	683	605	488	439	1 891	1 431	823	618	605	537	520	756
1946	651	521	683	472	630	646	706	520	655	602	504	736
1947	585	504	472	342	540	616	437	423	586	537	439	639
1948	553	387	309	260	365	618	773	455	454	520	423	639
1949	568	387	309	293	450	678	471	407	538	520	407	622
1950	553	370	309	390	756	602	487	390	403	504	390	605
1951	537	1 143	2 944	3 041	792	764	454	439	403	390	390	605
1952	589	403	683	1 805	1 113	2 602	2 188	7 904	504	455	423	655
1953	716	756	588	732	522	618	471	455	487	439	423	656
1954	585	420	374	358	612	813	555	455	571	537	439	639
1955	568	403	358	423	498	602	454	488	538	520	423	622
1956	589	403	4 424	6 115	3 490	1 203	905	2 618	706	504	423	655
1957	553	420	358	293	466	667	420	504	454	504	407	622
1958	589	403	358	423	918	1 789	2 370	3 269	1 546	472	439	655
1959	698	706	342	342	736	569	403	407	521	520	407	622
1960	553	387	309	293	556	618	437	423	521	504	407	605
1961	504	370	293	244	380	488	338	407	487	455	358	571
1962	504	336	260	244	2 197	911	437	390	387	423	358	571
1963	504	336	260	439	900	663	1 042	585	538	390	342	555
1964	504	454	293	293	400	651	387	423	487	455	358	571
1965	537	454	976	1 484	576	651	975	520	454	407	374	605
1966	589	605	553	504	594	634	420	407	538	520	407	622
1967	585	420	781	716	1 134	1 236	4 285	9 050	2 218	2 178	456	672
1968	698	668	380	342	522	634	420	407	521	520	407	622
1969	602	454	504	4 926	14 021	8 278	10 621	12 087	4 083	1 610	472	698
1970	651	790	423	3 513	810	1 073	521	472	471	455	439	672
1971	602	471	585	472	568	634	454	520	487	553	439	655
1972	553	387	380	325	468	537	387	374	538	504	407	622
1973	585	420	358	537	1 927	1 447	723	504	655	472	423	639
1974	589	437	472	1 382	648	1 171	1 082	504	487	439	439	655
1975	602	437	390	356	1 080	1 269	908	602	521	488	407	672
1976	589	437	358	309	400	589	420	423	487	455	358	555
1977	1 041	370	276	276	306	439	319	342	336	276	276	370
1978	342	286	293	876	3 151	7 058	8 773	6 310	471	976	423	639
1979	589	739	358	911	1 386	1 301	698	472	403	423	390	655
1980	537	403	325	2 588	6 224	6 440	688	3 398	454	688	407	605
1981	589	706	358	423	504	716	454	390	504	520	407	622
1982	634	504	472	1 252	1 801	2 114	10 688	5 708	1 277	504	504	723
1983	829	1 781	8 278	9 756	17 070	16 364	9 986	12 246	14 318	976	504	571
1984	2 277	3 933	6 326	6 326	800	797	536	504	521	504	504	723
1985	585	487	407	325	576	699	471	423	571	537	423	639
1986	634	504	439	407	8 121	8 564	3 311	3 757	1 986	553	488	706
1987	553	555	309	309	466	651	403	423	536	520	423	622
1988	520	353	276	260	313	472	353	390	454	423	309	521
1989	472	319	260	226	306	553	319	293	454	423	325	536
1990	472	319	226	226	324	488	303	293	437	423	309	521
1991	455	303	211	179	196	797	319	276	303	374	276	454
1992	520	387	244	244	748	585	420	455	588	618	439	605
1993	618	471	423	2,342	936	439	454	569	2 773	588	504	739
1994	602	538	309	276	504	520	387	455	622	602	485	605

San Joaquin Basin 60-20-20 Index:

San Joaquin River at Stevison - CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	601	684	572	589	546
NOV	550	796	464	533	377
DEC	1,187	1 085	397	365	279
JAN	2,085	1,480	588	346	260
FEB	4,104	1,414	724	524	403
MAR	4 082	968	747	633	552
APR	3,347	737	524	452	355
MAY	4,483	505	446	410	370
JUN	2,123	502	488	512	488
JUL	729	458	503	503	449
AUG	455	419	416	401	347
SEP	698	640	633	611	534

A2-91

STUDY: 1995C06F-SWRCB DWRSIM: recirc818-f, 17 Jun 97
CP # 4, SHASTA LAKE, EOP AGE (MAF)

Project: /1995C06F-SWRCB-506/4/STORAGE-EOP//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP*
1922	2.81	2.69	2.84	2.9	3.3	3.74	4.35	4.55	4.4	4	3.58	3.43
1923	3.38	3.25	3.29	3.4	3.33	3.36	3.63	3.52	3.2	2.6	2.4	2.38
1924	2.41	2.41	2.41	2.4	2.55	2.56	2.35	2.11	1.6	1.5	1.26	1.10
1925	1.15	1.29	1.41	1.5	2.83	3.19	3.93	4.23	4.1	3.6	3.3	3.22
1926	3.16	3.11	3.04	3	3.57	3.8	3.91	3.77	3.3	2.7	2.39	2.27
1927	2.25	2.73	3.24	3.7	3.46	4.14	4.55	4.55	4.3	3.9	3.52	3.40
1928	3.35	3.25	3.32	3.5	3.91	3.97	4.53	4.4	4	3.4	2.9	2.76
1929	2.72	2.72	2.73	2.7	2.67	2.9	2.96	2.82	2.6	2.3	2.02	1.89
1930	1.87	1.85	2.4	2.6	3	3.51	3.77	3.77	3.4	3	2.63	2.58
1931	2.63	2.49	2.43	2.5	2.5	2.63	2.47	2.29	2.1	1.8	1.63	1.46
1932	1.39	1.36	1.59	1.7	1.89	2.32	2.35	2.52	2.4	2.1	1.89	1.78
1933	1.76	1.69	1.7	1.7	1.78	2.37	2.52	2.58	2.5	2.2	1.94	1.83
1934	1.82	1.78	1.92	2.2	2.57	2.82	2.82	2.69	2.5	2	1.6	1.40
1935	1.33	1.48	1.65	1.9	2.2	2.62	3.63	3.81	3.6	3.2	2.89	2.76
1936	2.68	2.61	2.54	3.1	3.59	3.89	4.14	4.06	3.9	3.4	2.92	2.80
1937	2.7	2.61	2.51	2.4	2.43	3.02	3.7	3.92	3.8	3.4	2.93	2.78
1938	2.71	3.2	3.31	3.7	3.59	3.42	4.06	4.55	4.6	4.3	3.95	3.70
1939	3.4	3.25	3.33	3.4	3.4	3.77	3.59	3.42	2.9	2.4	1.94	1.88
1940	1.81	1.73	1.87	2.6	3.25	3.44	4.34	4.46	4.2	3.6	3.24	3.20
1941	3.16	3.15	3.29	3.3	3.42	3.94	4.46	4.55	4.6	4.3	4	3.70
1942	3.4	3.25	3.32	3.4	3.52	3.86	4.55	4.55	4.6	4.3	3.96	3.70
1943	3.4	3.25	3.36	3.5	3.85	4.12	4.55	4.55	4.3	4	3.58	3.44
1944	3.4	3.25	3.2	3.2	3.39	3.83	3.75	3.73	3.3	2.8	2.37	2.25
1945	2.28	2.48	2.79	3	3.77	4.13	4.45	4.55	4.4	3.8	3.39	3.29
1946	3.26	3.25	3.27	3.6	3.77	4.09	4.42	4.47	4.2	3.8	3.4	3.32
1947	3.25	3.25	3.26	3.2	3.35	3.79	3.97	3.71	3.4	2.9	2.48	2.37
1948	2.46	2.5	2.52	3.1	3.03	3.3	4.27	4.55	4.5	4.2	3.75	3.70
1949	3.4	3.25	3.22	3.1	3.22	4.07	4.44	4.46	4.1	3.5	3.12	3.02
1950	2.92	2.84	2.75	2.9	3.24	3.61	3.97	3.94	3.6	3.1	2.73	2.68
1951	2.98	3.25	3.32	3.6	3.79	4.28	4.47	4.55	4.1	3.6	3.15	3.10
1952	3.06	3.17	3.31	3.6	3.74	4.02	4.29	4.55	4.6	4.3	3.95	3.70
1953	3.4	3.25	3.35	3.4	3.63	4.1	4.51	4.55	4.6	4.3	3.97	3.70
1954	3.4	3.25	3.35	3.6	3.86	4.11	4.55	4.46	4.3	3.9	3.56	3.54
1955	[illegible]	3.25	3.36	3.4	3.48	3.45	3.77	3.99	3.6	3	2.61	2.59
1956	2.64	2.6	3.25	3.3	3.29	4.01	4.56	4.55	4.6	4.3	4	3.70
1957	[illegible]	3.25	3.23	3.3	3.68	4.13	4.3	4.55	4.4	3.9	3.53	3.59
1958	[illegible]	3.25	3.34	3.5	4.55	3.42	4.17	4.55	4.6	4.3	4	3.70
1959	3.4	3.25	3.26	3.6	3.78	4.08	4.2	4.19	3.7	3.1	2.75	2.83
1960	2.78	2.72	2.86	2.8	3.45	4.13	4.33	4.55	4.1	3.6	3.13	3.08
1961	3.02	3.06	3.35	3.5	3.91	4.28	4.47	4.55	4	3.4	2.98	2.95
1962	2.86	2.93	3.19	3.2	3.68	4.09	4.41	4.44	4.1	3.6	3.18	3.12
1963	3.4	3.25	3.35	3.4	3.94	4.23	4.14	4.55	4.4	4.1	3.8	3.70
1964	3.4	3.25	3.28	3.6	3.64	3.73	3.6	3.48	3.1	2.6	2.27	2.23
1965	2.21	2.38	3.25	3.4	3.81	4.12	4.5	4.53	4.3	3.9	3.6	3.56
1966	3.4	3.25	3.34	3.7	4.04	4.23	4.55	4.47	4.1	3.6	3.2	3.13
1967	3.05	3.25	3.34	3.6	3.92	4.03	4.48	4.55	4.6	4.3	3.99	3.70
1968	3.4	3.25	3.3	3.4	3.65	4.19	4.25	4.31	3.9	3.4	3.2	3.15
1969	3.14	3.16	3.35	3.4	3.48	4.03	4.43	4.55	4.6	4.3	4	3.70
1970	3.4	3.25	3.32	3.3	3.43	4.14	4.21	4.21	3.9	3.4	3.14	3.09
1971	3.1	3.25	3.32	3.5	3.8	3.87	4.44	4.55	4.6	4.3	4	3.70
1972	3.4	3.25	3.36	3.6	3.93	4.25	4.55	4.55	4.1	3.6	3.28	3.29
1973	3.32	3.25	3.35	3.6	3.64	4.16	4.5	4.55	4.3	3.9	3.63	3.60
1974	3.4	3.25	3.27	3.3	3.59	3.42	4.29	4.55	4.6	4.3	4	3.70
1975	3.4	3.25	3.35	3.4	3.94	3.76	4.39	4.55	4.6	4.3	4	3.70
1976	3.4	3.25	3.27	3.3	3.14	3.25	3.41	3.32	2.8	2.3	2.25	2.28
1977	2.33	2.35	2.35	2.4	2.21	2.2	1.88	1.78	1.5	1.2	1.05	1.02
1978	0.91	0.9	1.38	3.3	3.57	4	4.55	4.55	4.6	4.3	4	3.70
1979	3.4	3.25	3.21	3.3	3.52	3.96	4.17	4.42	4.1	3.6	3.37	3.33
1980	3.33	3.25	3.32	3.5	3.29	3.98	4.33	4.46	4.2	3.9	3.66	3.67
1981	3.4	3.25	3.32	3.5	3.88	4.26	4.48	4.42	3.9	3.3	2.93	2.86
1982	2.84	3.25	3.28	3.6	3.83	3.95	4.09	4.55	4.6	4.3	4	3.70
1983	3.4	3.25	3.33	3.4	3.25	3.93	4.07	4.55	4.6	4.3	4	3.70
1984	3.4	3.25	3.29	3.7	4.01	4.25	4.48	4.55	4.4	3.9	3.74	3.70
1985	3.4	3.25	3.36	3.4	3.49	3.65	3.86	3.64	3.1	2.7	2.38	2.41
1986	2.46	2.52	2.7	3.3	3.25	3.63	3.98	4.05	3.7	3.3	2.97	3.05
1987	3.06	3.03	3.01	3	3.27	3.93	3.95	3.78	3	2.5	2.02	1.91
1988	1.84	1.87	2.43	2.9	2.92	2.98	3.1	3.06	2.7	2.1	1.83	1.78
1989	1.77	1.99	2.11	2.2	2.35	3.76	4.31	4.2	3.8	3.3	3.06	3.07
1990	3.12	3.07	2.98	3.1	3.1	3.26	3.14	3.26	2.9	2.5	2.11	2.05
1991	1.96	1.92	1.9	1.9	1.84	2.3	2.6	2.5	2.3	2.1	1.83	1.72
1992	1.17	1.88	1.99	1.8	2.45	2.9	3.18	3.01	2.7	2.3	2.1	1.99
1993	1.92	1.87	2.12	2.8	3.58	3.59	4.38	4.55	4.6	4.2	4.02	4.01
1994	[illegible]	3.25	3.29	3.3	3.44	3.49	3.49	3.46	2.8	2.4	2.02	1.98

* EOM September storage used as October 1st of following year
Shading means "disregard"

Year	Oct 1st Storage	AFRP Vol III Recommended Keswick Release
1925	1.10	3250
1930	1.89	3250
1932	1.46	3250
1933	1.78	3250
1934	1.83	3250
1935	1.40	3250
1940	1.88	3250
1978	1.02	3250
1988	1.91	3250
1989	1.76	3250
1991	2.05	3250
1992	1.72	3250
1993	1.99	3250
1927	2.27	3500
1945	2.25	3500
1965	2.23	3500
1977	2.28	3500
1924	2.38	3750
1948	2.37	3750
1986	2.41	4000
1931	2.58	4250
1956	2.59	4250
1951	2.68	4500
1929	2.76	4750
1936	2.76	4750
1938	2.78	4750
1937	2.80	5000
1960	2.83	5000
1982	2.86	5000
1962	2.95	5250
1923	3.43	5500
1926	3.22	5500
1928	3.40	5500
1939	3.70	5500
1941	3.20	5500
1942	3.70	5500
1943	3.70	5500
1944	3.44	5500
1946	3.29	5500
1947	3.32	5500
1949	3.70	5500
1950	3.02	5500
1952	3.10	5500
1953	3.70	5500
1954	3.70	5500
1955	3.54	5500
1957	3.70	5500
1958	3.59	5500
1959	3.70	5500
1961	3.08	5500
1963	3.12	5500
1964	3.70	5500
1966	3.56	5500
1967	3.13	5500
1968	3.70	5500
1969	3.15	5500
1970	3.70	5500
1971	3.09	5500
1972	3.70	5500
1973	3.29	5500
1974	3.60	5500
1975	3.70	5500
1976	3.70	5500
1979	3.70	5500
1980	3.33	5500
1981	3.67	5500
1983	3.70	5500
1984	3.70	5500
1985	3.70	5500
1987	3.05	5500
1990	3.07	5500
1994	4.01	5500

STUDY: 1995C06F-SWRCB-506 DWRSIM: recirc818-f, 17 Jun 97
CP # 62, KESWICK TOTAL RELE/ WNSTREAM FLOW (CFS)

Project: /1995C06F-SWRCB-506/62/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	4,716	4,000	4,001	4,001	3,997	4,001	4,000	8,733	9,747
1923	5,497	7,226	5,497	5,497	7,130	6,034	5,495	8,831	10,772
1924	3,757	3,748	3,757	3,757	3,616	4,033	7,210	7,384	8,285
1925	3,253	3,243	3,253	3,253	3,241	3,253	3,243	3,253	8,436
1926	5,497	5,495	5,497	5,497	5,492	6,993	5,495	7,888	12,487
1927	4,115	3,496	3,497	5,627	30,520	4,424	12,923	10,831	11,596
1928	5,497	10,537	5,497	5,497	5,302	16,995	5,495	10,246	12,016
1929	4,765	4,756	4,749	4,749	4,754	6,538	6,168	8,164	7,714
1930	3,724	3,764	3,253	3,253	3,241	3,253	3,243	5,546	11,041
1931	4,391	4,252	4,245	4,245	4,249	4,359	7,327	6,538	6,571
1932	4,570	3,580	3,253	3,253	3,129	3,253	6,386	5,139	6,958
1933	3,545	4,571	3,253	3,253	3,241	3,253	5,596	6,424	7,058
1934	3,578	3,933	3,253	3,253	3,241	3,903	6,067	6,798	7,193
1935	4,359	3,243	3,253	3,253	3,241	3,253	3,243	7,205	8,504
1936	4,749	4,756	4,749	4,749	19,257	4,749	4,756	7,010	9,848
1937	4,749	4,756	4,749	4,749	4,754	4,749	4,756	6,180	8,789
1938	4,749	4,756	17,467	4,749	30,952	35,536	14,537	10,100	11,041
1939	19,539	8,201	5,497	5,497	5,492	5,497	10,487	8,311	13,965
1940	4,733	4,974	3,594	3,253	24,426	22,362	3,243	6,619	11,277
1941	5,497	5,495	17,321	25,420	23,696	14,881	16,822	14,897	10,940
1942	11,157	8,470	19,972	20,492	29,422	5,497	5,865	13,613	10,890
1943	10,213	8,840	6,603	12,994	8,679	12,978	6,924	9,726	11,713
1944	5,708	7,899	5,497	5,497	5,302	5,497	5,647	7,253	12,554
1945	3,529	3,496	3,497	3,497	3,493	3,497	3,496	8,067	9,546
1946	5,497	8,823	22,899	7,872	5,690	5,497	5,495	8,294	10,218
1947	5,497	5,647	5,497	5,497	5,492	5,497	5,495	9,823	13,075
1948	3,757	3,748	3,854	3,757	5,528	5,302	3,748	10,132	10,083
1949	9,254	7,277	5,497	5,497	5,600	6,701	5,495	8,311	11,882
1950	5,497	5,495	5,497	5,497	5,492	5,497	5,495	8,246	10,705
1951	4,538	6,453	15,857	8,376	16,385	4,505	6,756	8,847	13,663
1952	5,497	5,495	16,654	8,864	19,263	12,442	19,444	11,189	9,798
1953	9,937	7,563	10,653	29,404	5,492	5,497	5,495	12,149	12,150
1954	10,083	10,453	5,497	13,954	18,942	10,897	12,335	12,246	10,537
1955	7,416	9,680	7,790	5,497	5,492	7,920	5,495	6,017	12,789
1956	4,977	4,672	22,395	31,291	22,566	4,375	5,109	13,808	9,361
1957	10,815	7,932	5,497	5,497	9,471	11,010	9,361	9,677	10,503
1958	10,978	10,201	10,441	13,011	33,887	44,871	15,562	10,230	11,932
1959	11,352	8,369	5,497	10,848	14,585	6,717	8,168	7,953	14,604
1960	5,936	5,848	5,497	4,993	4,833	4,993	5,832	5,595	15,125
1961	5,578	5,495	6,733	5,497	8,463	7,611	6,420	8,246	15,327
1962	5,887	5,243	5,253	5,253	15,953	6,115	5,882	7,611	11,411
1963	7,302	8,554	9,612	5,497	8,787	7,774	32,065	7,611	9,546
1964	10,311	12,150	5,497	5,497	6,606	5,725	9,546	8,018	12,302
1965	4,651	3,496	13,613	21,793	3,493	3,497	12,890	9,335	10,890
1966	7,530	13,024	5,497	6,847	6,824	13,434	8,336	9,595	13,142
1967	5,904	7,294	15,109	9,872	8,193	16,589	12,201	16,328	10,806
1968	10,474	7,932	5,497	5,497	15,925	5,497	8,100	6,993	13,680
1969	5,497	5,495	6,570	25,290	22,237	7,351	13,999	13,482	10,016
1970	10,639	8,067	16,101	54,092	16,710	5,497	9,176	7,969	12,033
1971	5,497	10,117	16,930	15,239	6,104	18,492	6,521	12,067	11,646
1972	10,701	8,571	5,497	5,497	5,302	12,084	8,520	8,213	14,352
1973	5,497	10,151	8,181	15,434	19,699	8,620	5,495	8,815	10,369
1974	9,595	33,191	23,745	40,203	8,895	38,772	10,100	9,872	10,067
1975	11,189	9,041	5,497	5,497	7,310	29,160	5,495	12,263	10,806
1976	11,515	8,773	5,497	5,497	9,284	6,798	5,495	7,888	14,335
1977	3,936	4,353	4,391	3,497	7,202	4,375	8,924	5,855	9,344
1978	6,068	4,806	3,253	3,432	15,881	15,369	7,999	11,059	8,537
1979	9,774	7,579	5,497	5,497	5,492	5,497	5,495	5,855	10,840
1980	5,497	7,915	5,497	17,939	31,015	5,497	5,495	6,701	10,184
1981	9,091	8,117	5,497	5,497	5,492	8,262	5,495	7,937	14,486
1982	4,993	12,033	23,094	7,969	24,218	13,873	26,822	5,611	9,378
1983	10,962	9,932	14,084	20,866	37,470	41,325	21,595	13,287	14,184
1984	13,271	17,209	27,501	9,319	5,946	11,726	7,378	8,717	11,075
1985	10,636	14,268	6,847	5,497	5,492	5,497	5,495	9,709	13,428
1986	4,359	4,000	4,001	4,001	46,978	21,533	4,000	8,343	11,915
1987	5,497	5,495	5,497	5,497	5,492	5,497	7,075	9,156	17,007
1988	6,497	4,117	3,253	3,253	6,537	5,692	4,504	7,644	12,369
1989	3,724	3,243	3,253	3,253	3,241	3,253	3,243	8,636	11,562
1990	5,497	5,495	5,497	5,497	5,492	5,497	6,571	6,652	12,907
1991	5,416	4,386	3,562	3,253	5,402	3,253	3,243	6,213	7,378
1992	3,936	3,243	3,253	3,253	3,129	3,253	3,714	7,888	9,831
1993	5,156	4,504	3,253	3,253	3,241	26,640	3,243	8,733	11,260
1994	8,863	15,481	5,497	5,497	5,492	6,505	5,714	6,408	14,705

Location: Upper Sacramento Rver Below Keswick
CP # 62, Upper Sacramento River below Keswick

Shasta Reservoir Oct 1st Carryover Storage (MAF)	October thru April Average Flows (cfs)	Years included in Average flow Calculations
< 2.2	4,755	1925, 30, 32 , 33, 34, 35, 40, 78, 88, 89, 91, 92, 93
>=2.2	6,758	1927, 45, 65, 77
>= 2.3	4,255	1924, 48
>= 2.4	12,696	1986
>= 2.5	9,175	1931, 56
>= 2.6	8,981	1951
>= 2.7	8,952	1929, 36, 38
>= 2.8	8,771	1937, 60, 82
>= 2.9	7,084	1962
>= 3	9,979	1923, 26, 28, 39, 41, 42, 43, 44, 46, 47, 49, 50, 52 53, 54, 55, 57, 58, 59, 61, 63, 64, 66, 67, 68, 69, 70 71, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 90, 94

C-032432
C—032432

Comparison of DWRSIM Study 507 (Flow Alternative 4) flows at various control points with recommended flows from AFRP Working Paper Vol III

Location. Upper Sacramento Rver Below Keswick

CP # 62. Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS

SALMONIDS

Objective. Enhance rearing, maintain spawning habitat, & temperature control. Page 3-Xa-14, Vol III

Shasta Reservoir Oct 1st Carryover Storage (MAF)	AFRP Working Pap Recommended Flow	October thru April Average Flows (cfs)	Years included in Average flow Calculations	Ratio
< 2.2	3,250	4,737	1925, 30, 32, 33, 34, 35, 40, 78, 88, 89, 91, 92, 93	1.46
>= 2.2	3,500	6,753	1927, 45, 65, 77	1.93
>= 2.3	3,750	4,255	1924, 48	1.13
>= 2.4	4,000	12,752	1956	3.19
>= 2.5	4,250	4,724	1931	1.11
>= 2.6	4,500	11,314	1951, 56	2.51
>= 2.7	4,750	8,920	1929, 36, 38	1.88
>= 2.8	5,000	8,775	1937, 60, 82	1.76
>= 2.9	5,250	7,086	1962	1.35
>= 3	5,500	9,978	1923, 26, 28, 39, 41, 42, 43, 44, 46, 47, 49, 50, 52, 54, 55, 57, 58, 59, 61, 63, 64, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 90, 94	1.81

Location: Feather River at Nicolaus CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective Enhance rearing & maintain spawning habitat, Page: 3-Xc-11, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.17	0.63	0.71	0.85												1.17	0.63	0.71	0.85	
Nov	1.81	1.31	0.70	0.84												1.81	1.31	0.70	0.84	
Dec	5.09	1.93	1.18	1.15												5.09	1.93	1.18	1.15	
Jan	8.61	5.25	2.87	2.42												8.61	5.25	2.87	2.42	
Feb	10.29	5.96	4.23	2.95							2.24	1.30				2.24	1.30	4.23	2.95	
Mar	9.44	8.01	3.53	3.49							2.05	1.74				2.05	1.74	3.53	3.49	
Apr	5.36	3.51	1.49	1.83		0.92	0.79	0.35	0.43	0.60	1.40	0.92				0.92	0.79	0.35	0.43	0.60
May	4.42	2.54	1.66	0.79		0.78	0.63	0.49	0.25	0.20	1.15	0.66				0.78	0.63	0.49	0.25	0.20
June	9.11	6.12	5.33	3.91		0.93	1.07	1.09	1.18	0.77						0.93	1.07	1.09	1.18	0.77
July	6.55	6.79	7.11	6.75												6.55	6.79	7.11	6.75	
Aug	2.08	3.61	4.33	3.79												2.08	3.61	4.33	3.79	
Sept	0.89	0.45	0.39	0.92												0.89	0.45	0.39	0.92	
															April-May-June Average	0.87	0.83	0.65	0.82	0.52

Location: Yuba River at Marysville DEPLETION AREA 67, DOWNSTREAM FLOW

	SALMONIDS Objective Optimize migration, spawning and incubation, Page 3-Xc-14-25					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective.					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.05	0.81	0.65	0.64	0.74						No Working Paper flow recommendations					1.05	0.81	0.65	0.64	0.74
Nov	2.67	2.10	1.02	1.17	0.76											2.67	2.10	1.02	1.17	0.76
Dec	6.21	2.85	1.86	1.27	0.84											6.21	2.85	1.86	1.27	0.84
Jan	8.26	5.93	3.81	2.42	2.03											8.26	5.93	3.81	2.42	2.03
Feb	9.11	7.12	5.00	3.61	2.53											9.11	7.12	5.00	3.61	2.53
Mar	8.61	7.52	4.08	3.74	2.09											8.61	7.52	4.08	3.74	2.09
Apr	5.19	3.83	2.40	1.60	0.66	0.63	0.54	0.33	0.29	0.24						0.63	0.54	0.33	0.29	0.24
Mary	2.59	1.69	0.88	0.36	0.15	0.52	0.42	0.25	0.15	0.12						0.52	0.42	0.25	0.15	0.12
June	3.03	1.66	1.06	0.35	0.13	0.71	0.64	0.50	0.26	0.14						0.71	0.64	0.50	0.26	0.13
July	5.21	2.07	1.02	0.31	0.16											5.21	2.07	1.02	0.31	0.16
Aug	2.68	2.02	1.20	0.43	0.27											2.68	2.02	1.20	0.43	0.27
Sept	1.60	1.24	0.91	0.44	0.22											1.60	1.24	0.91	0.44	0.22
															April-May-June Average	0.62	0.53	0.36	0.23	0.16

Location: Sacramento River at Verona (RM 80) (Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)

	SALMONIDS Objective:					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective provide attraction passage, spawning, an larval transport, Page: 3-Xh-8, Vol III					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb											1.58	1.34				1.58	1.34			
Mar	No Working Paper flow recommendations					No Working Paper flow recommendations					1.54	1.30				1.54	1.30			
Apr											1.07	0.76				1.07	0.76			
May											0.88	0.57				0.88	0.57			
June																				
July																				
Aug																				
Sept																				
															April-May Average	0.97	0.66			

Location: Lower American River at H Street Bridge CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective optimize conditions in lower Am. River for all life stages, Page: 3-Xc-42, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page. 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.77	0.86	0.95	1.09	2.14						No Working Paper flow recommendations					0.77	0.86	0.95	1.09	2.14
Nov	1.36	1.70	1.01	1.23	1.44											1.36	1.70	1.01	1.23	1.44
Dec	2.47	1.61	1.44	1.08	1.15											2.47	1.61	1.44	1.08	1.15
Jan	3.41	2.52	1.27	1.04	1.08											3.41	2.52	1.27	1.04	1.08
Feb	3.67	3.18	2.23	1.31	1.19											3.67	3.18	2.23	1.31	1.19
Mar	1.35	2.04	1.02	1.30	1.07											1.35	2.04	1.02	1.30	1.07
Apr	1.29	1.41	1.11	1.05	0.89	0.57	0.50	0.39	0.32	0.43						0.57	0.50	0.39	0.32	0.43
May	1.24	1.22	0.99	0.92	0.78	0.46	0.38	0.34	0.30	0.38						0.46	0.38	0.34	0.30	0.38
June	1.31	1.44	1.26	1.67	6.92	0.73	0.90	0.90	1.38	2.03						0.73	0.90	0.90	1.38	2.03
July	1.17	1.13	1.28	2.23	3.20											1.17	1.13	1.28	2.23	3.20
Aug	1.28	1.13	0.98	2.01	0.80											1.28	1.13	0.98	2.01	0.80
Sept	1.44	1.44	1.07	2.03	1.59											1.44	1.44	1.07	2.03	1.59
															April-May-June Average	0.58	0.59	0.54	0.67	0.95

Location: San Joaquin River at Vernalis CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-47, 3-Xe-20, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-19, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page 3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.14	3.84	3.58	5.63	3.46											2.14	3.84	3.58	5.63	3.46
Nov	1.05	1.90	1.85	2.05	2.21											1.05	1.90	1.85	2.05	2.21
Dec	1.35	1.89	2.07	1.90	1.86											1.35	1.89	2.07	1.90	1.86
Jan	1.98	2.08	1.90	1.89	1.64											1.98	2.08	1.90	1.89	1.64
Feb	2.61	1.88	1.48	1.93	1.52						0.93	0.52				0.93	0.52	1.48	1.93	1.52
Mar	2.55	1.54	1.07	1.20	0.91						0.97	0.43				0.97	0.43	1.07	1.20	0.91
Apr	0.55	0.47	0.49	0.55	0.47	2.21	1.28	0.86	0.94	0.97	0.82	0.40				0.55	0.40	0.49	0.55	0.47
May	0.52	0.41	0.35	0.38	0.37	1.08	0.56	0.49	0.53	0.63	0.79	0.35				0.52	0.35	0.35	0.38	0.37
June	0.45	0.30	0.34	0.35	0.46	0.91	0.44	0.48	0.54	0.86						0.45	0.30	0.34	0.35	0.46
July	0.84	1.22	1.53	2.83	2.74											0.84	1.22	1.53	2.83	2.74
Aug	1.65	2.39	3.03	3.44	3.62											1.65	2.39	3.03	3.44	3.62
Sept	2.39	2.59	2.56	3.01	3.06											2.39	2.59	2.56	3.01	3.06
															April-May-June Average	0.51	0.35	0.40	0.43	0.44

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective Double natural production, Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-21, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.41	3.22	3.46	4.55	2.74						No Working Paper flow recommendations					2.41	3.22	3.46	4.55	2.74
Nov	1.28	1.73	1.34	1.73	1.38											1.28	1.73	1.34	1.73	1.38
Dec	1.32	1.98	1.17	1.60	1.14											1.32	1.98	1.17	1.60	1.14
Jan	1.94	2.42	1.24	1.72	1.06											1.94	2.42	1.24	1.72	1.06
Feb	3.18	2.36	1.62	2.70	1.14											3.18	2.36	1.62	2.70	1.14
Mar	3.62	1.77	1.11	1.83	1.29											3.62	1.77	1.11	1.83	1.29
Apr	1.19	0.89	0.99	1.77	1.07	0.43	0.36	0.39	0.53	0.60						0.43	0.36	0.39	0.53	0.60
May	1.00	1.01	1.80	1.51	0.98	0.22	0.27	0.32	0.40	0.49						0.22	0.27	0.32	0.40	0.49
June	0.91	1.00	2.98	3.96	4.25	0.27	0.23	0.27	0.44	0.85						0.27	0.23	0.27	0.44	0.85
July	2.40	2.33	3.18	4.28	4.30											2.40	2.33	3.18	4.28	4.30
Aug	2.60	2.59	3.43	4.57	4.51											2.60	2.59	3.43	4.57	4.51
Sept	2.04	1.96	2.35	2.93	2.80											2.04	1.96	2.35	2.93	2.80
															April-May-June Average:	0.31	0.29	0.33	0.46	0.65

Location: Tuolumne River from LaGrange Dam to the SJR confluence CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.94	1.84	1.74	3.25	2.26	No Working Paper flow recommendations					No Working Paper flow recommendations					0.94	1.84	1.74	3.25	2.26
Nov	0.50	0.93	1.35	1.41	2.11											0.50	0.93	1.35	1.41	2.11
Dec	0.60	1.01	1.63	1.20	1.56											0.60	1.01	1.63	1.20	1.56
Jan	1.40	1.20	1.24	1.08	1.23											1.40	1.20	1.24	1.08	1.23
Feb	1.71	1.03	0.92	0.76	0.69											1.71	1.03	0.92	0.76	0.69
Mar	1.85	1.31	0.66	0.77	0.36											1.85	1.31	0.66	0.77	0.36
Apr	1.05	0.59	0.38	0.35	0.29											1.05	0.59	0.38	0.35	0.29
May	0.42	0.30	0.25	0.24	0.26											0.42	0.30	0.25	0.24	0.26
June	0.65	0.44	0.34	0.21	0.46											0.65	0.44	0.34	0.21	0.46
July	0.70	0.50	0.37	0.66	0.68											0.70	0.50	0.37	0.66	0.68
Aug	1.15	2.18	2.43	1.67	2.79											1.15	2.18	2.43	1.67	2.79
Sept	2.50	2.91	1.59	1.83	3.03											2.50	2.91	1.59	1.83	3.03
															April-May-June Average:	0.71	0.45	0.33	0.27	0.33

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.42	3.97	3.83	5.73	2.41	No Working Paper flow recommendations					No Working Paper flow recommendations					2.42	3.97	3.83	5.73	2.41
Nov	0.87	1.44	0.81	0.86	0.61											0.87	1.44	0.81	0.86	0.61
Dec	1.33	1.77	1.00	0.91	0.63											1.33	1.77	1.00	0.91	0.63
Jan	1.43	1.45	1.15	1.07	0.56											1.43	1.45	1.15	1.07	0.56
Feb	1.59	1.67	0.87	1.90	0.94											1.59	1.67	0.87	1.90	0.94
Mar	1.04	0.37	0.34	0.40	0.41											1.04	0.37	0.34	0.40	0.41
Apr	0.31	0.24	0.18	0.18	0.14											0.31	0.24	0.18	0.18	0.14
May	0.57	0.30	0.14	0.29	0.23											0.57	0.30	0.14	0.29	0.23
June	0.82	0.29	0.25	0.38	0.40											0.82	0.29	0.25	0.38	0.40
July	0.34	0.40	0.65	1.12	1.39											0.34	0.40	0.65	1.12	1.39
Aug	0.25	0.59	0.72	0.97	1.09											0.25	0.59	0.72	0.97	1.09
Sept	1.17	0.64	0.46	0.50	0.57											1.17	0.64	0.46	0.50	0.57
															April-May-June Average	0.57	0.28	0.19	0.28	0.26

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective.					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct						No Working Paper flow recommendations					No Working Paper flow recommendations									
Nov																				
Dec																				
Jan																				
Feb																				
Mar																				
Apr	0.65	0.28	0.26	0.26	0.28											0.65	0.28	0.26	0.26	0.28
May	0.64	0.11	0.15	0.18	0.22											0.64	0.11	0.15	0.18	0.22
June	0.31	0.15	0.19	0.30	0.45											0.31	0.15	0.19	0.30	0.45
July																				
Aug																				
Sept																				
															April-May-June Average	0.53	0.18	0.20	0.25	0.32

Feather River at Nicolaus

STUDY 1995C06F-SWRCB-507 DWRSIM recrd18-I 17 Jun 97

CP # 37 DEPLETION AREA 13, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-507/37/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1 822	1 887	1 431	4 086	8 121	12 133	8 638	26 005	18 973	6 928	455	403
1923	2 163	1 529	7 546	11 287	5 330	3 962	7 008	2 553	5 143	6 961	4 977	706
1924	1 236	1 731	3 773	3 269	2 469	2 579	1 916	1 073	1 899	1 073	163	286
1925	1 073	454	618	2 586	11 308	5 269	3 916	2 244	3 983	3 123	553	756
1926	2 521	958	683	5 058	5 906	5 204	7 764	4 960	3 143	5 717	325	1 744
1927	4 212	6 487	3,090	9 693	35 022	18 589	12 705	9 628	5 210	9 319	1 545	252
1928	1 220	1 882	699	9 335	4 172	43 797	6 823	7 400	3 529	8 701	6 534	420
1929	1 306	1 311	797	3 676	2 269	2 960	1 042	342	756	781	98	269
1930	1 187	387	2 976	7 790	1 224	10 327	4 521	3 513	3 596	6 961	4 001	1 109
1931	1 870	2 756	2 765	1 594	2 629	1 935	2 067	2,033	3 075	1 236	195	336
1932	1 008	1 647	2 277	8 278	4 259	1 350	5 176	3 080	7 781	5 757	1 026	521
1933	1 156	1 832	1,659	2 179	4 465	2 765	2 586	0	1 785	716	325	387
1934	764	1 580	1 529	4 928	1 134	2 911	4 101	1 041	2 087	1 382	81	420
1935	2 086	536	1 008	8 799	1 082	7 432	8 352	12 848	8 638	3 627	589	2 033
1936	1 286	2 033	764	8 977	22 082	17 483	7 714	3 578	5 798	7 253	2 960	67
1937	716	1 546	1 138	2 781	11 452	13 531	6 437	5 839	7 932	3 724	1 724	84
1938	1 156	2 269	19,809	11 384	26 596	37 260	27 158	26,542	17 797	3 708	1 067	4 420
1939	5 139	4 974	5 253	5,416	5 528	5 253	2 991	1 301	4 403	7,530	5 887	805
1940	1 073	857	280	4 814	5 286	36 576	31 779	7 253	4 453	7 725	1 334	2 739
1941	2 882	2 605	4 993	19 679	29 602	24 037	7 226	14 572	6,470	4 716	1 238	756
1942	5 042	3 176	20 752	18 605	35 472	10 278	22 452	13 515	11,687	5 627	748	504
1943	3 480	6 117	10 718	24 883	16 565	25 547	11 579	6 603	3 428	6 944	1 968	269
1944	1 106	1 193	1 529	2 927	9 683	8 050	1 529	407	4 536	7 237	5 513	50
1945	911	2 790	2 982	2 472	11 560	10 804	2 891	407	6 084	7 741	3 773	252
1946	911	2 605	8,246	16 196	8 373	8 441	1 665	2 911	5 058	7 989	6 814	471
1947	980	1 748	2 749	1 887	3 439	4 407	3 059	0	3 082	7 186	6 392	34
1948	1 431	1 294	1 545	1 447	2 643	2 423	6 537	6 359	5 395	6 392	3 822	1 632
1949	1 265	874	1 805	1 805	2 266	2 563	1 781	2 293	4 134	7 611	5 576	891
1950	1 546	992	813	4 277	7 941	4 570	3 899	2 131	4 823	8 490	6 505	992
1951	894	15,380	31 826	26 034	20 781	11 449	3 764	2,879	2 286	8,815	6 522	1 193
1952	1 578	2 521	5,856	25,241	21 884	16 459	27 107	33 421	17 088	5 074	2 196	3 731
1953	4 163	2 151	9,496	21 780	6 481	6 798	4 790	6 652	8,941	9,791	797	891
1954	1 171	4 101	2,618	8 506	15 063	16 816	13 041	9 465	3,983	8 555	7 010	823
1955	1 041	1,280	3,448	4 342	2 161	1 936	1 126	846	4,380	7 400	1 386	655
1956	520	739	1 122	42,496	19,715	16 589	8,016	16,019	8 117	9,286	976	891
1957	3,484	1,280	1 984	4 521	14 261	17 386	5 482	2 805	6,873	8,587	6 164	1 244
1958	1 529	723	2,802	3,529	26 199	31 421	25 998	18 983	11 880	3 985	1 903	3 529
1959	4 326	1 899	2,082	10,799	17 486	5 585	1 462	374	4 017	7,644	6 245	941
1960	537	1 882	1,610	2 553	4 607	3 025	5 428	309	3,512	6,086	276	840
1961	1 610	1 580	618	1 724	5 078	1 529	3 697	146	4 487	7 790	5 774	521
1962	2,261	1 277	651	1 122	12 190	6 375	4 289	3,822	5 916	7 989	3 253	3 042
1963	9 921	3,949	5 643	862	29 134	12 984	26 736	11 624	7 025	8 768	2 700	1 176
1964	1 366	4 336	1 252	7 725	2 225	3 962	1 386	509	3 764	7 335	6 636	4 067
1965	1 626	1 849	11,075	43 131	12 406	8 278	11 277	10 831	4 033	7 449	2 488	1 210
1966	667	3 159	4 554	6 717	5 080	6 083	1 849	4 180	3 042	8 294	6 701	289
1967	1 106	1 210	6,928	4 912	23 136	19 965	9 176	14 383	16,957	4 554	2 000	3 042
1968	4 163	1,496	3,139	9 937	14 882	16 166	4,386	0	3,546	7 872	4 847	0
1969	732	1,210	1,838	32,397	31 853	19 142	14 251	20 459	7 082	1 675	163	6 353
1970	2 326	2,838	22,349	63 736	40 513	13 678	3 731	33	1 482	7,042	4 407	437
1971	797	941	14,231	10 409	8 859	16,751	9 613	10 490	8,453	9 465	5 269	1 446
1972	1 155	1 026	4,928	5,682	9 482	9 498	2 319	748	2 773	7 186	6 733	1 714
1973	1 504	3,983	4,733	19 337	25 786	20 248	5,496	3,204	5,748	7 481	4,851	1 897
1974	1 546	13,041	19,337	36 869	15 449	37,064	27,679	10 425	7,798	5,856	1 881	2 586
1975	3 919	2,067	2,781	3 610	24 920	20 459	7 327	9,856	10 187	7,449	1 561	1 933
1976	3,773	3,361	4,147	3,936	4 294	3,627	1 482	504	2,584	5 887	5 204	1 294
1977	1 504	1 486	2,244	1 480	2 305	781	1 395	732	971	65	49	1,126
1978	889	420	1,447	11 775	8,535	11 238	9 781	3 497	4,706	3,236	2 033	1 311
1979	1 203	2,166	1,952	9,986	18,690	11 531	3,479	1,464	6 420	6,473	1 724	1 180
1980	1 386	1,786	2,179	35,796	37 743	21 972	6,857	4 082	3,798	3,578	781	975
1981	797	822	1,108	6,896	8 481	9 839	4,855	716	3 482	6,570	5 596	1 042
1982	678	5 983	33 981	31 860	32,879	34 580	46 770	18,557	8,288	5,627	1 773	4 067
1983	7 361	11 831	19 923	16,507	37 254	55 523	24,771	21 029	23,276	6,538	4 245	6 873
1984	5,107	21 585	46,839	25 046	15 525	14 491	3,916	2 586	5,411	6 392	2 472	622
1985	293	2,235	2,895	2 244	5 744	7 953	2,823	2 879	2 689	7 680	6,668	4 880
1986	1 789	1,687	3,822	5 513	48 816	53,832	7 310	2 082	1,042	6,294	2 472	1 697
1987	1 220	739	1 887	2 618	4 592	6 944	3,446	195	3,143	6,083	3 367	84
1988	2 882	1 513	1 301	4 196	1 947	1 610	2 151	1 399	1,294	455	81	17
1989	2,000	672	683	1 952	3 709	12 458	8,218	2 944	2,386	6 912	1 578	2 750
1990	1 269	2 286	4,212	5 221	4 123	3 155	5,385	146	2 975	4 212	781	706
1991	2 456	1 798	2,781	1 171	2 647	8,197	3,781	325	1 916	2,505	589	790
1992	1 578	1 008	748	2 749	9 457	3 610	2 773	114	1 479	1 057	49	286
1993	2 309	1 361	992	7 042	9 273	8 701	13 747	9 417	6 873	4 261	634	319
1994	2,293	2 672	3 887	3 350	8 121	2 391	1 378	716	2 738	6,570	5 741	0

CP 15 Yuba River at Marysville, Regulated Flow

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	423	521	976	1,822	4,574	2,911	3,714	6,798	8,033	2,980	2,563	471
1923	455	807	3,968	3,074	1,981	1,870	2,185	1,594	2,084	829	683	571
1924	504	536	699	1,306	1,878	748	286	179	168	65	65	67
1925	276	353	764	1,171	4,826	2,277	1,798	1,675	881	390	585	454
1926	423	536	716	1,496	4,447	2,846	2,218	390	252	65	65	67
1927	423	4,033	2,358	3,741	8,589	5,446	5,781	5,253	4,571	2,244	618	487
1928	423	1,918	1,643	3,074	2,277	7,432	4,420	3,155	790	439	553	454
1929	423	536	683	1,301	1,729	1,431	1,025	342	202	65	65	67
1930	325	319	1,431	2,830	3,205	2,846	1,445	520	286	65	130	471
1931	423	622	504	1,513	1,639	1,203	252	179	168	65	65	67
1932	276	303	1,285	1,529	1 965	2,472	2,084	1,415	2,807	585	634	403
1933	423	454	553	1,301	1,458	1,643	1,180	651	202	65	65	67
1934	342	336	716	1,610	2,251	1,366	454	195	202	65	65	67
1935	325	504	585	1 545	1 747	2 131	4,636	3,594	3,344	618	618	420
1936	472	454	553	4,505	6 189	4 505	4,101	3,334	2,773	667	634	487
1937	423	420	537	1,285	3 151	2,879	2,706	3,236	1,748	488	589	403
1938	423	1,482	4,489	3,708	5,890	8,343	6,151	8,733	7,847	3,156	2,033	536
1939	520	565	589	1,306	1,565	1,858	672	179	168	65	65	67
1940	276	286	293	3,253	5,320	7,400	5,176	4,749	2,000	407	618	504
1941	455	807	3,350	4 536	6,626	5,465	4,389	5,008	3,344	2,586	797	605
1942	520	840	4,245	4,895	7 004	4,635	5,411	5,237	5,025	2,895	862	521
1943	423	2,000	3,448	6,115	5,008	7,221	5,008	4,131	2,805	889	797	536
1944	439	471	602	1,447	2,225	2,293	1,482	764	353	65	65	118
1945	423	1,412	1,724	1,935	4,700	3,724	1,714	1,306	1,064	589	699	487
1946	585	1,546	4,819	4,651	4,231	2,358	2,134	2,179	1,178	537	683	454
1947	423	1,244	1,155	1,285	2,583	2,521	1,328	342	336	65	65	67
1948	423	487	520	2,131	1 443	1,854	3,126	2,131	3,075	813	732	454
1949	423	487	943	1,334	1,873	3,367	2,134	797	252	65	439	454
1950	423	487	537	3,513	4 628	3,236	3,042	2,488	2,252	618	683	471
1951	829	6,000	8,571	6,944	6,156	5,172	4,571	3,415	1,513	589	683	471
1952	764	1,344	4,245	5,986	5,511	5,383	6,201	8,282	8,309	3 789	2,911	1,126
1953	423	487	1,513	5,643	4 123	3,318	2,353	2,163	3,887	2,781	829	521
1954	504	906	732	2,980	3 617	4,017	3,526	629	605	407	618	454
1955	423	586	1,334	2,163	1,765	1,610	1,294	1,006	370	65	65	67
1956	423	555	9,433	10,213	6 676	4 814	3,865	5,302	4,336	2,342	878	622
1957	764	639	553	1 529	4,249	4 115	1,280	2,000	1,933	585	716	536
1958	889	790	1,758	3 318	7,833	6,196	6,705	6,619	6,336	2,944	1,236	823
1959	423	504	553	3,058	3 583	1,789	1,059	407	336	65	65	101
1960	423	454	553	1 773	3 581	2 879	1,328	618	370	65	65	84
1961	423	706	813	1 350	2,269	1,622	941	342	202	65	65	67
1962	342	336	683	1,138	4 968	3,285	2,706	878	1,714	537	716	521
1963	4,131	3,059	3 123	4 196	5 456	4,570	4,874	5,904	3 344	829	894	655
1964	602	2,756	878	2 700	1 878	1,740	1,580	699	454	65	65	67
1965	423	739	10,815	9,756	5,924	4,310	5,495	4,688	3,361	1 626	1 008	672
1966	472	1,176	992	2 563	1 908	2 244	1,781	455	286	65	65	67
1967	423	1,482	3,643	4 928	4 700	4 765	3,008	4 879	5,848	3,285	2,586	622
1968	585	571	894	2,667	4,259	4,017	1 143	472	336	65	65	67
1969	423	706	1,317	10 002	6,734	5,302	5,385	7 123	5,748	2,716	813	555
1970	618	588	4,228	11 027	7 346	5 416	3,529	651	857	802	716	471
1971	618	2,420	4,538	4,472	3 475	4 570	1,714	3,171	3,378	2,618	976	739
1972	585	706	1,513	2,635	2,799	2 976	1,513	683	286	65	654	889
1973	813	1 765	2,797	5,351	6,536	5,080	3,361	2,277	1,108	585	732	706
1974	829	4,958	5,838	7,205	4 718	8 441	7,280	5,887	3,986	2,785	943	605
1975	589	655	634	1,670	4 718	5,367	2 202	3,285	4,185	2,488	1 008	773
1976	1 106	1 193	867	1 382	1 617	1 073	370	179	188	65	65	67
1977	276	286	309	716	828	716	168	179	188	65	130	67
1978	228	151	732	4,228	4,357	5 123	4,470	3,318	3,143	1 464	878	881
1979	455	622	585	2,618	3 367	3,080	1,798	1 822	1,109	520	718	521
1980	813	1,042	1,643	8,229	7 587	6,131	3,933	3,822	3,243	980	813	521
1981	520	471	748	2,309	2,161	2,486	1,428	390	336	65	65	67
1982	423	4,420	7,823	5,822	7,743	7,676	11,814	9 075	5 781	2 618	911	1 126
1983	1,025	2,739	4,261	5,811	7,781	9,709	7,613	7 725	9,310	4,977	2,944	1,513
1984	911	4,437	9,254	5 123	4,868	4,977	3,882	2,326	1,796	683	797	655
1985	683	2,470	1,203	1 610	2,125	2,082	1,479	439	336	65	65	67
1986	423	756	911	3,204	13 466	10,620	6,386	3,545	2,017	602	732	908
1987	883	437	553	1,309	2,251	1,828	487	211	202	65	65	67
1988	342	370	1,006	1,773	1,321	1,122	807	195	202	65	65	67
1989	342	924	867	1,301	1,883	7,400	3,949	1,826	773	390	618	605
1990	1 136	699	439	2,506	1,747	1,854	655	618	235	65	65	67
1991	342	353	423	862	1,082	2,885	1,244	465	202	183	618	403
1992	407	454	486	1,334	3,946	2,017	840	195	202	65	65	67

Flow recommendations are based on water year types as defined on p 23-24 of the SWRCB 1995 WQCP for the Bay Delta

Sacramento Basin 40-30-30 Index
Wet - 1927, 38, 41, 42, 43, 52, 53, 56 58, 63, 65, 67, 69, 70, 71, 74, 75, 82, 83, 84, & 86
Above Normal - 1922, 28, 40, 51, 54, 57 73, 78, 80, & 93
Below Normal - 1923, 35, 36, 37 45 46 48, 50 59, 62, 66, 68, 72, & 79
Dry - 1925, 26, 30, 32, 39, 44, 47 49, 55 60 61, 64, 81, 85, 87, & 89
Critical - 1924, 29, 31, 33, 34, 76, 77 88 90, 91 92, 94

San Joaquin Basin 60-20-20 Index
Wet - 1922, 37, 38, 41, 42, 43, 52, 56 58 65 67 69, 74, 75, 78, 80 82, 83, 86 & 93
Above Normal - 1923, 27, 32, 35, 36 40 45, 46 51 63, 70, 73 79 & 84
Below Normal - 1925, 28, 44 48 49 50 53, 54, 57, 62, 66 & 71
Dry - 1926, 33, 39, 47, 55, 59, 64 68 72, 81 & 85
Critical - 1924, 29, 30, 31, 34 60, 61 76 77 87 88, 89, 90, 91 92, 94

Mean Monthly Flow in cfs by Water Year Type

73-year Flow Averages by Month and Water Year Type
Feather River at Nicolaus - CP # 37, DEPLETION AREA 13 DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	2,935	1,565	1,772	1 446	1,851
NOV	4,514	3,269	1,739	1 426	1,945
DEC	12,723	4,817	2,954	1,982	2,487
JAN	21,530	13,123	7,178	4,113	3,146
FEB	25,718	14,897	10,586	5,013	3,822
MAR	23,610	20,032	8,835	5,941	3,068
APR	16,076	10,539	4 462	3,845	2,504
MAY	13,261	7,610	4 994	1,651	702
JUN	9,113	6,122	5 327	3,905	1,927
JUL	6,550	6,787	7 114	6 746	2,162
AUG	2,079	3,612	4 332	3 789	1 111
SEP	2,223	1,113	969	1 268	493

Sacramento Basin 40-30-30 Index
Yuba River at Marysville gage

Month	W	AN	BN	D	C
OCT	732	564	457	450	520
NOV	1869	1470	717	617	530
DEC	4349	1993	1305	886	587
JAN	5780	4154	2665	1691	1424
FEB	6380	4967	3486	2527	1771
MAR	6026	5266	2654	2620	1461
APR	5191	3826	2403	1602	880
MAY	5166	3374	1780	714	306
JUN	4549	2485	1585	524	193
JUL	2346	931	461	136	74
AUG	1204	907	540	195	121
SEP	718	566	406	200	98

A2-95

C-032435

C-032435

Sacramento River at Verona
STUDY 1995C06F-SWRCB-507 DWRSIM record18-d 21 May 97

ALT 4 - SACRAMENTO RIVER FLOW AT VERONA (CFS)
CP 43 del - CP 64 del - CP 43 in

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	8864	8504	11824	14133	27693	25647	17915	36495	25612	13206	9608	8033
1923	11498	13461	24493	26087	18978	14344	18587	8717	11848	13401	13457	6638
1924	8294	8016	10869	11417	13074	9595	7478	6961	7579	6944	5351	4725
1925	6131	5848	7920	9270	36714	15060	17377	7319	9814	10409	6115	7158
1926	10067	7697	8181	15841	31384	15263	18503	11401	11108	14003	5546	9117
1927	10311	10654	12832	27111	69377	37503	39140	21175	13478	15678	8034	7530
1928	9628	18973	12279	22509	23435	70665	23141	16670	10856	12117	13808	8083
1929	8820	9863	10116	12751	15449	13775	7579	7628	6958	5790	5266	5268
1930	6229	5899	11775	18475	14333	25840	10033	8845	12066	14595	13362	6537
1931	6262	6386	8603	10360	9921	6229	7630	7644	8336	7623	5386	6621
1932	6879	6739	11092	18003	10761	7461	10265	8197	12739	10295	5757	6701
1933	6229	7310	6863	9579	10461	8555	8403	5627	6840	6505	5009	5798
1934	5416	6924	9254	14702	11416	11775	10634	6786	7714	11382	8050	7056
1935	7676	7546	7026	23110	11164	20573	15965	22135	13781	11043	5229	8436
1936	9124	8823	8490	25908	32997	28672	15881	9663	13176	13547	6885	6588
1937	7839	8571	9059	11807	28143	32576	18721	12035	13885	10588	7400	6605
1938	9417	19747	40106	26509	89197	66631	39796	46221	27023	10897	7496	14588
1939	19044	16234	15369	15208	15773	13409	10789	7058	14302	14296	13531	6302
1940	7481	6974	6115	22866	33553	46790	35040	14491	11512	15629	5863	9109
1941	11059	10756	28800	65477	64821	51376	37527	35145	15848	11791	5406	13360
1942	18752	14890	58207	53165	65866	23273	37813	30959	21797	12474	7237	10588
1943	16751	17915	23631	46481	44763	51962	24385	17682	12201	13352	8441	7680
1944	9774	11882	10506	13938	25121	22183	7142	6489	13159	14556	11010	8872
1945	6684	11865	13864	11075	29080	23419	9830	8359	12386	15369	9296	6568
1946	9303	16486	42545	36788	20473	20215	8252	9791	11058	15515	12393	6924
1947	8929	10840	14312	10978	16906	16215	10705	8099	12890	14507	11807	6537
1948	8327	8823	8375	12751	11665	14540	18923	23322	16688	14117	9254	8588
1949	13808	11209	11319	11368	12892	36446	10503	9644	11344	14653	11401	7882
1950	8868	8151	8376	17093	28037	16507	11747	8213	11598	14962	11937	7126
1951	8750	23578	46869	49717	49174	25586	10705	13027	11512	15442	12962	8554
1952	10083	12772	37243	54905	52294	48270	48114	48205	26570	11889	6847	15713
1953	17597	13495	38089	56174	24920	21842	13125	22378	20839	17012	7319	13176
1954	14605	18402	12279	30299	52289	44204	35174	21614	11411	17780	13791	8436
1955	12246	17848	20947	18378	13324	14328	7327	7058	12856	15223	7432	7260
1956	8132	9898	10982	67802	54137	33812	18217	33259	16789	16703	7530	12957
1957	17158	12772	10813	15515	29422	39325	17226	13271	15024	17156	12588	7193
1958	19581	18469	20720	31584	50111	84086	37779	33885	25175	13157	10380	18083
1959	18524	13192	11338	30787	45735	20087	8453	6717	13865	16588	13236	7546
1960	9075	9798	9482	12604	23783	18280	11377	6489	13478	14296	6766	7685
1961	9124	11260	17028	11598	31168	19883	11986	7302	16086	16886	13141	7384
1962	9869	9109	15174	11319	39181	24688	11545	10804	13276	15710	9156	10403
1963	19500	16217	23082	11742	44943	29437	62063	22167	14806	15141	9465	9632
1964	15759	22839	11303	20427	14586	13531	7277	6944	12218	14442	12149	10688
1965	8457	12086	10913	67640	26829	18443	38787	20590	12688	15336	8812	6756
1966	11173	22336	13791	26298	23426	25766	11495	12523	11831	16866	13726	6789
1967	9319	13461	35568	27062	36806	47083	33864	35389	29848	12539	6782	15108
1968	17646	13092	13515	26379	46435	34086	12823	6457	13108	15954	11043	7798
1969	9547	11209	22476	53051	56314	40041	37023	36186	16402	10067	6798	19562
1970	16377	14268	43456	70681	50039	32868	13008	7563	10537	16854	11106	8201
1971	9498	19158	46204	41163	24164	46123	14217	24200	19007	18085	11973	13814
1972	15499	12772	15822	17613	21036	28721	10419	7808	13075	16410	13401	7966
1973	10734	21393	22839	38398	61112	42187	16906	11742	13142	15304	11140	9193
1974	15304	49626	54108	65574	35310	90051	24654	21744	18553	16572	10146	17747
1975	18410	14755	14377	15076	51677	69803	21276	23696	19091	16280	9286	14923
1976	18768	14823	13369	13791	16916	16963	8369	7741	14722	14914	10766	7411
1977	7546	7529	7579	7075	11598	8896	8672	6083	7647	5586	5465	7579
1978	7693	6302	11352	38398	43448	38967	32888	16410	10520	8213	7611	14033
1979	13515	11781	9839	22704	37470	27323	13982	8034	13209	14117	7596	8184
1980	10799	15293	16361	46091	56380	33015	16772	11336	11461	9672	7270	8319
1981	13222	10302	12198	24580	26109	29874	15276	6782	13784	15418	12344	7815
1982	9173	28317	53036	41390	50417	60370	61441	27589	17511	13222	8750	16804
1983	21939	27998	43423	49197	68999	59248	59880	44958	41342	17971	14982	22906
1984	22698	47308	68646	38882	30267	33891	15125	11189	13628	17532	9896	9243
1985	14344	26754	19044	13320	17628	10353	10957	9921	11058	14649	12185	10285
1986	8885	8268	13987	18849	61508	61866	17848	9254	8134	12586	8645	8067
1987	10246	8319	10929	14068	20023	26509	11310	7140	16385	15515	12853	8436
1988	9600	6756	13547	22671	13885	9368	7092	7806	11142	10100	5682	5546
1989	6993	7831	7364	10945	9867	35031	18217	10409	11598	15304	7068	8840
1990	10588	9863	12474	18248	14261	13173	11327	6115	14856	11937	7286	7210
1991	8898	7294	7872	6326	10533	24948	12671	6375	7579	7820	6294	7280
1992	6131	5075	5432	10002	27764	17402	11562	8538	9846	9514	5253	7647
1993	8034	7142	9774	40301	38786	40301	29729	21435	22419	11954	7140	7445
1994	12376	20133	14572	13775	23588	14686	8756	6847	15226	14556	13656	7579

Sacramento Basin 40-30-30 index
Sacramento River at Verona - CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow

Month	W	AN	BN	D	C
OCT	13,837	10 374	11 103	10 742	9,232
NOV	18,817	13 933	11 858	11 956	9 324
DEC	33,236	16,050	14 421	12 424	10 029
JAN	44 316	31 823	21 408	14 813	12 558
FEB	49,122	41,529	27 987	20 023	14,914
MAR	48 003	40 467	23 796	20 735	12,947
APR	33,179	23 550	13 316	11 815	9 181
MAY	27,277	17 649	11 020	7 950	6 844
JUN	19,017	14 347	13 054	12 803	9 854
JUL	14,521	14,385	14 587	14 340	9,391
AUG	9,125	10,010	10 272	9 954	6 965
SEP	13,273	8,840	7 727	7 749	6,880

American River at H Street Bridge
STUDY 1995C06F-SWRCB-507 DWRSIM record18-f 17 Jun 97
CP # 64 D-893 MINIMUM REQUIRED FLOW DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-507/64/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,870	2,403	2,440	2 196	4 808	4 407	4 369	8 359	6 470	2 407	3 529	3 513
1923	2 374	2,403	6,961	5 080	4 357	2 700	2 857	4 375	4,634	4 489	2 000	1 630
1924	1,870	2 403	2 440	2 196	1 878	2 114	739	1 138	2 467	342	280	672
1925	407	605	504	455	4 646	2 407	4 660	3 415	3,986	3 822	2 867	1 916
1926	1 870	2,403	2 440	2 196	1 945	2 082	1 378	1 626	3 512	3 610	3 108	538
1927	846	504	504	4 050	13 667	4 928	8 184	3 867	5 008	2 261	2 537	3 796
1928	2 374	2,874	2 635	2 440	2,347	12 572	5 613	3 074	2 288	3 090	1 988	1 025
1929	1 903	1,916	1 952	1 952	1 945	2.244	1 176	1 691	2 065	3 220	280	975
1930	2 196	1 109	504	439	432	2 423	2 370	2 309	3 798	3 448	2 423	672
1931	1 073	708	504	439	432	976	1 615	1 643	5 798	1 334	276	857
1932	829	1 160	504	455	2 417	4 017	2 823	2 716	6 218	7 107	3 959	941
1933	2 083	1 832	504	439	774	1 156	4 285	1 529	4 289	894	276	1 412
1934	1 903	1,563	504	439	432	2 131	2 588	1 496	5 647	797	244	303
1935	943	504	504	439	936	2 911	6 016	5 363	3 496	4 375	2 846	1 849
1936	1 870	2.403	2 440	4 131	13 213	4 294	5 714	3 582	5 294	3 025	2 358	2 606
1937	2 374	2 403	2.440	2 440	2 983	4 310	4 420	3 919	3 897	3 399	2 228	1 613
1938	2 374	2,403	6 083	3 367	10 263	10 978	8,067	9 075	7 988	3 108	3 903	3 933
1939	2 374	2,403	2,440	2 440	2 431	1 903	1 832	563	4 017	3 724	325	975
1940	1 252	1,280	1 386	439	9 614	10 457	6 487	2 911	3 563	3 676	2 082	1 076
1941	1 870	2.403	3,806	5 904	8 286	4 830	3.815	4 570	4 252	2 228	2 244	3 848
1942	2.374	2.403	5 318	9 742	10 407	3 659	5 277	6 148	5 986	3 309	3 919	3 889
1943	2,374	3,815	4,879	11 433	7 346	12 474	5 294	2 814	4 353	2 293	2 000	2 874
1944	2,374	2,403	2,440	2 440	2 347	1 903	2 370	1 317	3 385	3 253	2 374	1 882
1945	1 724	504	504	1,090	9 579	2 407	2 504	2 885	3 748	3 350	2 000	1 983
1946	2,374	3,546	8,929	5 627	3 025	3 058	4 252	2 781	3 583	3 269	2 085	1 546
1947	2 374	2,487	2 440	2 440	2 431	1 903	1 378	1 317	4 101	2 944	2 277	840
1948	374	908	2,391	943	2 051	2 976	2 370	2 814	4 302	2 423	2 000	3 193
1949	2 374	2,403	2,440	2 440	2 485	2 407	2 370	2 927	3 496	3 171	2 131	1 328
1950	1,870	2 403	2,440	2 196	5 708	3 253	5,143	2 982	5 058	3 480	2 000	2 084
1951	2,423	17,310	15,467	10 457	8 517	3 497	3 025	3 480	4 588	2 911	2 000	1 260
1952	2 374	2 807	6 148	9 254	9 353	6 086	9 108	10 132	10 302	4 062	4 375	4 134
1953	2 374	2 403	2,749	7 758	2 795	2 407	2 874	3 562	4,252	2 814	3 903	3 886
1954	2,374	2,403	2 440	2 440	3 277	4 538	4 756	2 846	2 288	2 553	1 773	840
1955	1 870	2,403	2 440	2 196	1 945	3 204	1 378	1 317	3 159	2 992	2 212	1 277
1956	1 887	1,714	12,984	16 786	5 884	2 911	3 630	4 619	5 344	2 795	3 887	3 848
1957	2 374	2 403	2 440	2 440	3 223	4 651	3 563	2 309	4 017	3 156	2 000	1 294
1958	2 374	2 403	2 440	2 440	9 975	6 717	10 436	9 158	7 142	2 788	4 017	3 949
1959	2 374	2 403	2 440	2 440	2 521	2 293	1 445	1 317	3 277	2 212	975	319
1960	1 041	1 587	1 447	943	1 339	4 147	1 714	2 309	3 378	2 472	1 675	420
1961	1 415	1 916	1 952	1 691	1 440	1 106	790	563	2 605	1 822	894	454
1962	718	908	943	943	3 223	2 700	3 496	2 472	2 723	3 454	1 984	1 326
1963	2 814	4 403	3 594	4 115	11 580	2 911	6 589	6 229	3 815	2 228	2 000	3 796
1964	2 374	4 134	2 440	3 074	2 834	1 984	1 378	2 309	3 714	3 741	2 976	2 033
1965	1 171	504	17 581	12 897	5 384	2 407	4 218	3 741	5 008	3 541	2 000	3 277
1966	2 374	2 571	2 440	2 618	2 431	1 903	1 378	1 773	3 008	2 570	1 625	924
1967	1 480	1 916	1 952	6 587	4 772	6 213	4 538	7 790	8 888	3 757	4 017	4 050
1968	2 374	2 571	2 440	2 618	6 780	2 521	2 235	1 317	3 280	2 423	1 431	739
1969	683	1 412	1 447	15 971	9 561	4 407	7 042	7 611	5 798	2 484	3 741	3 882
1970	2 374	2 403	5,588	21 842	6 178	2 407	2 975	2 309	2 807	2 976	1 252	773
1971	1 870	2,403	5 904	5 269	3 943	3 854	3 294	3 562	4 252	2 228	3 225	3 680
1972	2 374	2,403	2 927	2 440	3 042	4 294	2 370	2 309	3 583	2 944	1 740	1 092
1973	1 870	1 916	1 952	9 384	7 663	3 952	2 756	3 706	3 781	2 646	2 000	1 260
1974	2,374	6 974	7 336	12,702	3 781	9 482	6 789	4 082	4 252	2 440	3 962	4 017
1975	2 374	2 403	2 440	7 440	3 133	4 586	3 630	4 017	5 294	2 407	3 806	3 781
1976	2 374	3 277	2 440	2 440	2 347	2 309	622	927	3 586	2 085	325	538
1977	1 057	689	504	439	432	325	168	130	420	260	276	303
1978	390	504	504	1 431	5 090	5 806	4 403	3 220	4 622	2 407	2 131	3 632
1979	2 374	2 403	2 440	2 440	2 809	3 399	2 370	3 708	3 311	3 415	2 114	1 529
1980	1 870	2 403	2 440	18 231	12 917	3 285	2 655	2 814	4 708	2 228	2 114	3 781
1981	2 374	2,403	2 440	2 440	2 431	1 903	1 126	1 057	3 243	1 968	781	823
1982	374	4 000	14 821	8 246	15 071	7 172	14 167	9 579	6 050	2 836	3 962	4 252
1983	2 374	8 453	8 912	7 920	12 820	16 231	7 109	9 254	14 150	5 790	4 684	4 739
1984	2 374	15 310	14 832	6 749	5 581	2 407	2 756	2 309	4 117	3 497	2 000	1 781
1985	2 374	4 185	2 927	2 440	2 431	1 903	2 370	1 789	3 815	3 448	2 785	756
1986	1 285	504	504	3 480	33 023	10 506	2 370	2 814	4 564	2 228	2 300	3 660
1987	2 374	2 403	2 440	2 440	2 431	1 903	1 076	797	3 784	2 749	244	805
1988	618	908	504	439	2 121	1 659	639	1 057	2 823	748	244	2 202
1989	1 870	504	504	455	2 611	6 424	4 634	3 139	3 647	3 301	1 675	780
1990	1 870	1 916	1 952	1 952	1 945	1 513	1 294	1 366	4 235	3 318	813	1 109
1991	894	739	882	439	450	1 156	1 378	1 317	3 548	1 594	1 252	808
1992	1,918	2 437	1 952	1 952	1 878	1 513	538	1 196	2 941	2 017	244	289
1993	374	504	504	982	6 104	8 148	4 790	3 773	4 874	7 992	2 978	3 580
1994	2 374	2 403	2 440	2 440	2 431	2 114	689	651	3 075	2 602	342	289

Sacramento Basin 40-30-30 Index
American River at H Street bridge - CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

Year Typ	W	AN	BN	D	C
OCT	1,924	1,717	1,882	1,906	1,712
NOV	3,407	3,386	2 024	2 157	1,732
DEC	6,173	3,219	2,874	1,884	1,380
JAN	8,520	5,045	2,532	1 811	1,297
FEB	9,178	6,352	4 467	2 287	1,422
MAR	6,074	6,131	3 073	2 601	1,801
APR	5,822	4,242	3 326	2 105	1,328
MAY	5,584	3,850	2,973	1,841	1,175
JUN	5,881	4,317	3,781	3 739	3,458
JUL	2,919	2,827	3,203	3,346	1,588
AUG	3,201	2,257	1 955	2 012	401
SEP	3,612	2,156	1 803	1 016	793

A2-96

C-032436

C-032436

San Joaquin River at Vernalis

STUDY 1995C06F-SWRCB-507 DWRSIM rsorc616-r 17 Jun 97

CP # 682 SJR AT VERNALIS TOTAL FLOW DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-507/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	2 000	1 697	2 486	2 683	6 770	5 361	6 201	5 936	7 294	2 228	2 017	1 916
1923	4 001	2 000	3 741	4 196	4 267	3 415	5 344	5 156	4 420	2 082	1 984	1 832
1924	2 602	1 462	1 486	1 399	1 617	1 706	2 050	1 903	1 849	1 773	1 643	1 294
1925	1 966	1 361	1 252	1 171	2 719	2 423	3 963	3 822	5 210	2 017	1 870	1 664
1926	2 000	1 412	1 334	1 203	2 467	2 277	3 664	3 545	2 033	1 773	1 675	1 479
1927	2 000	1 949	2 179	1 789	5 438	3 576	5 344	5 156	3 428	2 017	1 903	2 840
1928	4 359	1 649	2 309	2 277	2 590	2 960	3 963	3 822	2 067	1 887	1 773	1 546
1929	2 000	1 395	1 301	1 203	1 458	1 691	2 017	1 870	2 420	1 691	1 561	1 277
1930	1 962	1 260	1 136	1 220	1 549	1 935	2 420	1 870	4 064	1 724	1 584	1 361
1931	1 415	1 210	1 138	1 138	1 260	1 334	2 118	1 870	1 781	1 773	1 656	1 328
1932	1 350	1 294	3 008	3 399	7 667	4 538	4 521	3 871	2 336	1 984	1 903	1 748
1933	3 529	1 462	1 317	1,610	2 035	2 065	2 807	2 683	1 462	1 740	1 691	1 395
1934	2 000	1 277	1 220	1 220	2 413	1 656	1 983	1 870	1 798	1 756	1 643	1 378
1935	2 000	1 395	1 350	2 944	3 223	3 513	7 277	6 350	3 899	2 228	1 984	1 849
1936	3 171	1 546	1 561	2 309	12 448	5 774	6 433	5 156	2 134	2 098	1 968	1 840
1937	3 056	1 583	1 870	2 683	13 090	9 644	7 232	8 132	2 672	2 277	2 098	1 946
1938	3 155	1 798	5 090	6 993	22 489	31 047	15 349	23 972	14 117	3 643	1 903	2 669
1939	8 896	2 319	2 293	2,505	3 637	2 765	2 591	2 683	1 963	1 952	1 789	1 563
1940	2 000	1 479	1 399	4 001	7 928	10 441	5 632	5 156	4 958	2 049	2 017	1 933
1941	2 000	1 731	3 806	4,391	12 838	12 116	10 083	9 579	8 285	2 082	1 952	1 983
1942	4 912	2 252	5 318	9 173	10 443	5 936	6 907	5 936	5 647	2 488	1 968	2 185
1943	6 977	3 092	3 562	11 157	10 986	17 776	7 915	5 180	3 428	2 277	2 098	1 966
1944	3 432	1 815	1 919	1 984	3 129	3 138	3 428	2 976	3 412	1 962	1 919	1 781
1945	2 000	1 832	1 691	1 545	7 436	7 965	6 166	3 936	2 252	2 163	2 000	1 986
1946	3 919	2 218	5 627	6 619	6 212	4 391	5 344	3 871	3 479	2 147	2 033	1 949
1947	2 309	2 353	2 716	2 179	2 701	2 277	3 964	2 683	1 933	1 838	1 740	1 563
1948	2 000	1 344	1 203	1 122	1 373	1 740	3 963	3 822	2 286	2 017	1 919	1 731
1949	2 300	1 445	1 285	1 171	1 476	2 566	3 963	2 976	3 008	1 919	1 854	1 681
1950	2 000	1 426	1 285	1 464	2 557	2 293	3 963	3 822	3 832	1 903	1 636	1 647
1951	2 000	5 243	9 680	7 514	8 823	5 180	5 344	5 156	2 756	1 968	1 822	1 849
1952	2 000	1 697	2 521	5 680	5 494	12 622	10 640	15 450	11 226	2 732	1 870	2 252
1953	6 359	2 185	3 058	4 980	5 744	3 627	3 963	3 822	2 286	1 740	1 724	1 697
1954	2 000	1 513	1 415	1 334	2 287	2 407	3 963	3 822	2 186	1 952	1 740	1 697
1955	2 000	1 428	1 334	1,529	2 287	2 277	2 807	2 683	3 832	1 870	1 756	1 563
1956	2 000	1 445	10,604	20,053	12,917	5 099	6 201	5 034	7 546	2 082	1 822	2 017
1957	4 765	1 613	1 740	1 643	2 935	3 155	3 963	3 822	2 286	1 984	1 870	1 664
1958	2 000	1 529	1 447	1 626	3 745	10 604	14 923	13 173	10 453	2 017	1 919	2 151
1959	7 595	2 118	1,903	2,309	4 536	3 643	2 807	2 683	1 882	1 854	1 708	1 479
1960	2 000	1 328	1 171	1 155	1 791	1 919	2 420	1 870	2 286	1 870	1 724	1 496
1961	1 984	1 344	1 236	1 171	1 278	1 350	1 983	1 870	1 849	1 622	1 708	1 412
1962	1 382	1 294	1 156	1 138	5 942	4 489	4 201	3 822	1 881	1 854	1 806	1,613
1963	2 000	1 412	1 252	1 740	6 266	3 415	5 344	5 156	3 428	2 261	1 838	1 832
1964	3 041	2 134	1 789	1 854	2 208	2 082	2 807	2 683	2 252	1 789	1 691	1 482
1965	2 000	1 647	4 391	11 433	7 905	4 619	6 201	5 936	3 428	2 147	1 789	1 815
1966	4 424	3 479	4 798	4 847	5 186	3 706	3 963	2 976	2 000	1 919	1 822	1 597
1967	2 000	1 546	2 635	2 980	3 799	6 977	13 580	16 003	13 797	8 631	1 822	2 924
1968	4 847	1 748	1 854	1 773	3 581	2 797	3 964	2 683	1 833	1 919	1 578	1 529
1969	2 000	1 479	1 724	14 084	30 556	21 012	22 923	26 217	18 368	4 131	1 854	2 622
1970	8 343	2 554	3 594	17 044	9 489	7 432	5 344	5 156	3 647	1 984	1 838	1 882
1971	2 000	1 731	2 147	2 000	2 287	2 732	3 963	3 822	2 286	1 773	1 708	1 681
1972	2 000	1,462	1 513	1 362	2 208	2 277	3 664	2 683	1 832	1 773	1 691	1 395
1973	2 300	1 395	1 317	1 952	5 672	6 622	5 660	5 156	5 579	2 082	1 822	1 849
1974	2 781	2,386	2 749	4 538	5 386	7 676	7 663	5 936	3 428	1 919	1 636	1 949
1975	3 545	1 731	1 935	2 196	6 572	6 631	6 621	5 936	6 285	1 968	1 687	1 882
1976	4 115	1 832	1 805	1 529	1 985	1 708	1 963	2 065	1 615	1 773	1 447	1 395
1977	2 630	2 101	1 610	1,155	1 242	1 447	1 393	1 870	1 748	1 691	1 415	1 176
1978	1 252	1 277	1,350	3,220	7 797	11 336	14 923	10,831	7 075	4 407	1 984	2 773
1979	4 228	1 933	1 691	3,968	8 157	8 652	5 344	5 156	4 453	1 984	1 756	1 781
1980	12 407	1 697	1 805	12 019	24 217	14 572	6 722	6 619	6 184	3,836	1,756	2 672
1981	5 123	2 084	2 098	2,980	2 791	2 900	3 664	2 683	1 916	1 854	1 773	1 563
1982	2 000	1 630	1 756	9 368	17 464	15 467	27 040	15 158	9 885	3 730	1 854	3 949
1983	12 456	8 621	19,080	24 887	36 534	41 114	20 738	19 077	36 451	13 580	1 859	6 504
1984	12 116	13 545	21,500	15 190	9 718	6,001	5 344	5 156	3 647	2 049	1,936	2,000
1985	2 000	1 781	1 691	1 431	2 287	2 277	3 664	3 610	1 986	1 854	1 605	1 546
1986	2 000	1 597	1 546	1 464	18 306	25 786	9 814	8 087	7 613	2 147	2,000	1 949
1987	3,480	1 731	1 545	1 464	1 855	1 919	2 033	1 887	1 865	1 822	1 740	1 496
1988	2 000	1 277	1 138	1 122	1 182	1 285	1 963	1 870	1 796	1 822	1 724	1 361
1989	1 317	1 176	1 171	1 156	1 280	1 626	2 420	1 870	2 672	1 756	1 675	1 395
1990	1 334	1,227	1 138	1,122	1 260	1 399	1 983	1 870	1 781	1 724	1 626	1 378
1991	1 285	1 210	1 122	1 080	1 170	2 358	2 437	1 870	1 385	1 724	1 399	1 294
1992	1 360	1 446	1 136	1 138	2 260	2 049	2 252	2 882	1 899	1 903	1 756	1 406
1993	1 561	1 479	1 464	6,017	3 547	3 415	6 201	5 936	5 082	2 277	1 919	2 050
1994	4 294	1 714	1 447	1 350	1 983	1 545	1 983	1 870	2 000	1 919	1 773	1 479

San Joaquin Basin 60-20-20 Index

San Joaquin River at Vernalis - CP # 682 SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	3,106	3,852	3 224	3 940	2,247
NOV	2,085	2,843	1 755	1 846	1 437
DEC	3,858	4,255	1,984	1 604	1 301
JAN	7,829	5,301	2 083	1 885	1 227
FEB	13,045	7,338	3 185	2 794	1 585
MAR	13,850	5,985	2 936	2 518	1 683
APR	11,479	5,617	3 955	3 282	2 128
MAY	11,005	4,949	3 610	2 846	1 948
JUN	9,413	3 801	2 711	2 083	2 085
JUL	3,515	2,078	1 910	1,838	1 784
AUG	1,900	1,914	1 820	1 718	1 630
SEP	2,510	1,940	1 667	1 503	1 376

Stanislaus River from Goodwin Dam downstream to confluence with San Joaquin River

STUDY 1995C06F-SWRCB-507 DWRSIM rsorc616-r 17 Jun 97

CP # 675 STANISLAUS RIVER AT MOUTH, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-507/675/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	439	353	260	228	504	325	1 227	2 358	555	683	699	588
1923	325	353	342	228	234	1 008	1 731	2 374	571	683	732	588
1924	325	353	260	228	226	309	807	651	908	894	943	538
1925	894	319	244	211	386	325	1 227	1 756	571	716	862	588
1926	732	353	260	228	252	646	1 428	1 805	790	894	943	588
1927	585	336	260	228	386	325	1 260	2 472	2,101	699	813	588
1928	325	353	260	228	226	325	1 529	2 049	756	829	894	588
1929	813	353	260	228	234	325	823	667	555	764	716	571
1930	894	319	276	211	218	325	1 108	927	672	699	683	588
1931	325	319	276	260	288	325	823	732	941	894	943	555
1932	309	319	244	228	313	325	857	1 724	790	748	797	588
1933	325	353	260	228	234	325	1 378	1 529	622	911	927	588
1934	894	336	260	228	234	325	1 008	1 203	941	911	943	571
1935	862	319	244	211	216	325	857	602	555	683	732	588
1936	325	353	260	228	782	325	857	1 415	773	683	748	588
1937	325	353	260	228	468	325	857	602	555	683	683	588
1938	325	353	260	228	684	468	1 649	1 203	2 907	553	732	588
1939	4 082	639	732	797	828	325	840	1 334	807	764	878	571
1940	537	336	260	244	296	356	1 225	1 643	571	683	699	588
1941	407	387	293	260	936	992	1 649	1 203	555	569	746	588
1942	504	471	1 301	1 952	1 927	488	1 649	1 399	555	553	732	588
1943	2 716	1,008	1 073	2 944	2 449	3 446	1 649	1 203	1 344	683	683	588
1944	504	454	423	390	382	325	857	683	672	781	781	588
1945	569	353	260	228	342	374	1 244	846	555	683	716	588
1946	407	370	325	1 399	1 531	484	2 252	1 366	672	683	683	588
1947	504	437	423	390	386	699	1 882	1 513	874	862	911	588
1948	829	336	260	293	435	325	1 210	1 350	1 008	699	797	588
1949	699	353	260	228	234	325	1 513	1 366	872	797	846	588
1950	716	353	260	228	252	325	1 798	2 228	555	613	846	588
1951	764	370	407	293	1 134	990	1 916	1 773	672	748	846	588
1952	472	370	276	455	469	1 431	1 649	1 203	3 764	553	797	588
1953	4 050	723	943	1 480	1 242	356	1 580	1 643	605	894	894	588
1954	699	403	293	260	630	325	1 311	1 935	672	764	894	588
1955	716	353	260	228	864	374	1 395	1 317	672	846	894	588
1956	732	336	563	455	226	464	2 958	1 203	555	585	829	588
1957	504	454	423	390	864	356	2 134	1 756	1 082	732	829	588
1958	634	353	260	226	378	468	1 649	1 203	823	651	764	588
1959	3 253	773	748	927	1 513	325	1 445	1 691	891	862	927	588
1960	862	336	260	228	226	325	1 004	829	672	829	927	588
1961	894	319	244	228	252	325	1 136	1 220	924	862	927	555
1962	309	319	260	260	378	325	851	2 000	968	846	878	568
1963	781	353	260	228	234	1 357	857	1 610	1 361	683	829	588
1964	325	353	260	228	561	455	1 479	1 285	672	694	927	588
1965	764	336	455	358	234	325	1 392	2 830	1 109	683	862	588
1966	325	353	260	228	234	325	2 364	1 708	807	813	862	588
1967	602	353	260	293	234	468	1 549	1 203	555	553	829	588
1968	504	454	423	390	1 185	325	1 765	1 025	874	797	943	588
1969	667	336	260	228	504	1 822	1 649	2 423	3 479	553	797	588
1970	3 529	823	1 431	5 009	2 737	1 108	2 134	982	672	732	829	588
1971	537	403	309	260	558	358	1 714	943	571	862	894	588
1972	699	403	293	260	869	1 325	2 084	1 090	790	894	927	588
1973	829	336	260	342	432	325	857	1 464	622	683	846	588
1974	325	353	260	228	234	343	1 649	1 708	1 428	748	813	588
1975	504	454	423	553	1 729	1 171	1 649	2 505	555	699	846	588
1976	504	454	423	390	362	325	941	634	924	894	980	555
1977	309	319	244	244	306	325	1 059	990	958	927	943	504
1978	276	319	244	309	270	325	857	602	555	634	716	588
1979	325	353	260	228	360	325	891	1 708	672	732	878	588
1980	325	353	260	1 545	4 903	992	1 649	1 203	555	553	878	588
1981	829	723	878	1 269	756	325	1 714	1 187	874	846	894	588
1982	602	336	260	228	2 953	5 390	1 849	1 203	1 597	553	813	588
1983	5 221	2 739	3 106	4 310	4 504	5 497	1 849	1 203	4 880	2 521	927	1 092
1984	5 627	3 512	4 679	2 781	2 566	1 380	1 949	1 252	571	683	748	588
1985	553	387	309	260	702	504	2 087	1 138	840	846	878	588
1986	683	336	260	228	646	4 544	1 849	1 203	555	683	716	588
1987	504	454	423	390	366	325	823	683	908	862	911	555
1988	811	319	276	276	330	309	1 042	1 138	941	862	911	538
1989	293	319	244	244	270	325	1 227	982	672	911	943	588
1990	325	319	293	276	284	325	1 059	1 220	941	927	943	555
1991	309	319	293	325	366	325	823	813	975	927	980	571
1992	309	319	276	260	286	325	823	565	874	797	894	555
1993	325	319	244	228	756	878	2 924	2 358	555	683	764	588
1994	309	353	260	228	234	325	891	862	790	797	894	571

San Joaquin Basin 60-20-20 Index

Stanislaus River from Goodwin Dam to the San Joaquin River confluence - CP # 675 - STANISLAUS RIVER AT MOUTH

Month	W	AN	BN	D	C
OCT	842	1,127	866	1 136	549
NOV	511	606	402	475	345
DEC	529	692	350	441	286
JAN	774	848	371	473	295
FEB	1,272	826	486	741	286
MAR	1,447	820	333	503	323
APR	1,790	1,335	1 464	1 588	961
MAY	1,501	1,517	1 618	1 356	882
JUN	1,372	797	745	791	850
JUL	719	700	796	856	880
AUG	781	778	857	914	903
SEP	613	588	588	587	580

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C-032437

Tuolumne River from La Grange Dam downstream to the confluence with the San Joaquin River

STUDY 1995C06F-SWRCB-507 DWRSIM recirc818-f 17 Jun 97

CP # 665 TUOLUMNE RETURN W/O TURLOCK DOWNSTREAM FLOW (CFS)

CP665def + CP761div = Adj Tuolumne River Flow at AFRP Node

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	651	571	667	634	954	764	1428	1366	538	504	520	521
1923	569	504	602	602	594	520	1395	1285	2084	455	439	437
1924	520	437	439	423	435	423	336	325	134	130	130	151
1925	276	303	309	293	450	342	941	894	3176	260	260	252
1926	342	319	325	309	360	309	706	748	185	179	179	185
1927	308	387	374	358	630	419	1361	1299	454	455	439	437
1928	537	521	488	488	522	569	706	667	235	228	244	235
1929	325	319	309	309	324	309	538	520	1412	130	130	151
1930	260	269	260	276	306	309	538	520	2302	130	146	151
1931	260	269	260	260	268	260	353	342	134	146	146	151
1932	293	336	520	455	800	407	1294	1269	454	455	439	437
1933	520	454	439	455	468	472	505	618	185	163	179	185
1934	309	303	309	309	360	293	353	325	134	130	130	151
1935	293	336	342	504	432	488	1546	1317	487	472	439	437
1936	569	504	504	520	1147	618	1378	1285	471	455	439	437
1937	651	571	585	585	1188	2927	2235	1366	823	520	520	521
1938	651	571	911	2944	7797	8050	4101	5839	4117	1726	520	874
1939	1171	454	456	618	1096	829	807	585	185	163	179	185
1940	325	336	342	585	1165	5318	2118	1285	2840	439	439	437
1941	651	571	683	683	2861	4765	3075	1382	2521	537	520	521
1942	1025	588	878	3806	4285	2992	2655	2065	1597	911	537	538
1943	960	588	992	3708	4411	6115	2353	1366	1109	520	520	521
1944	537	487	472	455	522	569	891	862	1412	244	244	235
1945	390	403	390	374	810	3334	1580	1269	471	439	423	437
1946	569	504	2563	3399	2863	2440	1529	1269	1445	455	439	437
1947	520	471	488	439	486	439	588	569	185	163	163	185
1948	293	303	293	293	313	342	975	894	269	260	260	252
1949	358	353	342	325	360	439	672	667	1294	228	228	235
1950	358	353	342	374	450	358	891	862	2622	244	244	235
1951	390	606	618	911	3871	3074	1277	1269	1143	455	439	437
1952	651	571	667	864	678	4570	4101	2563	4487	1578	520	823
1953	927	487	504	1106	2719	2000	941	1171	353	244	244	236
1954	358	353	342	342	396	407	1193	862	353	244	244	235
1955	342	319	325	342	324	553	622	602	1277	179	179	185
1956	390	403	1073	6619	4346	3025	1513	1382	4269	781	520	622
1957	1008	471	472	456	504	1594	874	894	269	244	244	235
1958	488	454	439	472	1044	5186	5344	2749	4840	618	537	657
1959	927	454	439	439	738	2065	588	569	185	163	163	185
1960	260	269	260	260	330	293	437	439	672	130	146	151
1961	228	269	276	260	288	260	353	342	134	146	146	151
1962	260	303	293	293	738	423	874	846	218	228	226	235
1963	390	370	374	423	540	423	1479	1334	487	472	455	437
1964	520	487	455	455	435	455	605	569	655	163	163	185
1965	390	437	602	5172	3897	2802	2739	1366	538	520	520	521
1966	829	1260	2456	2563	2971	1984	655	667	235	228	228	235
1967	455	454	569	520	540	2980	4285	1496	5042	4521	520	1042
1968	943	454	455	439	695	1301	689	699	185	163	163	185
1969	390	403	439	4115	7400	5042	4857	6749	7462	1968	520	691
1970	1285	504	764	6050	3745	3432	1277	1269	1949	439	423	437
1971	537	487	520	488	486	1220	1160	862	252	244	244	235
1972	342	319	342	325	330	374	622	537	151	146	130	168
1973	309	336	342	390	1080	3838	1344	1269	3075	439	423	437
1974	651	588	602	911	2935	3757	2605	1350	521	520	520	521
1975	651	571	589	569	774	4096	1630	1382	2056	504	504	521
1976	667	454	439	423	539	423	420	423	134	130	146	151
1977	390	269	260	260	270	260	353	358	134	146	146	151
1978	358	403	407	585	846	732	1714	1431	538	1870	520	521
1979	589	504	504	602	3025	3985	1546	1285	2218	439	423	437
1980	651	588	569	3448	7738	4131	2151	1350	3428	2440	520	992
1981	1008	454	455	472	468	1236	941	602	185	163	163	185
1982	439	454	456	4570	7220	5852	7831	3285	4420	2066	520	2151
1983	3318	2773	4863	8050	7689	9660	3983	1480	11125	7058	520	3479
1984	1480	4773	6884	4131	3642	2879	1277	1252	2420	455	439	437
1985	520	471	455	439	486	472	622	585	185	179	179	185
1986	390	420	423	407	4556	7335	1796	1626	4671	504	504	521
1987	504	437	423	423	450	439	420	423	134	130	146	151
1988	228	269	260	260	261	260	437	423	134	130	146	151
1989	228	269	276	260	288	293	555	520	1244	146	146	151
1990	260	269	260	260	288	276	420	407	134	130	130	151
1991	228	269	260	260	270	390	437	407	151	130	130	151
1992	228	269	260	260	365	293	437	1334	151	146	130	151
1993	358	403	407	781	612	569	1395	1334	538	504	504	521
1994	520	437	439	423	450	407	538	520	151	130	130	151

San Joaquin Basin 60-20-20 index

Tuolumne River from LaGrange Dam to the SJR confluence - CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	708	553	523	651	338
NOV	619	743	473	423	317
DEC	840	1 065	569	421	312
JAN	2 374	1 379	622	430	308
FEB	3 595	1 753	869	535	345
MAR	4,262	2 228	854	773	324
APR	3 090	1 457	898	672	433
MAY	2 146	1 280	846	608	477
JUN	3 257	1 428	891	324	456
JUL	1 508	452	241	166	135
AUG	520	438	243	167	139
SEP	874	437	238	183	151

Merced River from Crocker Huffman Diversion downstream to confluence with San Joaquin River

STUDY 1995C06F-SWRCB-507 DWRSIM recirc818-f 17 Jun 97

CP # 649 LOWER MERCED RIVER DIVERSION DOWNSTREAM FLOW (CFS)

CP649def + CP762div = Adj Merced River Flow at AFRP Node

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	130	151	228	211	414	276	101	81	2403	146	130	50
1923	2472	353	1106	1220	1096	163	134	81	689	163	146	34
1924	1057	151	211	195	313	146	235	472	252	278	195	118
1925	130	151	146	130	270	195	101	81	504	163	130	67
1926	146	151	163	163	936	146	101	65	134	163	130	101
1927	423	218	488	195	1098	228	134	81	34	146	81	1244
1928	3041	134	602	553	808	244	84	130	134	146	81	34
1929	98	168	146	146	162	163	67	276	101	308	309	17
1930	130	151	130	146	144	195	67	65	487	374	342	17
1931	163	84	130	130	126	146	504	504	168	244	195	118
1932	146	134	276	228	782	195	84	81	556	163	179	118
1933	2000	151	146	276	414	179	67	65	319	163	195	118
1934	146	134	146	130	810	146	67	65	166	260	195	134
1935	146	151	146	260	234	228	1260	1415	1395	163	225	134
1936	1626	202	228	748	4903	309	471	1041	34	163	195	118
1937	1431	151	407	520	4465	927	134	2196	319	163	290	134
1938	1464	151	2423	1269	4736	4603	639	3367	4453	130	65	672
1939	2911	336	358	358	578	179	67	65	168	342	195	84
1940	276	134	146	325	2330	1122	84	829	708	163	244	134
1941	146	151	1464	1350	2971	1317	185	2049	2087	114	65	151
1942	2683	336	1415	1561	1603	211	101	634	2386	114	65	269
1943	2683	672	732	2488	1783	2700	454	862	34	163	179	67
1944	1594	168	260	407	921	244	84	407	353	163	136	134
1945	179	168	163	146	3313	618	101	81	252	163	130	101
1946	2277	756	1805	976	736	195	84	146	134	163	244	134
1947	504	639	829	585	828	146	471	163	168	228	195	134
1948	130	134	130	114	122	179	134	293	34	163	195	134
1949	146	151	146	146	144	244	437	81	134	163	195	134
1950	163	151	146	163	216	179	84	81	134	163	195	134
1951	130	1933	4570	1626	1404	211	874	1073	134	163	211	134
1952	130	151	228	407	869	1399	252	3432	2185	33	33	303
1953	2716	151	618	1073	558	163	622	179	689	146	195	134
1954	146	151	163	146	162	211	84	81	134	163	195	134
1955	163	151	163	179	162	293	67	65	908	163	196	134
1956	146	134	1988	3871	1495	146	202	520	1882	65	33	134
1957	2716	218	244	293	828	195	84	342	252	163	195	134
1958	130	151	146	179	380	1480	1277	2895	2000	33	33	50
1959	2749	151	146	390	1080	146	67	65	168	276	195	84
1960	130	151	130	130	156	163	67	65	166	325	195	134
1961	146	151	146	130	126	146	67	65	168	276	211	118
1962	146	134	130	130	486	244	84	81	34	163	211	134
1963	130	151	146	228	3385	179	202	98	34	163	130	118
1964	1496	639	407	520	469	211	67	358	134	179	195	101
1965	146	151	1360	3058	1188	163	168	81	622	146	33	118
1966	2732	1210	813	829	738	179	403	81	168	211	195	84
1967	146	151	244	228	646	1464	655	2163	4218	1594	33	773
1968	2749	134	293	309	887	163	454	455	168	342	195	84
1969	163	134	163	2976	4357	1480	1260	5367	3966	179	33	586
1970	2927	420	687	2683	1314	456	168	1659	202	163	211	118
1971	130	151	195	163	144	163	235	1155	840	130	163	118
1972	179	151	163	163	156	146	353	813	269	211	195	17
1973	114	134	146	179	398	309	101	667	975	153	114	84
1974	1122	1042	1138	1724	756	829	185	829	437	81	81	101
1975	1675	151	325	488	2251	846	118	81	2134	130	146	34
1976	2342	370	309	146	365	146	67	390	168	260	179	134
1977	228	151	179	130	126	179	101	130	168	276	195	134
1978	130	101	146	260	432	358	303	179	3849	602	98	1320
1979	2814	336	293	1708	2125	1008	101	634	622	163	146	84
1980	781	218	390	4489	4572	1334	84	407	1640	163	65	655
1981	2732	151	163	455	612	179	67	342	168	211	195	101
1982	130	151	358	2440	3745	1773	4285	2980	1479	33	33	739
1983	3383	1681	2521	3383	4321	5351	118	2602	7663	3448	33	1781
1984	3025	1988	3464	1675	1460	228	790	1887	50	163	228	118
1985	130	168	163	130	162	179	67	1334	134	179	244	134
1986	163	151	146	130	4357	3432	84	1090	958	163	146	101
1987	1870	151	146	146	252	163	67	325	166	260	211	134
1988	130	151	130	130	104	163	67	65	134	342	276	101
1989	163	84	146	130	126	163	67	65	168	244	195	118
1990	130	134	130	130	126	146	67	65	168	244	195	134
1991	130	134	130	114	128	228	87	65	34	244	190	134
1992	130	134	130	130	181	163	67	455	168	244	195	134
1993	130	134	148	423	810	1252	487	1773	1647	260	195	134
1994	2636	151	163	163	522	146	67	65	168	260	195	134

San Joaquin Basin 60-20-20 index

Merced River, Crocker-Huffman Diversion to San Joaquin River confluence - CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	846	1 192	1,149	1,433	602
NOV	306	504	242	257	153
DEC	787	975	300	272	157
JAN	1 573	871	346	321	139
FEB	2,307	1 756	433	571	238
MAR	1,567	389	203	179	183
APR	555	328	203	168	107
MAY	1,678	698	249	344	198
JUN	2,333	415	284	249	179
JUL	388	181	161	223	277
AUG	88	178	179	194	218
SEP	409	191	115	99	113

A2-98

C-032438

C-032438

San Joaquin River at Stevinson upstream of Merced River confluence

STUDY: 1995C06F SWRCB-507 DWRSIM /eom818/ 17 Jun 97

CP # 694 SJR DIVERSION, NON-PROJECT DOWNSTREAM FLOW (CFS)

Project /1995C06F SWRCB-507/694/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	618	454	732	651	2 485	1 285	780	980	3 815	553	472	689
1923	634	706	1 025	1 008	628	716	908	553	538	472	455	689
1924	537	370	325	276	365	537	370	354	454	423	325	487
1925	455	353	276	260	792	667	639	455	555	520	390	622
1926	553	387	342	293	504	569	706	374	504	488	360	588
1927	520	555	407	342	1 657	846	756	439	437	455	374	605
1928	520	504	360	407	574	894	555	358	504	472	374	588
1929	520	353	309	260	396	553	319	325	454	423	325	521
1930	472	319	244	293	432	618	336	325	487	455	342	571
1931	488	336	244	244	306	455	336	390	420	390	293	471
1932	439	303	878	732	2 225	716	403	360	370	374	325	538
1933	488	319	244	309	396	569	319	325	303	358	293	487
1934	455	319	260	244	488	488	303	342	454	423	325	521
1935	488	370	309	846	648	992	1 277	569	437	423	358	571
1936	537	370	325	407	3 373	992	773	472	471	455	360	605
1937	537	387	358	1 080	4 988	1 626	1 143	2 846	471	472	407	622
1938	602	639	1 480	1 968	7 274	12 572	5 109	12 116	2 723	1 008	455	672
1939	781	623	423	360	646	797	538	472	588	569	455	689
1940	634	454	407	1 480	1 843	1 171	706	537	521	455	455	689
1941	634	471	797	992	3 943	1 805	1 344	3 074	2 538	602	504	723
1942	764	623	1 090	1 025	1 348	1 073	867	716	605	585	504	723
1943	687	874	472	1 659	1 134	3 773	790	1 610	571	520	488	706
1944	683	555	472	455	782	1 025	605	553	571	520	537	756
1945	683	505	468	439	1 891	1 431	823	618	805	537	520	756
1946	651	521	583	472	632	846	706	520	655	602	504	706
1947	585	504	472	342	540	618	437	423	555	537	439	639
1948	553	387	309	260	365	618	773	455	454	520	423	639
1949	589	387	309	293	430	878	471	407	538	520	407	622
1950	553	370	309	360	756	602	487	360	403	504	360	605
1951	537	1 143	2 944	3 041	782	784	454	439	403	360	360	605
1952	589	403	883	1 805	1 043	2 602	2 188	7 904	504	455	439	655
1953	716	756	589	732	522	618	471	455	487	439	423	655
1954	585	420	374	358	612	813	585	455	571	537	439	639
1955	585	403	358	423	468	602	454	488	538	520	423	622
1956	589	403	4 391	5 989	3 492	1 203	605	2 618	706	504	439	655
1957	553	420	358	293	486	667	420	504	454	504	407	622
1958	589	403	358	423	918	1 789	2 269	3 269	1 546	472	439	655
1959	689	706	342	342	738	589	403	407	521	520	407	622
1960	553	387	309	293	556	618	437	423	521	504	407	605
1961	504	370	293	244	360	488	336	325	487	455	358	571
1962	504	336	260	244	2 377	911	437	360	387	423	358	571
1963	504	336	260	439	900	683	1 042	585	538	360	342	555
1964	504	454	293	293	400	651	387	374	487	455	358	571
1965	537	454	976	1 464	576	651	975	520	454	407	360	605
1966	589	605	553	504	594	634	420	407	538	520	407	622
1967	585	420	781	716	1 134	1 236	3 949	9 059	2 218	2 179	455	672
1968	683	689	360	342	522	634	420	407	521	520	407	622
1969	602	454	504	4 847	14 621	8 278	10 621	12 087	4 033	1 564	472	689
1970	634	790	423	3 513	810	1 073	521	472	471	455	439	672
1971	602	471	586	472	558	634	454	520	487	553	466	655
1972	553	387	360	325	489	537	387	374	538	504	407	622
1973	589	420	358	537	1 927	1 447	723	504	685	472	423	639
1974	589	437	472	1 362	648	1 171	1 082	504	487	504	439	655
1975	602	437	360	358	1 080	1 269	908	602	521	488	423	672
1976	589	437	358	309	400	589	353	423	487	455	358	555
1977	1 041	370	276	276	305	537	319	342	336	276	276	370
1978	342	286	293	976	3 187	7 056	8 773	6 310	471	976	423	639
1979	589	739	358	911	1 386	1 301	688	472	403	423	360	605
1980	537	403	325	2 586	6 224	6 440	689	3 389	454	689	407	605
1981	589	706	358	423	504	716	454	360	604	520	407	622
1982	634	504	472	1 252	1 801	2 114	10 686	5 706	1 277	504	504	723
1983	829	1 781	8 311	9 758	17 070	16 384	9 986	12 246	14 318	976	504	571
1984	2 277	3 933	8 326	6 326	800	797	538	504	521	504	504	723
1985	585	487	407	325	576	689	471	423	571	537	423	639
1986	634	504	439	407	8 121	8 880	3 311	3 757	1 988	553	488	706
1987	553	555	309	309	466	651	403	423	538	520	423	622
1988	520	353	276	260	313	472	353	309	454	423	308	521
1989	472	319	260	228	306	553	303	293	437	423	325	521
1990	472	319	228	226	324	488	303	293	437	423	325	521
1991	455	303	211	179	198	797	319	276	303	374	276	454
1992	520	555	244	244	730	585	420	485	588	618	439	605
1993	618	454	423	2 342	938	439	454	589	2 773	589	504	739
1994	602	538	306	276	504	520	387	455	622	602	455	588

San Joaquin Basin 60-20-20 Index

San Joaquin River at Stevinson - CP # 694: SJR DIVERSION, NON-PROJECT DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	601	691	572	589	546
NOV	550	803	464	533	366
DEC	1 187	1 085	387	385	278
JAN	2 083	1 464	348	348	280
FEB	4 101	1 406	738	524	402
MAR	4 083	964	747	633	558
APR	3 325	737	524	452	350
MAY	4 493	505	446	405	360
JUN	2 123	502	486	512	467
JUL	731	458	503	503	449
AUG	458	419	417	401	348
SEP	689	640	633	611	531

STUDY 1995C06F-SWR[illegible] DWRSIM: recirc818-f, 17 Jun 97
CP # 4, SHASTA LAKE, E[illegible]ORAGE (MAF)

Project. /1995C06F-SWRCB-507/4/STORAGE-EOP//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP*
1922	2.81	2.69	2.84	2.9	3.3	3.74	4.35	4.55	4.4	4	3.68	3.48
1923	3.38	3.25	3.29	3.4	3.33	3.35	3.63	3.52	3.2	2.6	2.4	2.38
1924	2.4	2.41	2.41	2.4	2.55	2.56	2.35	2.11	1.8	1.5	1.27	1.10
1925	1.15	1.3	1.41	1.5	2.83	3.19	3.94	4.23	4.1	3.6	3.3	3.22
1926	3.16	3.11	3.04	3	3.67	3.6	3.91	3.77	3.3	2.7	2.39	2.27
1927	2.25	2.73	3.24	3.7	3.46	4.14	4.55	4.55	4.3	3.9	3.52	3.40
1928	3.35	3.25	3.32	3.5	3.91	3.97	4.53	4.4	4	3.4	2.9	2.76
1929	2.72	2.72	2.73	2.7	2.87	2.9	2.96	2.82	2.6	2.3	2.02	1.89
1930	1.87	1.86	2.4	2.6	3	3.51	3.77	3.77	3.4	3	2.63	2.58
1931	2.63	2.49	2.43	2.5	2.5	2.63	2.47	2.29	2.1	1.8	1.62	1.45
1932	1.38	1.37	1.59	1.7	1.88	2.32	2.37	2.52	2.4	2.1	1.89	1.78
1933	1.75	1.7	1.7	1.7	1.78	2.37	2.52	2.58	2.5	2.2	1.95	1.83
1934	1.82	1.79	1.93	2.2	2.58	2.83	2.83	2.7	2.5	2	1.81	1.40
1935	1.34	1.49	1.55	1.9	2.21	2.83	3.64	3.81	3.6	3.2	2.9	2.77
1936	2.89	2.61	2.55	3.1	3.59	3.89	4.14	4.08	3.9	3.4	2.92	2.80
1937	2.7	2.61	2.51	2.4	2.43	3.02	3.7	3.92	3.8	3.3	2.89	2.73
1938	2.66	3.15	3.31	3.7	3.55	3.42	4.06	4.55	4.6	4.3	3.95	3.70
1939	3.4	3.25	3.33	3.4	3.8	3.77	3.59	3.42	2.8	2.4	1.92	1.86
1940	1.79	1.71	1.85	2.7	3.25	3.44	4.34	4.46	4.2	3.6	3.24	3.19
1941	3.16	3.15	3.29	3.3	3.42	3.94	4.46	4.55	4.6	4.3	4	3.70
1942	3.4	3.25	3.32	3.4	3.62	3.86	4.55	4.55	4.6	4.3	3.96	3.70
1943	3.4	3.25	3.36	3.5	3.85	4.12	4.55	4.55	4.3	4	3.57	3.44
1944	3.4	3.25	3.2	3.2	3.39	3.63	3.75	3.73	3.3	2.8	2.37	2.25
1945	2.28	2.48	2.79	3	3.77	4.13	4.46	4.55	4.4	3.8	3.39	3.29
1946	3.26	3.25	3.27	3.6	3.77	4.09	4.42	4.47	4.2	3.8	3.4	3.32
1947	3.25	3.25	3.26	3.2	3.35	3.79	3.97	3.71	3.4	2.9	2.48	2.37
1948	2.46	2.5	2.52	3.1	3.03	3.29	4.27	4.55	4.5	4.2	3.75	3.70
1949	3.4	3.25	3.22	3.1	3.22	4.07	4.44	4.46	4.1	3.5	3.12	3.02
1950	2.92	2.84	2.75	2.9	3.24	3.81	3.97	3.94	3.6	3.1	2.73	2.68
1951	2.98	3.25	3.32	3.6	3.79	4.26	4.47	4.55	4.1	3.6	3.15	3.10
1952	3.06	3.17	3.31	3.6	3.74	4.02	4.29	4.55	4.6	4.3	3.95	3.70
1953	3.4	3.25	3.35	3.4	3.63	4.1	4.51	4.55	4.6	4.3	3.97	3.70
1954	3.4	3.25	3.35	3.6	3.86	4.11	4.55	4.46	4.3	3.9	3.56	3.55
1955	3.4	3.25	3.36	3.4	3.48	3.46	3.79	4.01	3.6	3	2.82	2.60
1956	2.55	2.62	3.25	3.3	3.29	4.01	4.55	4.55	4.6	4.3	4	3.70
1957	3.4	3.25	3.23	3.3	3.68	4.13	4.3	4.55	4.4	3.9	3.53	3.59
1958	3.4	3.25	3.34	3.5	4.55	3.42	4.17	4.55	4.6	4.3	4	3.70
1959	3.4	3.25	3.26	3.6	3.78	4.06	4.2	4.19	3.7	3.1	2.75	2.83
1960	2.78	2.72	2.66	2.8	3.45	4.13	4.33	4.55	4.1	3.6	3.13	3.08
1961	3.02	3.06	3.35	3.5	3.91	4.28	4.47	4.55	4	3.4	2.98	2.95
1962	2.86	2.93	3.19	3.2	3.58	4.09	4.41	4.44	4.1	3.6	3.18	3.12
1963	3.4	3.25	3.35	3.4	3.94	4.23	4.14	4.55	4.4	4.1	3.8	3.70
1964	3.4	3.25	3.28	3.6	3.64	3.73	3.8	3.48	3.1	2.6	2.27	2.23
1965	2.21	2.38	3.25	3.4	3.81	4.12	4.5	4.53	4.3	3.9	3.6	3.55
1966	3.4	3.25	3.34	3.7	4.04	4.23	4.55	4.47	4.1	3.6	3.2	3.13
1967	3.05	3.25	3.34	3.6	3.92	4.03	4.46	4.55	4.6	4.3	3.99	3.70
1968	3.4	3.25	3.3	3.4	3.65	4.19	4.25	4.31	3.9	3.4	3.2	3.15
1969	3.14	3.16	3.35	3.4	3.48	4.03	4.43	4.55	4.6	4.3	4	3.70
1970	3.4	3.25	3.32	3.3	3.43	4.14	4.21	4.21	3.9	3.4	3.13	3.08
1971	3.09	3.25	3.32	3.5	3.8	3.87	4.44	4.55	4.6	4.3	4	3.70
1972	3.4	3.25	3.36	3.6	3.93	4.25	4.55	4.55	4.1	3.6	3.28	3.29
1973	3.32	3.25	3.35	3.6	3.64	4.16	4.5	4.55	4.3	3.9	3.63	3.60
1974	3.4	3.25	3.27	3.3	3.69	3.44	4.29	4.55	4.6	4.3	4	3.70
1975	3.4	3.25	3.35	3.4	3.94	3.76	4.39	4.55	4.6	4.3	4	3.70
1976	3.4	3.25	3.27	3.3	3.14	3.25	3.41	3.32	2.8	2.3	2.25	2.28
1977	2.33	2.35	2.35	2.4	2.21	2.21	1.89	1.79	1.5	1.2	1.06	1.02
1978	0.92	0.9	1.39	3.3	3.57	4	4.55	4.55	4.5	4.3	4	3.70
1979	3.4	3.25	3.21	3.3	3.52	3.96	4.17	4.42	4.1	3.6	3.37	3.33
1980	3.33	3.25	3.32	3.5	3.29	3.98	4.33	4.46	4.2	3.9	3.66	3.67
1981	3.4	3.25	3.32	3.5	3.86	4.26	4.48	4.42	3.9	3.3	2.94	2.86
1982	2.85	3.25	3.28	3.6	3.53	3.95	4.09	4.55	4.6	4.3	4	3.70
1983	3.4	3.25	3.33	3.4	3.25	3.93	4.07	4.55	4.6	4.3	4	3.70
1984	3.4	3.25	3.29	3.7	4.01	4.25	4.46	4.55	4.4	3.9	3.74	3.70
1985	3.4	3.25	3.36	3.4	3.49	3.65	3.86	3.84	3.2	2.7	2.4	2.44
1986	2.48	2.64	2.72	3.3	3.25	3.63	3.98	4.05	3.7	3.3	2.97	3.05
1987	3.05	3.03	3.01	3	3.27	3.93	3.96	3.78	3	2.5	2.01	1.89
1988	1.82	1.86	2.42	2.9	2.91	2.97	3.12	3.1	2.7	2.1	1.84	1.81
1989	1.81	2.03	2.15	2.3	2.39	3.8	4.35	4.24	3.8	3.4	3.11	3.12
1990	3.17	3.12	3.03	3.2	3.15	3.31	3.18	3.32	3	2.5	2.14	2.08
1991	1.96	1.94	1.93	1.9	1.87	2.33	2.52	2.53	2.3	2.1	1.86	1.74
1992	1.72	1.7	1.72	1.8	2.46	2.93	3.15	3.01	2.7	2.3	2.03	1.92
1993	1.86	1.8	2.05	2.7	3.49	3.55	4.33	4.55	4.6	4.2	4.02	4.01
1994	3.4	3.25	3.29	3.3	3.45	3.49	3.49	3.45	2.8	2.4	2.03	1.98

* EOM September storage used as October 1st of following year
Shading means "disregard"

Year	Oct 1st Storage	AFRP Vol III Recommended Keswick Release
1925	1.10	3250
1930	1.89	3250
1932	1.45	3250
1933	1.78	3250
1934	1.83	3250
1935	1.40	3250
1940	1.86	3250
1978	1.02	3250
1988	1.89	3250
1989	1.81	3250
1991	2.08	3250
1992	1.74	3250
1993	1.92	3250
1927	2.27	3500
1945	2.25	3500
1965	2.23	3500
1977	2.28	3500
1924	2.38	3750
1948	2.37	3750
1986	2.44	4000
1931	2.58	4250
1951	2.68	4500
1956	2.60	4500
1929	2.76	4750
1936	2.77	4750
1938	2.73	4750
1937	2.80	5000
1960	2.83	5000
1982	2.86	5000
1962	2.95	5250
1923	3.43	5500
1926	3.22	5500
1928	3.40	5500
1939	3.70	5500
1941	3.19	5500
1942	3.70	5500
1943	3.70	5500
1944	3.44	5500
1946	3.29	5500
1947	3.32	5500
1949	3.70	5500
1950	3.02	5500
1952	3.10	5500
1953	3.70	5500
1954	3.70	5500
1955	3.55	5500
1957	3.70	5500
1958	3.59	5500
1959	3.70	5500
1961	3.08	5500
1963	3.12	5500
1964	3.70	5500
1966	3.56	5500
1967	3.13	5500
1968	3.70	5500
1969	3.15	5500
1970	3.70	5500
1971	3.08	5500
1972	3.70	5500
1973	3.29	5500
1974	3.60	5500
1975	3.70	5500
1976	3.70	5500
1979	3.70	5500
1980	3.33	5500
1981	3.67	5500
1983	3.70	5500
1984	3.70	5500
1985	3.70	5500
1987	3.05	5500
1990	3.12	5500
1994	4.01	5500

STUDY: 1995C06F-SWRCB-507 DWRSIM: recirc818-f, 17 Jun 97
CP # 62, KESWICK TOTAL REL[illegible] DOWNSTREAM FLOW (CFS)

Project: /1995C06F-SWRCB-507/62/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	4,716	4,000	4,001	4,001	3,997	4,001	4,000	8,733	9,747
1923	5,497	7,226	5,497	5,497	7,130	6,050	5,495	8,831	10,772
1924	3,757	3,748	3,757	3,757	3,616	4,033	7,210	7,384	8,285
1925	3,253	3,243	3,253	3,253	3,241	3,253	3,243	3,253	8,436
1926	5,497	5,495	5,497	5,497	5,492	6,993	5,495	7,904	12,487
1927	4,115	3,496	3,497	5,627	30,520	4,424	12,923	10,831	11,596
1928	5,497	10,554	5,497	5,497	5,302	16,995	5,495	10,246	12,016
1929	4,765	4,756	4,749	4,749	4,754	6,538	6,168	8,164	7,714
1930	3,724	3,764	3,253	3,253	3,241	3,253	3,243	5,546	11,041
1931	4,391	4,252	4,245	4,245	4,249	4,359	7,327	6,538	6,571
1932	4,570	3,580	3,253	3,253	3,129	3,253	6,386	5,139	6,958
1933	3,545	4,420	3,253	3,253	3,241	3,253	5,630	6,424	7,075
1934	3,578	3,882	3,253	3,253	3,241	3,919	6,084	6,798	7,260
1935	4,359	3,243	3,253	3,253	3,241	3,253	3,243	7,205	8,504
1936	4,749	4,756	4,749	4,749	10,344	4,749	4,756	7,010	9,848
1937	4,749	4,756	4,749	4,749	4,754	4,749	4,756	6,180	8,789
1938	4,749	4,756	16,703	4,749	30,952	35,536	14,537	10,100	11,041
1939	10,539	8,201	5,497	5,497	5,492	5,497	10,487	8,311	14,184
1940	4,733	4,974	3,594	3,253	24,078	22,362	3,243	6,619	11,277
1941	5,497	5,495	17,239	25,420	23,696	14,881	16,822	14,897	10,940
1942	11,157	8,470	19,972	20,492	29,422	5,497	5,865	13,613	10,890
1943	10,213	8,840	6,603	12,994	8,679	12,978	6,924	9,726	11,713
1944	5,595	7,899	5,497	5,497	5,302	5,497	5,647	7,253	12,554
1945	3,529	3,496	3,497	3,497	3,493	3,497	3,496	8,067	9,546
1946	5,497	8,823	22,899	7,872	5,890	5,497	5,495	8,294	10,218
1947	5,497	5,647	5,497	5,497	5,492	5,497	5,495	9,823	13,075
1948	3,757	3,748	3,854	3,757	5,528	5,302	3,748	10,132	10,083
1949	9,254	7,277	5,497	5,497	5,600	6,701	5,495	8,311	11,882
1950	5,497	5,495	5,497	5,497	5,492	5,497	5,495	8,246	10,705
1951	4,538	6,453	15,857	8,376	16,385	4,505	6,756	8,847	13,663
1952	5,497	5,495	16,654	8,864	19,263	12,442	19,444	11,189	9,798
1953	9,937	7,563	10,653	29,404	5,492	5,497	5,495	12,149	12,150
1954	10,083	10,453	5,497	13,954	18,942	10,897	12,335	12,246	10,419
1955	7,546	9,680	7,790	5,497	5,492	7,676	5,495	6,017	12,923
1956	4,960	4,504	22,720	31,291	22,566	4,375	5,109	13,808	9,361
1957	10,815	7,932	5,497	5,497	9,471	11,010	9,378	9,660	10,503
1958	10,978	10,201	10,441	13,011	33,887	44,871	15,562	10,230	11,932
1959	11,352	8,369	5,497	10,848	14,585	6,717	8,168	7,953	14,604
1960	5,936	5,848	5,497	4,993	4,833	4,993	5,832	5,595	15,125
1961	5,578	5,495	6,733	5,497	8,463	7,611	6,420	8,246	15,327
1962	5,887	5,243	5,253	5,253	15,971	6,115	5,882	7,611	11,411
1963	7,302	8,554	9,612	5,497	8,787	7,774	32,065	7,611	9,546
1964	10,311	12,150	5,497	5,497	6,606	5,725	9,546	8,018	12,302
1965	4,651	3,496	13,613	21,793	3,493	3,497	12,890	9,335	10,890
1966	7,530	13,024	5,497	6,847	6,824	13,434	8,336	9,595	13,142
1967	5,904	7,294	15,109	9,872	8,193	16,589	12,201	16,328	10,806
1968	10,474	7,932	5,497	5,497	15,925	5,497	8,117	6,993	13,680
1969	5,497	5,495	6,587	25,290	22,237	7,351	13,999	13,482	10,016
1970	10,539	8,067	16,101	54,092	16,710	5,497	9,176	7,969	12,251
1971	5,497	9,949	16,930	15,239	6,104	18,492	6,521	12,067	11,646
1972	10,701	8,571	5,497	5,497	5,302	12,084	8,520	9,213	14,352
1973	5,497	10,268	8,181	15,434	19,699	8,620	5,495	8,815	10,319
1974	9,628	33,191	23,745	40,203	8,395	38,398	10,487	9,872	10,067
1975	11,189	9,041	5,497	5,497	7,310	29,160	5,495	12,263	10,806
1976	11,515	8,773	5,497	5,497	9,284	6,798	5,495	7,888	14,335
1977	3,936	4,353	4,391	3,497	7,202	4,245	8,924	5,855	9,344
1978	6,066	4,806	3,253	3,432	16,025	15,369	7,999	11,059	8,537
1979	9,774	7,579	5,497	5,497	5,492	5,497	5,495	5,855	10,840
1980	5,497	7,932	5,497	17,939	31,015	5,497	5,495	6,701	10,184
1981	9,091	8,117	5,497	5,497	5,492	8,262	5,495	7,937	14,486
1982	4,993	12,117	23,094	7,969	24,218	13,873	26,822	5,611	9,378
1983	10,962	9,932	14,084	20,866	37,470	41,325	21,595	13,287	14,184
1984	13,271	17,209	27,501	9,319	5,946	11,726	7,378	8,717	11,075
1985	10,636	14,268	6,847	5,497	5,492	5,497	5,495	9,579	13,176
1986	4,359	4,000	4,001	4,001	47,374	21,533	4,000	8,343	11,915
1987	5,497	5,495	5,497	5,497	5,492	5,497	7,075	8,238	17,108
1988	5,481	4,117	3,253	3,253	6,485	5,676	4,033	7,595	12,453
1989	3,724	3,243	3,253	3,253	3,241	3,253	3,243	8,636	11,596
1990	5,497	5,495	5,497	5,497	5,492	5,497	6,571	6,668	12,974
1991	5,432	4,386	3,594	3,253	5,420	3,253	3,243	6,213	7,378
1992	3,936	3,243	3,253	3,253	3,129	3,253	4,067	7,985	10,184
1993	5,123	4,504	3,253	3,253	3,241	25,469	3,243	8,733	11,260
1994	6,912	15,461	5,497	5,497	5,492	6,505	5,714	8,408	14,705

Location: Upper Sacramento Rver Below Keswick
CP # 62, Upper Sacramento River below Keswick

Shasta Reservoir Oct 1st Carryover Storage (MAF)	October thru April Average Flows (cfs)	Years included in Average flow Calculations
< 2.2	4,737	1925, 30, 32, 33, 34, 35, 40, 78, 88, 89, 91, 92, 93
>=2.2	6,753	1927, 45, 65, 77
>= 2.3	4,255	1924, 48
>= 2.4	12,752	1986
>= 2.5	4,724	1931
>= 2.6	11,314	1951, 56
>= 2.7	8,920	1929, 36, 38
>= 2.8	8,775	1937, 60, 82
>= 2.9	7,086	1962
>= 3	9,978	1923, 26, 28, 39, 41, 42, 43, 44, 46, 47, 49, 50, 52, 53, 54, 55, 57, 58, 59, 61, 63, 64, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 90, 94

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Comparison of DWRSIM Study 513 (Flow Alternative 5) flows at various control points with recommended flows from AFRP Working Paper Vol III

Location: Upper Sacramento Rver Below Keswick

CP # 62, Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS

SALMONIDS

Objective: Enhance rearing, maintain spawning habitat, & temperature control Page 3-Xa-14, Vol III

Shasta Reservoir Oct 1st Carryover Storage (MAF)	AFRP Working Pap Recommended Flow	October thru April Average Flows (cfs)	Years included in Average flow Calculations	Ratio
< 2.2	3,250	4,328	1925, 30, 32, 33, 34, 35, 78, 92	1.33
>= 2.2	3,500	10,481	1940	2.99
>= 2.3	3,750		No years in this category	
>= 2.4	4 000	6,511	1924, 45, 65, 93	1.63
>= 2.5	4,250	4,436	1988, 91	1.04
>= 2.6	4,500	8,187	1927, 48, 77, 86	1.82
>= 2.7	4 750	8,799	1937, 38, 89	1.85
>= 2.8	5,000	5,311	1931	1.06
>= 2.9	5,250	10,011	1929, 56	1.91
>= 3	5,500	10,022	1923, 26, 28, 36, 39, 41, 42, 43, 44, 46, 47, 49, 50, 53, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 66, 67, 68, 69, 70 71, 72, 73, 74, 75, 76, 79, 80, 81, 82, 83, 84, 85, 87, 90, 94	1.82

Location: Feather River at Nicolaus CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective Enhance rearing & maintain spawning habitat, Page: 3-Xc-11, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.19	0.89	0.89	0.91												1.19	0.89	0.89	0.91	
Nov	2.03	1.59	0.92	1.30												2.03	1.59	0.92	1.30	
Dec	5.59	1.94	1.48	1.27												5.59	1.94	1.48	1.27	
Jan	8.83	5.08	2.90	2.69												8.83	5.08	2.90	2.69	
Feb	10.53	5.94	4.49	3.15							2.29	1.29				2.29	1.29	4.49	3.15	
Mar	9.54	8.50	3.76	3.94							2.07	1.85				2.07	1.85	3.76	3.94	
Apr	5.51	3.62	1.72	2.03		0.94	0.81	0.41	0.47	0.71	1.44	0.95				0.94	0.81	0.41	0.47	0.71
May	4.47	2.61	2.02	1.03		0.78	0.65	0.60	0.33	0.34	1.17	0.68				0.78	0.65	0.60	0.33	0.34
June	9.28	5.41	4.65	3.78		0.95	0.95	0.95	1.14	1.47						0.95	0.95	0.95	1.14	1.47
July	5.80	6.46	7.55	6.87												5.80	6.46	7.55	6.87	
Aug	1.96	3.16	4.29	4.11												1.96	3.16	4.29	4.11	
Sept	1.15	0.50	0.37	0.99												1.15	0.50	0.37	0.99	
															April-May-June Average:	0.89	0.80	0.65	0.65	0.84

Location: Yuba River at Marysville DEPLETION AREA 67, DOWNSTREAM FLOW

	SALMONIDS Objective Optimize migration, spawning and incubation, Page 3-Xc-14-25					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.14	0.95	0.86	0.87	0.99						No Working Paper flow recommendations					1.14	0.95	0.86	0.87	0.99
Nov	3.05	2.50	1.49	1.62	1.22											3.05	2.50	1.49	1.62	1.22
Dec	6.55	3.26	2.33	1.70	1.27											6.55	3.26	2.33	1.70	1.27
Jan	9.62	7.06	4.29	2.91	2.48											9.62	7.06	4.29	2.91	2.48
Feb	10.48	8.47	5.80	4.35	3.14											10.48	8.47	5.80	4.35	3.14
Mar	10.66	8.90	5.61	4.73	2.77											10.66	8.90	5.61	4.73	2.77
Apr	5.38	4.76	3.22	2.26	1.38	0.66	0.67	0.45	0.41	0.49						0.66	0.67	0.45	0.41	0.49
Mary	2.87	1.92	1.33	0.77	0.56	0.58	0.47	0.38	0.31	0.43						0.58	0.47	0.38	0.31	0.43
June	3.02	2.29	1.67	1.05	0.98	0.71	0.88	0.78	0.79	1.05						0.71	0.88	0.78	0.79	0.98
July	5.75	3.24	2.40	1.61	1.38											5.75	3.24	2.40	1.61	1.38
Aug	2.89	2.11	1.74	0.99	0.85											2.89	2.11	1.74	0.99	0.85
Sept	1.77	1.56	1.26	0.82	0.76											1.77	1.56	1.26	0.82	0.76
															April-May-June Average:	0.65	0.67	0.53	0.50	0.63

Location: Sacramento River at Verona (RM 80) (Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)

	SALMONIDS Objective:					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective provide attraction passage, spawning, an larval transport, Page: 3-Xh-8, Vol III					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	No Working Paper flow recommendations					No Working Paper flow recommendations														
Nov																				
Dec																				
Jan																				
Feb											1.60	1.36				1.60	1.36			
Mar											1.55	1.37				1.55	1.37			
Apr											1.08	0.77				1.08	0.77			
May											0.88	0.56				0.88	0.56			
June																				
July																				
Aug																				
Sept																				
															April-May Average.	0.98	0.67			

Location: Lower American River at H Street Bridge CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective optimize conditions in lower Am River for all life stages, Page: 3-Xc-42, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective.					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.88	0.86	1.06	1.08	2.19						No Working Paper flow recommendations					0.88	0.86	1.06	1.08	2.19
Nov	1.49	1.74	1.15	1.35	1.70											1.49	1.74	1.15	1.35	1.70
Dec	2.71	1.67	1.53	1.25	1.63											2.71	1.67	1.53	1.25	1.63
Jan	3.44	2.91	1.46	1.23	1.55											3.44	2.91	1.46	1.23	1.55
Feb	3.67	3.21	2.18	1.45	1.61											3.67	3.21	2.18	1.45	1.61
Mar	1.35	2.04	0.99	1.32	1.10											1.35	2.04	0.99	1.32	1.10
Apr	1.28	1.40	1.18	0.99	0.57	0.57	0.50	0.41	0.31	0.27						0.57	0.50	0.41	0.31	0.27
May	1.24	1.16	0.93	0.91	0.54	0.46	0.36	0.32	0.30	0.26						0.46	0.36	0.32	0.30	0.26
June	1.29	1.48	1.25	1.30	3.93	0.72	0.93	0.89	0.96	1.15						0.72	0.93	0.89	0.96	1.15
July	1.10	0.87	0.86	1.42	3.04											1.10	0.87	0.86	1.42	3.04
Aug	1.33	1.16	0.92	1.35	1.43											1.33	1.16	0.92	1.35	1.43
Sept	1.49	1.57	1.45	1.95	0.67											1.49	1.57	1.45	1.95	0.67
															April-May-June Average	0.58	0.60	0.54	0.52	0.56

Location. San Joaquin River at Vernalis CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page. 3-Xd-47, 3-Xe-20, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-19 Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page 3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	3.09	5.07	4.85	8.08	5.52											3.09	5.07	4.85	8.08	5.52
Nov	1.42	2.30	2.76	2.85	3.45											1.42	2.30	2.76	2.85	3.45
Dec	1.30	1.97	2.44	2.21	2.31											1.30	1.97	2.44	2.21	2.31
Jan	1.79	2.11	2.21	2.11	1.93											1.79	2.11	2.21	2.11	1.93
Feb	2.83	2.00	2.05	2.63	2.12						1.01	0.56				1.01	0.56	2.05	2.63	2.12
Mar	2.72	1.91	1.76	1.94	1.57						1.04	0.53				1.04	0.53	1.76	1.94	1.57
Apr	0.67	0.70	0.75	0.84	0.91	2.70	1.90	1.30	1.44	1.86	1.00	0.60				0.67	0.60	0.75	0.84	0.91
May	0.64	0.56	0.53	0.62	0.72	1.32	0.76	0.73	0.84	1.20	0.96	0.48				0.64	0.48	0.53	0.62	0.72
June	0.55	0.44	0.58	0.69	0.77	1.12	0.64	0.81	1.07	1.45						0.55	0.44	0.58	0.69	0.77
July	1.50	2.75	3.64	6.22	5.52											1.50	2.75	3.64	6.22	5.52
Aug	3.52	4.95	6.25	7.05	7.18											3.52	4.95	6.25	7.05	7.18
Sept	3.99	4.93	5.42	6.66	6.89											3.99	4.93	5.42	6.66	6.89
															April-May-June Average:	0.62	0.51	0.62	0.72	0.80

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective Double natural production. Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-21, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.26	2.73	3.56	5.93	1.68											2.26	2.73	3.56	5.93	1.68
Nov	1.36	1.74	1.64	1.82	1.36											1.36	1.74	1.64	1.82	1.36
Dec	1.45	3.19	1.49	1.72	1.07											1.45	3.19	1.49	1.72	1.07
Jan	2.93	2.79	1.70	1.88	1.00											2.93	2.79	1.70	1.88	1.00
Feb	5.54	2.69	2.16	2.65	1.08											5.54	2.69	2.16	2.65	1.08
Mar	4.18	1.89	1.59	1.18	1.27						No Working Paper flow recommendations					4.18	1.89	1.59	1.18	1.27
Apr	1.13	0.81	0.59	0.95	0.91	0.40	0.33	0.23	0.29	0.51						0.40	0.33	0.23	0.29	0.51
May	0.79	0.55	0.69	0.67	0.64	0.17	0.14	0.12	0.18	0.32						0.17	0.14	0.12	0.18	0.32
June	1.05	0.69	2.22	2.77	2.66	0.31	0.16	0.20	0.31	0.53						0.31	0.16	0.20	0.31	0.53
July	2.28	1.84	2.21	2.76	2.65											2.28	1.84	2.21	2.76	2.65
Aug	1.88	1.90	2.28	2.85	2.73											1.88	1.90	2.28	2.85	2.73
Sept	2.09	1.96	2.35	2.93	2.77											2.09	1.96	2.35	2.93	2.77
															April-May-June Average:	0.30	0.21	0.19	0.26	0.45

Location: Tuolumne River from LaGrange Dam to the SJR confluence CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.04	2.35	2.19	3.85	3.47											1.04	2.35	2.19	3.85	3.47
Nov	0.50	0.91	1.18	1.41	2.11											0.50	0.91	1.18	1.41	2.11
Dec	0.59	0.95	1.52	1.20	1.56											0.59	0.95	1.52	1.20	1.56
Jan	1.01	1.17	1.24	1.08	1.23											1.01	1.17	1.24	1.08	1.23
Feb	1.61	0.92	1.09	1.05	0.68											1.61	0.92	1.09	1.05	0.68
Mar	1.66	1.10	0.77	0.92	0.38	No Working Paper flow recommendations					No Working Paper flow recommendations					1.66	1.10	0.77	0.92	0.38
Apr	1.06	0.68	0.52	0.52	0.44											1.06	0.68	0.52	0.52	0.44
May	0.48	0.36	0.34	0.34	0.32											0.48	0.36	0.34	0.34	0.32
June	0.64	0.25	0.21	0.29	0.24											0.64	0.25	0.21	0.29	0.24
July	0.78	0.95	1.24	2.54	2.54											0.78	0.95	1.24	2.54	2.54
Aug	1.15	2.18	2.43	1.79	3.15											1.15	2.18	2.43	1.79	3.15
Sept	2.44	2.91	1.59	1.83	3.19											2.44	2.91	1.59	1.83	3.19
															April-May-June Average:	0.73	0.43	0.36	0.39	0.33

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.87	3.03	1.94	4.49	1.65											1.87	3.03	1.94	4.49	1.65
Nov	0.73	1.09	0.80	0.57	0.61											0.73	1.09	0.80	0.57	0.61
Dec	0.91	1.16	0.85	0.63	0.61											0.91	1.16	0.85	0.63	0.61
Jan	1.09	1.30	1.00	0.80	0.54											1.09	1.30	1.00	0.80	0.54
Feb	1.56	1.25	1.05	1.81	0.79											1.56	1.25	1.05	1.81	0.79
Mar	0.99	0.61	0.62	0.83	0.42	No Working Paper flow recommendations					No Working Paper flow recommendations					0.99	0.61	0.62	0.83	0.42
Apr	0.68	0.65	0.57	0.57	0.47											0.68	0.65	0.57	0.57	0.47
May	0.56	0.36	0.35	0.39	0.38											0.56	0.36	0.35	0.39	0.38
June	0.63	0.28	0.23	0.34	0.26											0.63	0.28	0.23	0.34	0.26
July	0.55	0.94	1.42	1.39	1.14											0.55	0.94	1.42	1.39	1.14
Aug	0.30	0.41	0.56	0.85	0.77											0.30	0.41	0.56	0.85	0.77
Sept	0.73	0.35	0.46	0.50	0.56											0.73	0.35	0.46	0.50	0.56
															April-May-June Average:	0.62	0.43	0.39	0.43	0.37

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb																				
Mar						No Working Paper flow recommendations					No Working Paper flow recommendations									
Apr	1.02	1.07	1.15	1.29	1.60											1.02	1.07	1.15	1.29	1.60
May	0.99	0.60	0.85	1.09	1.41											0.99	0.60	0.85	1.09	1.41
June	0.68	0.90	1.18	1.75	2.59											0.68	0.90	1.18	1.75	2.59
July																				
Aug																				
Sept																				
															April-May-June Average:	0.90	0.86	1.06	1.37	1.87

Feather River at Nicolaus
STUDY 1995C06H-SWRCB-513 DWRSIM record818-h, 05 Sep 97
CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW (CFS)

Project: /1995C06H-SWRCB-513/37/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,643	1,882	1,073	4,228	7,583	12,913	8,941	26,298	18,388	4,977	667	891
1923	4,733	1,888	7,546	10,945	4,844	4,050	7,798	3,432	3,748	7,221	3,806	874
1924	1,090	2,101	3,692	3,610	3,198	3,806	1,580	3,123	6,067	3,529	1,805	504
1925	878	790	1,203	2,879	9,471	8,717	3,933	2,563	3,126	2,586	813	622
1926	1,025	1,328	309	5,611	5,600	5,856	7,512	4,480	2,286	7,985	5,123	289
1927	3,415	8,571	2,883	9,872	35,708	18,833	12,991	9,485	5,016	8,262	813	437
1928	1,388	4,823	309	10,181	4,172	43,098	7,277	6,977	2,101	9,108	4,472	588
1929	1,288	1,513	1,090	3,854	2,809	3,269	1,785	1,187	3,632	4,570	1,252	571
1930	1,041	1,847	2,732	8,571	630	10,051	4,907	3,108	3,697	7,598	4,147	975
1931	2,700	3,243	5,725	1,819	2,963	1,626	2,521	2,440	6,319	4,033	1,675	521
1932	1,301	2,067	1,691	7,091	3,807	1,486	4,168	3,968	5,697	1,708	553	420
1933	1,122	2,134	1,988	2,553	4,844	2,374	2,991	472	3,598	2,226	465	487
1934	537	1,277	943	5,546	324	4,928	5,983	1,122	3,832	2,563	634	1,395
1935	1,628	958	1,317	8,164	702	6,981	7,310	15,388	5,445	6,944	2,797	723
1936	1,317	1,613	1,984	8,888	27,086	18,020	8,504	8,603	3,598	6,278	1,919	235
1937	829	1,916	1,496	3,188	11,884	13,388	6,655	4,375	4,857	4,603	1,952	252
1938	1,289	3,428	26,753	11,254	25,280	37,813	27,581	26,136	17,932	4,212	1,480	4,588
1939	5,432	5,344	5,627	5,887	6,122	5,725	3,227	683	5,411	8,018	4,261	823
1940	1,122	1,949	563	4,977	4,798	40,626	32,603	5,965	3,280	6,457	927	2,672
1941	2,700	3,361	10,508	19,044	30,070	24,386	7,647	14,588	7,529	3,919	1,528	2,504
1942	5,172	3,546	20,284	17,987	35,742	10,620	22,880	13,743	11,814	3,548	1,067	2,470
1943	4,564	6,521	10,653	23,826	16,880	26,168	11,596	5,936	3,378	6,375	2,244	437
1944	1,252	1,513	1,903	4,407	12,813	8,002	2,134	1,203	4,622	7,708	3,383	252
1945	1,561	3,227	3,367	2,895	14,729	10,913	3,428	1,788	4,470	7,969	2,374	403
1946	1,073	2,958	12,133	15,488	8,373	9,880	2,252	1,610	4,252	8,565	5,465	622
1947	1,106	2,084	3,123	2,277	4,089	6,440	3,563	1,308	3,933	7,741	6,898	2,134
1948	1,431	1,479	1,708	1,756	3,181	3,058	7,361	9,726	5,781	9,807	8,457	1,479
1949	1,382	1,597	2,196	2,228	2,883	7,270	5,546	1,334	3,798	8,197	3,724	1,008
1950	813	1,277	1,138	4,798	8,049	5,880	5,025	4,586	4,289	8,798	7,384	1,126
1951	1,057	15,848	31,535	26,591	21,489	11,384	3,714	3,487	1,933	8,880	6,375	1,328
1952	1,724	2,881	8,229	23,712	22,218	17,142	27,780	33,617	16,503	5,172	2,749	3,889
1953	4,281	2,470	9,856	20,855	8,967	9,742	5,294	7,514	9,529	6,564	1,138	1,042
1954	4,636	4,924	3,009	8,536	15,053	18,979	13,629	9,595	2,739	9,026	6,587	975
1955	1,187	1,864	3,854	4,785	2,773	2,521	1,546	1,659	4,538	7,904	2,342	807
1956	520	1,076	5,887	42,984	20,708	16,459	6,958	15,629	9,025	5,367	1,289	2,185
1957	6,768	1,613	2,342	5,080	14,261	17,516	5,445	4,086	4,571	9,075	5,962	1,428
1958	1,875	1,082	2,982	6,099	28,179	31,323	26,418	18,719	11,831	4,619	2,198	3,714
1959	4,538	2,286	2,458	11,384	17,808	6,570	2,807	1,610	4,722	8,213	5,042	1,109
1960	618	1,983	1,025	2,797	5,128	5,448	2,807	1,080	2,521	5,725	683	2,941
1961	3,484	1,988	982	2,082	5,762	2,114	2,202	982	5,025	8,262	7,188	1,445
1962	2,085	638	980	1,561	12,370	7,548	3,680	3,139	5,863	7,172	2,683	2,538
1963	9,612	3,988	9,026	7,709	30,844	12,588	27,998	11,596	5,815	8,815	1,724	1,344
1964	1,496	7,764	1,415	8,587	2,590	4,375	2,084	1,334	3,128	7,904	7,075	2,823
1965	1,773	2,185	13,434	43,749	13,000	8,538	11,747	10,100	4,708	7,465	1,626	1,361
1966	943	8,756	4,830	6,522	5,564	6,981	3,344	4,001	3,479	8,587	7,091	420
1967	537	1,445	7,205	6,284	22,984	20,183	10,184	15,256	16,520	4,733	2,458	3,183
1968	4,389	1,849	3,399	9,988	14,012	16,524	4,386	846	3,580	6,424	3,724	0
1969	732	1,482	2,537	35,991	32,159	19,516	14,974	20,183	7,193	2,293	455	6,521
1970	2,488	2,991	21,686	63,086	41,646	13,645	3,529	1,203	2,059	7,400	2,830	588
1971	980	1,244	16,686	10,382	9,689	18,540	10,388	11,338	9,108	8,538	2,814	1,630
1972	2,049	2,807	7,042	5,871	9,840	10,230	5,848	1,691	3,647	7,693	7,140	1,849
1973	1,740	4,302	5,056	15,158	26,289	20,915	5,986	4,196	5,159	7,611	3,464	1,649
1974	1,675	18,806	18,524	37,243	15,827	37,308	27,830	10,831	8,382	4,098	1,986	5,395
1975	4,082	2,403	3,139	4,086	24,146	18,467	7,630	11,388	10,470	5,334	1,982	3,092
1976	6,131	3,749	4,964	4,310	5,024	4,198	2,067	1,138	3,280	6,343	4,619	1,412
1977	718	1,731	2,163	1,610	2,737	1,203	1,785	1,529	2,151	667	380	1,178
1978	589	454	1,073	10,636	7,526	14,344	9,898	4,245	4,636	3,108	1,415	1,482
1979	3,789	2,521	2,342	10,213	18,618	11,970	3,882	2,244	7,546	5,416	2,163	1,294
1980	1,545	2,134	2,537	38,236	38,821	22,330	7,496	4,183	4,487	2,989	1,041	1,109
1981	1,008	975	2,506	7,595	9,128	9,791	5,193	1,350	4,000	7,042	3,724	1,109
1982	878	8,285	33,783	32,104	34,697	34,478	46,871	18,186	9,159	4,488	2,086	5,949
1983	7,465	11,176	18,914	16,186	37,668	57,199	24,049	21,208	21,847	6,619	4,554	7,159
1984	5,221	21,578	46,880	25,127	16,325	14,558	4,840	2,797	3,664	7,885	2,309	756
1985	439	4,756	3,108	3,389	7,581	8,067	3,280	3,188	3,479	7,709	6,717	3,798
1986	1,626	1,988	4,131	6,213	49,985	54,082	7,781	2,368	2,403	5,936	1,952	1,849
1987	1,486	1,008	1,854	3,025	5,366	8,953	3,697	1,317	3,731	6,570	2,602	235
1988	2,911	1,513	911	4,180	2,382	1,908	2,370	1,108	3,344	4,424	380	17
1989	1,675	672	1,057	1,952	1,856	11,401	12,587	5,188	1,482	7,253	6,587	2,487
1990	1,415	2,504	1,464	5,680	4,898	3,822	5,378	618	2,353	1,984	618	605
1991	2,033	1,983	2,488	1,138	2,868	8,782	4,504	927	2,370	2,879	618	756
1992	1,041	1,280	1,041	3,080	10,170	4,284	3,498	1,187	3,109	2,618	358	236
1993	1,675	1,632	982	5,302	8,643	12,474	13,747	9,417	6,873	3,383	651	319
1994	3,155	2,672	3,887	3,350	8,121	2,261	1,260	0	2,000	6,505	4,630	0

Flow recommendations are based on water year types as defined on p. 23-24 of the SWRCB 1995 WQCP for the Bay Delta

Sacramento Basin 40-30-30 Index:
Wet - 1927, 38, 41, 42, 43, 52, 53, 56, 58, 63, 65, 67, 69, 70, 71, 74, 75, 82, 83, 84, & 86
Above Normal - 1922, 28, 40, 51, 54, 57, 73, 78, 80, & 93.
Below Normal - 1923, 35, 36, 37, 45, 46, 48, 50, 59, 62, 66, 68, 72 & 79
Dry - 1925, 26, 30, 32, 39, 44, 47, 49, 55, 60, 61, 64, 81, 85, 87 & 89
Critical - 1924, 29, 31, 33, 34, 76, 77, 88, 90, 91, 92, 94

San Joaquin Basin 60-20-20 Index:
Wet - 1922 37, 38, 41, 42, 43, 52, 56, 58, 65, 67, 69, 74, 75, 78, 80, 82, 83, 86, & 93
Above Normal - 1923, 27, 32, 35, 36, 40, 45, 46, 51, 63, 70, 73, 79 & 84
Below Normal - 1925, 28, 44, 48, 49, 50, 53, 54, 57, 62, 66, & 71
Dry - 1926, 33, 39, 47, 55, 59, 64, 68, 72, 81, & 85.
Critical - 1924, 29, 30, 31, 34, 60, 61, 76, 77, 87, 88, 89, 90, 91, 92, 94

Mean Monthly Flow in cfs by Water Year Type

73-year Flow Averages by Month and Water Year Type
Feather River at Nicolaus - CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	2,988	2,215	2,223	1,550	2,010
NOV	5,070	3,976	2,299	2,203	2,140
DEC	13,978	4,848	3,694	2,162	2,494
JAN	22,075	12,694	7,247	4,572	3,402
FEB	26,320	14,862	11,219	5,347	4,177
MAR	23,836	21,258	9,392	6,702	3,530
APR	16,526	10,872	5,163	4,273	2,973
MAY	13,417	7,844	6,056	2,154	1,237
JUN	9,276	5,413	4,647	3,778	3,686
JUL	5,797	6,458	7,549	6,869	3,528
AUG	1,961	3,155	4,265	4,114	1,470
SEP	2,863	1,262	923	1,364	640

CP 15 Yuba River at Marysville, Regulated Flow
Alternative 5 Hydrology

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	407	807	1,289	2,196	4,970	4,407	4,586	7,188	9,546	3,220	892	588
1923	585	1,126	4,261	3,432	2,885	2,844	2,907	2,309	2,823	1,317	894	708
1924	764	840	1,008	1,858	2,434	1,317	1,008	1,041	1,482	802	325	336
1925	651	586	1,080	1,431	5,078	3,367	2,487	2,000	1,849	829	797	586
1926	520	857	1,008	1,935	4,846	3,757	3,025	1,156	1,385	867	325	235
1927	407	4,087	2,867	4,050	9,687	6,489	6,084	5,725	4,895	2,883	829	822
1928	588	2,218	1,988	3,513	3,338	8,571	5,284	3,301	1,983	980	797	605
1929	589	840	982	1,584	2,289	1,773	1,587	1,041	1,482	802	325	235
1930	407	571	1,740	3,513	3,727	3,480	2,118	1,252	1,386	867	325	370
1931	867	1,143	878	1,805	1,819	1,626	1,178	1,041	1,482	802	342	336
1932	634	836	1,578	1,887	3,407	3,009	2,739	3,584	3,512	1,236	862	556
1933	504	756	862	1,584	1,785	1,903	1,731	1,301	1,482	802	325	235
1934	407	822	1,025	2,374	2,835	1,835	1,082	1,041	1,482	802	325	339
1935	618	823	894	1,870	2,179	2,537	5,294	4,749	3,613	1,859	862	588
1936	602	758	862	4,635	7,110	5,611	4,974	3,741	3,277	1,252	862	622
1937	504	723	829	1,610	3,863	3,952	3,647	3,871	3,159	976	781	555
1938	520	1,798	4,835	4,180	8,248	9,485	6,739	10,945	8,504	3,301	1,220	855
1939	797	891	862	1,740	2,053	2,212	1,311	1,156	1,386	867	325	235
1940	407	471	553	3,627	6,311	8,490	7,193	3,988	2,840	911	862	639
1941	588	1,128	3,859	4,700	7,743	6,522	5,143	5,025	4,302	3,236	1,025	739
1942	634	1,160	4,310	5,513	8,013	5,892	8,134	5,578	5,529	3,090	1,057	839
1943	520	2,353	3,773	6,505	6,032	8,248	5,058	4,521	3,546	1,545	1,008	672
1944	588	756	894	1,773	2,677	2,862	2,118	1,513	1,386	867	325	363
1945	537	1,781	2,048	2,277	5,078	4,716	2,554	2,867	2,888	1,057	827	822
1946	716	1,886	5,025	4,718	4,538	4,131	2,907	2,586	2,218	1,025	894	588
1947	553	1,980	1,496	1,626	3,133	3,171	1,983	1,156	1,386	867	325	235
1948	407	807	846	2,472	2,104	2,381	3,885	3,383	3,344	1,626	943	622
1949	504	840	1,289	1,675	2,341	3,936	2,790	1,513	1,385	867	589	588
1950	439	790	846	4,001	4,772	4,798	4,033	3,041	2,874	1,108	911	805
1951	976	6,285	8,790	10,880	8,880	5,432	4,084	3,041	2,101	1,080	894	584
1952	878	1,864	4,277	6,050	6,398	8,835	8,974	11,352	6,880	3,285	2,326	773
1953	504	773	1,654	6,017	4,592	4,733	3,428	3,236	4,185	3,186	1,080	656
1954	716	1,227	1,041	3,389	4,429	5,123	4,706	2,198	1,849	980	862	839
1955	553	941	1,858	2,505	2,251	2,163	1,798	1,756	1,385	867	325	235
1956	407	857	9,883	15,613	6,241	5,025	3,830	4,261	4,188	2,553	1,080	739
1957	894	941	829	1,984	4,483	5,042	2,504	3,822	3,126	1,138	980	723
1958	829	1,198	2,066	3,708	8,841	7,237	7,478	8,836	4,840	3,058	1,108	975
1959	818	823	862	3,545	4,393	2,879	1,781	1,578	1,546	748	358	288
1960	407	723	748	2,000	4,061	3,513	1,983	1,350	1,385	867	325	236
1961	439	1,082	1,155	1,675	2,845	2,309	1,630	1,155	1,385	867	439	555
1962	602	807	1,090	1,658	5,294	4,538	3,880	1,903	2,672	1,090	1,025	773
1963	4,163	3,412	3,432	4,245	6,878	4,879	6,386	5,676	3,781	2,147	1,108	790
1964	716	3,075	1,187	3,009	2,330	2,293	2,252	1,431	1,386	867	325	235
1965	407	1,042	11,368	15,645	5,168	4,570	4,657	3,643	3,880	1,870	1,236	790
1966	716	1,513	1,317	2,895	2,611	3,318	2,521	1,578	1,546	748	358	236
1967	407	1,847	3,936	5,074	4,988	5,774	4,605	5,806	6,188	3,383	2,326	739
1968	764	857	1,220	3,025	4,556	4,847	1,986	1,578	1,546	748	358	235
1969	407	1,008	2,033	10,380	7,743	6,310	6,188	8,424	4,504	2,927	1,041	672
1970	748	881	4,342	11,254	12,964	5,546	1,889	1,822	1,933	829	911	622
1971	748	2,708	4,538	4,847	4,538	5,074	2,881	4,147	3,983	2,862	1,220	874
1972	718	1,008	1,822	2,978	3,584	4,017	2,353	1,578	1,548	748	878	823
1973	943	2,080	3,074	5,741	7,635	6,245	4,151	3,286	2,286	1,122	978	640
1974	943	5,260	6,213	7,583	5,890	12,185	6,134	6,831	3,882	2,797	1,171	723
1975	718	941	927	2,277	5,008	5,513	3,008	4,885	4,386	3,285	1,334	908
1976	1,382	1,528	982	1,675	2,173	1,826	1,025	1,041	1,482	802	325	235
1977	802	756	718	829	918	878	1,227	1,350	1,482	802	325	202
1978	114	403	1,041	4,619	4,483	6,375	5,327	4,277	3,815	2,183	1,171	1,059
1979	834	908	894	2,976	4,105	4,342	2,554	2,781	2,188	1,008	927	889
1980	980	1,378	1,962	8,522	11,005	6,375	4,991	3,513	3,328	1,561	1,025	856
1981	716	773	1,073	2,435	2,885	3,056	2,067	1,155	1,386	867	325	235
1982	407	4,437	8,002	6,180	9,705	12,181	9,150	9,823	4,201	2,851	1,155	1,244
1983	1,122	3,025	4,359	5,676	8,787	12,019	10,520	5,887	9,344	3,285	3,155	1,143
1984	1,008	4,598	9,039	8,229	5,494	5,432	3,082	2,407	2,807	1,203	1,008	756
1985	797	2,823	1,546	1,952	2,611	2,861	2,134	1,171	1,386	867	325	236
1986	407	1,025	1,203	3,773	13,324	17,174	3,390	2,017	2,000	1,136	943	1,025
1987	927	739	846	1,724	2,846	2,198	1,126	1,156	1,412	867	325	235
1988	407	504	1,380	2,085	1,704	1,708	1,583	1,041	1,479	802	472	521
1989	802	1,244	911	1,496	2,036	8,981	4,622	2,098	1,748	862	878	773
1990	1,289	1,008	683	2,895	2,377	2,423	1,284	1,289	1,482	802	325	235
1991	407	838	520	943	1,188	3,464	1,889	1,108	1,482	797	813	568
1992	834	790	781	1,859	4,572	2,851	1,513	1,041	1,479	802	325	521

Sacramento Basin 40-30-30 Index
Yuba River at Marysville gage

Month	W	AN	BN	D	C
OCT	796	665	804	612	882
NOV	2136	1753	1042	1133	857
DEC	4586	2280	1830	1191	882
JAN	6736	4942	3008	2036	1738
FEB	7337	5826	4058	3043	2196
MAR	7461	6229	3830	3308	1937
APR	5379	4780	3217	2281	1375
MAY	5746	3844	2867	1538	1119
JUN	4635	3430	2502	1579	1465
JUL	2967	1456	1079	725	819
AUG	1303	849	784	445	364
SEP	796	704	567	388	341

A2-103

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Sacramento River at Verona

STUDY 1995C06H-SWRCB-513 DWRSIM reorc818-h 05 Sep 97

ALT 5 - SACRAMENTO RIVER FLOW AT VERONA (CFS)

CP 43 del - CP 64 del - CP 43 lin

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	8,685	8,739	11,824	14,381	27,207	26,509	18,352	36,267	25,307	11,254	7,140	8,504
1923	14,149	13,781	23,549	25,843	17,808	14,426	19,478	9,585	10,621	12,523	9,286	6,840
1924	8,406	8,638	10,831	12,019	14,047	10,522	7,126	9,010	13,377	8,538	7,010	6,487
1925	6,034	6,268	8,538	9,579	34,696	21,468	17,528	7,839	6,184	7,774	5,546	6,050
1926	8,685	8,672	8,164	16,475	31,186	16,068	18,402	10,344	6,890	13,873	10,474	6,636
1927	10,002	17,780	15,662	28,965	10,025	37,926	39,207	21,029	13,159	14,540	7,302	7,815
1928	10,116	22,822	12,311	23,468	23,783	69,689	23,713	14,897	11,713	15,385	10,962	8,067
1929	9,010	10,655	10,913	13,417	16,475	14,605	7,394	7,123	11,075	9,579	6,440	6,571
1930	6,440	6,655	11,821	19,370	14,477	25,973	10,520	9,025	10,436	14,084	9,774	6,638
1931	9,709	9,596	12,246	11,401	10,966	8,538	8,083	8,050	11,562	9,042	6,863	6,336
1932	6,017	6,891	11,140	14,914	10,396	7,253	9,277	9,058	10,636	5,245	5,266	6,117
1933	8,701	6,588	7,140	9,937	10,822	8,587	9,462	5,115	8,907	7,253	5,643	6,403
1934	5,497	5,815	9,042	15,206	11,272	13,303	11,529	6,879	10,184	7,741	5,608	7,411
1935	6,619	7,932	7,367	22,395	10,786	20,118	15,041	24,509	12,117	12,989	6,229	6,958
1936	10,490	9,529	10,490	26,265	47,340	30,006	17,545	14,569	10,722	11,547	7,400	6,756
1937	7,985	9,008	9,498	12,311	28,885	32,543	19,074	10,565	11,495	9,904	7,449	6,672
1938	9,514	20,990	47,099	26,542	67,702	67,184	40,165	45,830	27,175	11,401	7,888	14,873
1939	19,353	16,604	15,792	15,776	16,475	14,117	9,932	6,440	12,419	14,019	9,677	6,336
1940	7,514	7,747	6,522	23,029	39,881	50,709	36,266	12,946	12,033	12,718	7,416	10,087
1941	10,669	11,512	32,332	64,810	85,272	51,734	37,947	35,178	16,906	11,010	8,685	15,108
1942	18,898	15,259	57,719	52,547	68,136	23,726	38,182	30,787	21,931	10,425	7,514	12,520
1943	17,825	16,268	23,586	45,424	45,087	52,482	24,402	17,012	11,310	12,620	8,717	7,648
1944	10,913	12,201	10,913	15,499	28,372	22,265	7,747	7,286	10,319	13,775	8,880	6,857
1945	7,774	12,823	14,832	12,035	32,825	24,298	10,806	9,680	11,529	13,303	7,888	6,756
1946	9,547	18,365	46,416	36,105	20,383	21,533	8,773	8,376	11,159	13,922	10,929	6,806
1947	9,189	12,722	14,735	11,466	17,646	20,394	11,310	7,091	10,571	13,613	12,311	8,621
1948	9,075	9,764	9,189	13,936	11,057	14,474	20,604	26,461	16,923	15,044	11,905	8,890
1949	13,580	11,932	11,758	11,689	13,504	36,007	15,696	7,123	9,193	13,547	8,860	7,277
1950	8,034	8,453	8,701	17,695	26,217	17,678	12,891	10,669	11,226	14,052	12,816	7,260
1951	10,002	28,922	46,578	50,173	49,822	26,574	10,638	12,539	10,735	15,239	12,816	8,688
1952	10,230	13,562	40,919	53,360	52,590	48,920	48,603	48,416	26,015	11,966	9,400	15,881
1953	17,711	13,814	38,447	56,068	25,568	22,931	13,781	22,850	21,427	13,791	7,660	13,344
1954	17,695	18,772	12,442	30,283	52,289	44,367	35,762	20,313	12,318	15,389	13,271	8,436
1955	14,881	18,234	21,354	18,914	14,045	14,231	7,890	7,872	10,453	13,922	7,839	6,941
1956	8,555	11,041	20,118	68,290	56,111	34,706	17,444	31,600	17,698	12,767	7,806	14,234
1957	20,394	12,940	11,319	16,198	29,296	39,455	16,251	15,353	13,075	15,389	12,378	7,428
1958	21,484	18,636	21,110	34,153	52,055	83,984	38,199	33,421	25,328	13,791	10,653	18,268
1959	18,752	13,579	11,775	31,323	46,077	20,524	10,218	7,953	10,924	14,621	10,798	7,596
1960	8,831	9,361	8,831	13,468	24,930	25,908	8,621	9,823	9,142	11,856	6,115	9,630
1961	11,010	14,738	20,541	12,067	31,420	19,874	10,436	8,181	13,278	14,665	13,362	7,915
1962	9,319	10,772	18,052	12,116	41,990	25,322	10,686	9,482	14,362	13,271	8,213	9,478
1963	21,435	18,234	26,444	18,703	46,527	29,047	63,307	21,939	13,125	15,174	8,506	10,571
1964	15,873	26,267	11,547	21,436	13,734	13,824	7,966	7,709	10,872	13,743	12,572	8,756
1965	8,197	12,974	16,345	68,256	28,035	19,286	38,081	19,451	12,086	13,726	8,050	9,915
1966	13,271	25,830	14,117	26,054	23,948	27,453	14,150	10,653	9,630	14,328	13,080	7,428
1967	11,433	19,576	35,845	28,461	38,480	47,310	34,972	36,251	29,511	12,702	9,238	15,259
1968	17,841	13,411	13,808	26,542	45,410	34,576	12,184	7,302	11,495	13,743	9,319	6,605
1969	11,856	14,352	24,639	56,662	55,620	40,415	37,745	35,926	16,503	10,685	7,058	19,730
1970	16,540	14,621	42,805	70,014	51,245	32,962	12,100	8,717	11,125	14,149	9,530	8,352
1971	9,465	22,603	48,660	41,130	24,488	46,351	18,066	25,906	19,679	17,156	9,514	13,399
1972	16,101	14,100	18,085	17,792	21,364	29,047	17,780	7,823	10,604	14,686	12,702	6,705
1973	13,678	23,040	22,964	34,218	61,616	42,854	17,478	12,637	12,756	13,970	9,953	9,327
1974	16,556	53,374	53,295	65,946	35,632	90,083	24,872	22,167	17,125	14,600	10,425	20,536
1975	16,150	14,907	14,783	15,629	50,741	88,794	21,713	25,078	19,410	14,165	9,680	16,066
1976	21,110	15,209	13,775	14,133	17,333	16,914	8,974	7,319	12,907	13,678	10,181	7,042
1977	6,844	7,663	7,497	8,067	10,227	7,595	7,277	6,896	7,344	5,643	5,774	6,403
1978	6,440	5,663	11,010	49,083	42,656	40,041	32,989	17,174	10,336	7,888	7,253	14,251
1979	15,967	12,134	10,213	23,082	37,542	27,908	14,503	8,799	13,125	11,482	7,839	7,714
1980	12,458	16,923	16,784	46,497	57,458	33,519	17,528	11,417	11,243	9,238	7,497	8,554
1981	13,661	10,503	13,678	25,403	26,883	29,616	15,932	7,416	10,638	13,401	9,238	6,907
1982	9,758	38,317	52,807	41,634	52,253	80,289	61,844	27,209	18,402	12,084	9,059	18,486
1983	22,083	27,343	42,419	48,656	69,413	80,923	58,837	45,147	39,913	18,052	15,255	23,192
1984	22,801	47,425	66,469	40,187	30,963	34,023	14,806	12,588	12,388	14,442	8,733	11,629
1985	14,491	29,275	19,256	14,621	19,590	19,614	11,512	9,384	9,885	13,482	12,246	8,789
1986	8,522	9,109	14,885	30,167	64,805	62,159	18,736	9,530	9,280	12,214	8,424	8,235
1987	10,620	8,655	10,982	14,523	20,923	29,646	10,117	7,546	13,192	14,344	9,042	6,840
1988	8,457	7,378	14,165	23,647	13,178	8,815	7,781	6,701	11,528	10,555	6,050	6,168
1989	7,725	9,344	9,286	12,572	9,369	42,041	24,687	14,507	8,467	13,629	11,840	8,520
1990	10,734	9,529	9,351	18,622	14,945	13,580	11,058	6,034	10,503	8,733	6,278	6,958
1991	7,367	7,042	8,083	7,123	9,256	26,493	14,402	6,977	8,033	8,294	6,343	7,226
1992	5,867	5,563	5,367	10,166	26,477	18,101	11,461	7,156	10,907	9,189	6,164	7,226
1993	6,359	7,126	10,539	39,390	36,965	51,083	30,586	20,606	22,419	10,490	7,140	7,445
1994	13,624	20,133	14,572	13,775	23,598	14,523	8,436	5,639	12,100	13,584	10,815	7,579

Sacramento Basin 40-30-30 Index

Sacramento River at Verona - CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow

Month	W	AN	BN	D	C
OCT	14,364	11,334	11,782	11,062	9,471
NOV	20,462	15,270	12,821	13,026	9,484
DEC	35,064	16,229	15,435	13,026	10,249
JAN	44,991	32,670	21,677	15,496	13,126
FEB	49,798	42,297	29,388	20,492	15,049
MAR	48,346	42,480	24,279	22,394	13,465
APR	33,491	23,956	14,580	12,349	9,415
MAY	27,430	17,415	11,887	8,540	7,006
JUN	19,021	14,160	11,852	10,398	10,702
JUL	13,413	12,692	13,221	12,886	9,316
AUG	9,004	9,582	9,845	9,567	6,947
SEP	14,069	9,077	7,319	7,427	6,817

American River at H Street Bridge

STUDY 1995C06H-SWRCB-513 DWRSIM reorc818-h, 05 Sep 97

CP # 64 D-893 MINIMUM REQUIRED FLOW DOWNSTREAM FLOW (CFS)

Project /1995C06H-SWRCB-513/64/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,870	2,403	2,440	2,196	4,806	4,407	4,369	8,359	6,470	2,407	3,529	3,613
1923	2,374	2,403	6,981	5,080	3,979	2,618	3,311	4,375	4,790	2,244	2,000	2,773
1924	2,374	2,403	2,440	2,440	2,347	1,903	134	563	252	228	244	269
1925	683	1,412	1,447	1,187	5,744	4,538	2,487	3,415	3,496	2,568	2,000	2,807
1926	2,374	2,403	2,440	2,440	2,431	2,082	1,529	1,317	2,622	2,131	1,415	773
1927	1,870	1,916	2,309	4,050	13,667	4,926	8,184	3,887	4,504	2,228	3,074	3,798
1928	2,374	2,874	2,635	2,440	2,347	12,572	5,613	2,553	3,227	1,594	1,740	773
1929	1,870	2,403	2,440	2,196	1,945	2,308	622	1,057	3,361	2,651	244	269
1930	455	906	943	1,480	2,593	2,944	2,370	2,309	2,672	2,391	1,545	773
1931	1,870	1,916	1,952	1,952	1,945	1,529	639	585	1,076	764	276	303
1932	1,350	1,428	1,464	1,203	3,894	2,716	2,370	2,814	4,252	3,513	2,000	2,706
1933	2,374	2,403	2,440	2,440	2,431	1,903	2,202	1,057	2,000	1,594	1,252	269
1934	1,870	1,916	1,952	1,952	1,945	1,805	622	1,057	2,891	2,651	1,317	269
1935	927	504	504	439	2,017	2,911	7,361	3,350	4,889	2,440	2,000	3,512
1936	2,374	2,403	2,440	5,643	13,213	4,294	5,714	3,582	5,227	2,228	2,048	3,815
1937	2,374	2,403	2,440	2,440	2,883	4,310	4,420	3,918	4,151	2,228	2,000	2,437
1938	2,374	2,403	4,278	3,367	10,263	10,978	8,067	9,075	7,989	3,108	3,903	3,933
1939	2,374	2,403	2,440	2,440	2,431	1,903	1,445	1,057	2,101	1,864	829	269
1940	683	1,412	1,805	3,513	10,327	10,457	6,487	2,309	3,731	2,228	2,000	1,815
1941	2,374	2,403	4,564	5,904	8,265	4,830	3,815	4,570	4,252	2,228	2,244	3,848
1942	2,374	2,403	5,318	9,742	10,407	3,659	5,277	6,148	5,986	3,009	3,919	3,809
1943	2,374	3,815	4,879	11,433	7,346	12,474	5,294	2,814	4,017	2,228	2,000	3,277
1944	2,374	2,403	2,440	2,440	2,347	1,903	2,370	1,317	2,000	2,131	1,252	773
1945	1,870	2,403	2,440	2,196	9,147	2,407	2,504	2,895	4,050	2,228	2,000	2,840
1946	2,374	3,546	8,929	5,827	2,971	3,123	4,252	2,732	3,986	2,228	2,000	2,202
1947	2,374	2,895	2,440	2,440	2,431	1,903	1,378	1,317	2,954	1,988	1,252	773
1948	1,870	1,916	1,952	1,952	1,878	2,407	2,370	2,814	4,252	2,228	2,927	3,748
1949	2,374	2,403	2,440	2,440	2,431	2,407	2,807	2,309	2,739	2,374	2,000	1,260
1950	2,374	2,403	2,440	3,383	5,978	3,253	5,143	2,992	5,008	2,228	2,000	3,428
1951	2,374	17,380	15,467	10,457	8,517	3,497	3,025	3,480	4,389	2,228	2,000	1,781
1952	2,374	3,193	6,148	9,254	9,363	6,088	9,109	10,132	10,302	4,082	4,375	4,134
1953	2,374	2,403	2,749	7,758	2,756	2,407	2,874	3,582	4,252	2,814	3,903	3,885
1954	2,374	2,403	2,440	2,440	3,277	4,536	4,756	2,309	2,991	1,594	1,740	773
1955	1,870	2,403	2,440	2,309	1,963	2,976	2,370	1,317	2,087	1,984	1,252	773
1956	1,870	2,403	15,824	16,768	5,894	2,911	3,630	4,619	5,344	2,765	3,887	3,848
1957	2,374	2,403	2,440	2,440	3,223	4,651	3,227	2,309	4,186	2,228	2,000	1,798
1958	2,374	2,403	2,440	2,781	10,299	6,717	10,436	9,156	7,149	2,785	4,017	3,940
1959	2,374	2,403	2,440	2,440	2,521	1,903	1,580	1,317	2,151	1,935	1,252	269
1960	1,382	1,916	1,952	1,691	1,391	3,578	1,546	2,309	2,319	1,854	1,252	773
1961	1,870	2,403	2,440	2,196	1,945	1,513	756	553	1,583	1,269	439	269
1962	1,382	1,916	1,952	1,691	1,440	2,407	3,059	2,309	3,949	2,082	1,740	982
1963	3,952	4,403	3,594	4,115	11,580	2,911	6,689	6,229	3,613	2,228	2,131	3,848
1964	2,374	4,134	2,440	3,074	2,347	1,903	1,378	2,309	3,143	2,147	1,317	1,344
1965	1,382	1,916	20,947	12,897	5,364	2,407	4,218	3,582	4,453	2,228	2,944	3,882
1966	2,374	2,571	2,440	2,618	2,431	1,903	1,765	1,447	2,151	1,708	1,252	807
1967	1,870	1,916	2,944	7,288	4,772	6,213	4,536	7,790	8,889	3,757	4,017	4,050
1968	2,374	2,571	2,440	2,618	6,780	2,521	2,017	1,317	2,798	1,610	1,252	773
1969	1,870	1,916	1,952	15,450	9,561	4,407	7,042	7,611	5,798	2,488	3,741	3,882
1970	2,374	2,403	5,595	21,842	8,176	2,407	2,756	2,309	2,924	1,756	1,740	773
1971	1,870	2,807	6,408	5,269	3,745	4,080	2,941	3,582	4,252	2,228	3,367	3,680
1972	2,374	2,403	2,927	2,440	3,042	4,294	3,580	2,309	2,437	2,163	1,252	773
1973	1,870	2,403	2,851	9,683	7,853	3,952	2,756	3,708	3,882	2,228	2,000	1,798
1974	2,374	6,991	7,336	12,702	3,781	9,449	6,823	4,082	4,252	2,440	3,952	4,017
1975	2,374	2,403	2,440	2,440	3,133	4,588	3,630	4,017	5,294	2,407	3,808	3,781
1976	2,374	3,277	2,440	2,440	2,347	2,114	622	563	2,598	1,903	244	269
1977	374	504	504	439	2,017	325	504	130	134	260	276	437
1978	537	839	504	2,358	5,060	5,808	4,403	3,220	4,470	2,228	2,440	3,848
1979	2,374	2,403	2,440	2,440	2,809	3,390	2,370	3,708	2,739	2,618	2,000	1,983
1980	2,374	2,403	2,521	18,854	12,917	3,285	2,655	2,814	4,302	2,228	2,505	3,781
1981	2,374	2,403	2,440	2,440	2,431	1,903	1,126	1,057	2,252	1,854	748	269
1982	1,382	4,856	14,621	8,246	15,071	7,172	14,167	9,579	6,050	2,895	3,952	4,252
1983	2,374	8,453	8,912	7,920	12,820	16,231	7,109	9,254	14,150	5,790	4,684	4,739
1984	2,374	15,310	14,832	6,749	5,581	2,407	2,370	2,814	4,319	2,309	2,000	2,689
1985	2,374	4,186	2,927	2,440	2,431	1,903	2,370	1,317	2,539	2,033	1,350	773
1986	1,870	1,918	1,952	4,564	33,023	10,506	2,370	2,814	4,430	2,228	2,000	3,832
1987	2,374	2,403	2,440	2,440	2,431	1,903	622	563	2,856	1,756	1,220	521
1988	960	982	504	439	817	1,301	1,126	1,317	2,405	1,724	1,262	370
1989	1,382	1,916	1,952	1,691	1,440	6,083	4,823	[illegible]	[illegible]	2,212	1,740	773
1990	1,870	2,403	2,440	2,196	1,945	1,513	1,126	1,067	2,891	1,773	846	269
1991	813	1,412	1,447	1,187	1,188	1,415	1,378	1,317	2,060	1,594	1,740	773
1992	1,870	2,403	2,440	2,196	1,878	1,513	622	563	1,597	1,584	634	269
1993	374	504	504	3,985	6,104	8,148	4,790	3,773	4,874	2,716	3,253	3,580
1994	2,374	2,403	2,440	2,440	2,431	2,114	622	563	2,087	1,496	244	269

Sacramento Basin 40-30-30 Index

American River at H Street bridge - CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

Year Typ	W	AN	BN	D	C
OCT	2,211	1,721	2,128	1,898	1,750
NOV	3,735	3,480	2,304	2,361	2,036
DEC	6,783	3,341	3,053	2,193	1,853
JAN	8,586	5,817	2,930	2,147	1,859
FEB	9,184	8,423	4,362	2,542	1,936
MAR	8,082	6,131	2,982	2,635	1,645
APR	5,778	4,208	3,532	1,984	851
MAY	5,599	3,484	2,789	1,816	816
JUN	5,809	4,446	3,737	2,584	1,963
JUL	2,761	2,168	2,156	2,128	1,519
AUG	3,317	2,321	1,838	1,351	714
SEP	3,713	2,356	2,166	977	336

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C-032444

San Joaquin River at Vernalis

STUDY 1995C08H-SWRCB-513 DWRSIM recorall18-h 05 Sep 97

CP # 682 SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW (CFS)

Project /1995C08H-SWRCB-513/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	3,643	2,571	2,814	2,911	7 833	7 579	9 208	8 898	6,823	5 008	4 163	3 798
1923	4 536	2 622	3,822	4 326	5 726	5 025	7 361	6,522	5 428	4 554	3 919	3 647
1924	3 367	2 286	1 773	1,578	2 051	2 700	3 630	3,269	2 968	3 074	2 797	2 773
1925	3 090	2,084	1,561	1,382	3 799	4 472	6 319	5 643	4,907	4 407	3 773	3 546
1926	3 594	2 286	1 675	1 464	3 061	3 806	5 680	4 895	4 336	3 952	3 415	3 311
1927	3 448	2 773	2 212	2 000	6 230	6 115	7 999	6 536	5,277	4 798	3 936	3 466
1928	3 236	2 706	2 244	2 163	3 390	6 375	6 336	5 481	4 554	4 684	3 708	3 412
1929	3 415	2 252	1 643	1 431	2 125	2 879	4 300	3 643	3 328	3 383	3 009	2 975
1930	3 166	2 087	1 415	1,464	2 305	3 318	4 403	3 968	3 880	3,952	3 432	3 210
1931	3 318	2 050	1 431	1 317	1 637	2 423	3 546	3 301	3,075	3 155	2 830	2 807
1932	3 204	1 949	3,367	3 562	8 449	7 091	7 613	5 920	4 924	4 147	3 789	3 596
1933	3 497	2 319	1,659	1,758	2 989	3 643	4 739	4 342	3,866	3,529	3 253	3 143
1934	3 220	2 118	1 545	1 464	2 449	3 058	4 252	3 822	3,630	3 643	3,285	3 243
1935	3 286	2 218	1,708	3 204	5 240	5 969	8 957	7 839	5 846	4 603	3 687	3 546
1936	3 432	2 319	1 838	1 984	12 361	8 083	9 730	6 977	5 243	4 586	3 319	3 697
1937	3 692	2,437	2,326	2 830	12 172	9 677	12 167	11 612	8,021	4 749	4 131	3 832
1938	4 456	2 521	4 863	4,977	22 778	34 890	19 864	25 192	17 243	7,286	4,261	4 151
1939	10,539	3,143	2,635	2 765	4 538	4 391	5 428	4 749	4,289	4 082	3 659	3 396
1940	3 610	2,336	1 740	4,017	7 302	10 783	9 381	7 123	5,243	4,863	4 050	3 781
1941	3 806	2,636	3,220	4,554	14 333	13 580	13 982	12 383	9,730	5,253	4,294	3 748
1942	5 643	2,907	5,546	9 254	11 128	7 868	9 865	8 343	6 470	5 289	4 147	3 815
1943	8 522	3,580	3 887	10,913	11 778	16 898	11 082	10 327	6,554	5 025	4 163	3,848
1944	3 741	2 665	2 163	2 244	4 451	4 830	6 134	5 481	4 672	4 310	3 789	3 613
1945	3 643	2 672	2,048	1 789	6 986	7 668	9 361	7 367	5 411	4 749	4 082	3,832
1946	3,627	3 082	5 042	6 749	7 220	6 310	7 663	6 749	5,158	4 554	4 050	3 798
1947	3 773	2 739	2 407	2 017	3 331	3 838	4 958	4 489	4 151	4 017	3 578	3 395
1948	3 497	2,185	1,529	1 252	2 399	3 464	6 201	5 839	5,042	4,884	3 903	3,630
1949	3 562	2 302	1,626	1,415	2 755	4 391	5 899	5 367	4,521	4 212	3 643	3 529
1950	3 513	2 286	1,610	1,724	3 853	4 294	5 731	5 123	4,470	4,391	3 741	3 466
1951	3,497	4 504	9 563	8 327	8 067	6 083	7 411	6 001	5 193	4,716	3 952	3 697
1952	3 594	2,538	2,879	6,717	8,032	11 319	14 033	16 263	12,655	5 676	4 196	3 899
1953	9 639	2,991	3,383	5,204	6 662	5 302	5 596	5 204	4 588	4 765	3 789	3,529
1954	3,562	2 353	1,756	1,594	3,349	4 342	5 966	5 446	4,655	4 781	3 854	3,580
1955	3 594	2,286	1 691	1,789	3 151	3 757	4 874	4 733	4,302	4 082	3,578	3,395
1956	3,464	2,286	8,229	14,393	15 977	7 937	9,208	11 417	7,866	5,025	4,131	3,887
1957	7,058	2,773	2,440	2,326	4 339	4 554	5 395	5,302	4,638	4 781	3 724	3,496
1958	3,529	2,386	1 773	1,867	5,080	10,457	16,722	14 897	14,839	5,204	4,294	3,087
1959	8,880	2,790	2,261	2 570	5,402	5 318	4 941	4 375	4,080	4 180	3,513	3,294
1960	3,380	2 188	1,498	1 386	2,486	3,318	4 580	4,163	3,848	4,017	3,562	3,328
1961	3,318	2,185	1,578	1,415	2 053	2 781	4 084	3,822	3,864	3,919	3,464	3,243
1962	3,415	2,134	1,464	1,317	6,482	6 392	7 092	5,486	4,521	4,456	3,676	3,496
1963	3,497	2,269	1,594	1,952	5 024	5 237	8,117	7 205	5,798	4,993	3,952	3,680
1964	3,513	2,504	1 887	1 756	2 889	3 676	4 840	4 538	4,185	4,001	3,529	3,311
1965	3 446	2,504	3,676	4,847	6 014	5 204	9 529	7 953	5,983	4 895	4,033	3,596
1966	4 245	4,386	5,497	5,989	7 004	5 367	5 361	4 977	4,369	4 369	3 676	3,445
1967	3,529	2 403	2,882	3,171	4 934	5 790	15 461	16 621	17,041	12,408	4 115	4 706
1968	10,665	2 536	2,537	2,521	4 966	4 472	5 025	4 538	4,151	4,294	3 578	3,344
1969	3 513	2,319	2,086	10,392	32 915	21 923	21 125	28 087	19,546	6,603	4 180	4,151
1970	10 181	3 178	3,952	15,743	10,335	9 108	7 546	6 245	4,974	4 765	3 988	3,748
1971	3 594	2 586	2,505	2,586	4 447	4 163	5 596	5 269	4,584	4 765	3,741	3,529
1972	3 610	2 302	1,887	1,659	3,547	3,562	4 689	4 310	4,067	4,245	3 562	3,260
1973	3 529	2,235	1,659	2,228	6 682	8 275	9 630	7,449	5,126	4,863	3 952	3,714
1974	3,676	2 403	2,293	5,221	8 013	10 036	10 571	8,400	5,882	4 944	4 017	3,832
1975	4 294	2 941	2 667	2 846	7 905	8 717	9 665	8,278	6,554	5 009	3,919	3 764
1976	4 944	2,672	2,179	2,049	2 955	2 846	3 865	3 513	3,210	3 253	2 976	3,008
1977	4,440	2,907	1,952	1,366	1,801	2 212	3 277	3,090	2,823	2,960	2,687	2,487
1978	2,700	1,933	1,626	3,415	8,535	12 084	17 293	14,956	9,310	6,570	4,163	4,536
1979	5,887	2,454	2,049	4,017	7 384	10,620	8,554	6,928	5,025	4,424	3 806	3,630
1980	3,562	2,487	1,984	14,019	24,322	15 580	10 756	11 449	8,739	6,536	3,985	3,849
1981	6,879	2,655	2,440	3 220	3,925	4 407	5 210	4,619	4,185	4,066	3,562	3,386
1982	3,582	2,470	1,903	7,387	20,583	16 768	27 376	17,028	13,461	6,180	4,196	5,361
1983	14 149	8,604	15,864	24,737	36,534	41,885	21 864	18,636	37,224	14,442	2,398	7 831
1984	12,019	13,713	21,533	15,365	12,291	7 920	7 563	6,034	5,025	4,879	4,163	3,865
1985	3,659	2,636	2,049	1,691	4 105	3 985	5,082	4,586	4,218	4,050	3,562	3,378
1986	3,529	2,437	1,887	1,724	18,636	27 323	12 739	10,734	9,296	4,814	4 017	3,815
1987	4 228	2,403	1,803	1,724	2,557	3 204	4 396	4 001	3,731	3 985	3,529	3,328
1988	3,334	2,118	1,447	1,285	1,878	2 667	4 033	3 789	3,580	3,659	3 383	3,183
1989	3,293	2,033	1,513	1,350	1 946	2 882	4 302	3,836	3,880	3,903	3,480	3,260
1990	3,301	2,084	1,415	1,285	1,945	2 749	4 000	3,708	3,496	3,562	3,301	3,159
1991	3,236	2,080	1,399	1,203	1 621	3 269	4 521	3,918	3,361	3,318	3,025	2,991
1992	3,269	2,101	1,447	1,317	2 889	3,367	4 622	4 017	3,798	3,952	3,643	3,361
1993	3 432	2,269	1,740	5 627	5 888	5 562	7 882	7 725	6,487	4,879	4,115	3,798
1994	4 261	2 353	1,708	1 513	2 701	2,765	3,899	3,741	3,647	3,692	3,301	3,108

San Joaquin Basin 60-20-20 Index

San Joaquin River at Vernalis - CP # 682 SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	4,467	4,814	4,383	5 657	3,580
NOV	2,832	3,452	2,820	2 584	2 240
DEC	3,716	4,438	2,315	2 102	1 615
JAN	7,080	5,377	2,431	2 110	1 445
FEB	14,167	7,804	4,411	3 807	2,223
MAR	14,545	7,485	4,829	4,078	2,901
APR	14,030	8,348	5 969	5,043	4,068
MAY	13,445	8,778	5,383	4,561	3,731
JUN	11,513	5,263	4,624	4,162	3,489
JUL	6,288	4,678	4,550	4 045	3,588
AUG	4,044	3,959	3,751	3,526	3,230
SEP	4,181	3,895	3 525	3,329	3,089

Stanislaus River from Goodwin Dam downstream to confluence with San Joaquin River

STUDY 1995C08H-SWRCB-513 DWRSIM recorall18-h, 05 Sep 97

CP # 675 STANISLAUS RIVER AT MOUTH, DOWNSTREAM FLOW (CFS)

Project /1995C08H-SWRCB-513/675/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	325	353	260	228	504	325	857	602	555	553	580	588
1923	325	353	342	228	234	325	857	602	555	553	580	588
1924	325	353	260	228	226	309	807	569	521	520	537	538
1925	293	319	244	228	386	325	857	602	555	553	580	588
1926	325	353	260	228	252	325	857	602	585	553	580	588
1927	325	336	260	228	386	342	908	634	555	553	580	588
1928	342	370	276	244	243	2 017	857	602	585	553	580	588
1929	325	353	260	228	234	325	823	585	538	537	553	571
1930	309	319	244	211	216	325	857	602	585	553	580	588
1931	325	319	244	211	216	325	823	569	538	537	563	555
1932	309	319	244	228	313	325	857	602	555	553	580	588
1933	325	353	260	228	234	325	857	602	555	553	580	588
1934	325	336	260	228	234	325	823	585	538	537	553	571
1935	309	319	244	228	216	325	857	602	585	553	580	588
1936	325	353	260	228	762	423	1 546	1 025	585	553	580	588
1937	455	387	374	325	826	829	1 849	1 203	555	553	580	588
1938	504	454	423	1 041	4 015	2 781	1 849	1 496	4,554	553	580	588
1939	4,228	639	732	787	828	325	640	602	555	553	580	571
1940	325	336	260	244	296	455	1 761	1 171	585	553	580	588
1941	504	437	423	374	1 603	992	1 849	1 203	585	553	580	588
1942	504	586	1,301	1 952	1 927	488	1 849	1,203	605	553	580	588
1943	2,982	1 008	1,073	2,944	2 449	3,448	1 849	1 203	585	553	580	588
1944	504	454	423	537	817	325	857	602	585	553	580	588
1945	325	353	260	228	342	439	1 613	1,073	585	553	580	588
1946	472	403	390	1,285	1,531	488	1,815	1 187	585	553	580	588
1947	504	437	423	390	386	325	857	602	555	553	580	588
1948	325	336	260	228	226	325	857	602	585	553	580	588
1949	325	353	260	228	234	325	857	602	555	553	580	588
1950	325	353	260	228	252	325	857	602	555	553	580	588
1951	325	370	6,261	2,179	2,197	980	908	634	555	553	580	588
1952	342	370	276	1,334	2 121	1 431	1 849	1 203	3,784	553	580	588
1953	4 277	723	943	1,480	1,242	358	975	687	555	553	580	588
1954	342	403	293	260	252	325	857	602	555	553	580	588
1955	325	353	260	228	234	325	857	602	566	553	580	588
1956	325	336	553	1 529	2,573	862	1 849	1 203	555	553	580	588
1957	2 049	756	764	797	1 242	358	857	602	585	553	580	588
1958	325	353	260	228	378	1 464	1 849	1 220	3,294	553	580	588
1959	3 545	773	748	927	1 513	325	857	602	585	553	580	588
1960	325	336	260	226	226	325	840	602	566	553	580	588
1961	325	319	244	211	216	325	823	569	538	537	563	555
1962	309	319	244	228	378	325	857	602	555	553	580	588
1963	325	353	260	228	234	325	857	602	556	553	580	588
1964	325	353	260	228	226	325	857	602	555	553	580	588
1965	325	336	455	358	234	488	1 849	1 203	565	553	580	588
1966	1 252	1 126	1 073	1 106	1 134	325	857	602	555	553	580	588
1967	325	353	260	293	234	488	1 849	1,203	2 089	1 269	580	588
1968	4 847	756	764	862	1 652	325	857	602	565	553	580	588
1969	325	336	260	228	2 988	1 836	1 849	2 423	3 479	553	580	588
1970	3,757	823	1,431	5 009	2 737	1 106	975	687	565	553	580	588
1971	342	403	309	589	1 350	374	1 160	781	585	553	580	588
1972	374	387	309	276	785	325	857	602	566	553	580	588
1973	325	336	260	342	432	876	1 748	1 138	565	563	580	588
1974	488	420	407	2 244	1 945	1 708	1 849	1 203	566	563	580	588
1975	1 057	823	927	943	1 729	1 171	1 849	1 203	585	553	580	588
1976	504	454	455	651	852	325	823	585	538	537	553	555
1977	309	319	244	211	216	309	773	537	504	504	520	504
1978	276	319	244	309	270	325	857	602	555	553	580	588
1979	325	353	260	228	900	1 382	1 294	878	565	553	580	588
1980	407	370	325	4 180	4 903	992	1 849	1 203	585	553	580	588
1981	1 122	723	878	1 269	739	325	857	602	556	563	580	588
1982	325	336	260	228	5 402	3 090	1 849	1 203	1 507	563	580	588
1983	5 448	2 739	3 108	4,310	4 934	5 487	1 849	1 203	4,000	2 521	580	1 482
1984	5 827	3 512	4 879	2 781	2 586	1 382	1 076	732	585	553	580	588
1985	374	387	309	260	1 170	325	857	602	585	553	580	588
1986	325	336	260	228	5 006	4 944	1 849	1 203	555	553	580	588
1987	504	454	423	390	386	325	823	585	538	537	563	555
1988	309	319	244	211	208	308	807	569	521	520	537	538
1989	293	319	244	211	216	325	857	602	566	553	580	588
1990	325	319	244	211	216	325	823	585	538	537	553	585
1991	309	319	244	226	216	325	823	585	538	537	583	571
1992	309	319	244	211	206	325	823	585	538	537	553	505
1993	228	235	163	130	252	244	773	520	471	472	488	504
1994	244	260	179	146	144	244	730	504	454	456	472	487

San Joaquin Basin 60-20-20 Index.

Stanislaus River from Goodwin Dam to the San Joaquin River confluence - CP # 675 - STANISLAUS RIVER AT MOUTH

Month	W	AN	BN	D	C
OCT	790	957	880	1,481	335
NOV	545	609	483	501	339
DEC	561	1,115	446	473	286
JAN	1,170	976	511	517	251
FEB	2,215	940	647	728	271
MAR	1,870	861	476	325	317
APR	1,866	1,221	892	856	818
MAY	1,186	825	822	602	579
JUN	1,570	585	595	555	531
JUL	683	553	553	553	531
AUG	585	580	580	580	547
SEP	628	588	588	587	556

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Tuolumne River from La Grange Dam downstream to the confluence with the San Joaquin River
STUDY 1995C08H-SWRCB-513 DWRSIM: rscrc618-h 05 Sep 97
CP # 665 TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW (CFS)

Project: /1995C08H-SWRCB-513/665/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	651	571	667	634	1 080	1 073	1 933	1 870	1 076	980	520	521
1923	602	504	602	602	1 044	1 041	1 630	1 529	823	781	439	437
1924	520	437	439	423	435	423	655	585	235	472	163	151
1925	602	303	309	293	684	699	1 227	1 138	566	585	260	252
1926	634	319	325	309	702	699	992	862	454	585	179	185
1927	602	387	374	358	1 044	1 057	1 630	1 529	823	960	439	437
1928	602	521	488	488	661	696	1 227	1 138	565	943	244	235
1929	520	319	309	309	324	309	655	585	235	472	163	151
1930	520	269	260	276	306	309	655	585	235	585	163	151
1931	520	269	260	260	288	309	655	585	235	472	163	218
1932	602	185	520	466	1 008	1 041	1 630	1 529	807	802	439	437
1933	634	454	439	456	702	699	992	862	454	472	179	185
1934	520	303	309	309	360	309	655	585	235	472	61	218
1935	488	303	342	504	1 044	1 041	1 630	1 529	823	781	439	437
1936	602	504	504	520	1 147	1 041	1 630	1 529	823	781	439	437
1937	651	571	585	585	1 188	1 073	1 933	1 870	1 076	781	520	521
1938	651	571	651	667	5 150	6 034	4 101	5 855	4 117	1 724	520	891
1939	1 171	454	455	618	1 080	829	992	862	454	802	179	185
1940	602	336	342	585	1 008	4 001	2 118	1 529	807	943	439	437
1941	651	571	683	683	4 177	4 785	3 075	1 854	2 033	943	520	521
1942	667	588	846	3 789	4 265	2 982	2 655	2 085	1 587	943	537	538
1943	943	588	1 008	3,708	4 383	6 115	2 353	1 854	1 076	943	520	521
1944	602	487	472	456	661	699	1 227	1 138	565	802	244	235
1945	602	403	390	374	1 044	1 626	1 630	1 529	807	781	423	437
1946	602	504	1 561	3 399	2 883	2 440	1 630	1 529	807	781	439	437
1947	634	471	488	439	702	699	992	862	454	802	163	185
1948	602	303	293	293	643	696	1 227	1 138	566	781	260	252
1949	602	353	342	325	695	699	1 227	1 138	566	802	228	235
1950	602	353	342	374	684	699	1 227	1 138	565	781	244	235
1951	602	605	618	488	1 044	1 057	1 630	1 529	807	943	439	437
1952	651	571	667	694	1 043	3 188	4 101	2 553	4 470	1 578	520	823
1953	911	487	504	1 108	2 701	2 000	1 227	1 138	566	943	244	235
1954	602	353	342	342	666	699	1 227	1 138	566	980	244	235
1955	634	319	325	342	702	699	992	862	454	602	179	185
1956	602	403	1 073	2,456	4 346	3 025	1 933	1 854	3 344	980	520	521
1957	960	471	472	455	684	1 431	1 227	1 138	566	943	244	235
1958	602	454	439	472	1 080	3 460	5 361	2 749	4,840	943	537	538
1959	911	454	439	439	738	2,085	992	862	454	781	195	185
1960	520	269	260	260	330	293	655	585	235	585	163	151
1961	520	269	276	260	288	309	655	585	235	585	163	151
1962	602	303	293	293	738	699	1 227	1 138	566	781	228	235
1963	602	370	374	423	1 044	1 057	1 630	1 529	823	960	455	437
1964	634	487	455	455	678	699	992	862	454	585	163	185
1965	602	437	602	634	1 080	1 073	2 487	1 854	1 076	943	520	521
1966	602	538	2 000	2,553	2 953	1 964	1 227	1 138	566	781	228	235
1967	602	454	569	520	1 080	1 073	3 680	1 870	4,672	4 538	520	1 042
1968	943	454	455	439	678	1 301	992	862	454	781	195	185
1969	602	403	439	2,553	7 382	5 042	4 857	6 749	7 446	1 984	520	891
1970	1 288	504	764	6 050	3 745	3 432	1 630	1 529	823	980	423	437
1971	602	487	520	488	684	976	1 227	1 138	566	980	244	235
1972	634	319	342	325	678	699	992	862	454	781	195	168
1973	602	336	342	390	1 044	1 057	1 630	1 529	823	980	423	437
1974	651	588	602	764	2 935	3 757	2 605	1 870	1 076	943	520	521
1975	651	571	588	588	1 080	2 361	1 933	1 854	1 885	943	504	521
1976	520	454	439	423	435	423	655	585	235	472	163	151
1977	520	269	260	260	270	309	655	585	235	472	163	151
1978	602	403	423	585	1,080	1 073	1 933	1 870	1 076	980	520	521
1979	602	504	504	602	1,044	3 367	1 630	1 529	823	781	423	437
1980	651	588	569	4,115	7 736	4 115	2 151	1 870	2,807	2,456	520	1 008
1981	1,008	454	455	472	702	1,025	992	862	454	802	163	185
1982	602	454	455	3 383	7 202	5 952	7 831	3,285	4,420	2 085	520	2 151
1983	3,318	2 773	4,863	6,050	7,671	9 660	3 983	1 870	10 739	7 075	520	3,486
1984	1 480	4 790	6,701	4 115	3,825	2 879	1 630	1 529	823	980	439	437
1985	634	471	455	439	702	699	992	862	454	585	179	185
1986	602	420	423	407	2 755	7 336	1 933	1 870	4,201	980	504	521
1987	520	437	423	423	450	439	655	585	235	585	163	151
1988	520	269	260	260	261	293	655	585	235	472	163	151
1989	520	269	276	260	288	293	655	585	235	602	163	151
1990	520	269	260	260	288	293	655	585	235	472	163	151
1991	520	269	260	260	270	360	655	585	235	472	163	151
1992	520	269	260	260	365	309	655	585	235	472	163	151
1993	602	403	407	781	1 080	1 073	1 933	1 870	1 076	943	504	521
1994	520	437	439	423	450	407	655	585	235	472	163	151

San Joaquin Basin 60-20-20 Index
Tuolumne River from LaGrange Dam to the SJR confluence - CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	777	704	657	770	520
NOV	819	731	413	423	317
DEC	827	966	531	421	312
JAN	1,713	1,348	622	430	308
FEB	3,391	1,588	1,035	733	358
MAR	3,815	1,867	999	920	338
APR	3,138	1,665	1,227	992	655
MAY	2,468	1,529	1,138	862	585
JUN	3,209	817	555	454	235
JUL	1,679	855	805	634	506
AUG	520	436	243	179	156
SEP	855	437	238	183	160

Merced River from Crocker Huffman Diversion downstream to confluence with San Joaquin River
STUDY 1995C08H-SWRCB-513 DWRSIM: rscrc618-h 05 Sep 97
CP # 649 LOWER MERCED RIVER DIVERSION DOWNSTREAM FLOW (CFS)

Project: /1995C08H-SWRCB-513/649/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	260	151	228	211	630	569	1,042	1 008	521	423	114	34
1923	1 350	353	1 108	1,220	1 008	569	874	829	403	342	98	34
1924	211	134	163	146	156	163	353	325	118	211	163	118
1925	260	151	146	130	396	374	655	618	260	260	81	67
1926	260	151	163	163	414	374	538	472	218	260	81	101
1927	260	185	163	146	612	569	874	829	403	423	98	34
1928	260	101	179	163	382	374	655	618	260	423	114	34
1929	211	168	146	146	162	163	353	325	118	211	61	34
1930	211	151	130	146	144	195	353	325	118	260	61	34
1931	211	84	130	130	144	163	353	325	118	228	163	118
1932	260	134	276	228	591	569	874	829	403	260	81	118
1933	260	151	146	179	396	374	538	472	218	211	195	118
1934	211	134	146	130	182	163	353	325	118	211	163	134
1935	260	151	146	260	612	569	874	829	403	342	114	134
1936	260	134	163	163	4,294	569	874	829	403	342	98	118
1937	342	151	407	520	4 465	927	1 042	1 317	521	342	130	134
1938	960	151	2,423	1,269	4 736	4 623	1 042	2 992	4 453	423	98	218
1939	2 911	336	358	358	576	374	538	472	218	260	195	84
1940	260	134	146	325	991	1 122	874	829	403	423	179	134
1941	260	151	423	1,350	2,971	1 317	1 042	1 236	2,087	423	98	34
1942	2,281	336	1 415	1 561	1 603	569	1 042	1 008	672	423	98	34
1943	2,574	672	732	2 488	1 763	2 700	1 042	1 025	521	423	98	67
1944	260	151	163	260	921	374	655	618	260	260	98	134
1945	260	168	163	146	1 927	618	874	829	403	342	98	101
1946	276	756	1 805	976	738	569	874	829	403	342	179	134
1947	260	168	179	146	396	374	538	472	218	260	195	134
1948	260	134	130	114	342	374	655	618	260	342	130	134
1949	260	151	146	146	396	374	655	618	260	260	179	134
1950	260	151	146	163	396	374	655	618	260	342	195	134
1951	260	319	211	1,006	1 404	569	874	829	403	423	179	134
1952	260	151	228	407	608	569	1,042	2,635	2,185	423	98	34
1953	2 488	151	618	1,073	559	374	655	618	260	423	163	134
1954	260	151	163	146	396	374	655	618	260	423	195	134
1955	260	151	146	179	414	374	538	472	218	260	195	134
1956	260	134	618	1,350	1 495	585	1 042	1 008	521	423	98	34
1957	1 887	218	244	293	828	374	655	618	369	423	146	134
1958	260	151	146	179	630	569	1 042	2 212	2 000	423	98	34
1959	2 277	151	146	360	1 080	374	538	472	218	342	195	84
1960	211	151	130	130	156	163	353	325	118	260	195	134
1961	211	151	146	130	144	163	353	325	118	260	163	118
1962	260	134	130	130	486	374	655	618	260	342	98	134
1963	260	151	146	179	612	569	874	829	403	423	98	118
1964	260	168	163	163	400	374	538	472	218	260	195	101
1965	260	151	276	882	1 188	569	1 042	1 025	521	423	98	34
1966	260	1 210	613	829	736	374	655	618	260	342	163	84
1967	260	151	244	228	630	585	1 042	1 138	4,218	1 584	98	655
1968	2,748	134	265	309	897	374	538	472	218	342	163	84
1969	260	134	163	2,228	4 357	1 480	1,260	5 357	3 996	423	98	218
1970	2,927	420	667	2 883	1 314	569	874	829	403	423	130	118
1971	260	168	195	163	396	374	655	618	260	423	114	118
1972	260	151	163	163	382	374	538	472	218	342	179	34
1973	260	134	146	179	612	569	874	829	403	423	114	84
1974	260	118	179	1 057	758	629	1 042	1 025	521	423	98	101
1975	260	134	228	488	2,251	848	1 042	1 008	521	423	98	34
1976	1 681	370	309	146	365	163	353	325	118	211	146	134
1977	228	151	179	130	162	163	353	325	118	211	179	67
1978	114	101	146	260	630	569	1 042	1 008	1 953	488	114	1 193
1979	2,814	336	293	1 706	2,125	1 008	874	829	403	342	98	84
1980	260	151	163	4,147	4 572	1 334	1 042	1 008	521	423	114	34
1981	2 586	151	163	455	612	374	538	472	218	260	130	101
1982	260	151	146	1,360	3,746	1 773	4 286	2 980	1 479	423	98	269
1983	3 383	1 681	2 521	3 383	4 321	5 361	1 042	1 724	7 663	3 444	98	1 714
1984	3 025	1 906	3,464	1 675	1 460	569	874	829	403	423	179	118
1985	260	168	163	146	414	374	538	472	218	260	146	134
1986	260	151	146	130	3,331	3 432	1 042	1 025	521	423	98	101
1987	982	151	146	146	252	163	353	325	118	260	163	134
1988	211	151	130	130	156	163	353	325	118	211	163	101
1989	211	84	146	130	144	163	353	325	118	260	163	118
1990	211	134	130	130	144	163	353	325	118	211	163	134
1991	211	134	130	114	144	228	353	325	118	211	163	134
1992	211	134	130	130	191	163	353	325	118	211	163	134
1993	260	134	146	423	630	585	1 042	1 025	521	423	163	134
1994	1 195	151	163	163	522	163	353	325	118	211	163	134

San Joaquin Basin 60-20-20 Index
Merced River, Crocker-Huffman Diversion to San Joaquin River confluence - CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	864	910	581	1,122	413
NOV	295	382	239	171	152
DEC	548	635	256	189	153
JAN	1,195	778	301	241	136
FEB	2,247	1,314	523	543	187
MAR	1,486	644	374	374	189
APR	1,215	874	655	538	353
MAY	1,836	829	618	472	325
JUN	1,792	403	289	218	118
JUL	632	378	355	278	228
AUG	105	124	140	170	156
SEP	256	104	115	101	111

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San Joaquin River at Stevinson upstream of Merced River confluence

STUDY 1985C09I-SWRCB-513 DWRSIM reonc816-h 05 Sep 97

CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW (CFS)

Project /1985C09I-SWRCB-513/694/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	2,244	1,311	1,057	878	3,205	2,865	2,857	4,245	6,705	3,025	3,009	2,566
1923	2,261	1,328	1,106	1,136	1,837	2,228	2,840	2,683	3,109	2,862	2,862	2,504
1924	2,131	1,210	667	520	956	1,545	1,647	1,867	2,269	2,096	2,114	1,949
1925	1,773	1,076	585	472	1,531	2,179	2,504	2,635	3,126	2,927	2,846	2,504
1926	2,179	1,244	683	537	1,296	2,017	2,554	2,472	2,958	2,785	2,785	2,420
1927	2,114	1,412	784	602	2,521	2,423	2,758	2,635	3,082	2,879	2,862	2,470
1928	2,131	1,361	748	667	1,448	2,374	2,467	2,505	3,008	2,830	2,830	2,437
1929	2,131	1,210	651	504	1,044	1,740	1,668	2,163	2,954	2,358	2,374	2,185
1930	1,984	1,143	553	537	1,170	2,000	2,168	2,440	2,941	2,749	2,749	2,386
1931	2,082	1,178	569	472	918	1,480	1,647	1,935	2,353	2,147	2,163	2,067
1932	1,919	1,108	1,236	884	3,008	2,291	2,353	2,537	2,975	2,749	2,749	2,386
1933	2,082	1,178	585	569	1,134	1,708	1,916	2,244	2,838	2,440	2,456	2,218
1934	2,000	1,143	602	504	1,170	1,870	2,151	2,407	2,907	2,732	2,732	2,386
1935	2,098	1,227	667	1,106	1,675	2,553	3,227	2,732	3,042	2,797	2,781	2,420
1936	2,131	1,210	667	667	3,864	2,521	2,739	2,635	3,082	2,846	2,830	2,454
1937	2,147	1,227	699	1,122	3,691	3,009	3,781	6,099	3,993	2,927	2,911	2,504
1938	2,212	1,280	1,350	1,398	8,880	13,922	6,521	13,434	4,201	4,342	2,978	2,554
1939	2,277	1,664	781	651	1,549	2,244	2,403	2,586	3,039	2,862	2,862	2,521
1940	2,228	1,294	748	1,496	2,712	2,732	2,672	2,716	3,143	2,911	2,911	2,538
1941	2,244	1,328	1,122	1,041	3,493	3,269	4,389	6,229	4,470	3,074	3,025	2,605
1942	2,277	1,361	1,398	1,106	2,053	2,651	2,874	2,927	3,159	3,025	2,862	2,586
1943	2,277	1,361	813	1,431	1,983	2,895	3,378	5,107	4,033	2,976	2,980	2,571
1944	2,293	1,412	829	716	1,530	2,468	2,386	2,667	3,159	2,944	2,944	2,586
1945	2,277	1,462	846	699	2,557	3,009	2,823	2,797	3,260	3,009	3,009	2,622
1946	2,261	1,361	1,041	732	1,857	2,391	2,571	2,635	3,143	2,911	2,927	2,554
1947	2,179	1,361	829	602	1,404	2,065	2,286	2,537	3,025	2,830	2,846	2,487
1948	2,147	1,227	634	472	974	1,788	2,571	2,851	3,143	2,927	2,927	2,521
1949	2,179	1,344	651	537	1,170	2,283	2,286	2,537	3,042	2,862	2,749	2,487
1950	2,147	1,227	634	651	1,867	2,042	2,269	2,488	2,991	2,814	2,814	2,437
1951	2,131	2,000	1,386	3,041	1,785	2,326	3,159	2,586	3,284	2,862	2,846	2,470
1952	2,179	1,280	1,041	1,984	1,843	3,497	4,571	9,514	1,916	2,982	2,944	2,538
1953	2,212	1,580	911	976	1,458	2,086	2,370	2,586	3,075	2,862	2,862	2,487
1954	2,179	1,280	699	618	1,531	2,309	2,388	2,602	3,092	2,895	2,895	2,504
1955	2,179	1,280	699	667	1,368	2,033	2,216	2,586	2,975	2,797	2,797	2,454
1956	2,147	1,244	3,350	5,936	4,190	2,244	3,864	7,026	3,284	2,976	2,980	2,538
1957	2,179	1,280	699	569	1,332	2,065	2,202	2,602	3,025	2,814	2,814	2,454
1958	2,163	1,280	683	683	1,946	3,285	4,285	5,660	3,492	3,009	2,980	2,538
1959	2,196	1,378	699	602	1,803	2,017	2,252	2,505	2,958	2,765	2,781	2,437
1960	2,131	1,227	634	520	1,252	2,000	2,286	2,537	2,975	2,797	2,797	2,437
1961	2,098	1,227	634	504	1,118	1,854	2,151	2,423	2,924	2,749	2,749	2,403
1962	2,098	1,193	585	486	2,917	2,423	2,403	2,586	3,042	2,862	2,862	2,454
1963	2,131	1,193	602	699	1,927	2,212	2,891	2,716	3,008	2,797	2,765	2,403
1964	2,098	1,311	634	553	1,286	2,000	2,185	2,505	2,975	2,781	2,797	2,420
1965	2,131	1,311	1,334	1,626	1,603	2,179	2,841	2,732	3,126	2,879	2,879	2,470
1966	2,179	1,462	864	784	1,531	2,098	2,218	2,521	3,008	2,830	2,830	2,470
1967	2,179	1,277	1,136	927	1,729	2,614	5,949	10,344	3,714	5,042	2,976	2,554
1968	2,196	1,160	748	602	1,426	2,082	2,302	2,521	2,991	2,814	2,814	2,454
1969	2,196	1,294	846	3,464	14,513	9,156	10,823	13,938	5,210	3,806	2,862	2,588
1970	2,261	1,412	781	2,228	1,838	2,635	2,807	2,635	3,109	2,927	2,927	2,538
1971	2,212	1,328	927	748	1,484	2,098	2,252	2,586	3,075	2,862	2,862	2,504
1972	2,147	1,244	748	569	1,339	1,852	2,185	2,488	3,008	2,830	2,830	2,454
1973	2,179	1,260	699	797	2,737	2,982	2,689	2,683	3,109	2,895	2,879	2,504
1974	2,179	1,294	813	862	1,586	2,785	3,143	2,879	3,178	2,976	2,879	2,538
1975	2,212	1,294	732	634	2,107	2,846	2,941	2,830	3,210	2,944	2,797	2,538
1976	2,196	1,294	716	569	1,043	1,691	1,849	2,082	2,504	2,283	2,309	2,186
1977	2,521	1,176	618	504	936	1,366	1,513	1,756	2,101	1,966	1,984	1,786
1978	1,961	924	569	1,171	3,483	7,253	10,184	8,782	4,186	4,310	2,944	2,538
1979	2,196	1,260	699	980	2,035	2,830	2,838	2,618	3,008	2,814	2,814	2,437
1980	2,131	1,244	667	1,643	6,346	7,449	3,784	7,107	4,840	3,159	2,879	2,487
1981	2,196	1,277	716	683	1,422	2,179	2,336	2,505	3,025	2,930	2,830	2,470
1982	2,228	1,344	829	1,513	2,449	3,415	11,024	7,583	4,874	3,041	3,025	2,622
1983	2,293	1,765	5,158	9,644	17,086	17,174	10,151	12,311	15,486	1,822	1,464	1,613
1984	2,196	4,084	6,375	6,522	3,390	2,374	3,294	2,667	3,176	2,962	2,978	2,586
1985	2,196	1,328	748	585	1,476	2,147	2,235	2,505	3,025	2,797	2,797	2,454
1986	2,212	1,344	797	667	6,878	9,417	5,143	6,245	4,386	2,927	2,911	2,538
1987	2,179	1,244	667	553	1,170	1,919	2,252	2,505	3,008	2,830	2,830	2,470
1988	2,114	1,193	618	486	1,065	1,805	2,101	2,358	2,840	2,651	2,667	2,353
1989	2,049	1,160	602	455	1,008	1,789	2,168	2,423	2,924	2,732	2,749	2,386
1990	2,082	1,160	569	455	1,044	1,805	2,033	2,309	2,790	2,602	2,602	2,302
1991	2,017	1,126	537	380	792	1,708	1,899	2,096	2,621	2,309	2,326	2,151
1992	2,082	1,210	585	472	1,338	1,887	2,269	2,537	3,089	2,927	2,862	2,454
1993	2,228	1,311	781	2,293	1,855	2,033	2,857	3,671	4,504	3,041	3,025	2,622
1994	2,228	1,294	651	520	1,260	1,740	2,017	2,358	2,807	2,618	2,586	2,302

San Joaquin Basin 60-20-20 Index

San Joaquin River at Stevinson - CP # 694 SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	2,172	2,170	2,144	2,175	2,126
NOV	1,301	1,544	1,302	1,309	1,199
DEC	1,257	1,257	733	716	617
JAN	2,001	1,542	640	602	486
FEB	4,444	2,382	1,547	1,391	1,082
MAR	5,208	2,535	2,191	2,040	1,783
APR	5,281	2,633	2,361	2,261	2,003
MAY	6,842	2,683	2,580	2,486	2,264
JUN	4,587	3,111	3,086	2,987	2,717
JUL	3,214	2,675	2,889	2,774	2,535
AUG	2,980	2,867	2,853	2,780	2,537
SEP	2,507	2,482	2,467	2,435	2,260

A2-107

C-032448

STUDY: 1995C06H-SWRC' DWRSIM. recirc818-h, 05 Sep 97
CP # 4, SHASTA LAKE, EO[illegible]AGE (MAF)

Project: /1995C06H-SWRCB-513/4/STORAGE-EOP//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP*
1922	2.81	2.69	2.83	2.9	3.28	3.71	4.32	4.55	4.4	4	3.58	3.43
1923	3.38	3.25	3.29	3.4	3.36	3.58	3.65	3.54	[illegible]	2.9	2.49	2.46
1924	2.47	2.46	2.45	2.4	2.58	2.57	2.37	2.13	1.9	1.6	1.38	1.24
1925	1.28	1.42	1.53	1.7	2.93	3.1	3.84	4.13	4	3.7	3.43	3.41
1926	3.34	3.25	3.18	3.4	3.7	3.78	4.08	3.98	3.6	3.1	2.77	2.64
1927	2.59	3.01	3.35	3.7	3.48	4.13	4.55	4.55	4.4	4	3.59	3.47
1928	3.4	3.25	3.32	3.5	3.89	3.97	4.52	4.48	4	3.5	3.09	2.96
1929	2.89	2.86	2.84	2.8	2.92	2.92	3.04	2.97	2.7	2.4	2.11	1.98
1930	1.96	1.94	2.48	2.7	3.07	3.58	3.82	3.8	3.5	3.2	2.92	2.85
1931	2.76	2.68	2.58	2.6	2.56	2.65	2.49	2.33	2.2	2	1.79	1.64
1932	1.84	1.64	1.85	2	2.15	2.57	2.64	2.79	2.8	2.4	2.15	2.04
1933	1.98	1.98	1.98	2	2.08	2.65	2.7	2.75	2.7	2.4	2.15	2.01
1934	1.96	1.96	2.11	2.4	2.75	3.05	3.06	2.96	2.7	2.5	2.31	2.14
1935	2.11	2.25	2.31	2.6	2.94	3.38	4.37	4.55	[illegible]	4	3.68	3.56
1936	3.4	3.25	3.14	3.6	3.59	3.83	4.03	3.98	3.8	3.3	2.9	2.78
1937	2.68	2.68	2.48	2.4	2.4	[illegible]	3.64	3.86	3.7	3.3	2.89	2.74
1938	2.67	3.16	3.31	3.7	3.88	[illegible]	4.06	4.55	4.6	4.3	3.96	3.70
1939	3.4	3.25	3.33	3.4	3.39	[illegible]	3.63	3.48	3.1	2.7	2.35	2.29
1940	2.22	2.15	2.28	3.1	3.25	3.44	4.32	4.46	4.1	3.6	3.18	3.07
1941	3.03	3.02	3.29	3.3	3.42	[illegible]	4.46	4.55	4.6	4.3	4	3.70
1942	3.4	3.25	3.32	3.4	3.52	[illegible]	4.55	4.55	4.6	4.3	3.96	3.70
1943	3.4	3.25	3.36	3.6	3.86	4.12	4.55	4.55	4.4	4	3.83	3.50
1944	3.4	3.25	3.2	3.2	3.38	3.51	3.73	3.71	3.5	3	2.62	2.49
1945	2.49	2.66	2.93	3.1	3.64	4.16	4.46	4.55	4.4	3.9	3.49	3.38
1946	3.35	3.25	3.27	3.6	3.77	4.08	4.41	4.47	4.2	3.8	3.48	3.42
1947	3.34	3.25	3.26	3.2	3.33	3.37	3.94	3.68	3.5	3.1	2.73	2.62
1948	2.67	2.65	2.63	3.1	3.15	3.46	4.38	4.55	4.6	4.2	3.78	3.70
1949	3.4	3.25	3.22	3.1	3.21	4.07	4.35	4.47	4.2	3.8	3.39	3.33
1950	3.23	3.15	3.06	3.2	3.52	3.89	4.24	4.22	3.9	3.6	3.09	3.04
1951	3.27	3.25	3.32	3.6	3.79	4.21	4.4	4.55	4.1	3.7	3.28	3.22
1952	3.17	3.25	3.31	3.6	3.74	4.02	4.29	4.55	4.6	4.3	3.95	3.70
1953	[illegible]	3.25	3.35	3.4	3.62	4.06	4.48	4.55	4.6	4.3	3.97	3.70
1954	[illegible]	3.25	3.36	3.6	3.96	4.11	4.55	4.55	4.3	4	3.71	3.70
1955	3.4	3.25	3.36	3.4	3.47	3.49	3.81	4.03	3.8	3.3	2.94	2.94
1956	[illegible]	2.89	3.25	3.3	3.29	3.95	4.47	4.55	4.6	4.3	4	3.70
1957	[illegible]	3.25	3.23	3.2	3.58	4.13	4.35	4.55	4.3	4	3.65	3.70
1958	3.4	3.25	3.34	3.5	4.55	4.42	4.17	4.55	4.6	4.3	4	3.70
1959	3.4	3.25	3.26	3.6	3.78	4.14	4.24	4.23	3.9	3.5	3.24	3.32
1960	3.29	3.24	3.21	3.3	3.92	4.27	4.48	4.55	4.2	3.9	3.49	3.48
1961	3.4	3.25	3.35	3.4	3.91	4.28	4.47	4.55	4.2	3.8	3.39	3.40
1962	3.33	3.25	3.36	3.4	3.68	4.12	4.46	4.51	4.1	3.7	3.29	3.26
1963	3.4	3.25	3.35	3.4	3.94	4.23	4.14	4.55	4.5	4.2	3.83	3.70
1964	3.4	3.25	3.28	3.6	3.7	3.8	3.67	3.55	3.3	2.8	2.47	2.45
1965	2.43	2.55	3.25	3.4	3.78	4.06	4.5	4.55	4.4	4.1	3.8	3.70
1966	3.4	3.25	3.34	3.7	4.04	4.23	4.48	4.51	4.3	3.9	3.63	3.65
1967	3.4	3.25	3.34	3.6	3.92	4.03	4.48	4.55	4.6	4.3	3.99	3.70
1968	3.4	3.25	3.3	3.4	3.66	4.19	4.28	4.33	4	3.7	3.53	3.55
1969	3.4	3.25	3.35	3.4	3.48	4.03	4.43	4.55	4.6	4.3	4	3.70
1970	3.4	3.25	3.32	3.3	3.43	4.12	4.23	4.23	3.9	3.8	3.32	3.27
1971	3.28	3.25	3.32	3.5	3.83	3.87	4.5	4.55	4.6	4.3	4	3.70
1972	3.4	3.25	3.35	3.6	3.92	4.25	4.33	4.38	4.1	3.8	3.51	3.57
1973	3.4	3.25	3.35	3.6	3.84	4.16	4.5	4.55	4.3	4	3.71	3.67
1974	3.4	3.26	3.27	3.3	3.69	3.44	4.29	4.55	4.6	4.3	4	3.70
1975	3.4	3.25	3.34	3.4	3.84	3.76	4.39	4.55	4.6	4.3	4	3.70
1976	3.4	3.25	3.27	3.3	3.14	3.28	3.45	3.43	3	2.7	2.6	2.63
1977	2.64	2.66	2.65	2.6	2.54	2.52	2.32	2.22	2	1.8	1.63	1.67
1978	1.63	1.86	2.13	3.3	3.57	4	4.55	4.55	4.5	4.3	4	3.70
1979	3.4	3.25	3.21	3.3	3.51	3.93	4.14	4.38	4.1	3.8	3.52	3.51
1980	3.4	3.25	3.31	3.6	3.29	3.97	4.32	4.45	4.3	4	3.69	3.70
1981	3.4	3.25	3.32	3.5	3.85	[illegible]	4.47	4.42	4.1	3.7	3.37	3.35
1982	3.3	3.25	3.28	3.6	3.53	[illegible]	4.09	4.55	4.6	4.3	4	3.70
1983	3.4	3.25	3.33	3.4	[illegible]	[illegible]	4.07	4.55	4.6	4.3	4	3.70
1984	3.4	3.25	3.29	3.7	4.01	4.25	4.55	4.55	4.3	4	3.67	3.70
1985	3.4	3.26	3.36	3.4	3.47	3.63	3.82	3.57	3.3	2.9	2.62	2.65
1986	2.68	2.71	2.86	3.4	[illegible]	3.63	3.94	4.01	3.7	3.3	2.96	3.02
1987	3.02	2.99	2.97	[illegible]	[illegible]	3.87	3.97	3.84	3.3	2.9	2.58	2.56
1988	2.85	2.55	3.05	3.5	3.56	3.67	3.79	3.82	3.5	3.1	2.87	2.79
1989	2.72	2.86	2.88	2.9	[illegible]	3.84	4.27	4.04	3.8	3.4	3.2	3.22
1990	[illegible]	3.21	3.12	[illegible]	[illegible]	[illegible]	3.29	3.47	3.3	2.9	2.63	2.57
1991	[illegible]	2.49	2.43	[illegible]	[illegible]	2.77	2.91	2.91	2.7	2.5	2.24	2.12
1992	[illegible]	[illegible]	2.05	[illegible]	[illegible]	[illegible]	[illegible]	3.41	[illegible]	2.8	2.54	2.45
1993	[illegible]	[illegible]	2.62	[illegible]	[illegible]	[illegible]	4.28	[illegible]	[illegible]	4.3	4.05	4.05
1994	[illegible]	3.25	3.29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3	2.8	[illegible]	2.34

* EOM [illegible]mber storage used as October 1st of following year

Prep[illegible]y Kevin Long on 10/7/1997

Year	Oct 1st Storage	AFRP Vol III Recommended Keswick Release
1925	1.24	3250
1930	1.98	3250
1932	1.64	3250
1933	2.04	3250
1934	2.01	3250
1935	2.14	3250
1978	1.67	3250
1992	2.12	3250
1940	2.29	3500
<None>		3750
1924	2.46	4000
1945	2.49	4000
1965	2.45	4000
1993	2.45	4000
1988	2.56	4250
1991	2.57	4250
1927	2.64	4500
1948	2.62	4500
1977	2.63	4500
1986	2.65	4500
1937	2.78	4750
1938	2.74	4750
1989	2.79	4750
1931	2.85	5000
1929	2.96	5250
1956	2.94	5250
1923	3.43	5500
1926	3.41	5500
1928	3.47	5500
1936	3.56	5500
1939	3.70	5500
1941	3.07	5500
1942	3.70	5500
1943	3.70	5500
1944	3.50	5500
1946	3.38	5500
1947	3.42	5500
1949	3.70	5500
1950	3.33	5500
1951	3.04	5500
1952	3.22	5500
1953	3.70	5500
1954	3.70	5500
1955	3.70	5500
1957	3.70	5500
1958	3.70	5500
1959	3.70	5500
1960	3.32	5500
1961	3.46	5500
1962	3.40	5500
1963	3.26	5500
1964	3.70	5500
1966	3.70	5500
1967	3.65	5500
1968	3.70	5500
1969	3.55	5500
1970	3.70	5500
1971	3.27	5500
1972	3.70	5500
1973	3.57	5500
1974	3.67	5500
1975	3.70	5500
1976	3.70	5500
1979	3.70	5500
1980	3.51	5500
1981	3.70	5500
1982	3.35	5500
1983	3.70	5500
1984	3.70	5500
1985	3.70	5500
1987	3.02	5500
1990	3.22	5500
1994	4.05	5500

STUDY: 1995C06H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97
CP # 62, KESWICK TOTAL RE DOWNSTREAM FLOW (TAF)

Project: /1995C06H-SWRCB-513/62/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	4,619	4,000	4,001	4,001	3,997	4,001	4,000	8,132	9,747
1923	5,497	7,109	5,497	5,497	6,356	5,887	5,495	8,766	10,940
1924	4,001	4,000	4,001	4,001	3,859	4,001	7,126	7,253	7,815
1925	3,253	3,243	3,253	3,253	3,241	6,164	3,243	3,383	7,663
1926	5,497	6,033	5,497	5,497	5,492	6,017	5,495	7,253	11,058
1927	4,505	4,504	6,261	7,205	30,376	4,505	12,554	10,750	10,470
1928	5,725	11,377	5,497	5,497	5,302	16,572	5,495	8,831	14,285
1929	5,253	5,243	5,253	5,253	5,258	7,075	5,243	6,798	8,739
1930	3,968	3,277	3,253	3,253	3,241	3,253	3,243	5,985	9,159
1931	4,993	5,008	4,993	4,993	5,006	4,993	7,193	6,326	6,336
1932	3,367	3,243	3,253	3,253	3,129	3,301	6,235	5,058	6,857
1933	4,033	3,580	3,253	3,253	3,241	3,253	7,327	6,424	7,260
1934	4,082	3,294	3,253	3,253	3,241	3,562	5,075	6,684	7,781
1935	3,692	3,243	3,253	3,253	3,241	3,253	3,243	6,961	9,848
1936	5,969	5,832	5,497	5,497	19,610	5,497	5,495	6,944	9,596
1937	4,749	4,756	4,749	4,749	4,754	4,749	4,756	6,099	9,495
1938	4,749	4,756	16,654	4,749	30,646	35,389	14,402	10,002	11,008
1939	10,457	8,168	5,497	5,497	5,492	5,497	9,293	8,181	11,125
1940	4,716	4,739	3,773	3,497	30,928	22,216	3,496	6,294	12,923
1941	5,497	5,495	15,092	25,273	23,552	14,735	16,688	14,800	10,924
1942	11,075	8,420	19,874	20,348	29,278	5,497	5,596	13,515	10,873
1943	10,116	8,789	6,538	12,848	8,535	12,832	6,823	9,677	10,856
1944	6,489	7,848	5,497	5,497	5,302	5,497	5,579	7,205	9,579
1945	4,001	4,000	4,001	4,001	3,997	4,001	4,000	7,904	10,302
1946	5,497	10,268	22,801	7,725	5,492	5,497	5,495	8,132	11,125
1947	5,497	7,126	5,497	5,497	5,492	5,497	5,495	9,742	9,932
1948	4,505	4,504	4,505	4,505	4,346	4,505	4,504	11,824	9,915
1949	9,173	7,226	5,497	5,497	5,492	6,392	6,789	6,684	9,966
1950	6,497	5,495	5,497	5,497	5,492	5,497	5,495	8,181	10,772
1951	5,497	11,327	15,759	8,229	16,241	5,497	6,655	7,628	13,159
1952	5,497	5,882	17,906	8,717	19,124	12,295	19,310	11,092	9,798
1953	9,839	7,529	10,555	29,258	5,492	5,497	5,495	11,661	12,134
1954	10,002	10,386	5,497	13,759	18,798	10,750	12,201	10,734	12,554
1955	9,937	9,613	7,709	5,497	5,492	6,879	5,495	5,936	10,352
1956	5,253	5,243	27,014	31,144	22,427	5,253	5,243	12,458	9,361
1957	10,734	7,882	5,497	5,497	9,147	10,864	8,285	10,490	10,840
1958	12,718	10,117	10,344	12,864	33,743	44,724	15,428	10,148	11,932
1959	11,254	8,319	5,497	10,653	14,441	5,497	8,470	7,888	10,940
1960	5,497	5,495	5,497	5,497	5,302	10,100	5,579	8,083	11,781
1961	5,497	8,520	9,774	5,497	8,193	7,465	6,285	8,197	11,982
1962	5,497	7,680	7,741	5,497	18,492	5,497	5,495	7,140	12,739
1963	9,433	8,504	9,530	5,497	8,517	7,628	31,931	7,514	9,075
1964	10,181	12,050	5,497	5,497	5,302	5,497	9,478	7,985	11,327
1965	4,505	4,000	16,605	21,647	3,997	4,001	11,596	8,864	9,596
1966	9,709	12,923	5,497	6,652	6,680	13,287	9,411	7,839	10,470
1967	8,620	13,108	15,011	9,726	8,049	16,442	12,066	16,231	10,772
1968	10,392	7,899	5,497	5,497	15,629	5,497	7,378	6,961	12,050
1969	7,725	8,369	7,969	25,143	22,093	7,205	13,865	13,434	10,016
1970	10,457	8,033	16,003	53,946	16,710	5,497	8,386	7,904	12,251
1971	5,497	12,991	16,833	15,092	5,492	18,801	5,495	12,913	11,646
1972	10,620	8,520	5,497	5,497	5,302	11,710	12,251	7,237	11,024
1973	8,603	11,512	8,099	15,288	19,554	8,473	5,495	8,668	10,537
1974	10,799	33,174	23,647	40,057	8,895	38,040	10,436	9,823	10,067
1975	11,124	9,008	5,497	5,497	7,004	29,014	5,495	12,067	10,806
1976	11,515	8,773	5,497	5,497	9,266	6,180	5,495	6,831	11,848
1977	4,505	4,504	4,505	4,505	5,510	4,505	7,042	5,855	7,428
1978	4,798	4,000	3,253	15,141	16,151	15,223	7,865	10,994	8,420
1979	9,709	7,546	5,497	5,497	5,492	5,497	5,495	5,790	9,630
1980	7,091	9,142	5,497	17,727	30,876	5,497	5,495	6,668	9,260
1981	9,514	8,050	5,497	5,497	5,492	7,806	5,495	7,872	10,806
1982	5,497	19,747	23,029	7,839	24,092	13,726	26,704	5,546	9,378
1983	10,864	9,865	14,019	20,736	37,344	41,179	21,478	13,222	14,184
1984	13,173	17,142	27,436	9,286	5,702	11,580	6,033	9,839	11,562
1985	10,539	14,201	6,782	5,497	5,492	5,497	5,495	8,668	11,209
1986	4,505	4,504	4,505	4,506	48,976	21,386	4,504	8,278	11,680
1987	5,497	5,495	5,497	5,497	5,492	5,497	5,495	8,457	13,344
1988	4,570	4,571	4,245	4,245	5,233	4,684	4,504	6,782	10,772
1989	4,749	4,756	4,749	4,749	4,754	11,189	5,227	10,425	9,293
1990	5,497	5,495	5,497	5,497	5,492	5,497	6,319	6,099	9,243
1991	4,570	4,252	4,245	4,245	4,249	4,245	4,252	6,213	7,378
1992	4,440	3,580	3,253	3,253	3,129	3,253	3,243	7,530	9,764
1993	4,001	4,000	4,001	4,001	3,997	32,966	4,000	7,839	11,260
1994	7,497	15,461	5,497	5,497	5,492	6,457	5,495	6,115	12,302

Vol III CP C[illegible]ons 513.xls

Location: Upper Sacramento Rver Below Keswick

CP # 62, Upper Sacramento River below Keswick

Shasta Reservoir Oct 1st Carryover Storage (MAF)	October thru April Average Flows (cfs)	Years included in Average flow Calculations
< 2.2	4,328	1925, 30, 32, 33, 34, 35, 78, 92
>=2.2	10,461	1940
>= 2.3		No years in this category
>= 2.4	6,511	1924, 45, 65, 93
>= 2.5	4,436	1988, 91
>= 2.6	8,187	1927, 48, 77, 86
>= 2.7	8,799	1937, 38, 89
>= 2.8	5,311	1931
>= 2.9	10,011	1929, 56
>= 3	10,022	1923, 26, 28, 36, 39, 41, 42, 43, 44, 46, 47, 49, 50, 51, 52 53, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 66, 67, 68, 69, 70 71, 72, 73, 74, 75, 76, 79, 80, 81, 82, 83, 84, 85, 87, 90, 94

Shasta EOM Storage &[illegible]lows

C-032448

Comparison of DWRSIM Study 485 (Flow Alternative 6) flows at various control points with recommended flows from AFRP Working Paper Vol III

Location: Upper Sacramento Rver Below Keswick

CP # 62, Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS

SALMONIDS

Objective: Enhance rearing, maintain spawning habitat, & temperature control Page 3-Xa-14, Vol III

Shasta Reservoir Oct 1st Carryover Storage (MAF)	AFRP Working Paper Recommended Flows	October thru April Average Flows (cfs)	Years included in Average flow Calculations	Ratio
< 2.2	3,250	4,971	1925, 27, 30, 32, 33, 34, 35, 40, 45, 48, 45, 48, 65, 78, 88, 89, 91,	1.53
>= 2.2	3,500	12,335	1986	3.52
>= 2.3	3,750	4,672	1924, 31, 77	1.25
>= 2.4	4,000	13,358	1956	3.34
>= 2.5	4,250	6,076	1929, 36, 51	1.43
>= 2.6	4,500		No Years in this Category	
>= 2.7	4,750	9,498	1937, 38, 50, 61, 82	2.00
>= 2.8	5,000	7,324	1926, 1960, 1962, 1967, 1971, 1990	1.46
>= 2.9	5,250	13,496	1941, 89	2.57
>= 3	5,500	10,032	1923, 28, 39, 42, 43, 44, 46, 47, 49, 52, 53, 54, 55, 57, 58, 59, 63 64, 66, 68, 70, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 94	1.82

Location: Feather River at Nicolaus — CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective: Enhance rearing & maintain spawning habitat, Page: 3-Xo-11, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective: provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonide, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.13	0.63	0.73	0.81												1.13	0.63	0.73	0.81	
Nov	1.81	1.27	0.77	0.87												1.81	1.27	0.77	0.87	
Dec	4.92	1.93	1.24	1.14												4.92	1.93	1.24	1.14	
Jan	8.55	5.22	2.92	2.41												8.55	5.22	2.92	2.41	
Feb	10.32	5.87	4.23	2.97							2.24	1.28				2.24	1.28	4.23	2.97	
Mar	9.44	6.00	3.56	3.51							2.05	1.74				2.05	1.74	3.56	3.51	
Apr	5.36	3.51	1.45	1.75		0.92	0.79	0.35	0.41	0.54	1.40	0.92				0.92	0.79	0.35	0.41	0.54
May	4.40	2.50	1.67	0.79		0.77	0.62	0.49	0.25	0.21	1.15	0.65				0.77	0.62	0.49	0.25	0.21
June	9.16	6.45	5.40	4.12		0.93	1.13	1.10	1.25	0.79						0.93	1.13	1.10	1.25	0.79
July	6.61	6.88	7.28	6.84												6.61	6.88	7.28	6.84	
Aug	2.15	3.50	4.18	3.83												2.15	3.50	4.18	3.83	
Sept	0.89	0.44	0.44	0.96												0.89	0.44	0.44	0.96	
April-May-June Average:																0.87	0.65	0.65	0.64	0.51

Location: Yuba River at Marysville — DEPLETION AREA 67, DOWNSTREAM FLOW

	SALMONIDS Objective: Optimize migration, spawning and incubation, Page 3-Xo-14-25					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonide, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.05	0.81	0.65	0.64	0.74						No Working Paper flow recommendations					1.05	0.81	0.65	0.64	0.74
Nov	2.67	2.10	1.02	1.17	0.76											2.67	2.10	1.02	1.17	0.76
Dec	6.21	2.85	1.86	1.27	0.84											6.21	2.85	1.86	1.27	0.84
Jan	8.26	5.93	3.81	2.42	2.03											8.26	5.93	3.81	2.42	2.03
Feb	9.11	7.12	5.00	3.61	2.53											9.11	7.12	5.00	3.61	2.53
Mar	8.61	7.52	4.08	3.74	2.09											8.61	7.52	4.08	3.74	2.09
Apr	5.19	3.83	2.40	1.60	0.66	0.63	0.54	0.33	0.29	0.24						0.63	0.54	0.33	0.29	0.24
Mary	2.59	1.69	0.88	0.36	0.15	0.52	0.42	0.25	0.15	0.12						0.52	0.42	0.25	0.15	0.12
June	3.03	1.66	1.06	0.35	0.13	0.71	0.64	0.50	0.26	0.14						0.71	0.64	0.50	0.26	0.13
July	5.21	2.07	1.02	0.31	0.16											5.21	2.07	1.02	0.31	0.16
Aug	2.68	2.02	1.20	0.43	0.27											2.68	2.02	1.20	0.43	0.27
Sept	1.60	1.24	0.91	0.44	0.22											1.60	1.24	0.91	0.44	0.22
April-May-June Average:																0.62	0.53	0.36	0.23	0.16

Location: Sacramento River at Verona (RM 80) — (Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)

	SALMONIDS Objective:					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective: provide attraction passage, spawning, and larval transport, Page: 3-Xh-8, Vol III					Salmonide, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	No Working Paper flow recommendations					No Working Paper flow recommendations														
Nov																				
Dec																				
Jan																				
Feb											1.57	1.31				1.57	1.31			
Mar											1.54	1.30				1.54	1.30			
Apr											1.07	0.76				1.07	0.76			
May											0.88	0.57				0.88	0.57			
June																				
July																				
Aug																				
Sept																				
April-May Average:																0.97	0.66			

Location: Lower American River at H Street Bridge — CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective: optimize conditions in lower Am. River for all life stages, Page: 3-Xc-42, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.77	0.81	1.05	1.20	2.14						No Working Paper flow recommendations					0.77	0.81	1.05	1.20	2.14
Nov	1.23	1.68	1.03	1.22	1.38											1.23	1.68	1.03	1.22	1.38
Dec	2.34	1.58	1.32	1.05	1.10											2.34	1.58	1.32	1.05	1.10
Jan	3.33	2.45	1.19	0.96	0.96											3.33	2.45	1.19	0.96	0.96
Feb	3.67	3.15	1.89	1.25	1.07											3.67	3.15	1.89	1.25	1.07
Mar	1.35	2.04	0.97	1.16	0.94											1.35	2.04	0.97	1.16	0.94
Apr	1.29	1.41	1.10	1.02	1.04	0.57	0.50	0.38	0.31	0.50						0.57	0.50	0.38	0.31	0.50
May	1.24	1.23	0.98	0.93	0.91	0.46	0.38	0.34	0.31	0.44						0.46	0.38	0.34	0.31	0.44
June	1.31	1.51	1.39	2.29	6.41	0.73	0.94	0.99	1.69	1.69						0.73	0.94	0.99	1.69	1.89
July	1.21	1.25	1.41	2.39	2.49											1.21	1.25	1.41	2.39	2.49
Aug	1.36	1.17	1.19	1.95	0.88											1.36	1.17	1.19	1.95	0.88
Sept	1.38	1.58	1.30	2.54	1.57											1.38	1.58	1.30	2.54	1.57
April-May-June Average:																0.59	0.61	0.57	0.77	0.94

Location: San Joaquin River at Vernalis — CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective: benefit all life stages of fall-run chinook salmon, Page: 3-Xd-47, 3-Xe-20, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-19, Vol III					WHITE AND GREEN STURGEON Objective: provide suitable passage, spawning and rearing flows, page 3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.20	3.82	3.67	6.14	3.48											2.20	3.82	3.67	6.14	3.48
Nov	1.06	1.94	1.89	2.09	2.22											1.06	1.94	1.89	2.09	2.22
Dec	1.41	2.00	2.12	1.94	1.86											1.41	2.00	2.12	1.94	1.86
Jan	2.16	2.23	2.00	1.96	1.65											2.16	2.23	2.00	1.96	1.65
Feb	2.85	2.01	1.57	1.96	1.54						1.02	0.56				1.02	0.56	1.57	1.96	1.54
Mar	2.59	1.55	1.13	1.21	0.90						0.99	0.43				0.99	0.43	1.13	1.21	0.90
Apr	0.55	0.48	0.50	0.53	0.47	2.21	1.30	0.87	0.91	0.96	0.82	0.41				0.55	0.41	0.50	0.53	0.47
May	0.52	0.41	0.35	0.37	0.36	1.08	0.56	0.48	0.51	0.60	0.79	0.35				0.52	0.35	0.35	0.37	0.36
June	0.46	0.22	0.25	0.27	0.31	0.94	0.32	0.35	0.41	0.59						0.46	0.22	0.25	0.27	0.31
July	0.80	1.06	1.31	2.32	2.36											0.80	1.06	1.31	2.32	2.36
Aug	1.59	2.23	2.77	3.16	3.49											1.59	2.23	2.77	3.16	3.49
Sept	2.36	2.60	2.58	3.00	3.04											2.36	2.60	2.58	3.00	3.04
															April-May-June Average	0.51	0.33	0.36	0.39	0.38

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence — CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective: Double natural production, Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-21, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.07	2.66	3.10	5.52	1.70						No Working Paper flow recommendations					2.07	2.66	3.10	5.52	1.70
Nov	1.33	1.74	1.45	1.82	1.38											1.33	1.74	1.45	1.82	1.38
Dec	1.39	2.45	1.35	1.72	1.14											1.39	2.45	1.35	1.72	1.14
Jan	2.65	2.72	1.60	1.88	1.06											2.65	2.72	1.60	1.88	1.06
Feb	4.94	2.58	1.98	2.30	1.20											4.94	2.58	1.98	2.30	1.20
Mar	4.04	1.52	1.12	1.18	1.29											4.04	1.52	1.12	1.18	1.29
Apr	1.10	0.73	0.59	0.95	0.91	0.39	0.29	0.23	0.29	0.51						0.39	0.29	0.23	0.29	0.51
May	0.77	0.50	0.69	0.67	0.66	0.17	0.13	0.12	0.18	0.33						0.17	0.13	0.12	0.18	0.33
June	1.02	0.70	2.94	3.80	4.18	0.30	0.16	0.26	0.42	0.84						0.30	0.16	0.26	0.42	0.84
July	2.66	2.80	3.17	3.34	3.34											2.66	2.80	3.17	3.34	3.34
Aug	2.75	2.88	3.63	4.19	4.03											2.75	2.88	3.63	4.19	4.03
Sept	2.05	1.96	2.35	2.93	2.80											2.05	1.96	2.35	2.93	2.80
															April-May-June Average:	0.29	0.20	0.21	0.29	0.56

Location: Tuolumne River from LaGrange Dam to the SJR confluence — CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective: Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective.					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.94	1.84	1.74	3.25	2.25											0.94	1.84	1.74	3.25	2.25
Nov	0.50	0.93	1.35	1.41	2.11											0.50	0.93	1.35	1.41	2.11
Dec	0.60	1.08	1.63	1.20	1.56											0.60	1.08	1.63	1.20	1.56
Jan	1.57	1.40	1.24	1.08	1.23											1.57	1.40	1.24	1.08	1.23
Feb	1.88	1.14	0.93	0.76	0.69											1.88	1.14	0.93	0.76	0.69
Mar	1.89	1.31	0.80	0.83	0.36	No Working Paper flow recommendations					No Working Paper flow recommendations					1.89	1.31	0.80	0.83	0.36
Apr	1.05	0.59	0.43	0.35	0.29											1.05	0.59	0.43	0.35	0.29
May	0.42	0.30	0.24	0.23	0.23											0.42	0.30	0.24	0.23	0.23
June	0.65	0.16	0.09	0.12	0.14											0.65	0.16	0.09	0.12	0.14
July	0.67	0.50	0.37	0.66	0.68											0.67	0.50	0.37	0.66	0.68
Aug	1.15	2.18	2.43	1.67	2.79											1.15	2.18	2.43	1.67	2.79
Sept	2.50	2.91	1.59	1.83	3.03											2.50	2.91	1.59	1.83	3.03
															April-May-June Average:	0.71	0.35	0.26	0.23	0.22

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence — CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective: Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.60	3.90	3.80	5.76	2.70											2.60	3.90	3.80	5.76	2.70
Nov	0.88	1.62	0.81	0.86	0.61											0.88	1.62	0.81	0.86	0.61
Dec	1.53	1.77	1.00	0.92	0.63											1.53	1.77	1.00	0.92	0.63
Jan	1.54	1.55	1.15	1.14	0.61											1.54	1.55	1.15	1.14	0.61
Feb	1.74	1.92	0.95	2.18	0.98											1.74	1.92	0.95	2.18	0.98
Mar	1.04	0.39	0.34	0.35	0.40	No Working Paper flow recommendations					No Working Paper flow recommendations					1.04	0.39	0.34	0.35	0.40
Apr	0.29	0.16	0.08	0.07	0.09											0.29	0.16	0.08	0.07	0.09
May	0.58	0.19	0.05	0.05	0.08											0.58	0.19	0.05	0.05	0.08
June	0.82	0.14	0.03	0.04	0.08											0.82	0.14	0.03	0.04	0.08
July	0.28	0.08	0.15	0.50	0.92											0.28	0.08	0.15	0.50	0.92
Aug	0.15	0.32	0.52	0.81	0.73											0.15	0.32	0.52	0.81	0.73
Sept	1.08	0.61	0.46	0.50	0.57											1.08	0.61	0.46	0.50	0.57
															April-May-June Average:	0.56	0.18	0.05	0.06	0.08

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River — CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective: benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective.					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb																				
Mar						No Working Paper flow recommendations					No Working Paper flow recommendations									
Apr	0.64	0.28	0.26	0.26	0.27											0.64	0.28	0.26	0.26	0.27
May	0.64	0.11	0.15	0.18	0.21											0.64	0.11	0.15	0.18	0.21
June	0.31	0.15	0.17	0.25	0.34											0.31	0.15	0.17	0.25	0.34
July																				
Aug																				
Sept																				
															April-May-June Average.	0.53	0.18	0.19	0.23	0.27

Feather River at Nicolaus

STUDY 1995C06F-SWRCB-485 DWRSIM model618 18 Jun 97

CP # 37 DEPLETION AREA 13 DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-485/37/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1 906	2 454	1 431	5 107	6 014	12 133	8 838	26 005	18,973	7 026	504	403
1923	2 017	1 529	7 546	11 287	5 348	3 090	7 008	2 683	6 087	7 026	4 733	706
1924	1 136	1 731	4 294	3 269	2 489	2 830	1 933	1 008	1 949	1 171	179	286
1925	1 138	454	618	2 586	11 308	5 269	3 916	2 244	4 823	3 155	537	555
1926	978	1 798	663	5 058	5 906	5 204	7 294	5 074	3,227	6 652	585	2 807
1927	1 643	6 487	3 090	9 893	36 318	18 589	12 705	9 628	5 512	9 417	2 358	252
1928	1 220	1 882	699	8 132	4 172	43,797	6 623	7 010	3 479	8 852	5 343	420
1929	1 386	1 311	797	3 676	2 269	2 980	872	390	1 008	846	174	269
1930	1 167	387	2 976	7 790	1 224	10 327	4 521	3 513	4 084	7 058	4 342	1 092
1931	1 869	2,773	2 781	1 594	2 629	2 228	2 084	2 033	2 089	1 106	211	336
1932	1 006	1 563	2 277	8,278	4 259	1 389	4 974	3 009	7 579	6 229	1 106	521
1933	1 155	1 832	1 708	2 179	4 465	2 765	1 798	390	1 748	797	342	387
1934	764	1 847	1 529	4 928	1 134	2 980	4 101	1,196	2 336	1 578	504	420
1935	1 122	538	1 008	8 799	1,062	7 432	8 352	12 718	8,586	3 822	589	2 470
1936	2 683	1 882	764	6 977	20,482	17 463	7 714	3 578	5 381	7 205	3,009	67
1937	1,610	3 059	2 927	4 570	13,252	15 320	6,437	5 708	7 428	4 033	1 887	84
1938	1 159	2,269	12 084	10 376	26,980	37,280	27 156	26,542	17,799	3 708	1 041	4,420
1939	5 139	4 974	5 253	5 416	5,528	5 253	2,901	1 301	4,453	7 611	5 790	606
1940	1 073	857	280	4,814	5,208	38,580	31 779	7 302	5 482	7 823	1 041	2 571
1941	2 683	3 344	5 302	18,186	29 802	24,037	7 226	14 572	6,470	4 733	1 236	739
1942	5,025	3,176	20 752	18,605	36 472	10,278	22 452	13,515	11 887	5 774	746	504
1943	3 318	6 117	10 718	24,863	16 585	25 647	11 579	5 822	3 428	7 026	2,082	269
1944	1 108	1 193	1 529	2,927	10,309	8,050	1 529	407	4 823	7 302	5 627	50
1945	911	2 780	2 902	2 472	11,074	10 804	2 891	407	5,882	7 808	4 326	252
1946	911	2 805	7 823	16 198	8 373	8 441	1 865	2 911	5.294	8 080	6 863	471
1947	1 122	1 748	2 749	1 887	3 439	4 407	3 059	0	3 126	7 253	6 409	34
1948	1 431	1 294	1 513	1 447	2 580	2,423	6,537	6 376	5,386	6 799	4 033	3,277
1949	1 285	874	1 806	1 805	2 269	7 583	1 781	2 277	4 437	7 683	3 887	891
1950	1 724	2 202	1 854	4 277	7 941	4,570	3 899	2 147	6 403	6 441	3 058	982
1951	884	13 797	31 826	26,038	20 761	11 449	3,714	2,911	2,823	8 880	6 587	1 193
1952	1,805	2,521	5,009	25 241	21 888	16,459	27,107	33,421	17,058	5 074	2 196	3,731
1953	4,163	2,151	9,486	21 780	8,461	8,799	4 790	6,862	8,941	9 839	813	891
1954	1 171	4,093	2 618	8,508	15,053	16 816	13,041	8,733	3,986	8,636	6 977	823
1955	1,041	1,280	3 448	4 342	2,449	1 936	1,126	882	4,739	7 461	1 708	666
1956	530	739	1,025	42 252	19,715	16,580	6,016	16,019	8,117	9 319	976	891
1957	3,432	1,280	1 884	4,521	14 261	17 386	5,479	2,911	6,873	6 652	6,310	1,244
1958	1,539	723	2,802	3,529	25 947	31 421	25 998	18,983	11,880	3 965	1 903	3,529
1959	4,326	1,889	2,082	10,799	17 486	5 586	1,462	374	4 080	7 709	6 278	941
1960	802	1 882	1 610	2,563	4,607	3,025	5,361	293	3 647	6 278	293	639
1961	1 675	1 580	618	1,724	5 078	1,529	2,236	211	4 722	7 886	6 847	521
1962	2 228	1,280	651	1 122	12 190	6,375	1 311	4,086	5 932	8 087	3 882	2 981
1963	9 921	3 949	5 643	1 843	30 266	12,884	26,738	11,824	7,042	8 847	2 700	1 176
1964	1 366	4,336	1 252	7 611	2,225	3,952	1 395	634	4 033	7 416	6 088	3 983
1965	1,859	1 849	10 685	43 131	12 406	8 278	11 277	10,181	4,033	8 087	2 488	1,210
1966	867	3,193	4 554	6 717	5 080	6,083	3 328	3,936	2,975	6 229	6 619	269
1967	1,057	1,210	6,928	4 180	22 904	19 955	9,178	14,389	16 867	4 564	2 000	3 042
1968	4,163	1 496	3 139	9 937	14,882	16,166	4 389	0	3,580	7 953	4 879	0
1969	732	1 210	1 836	32,250	31,853	19,142	14,251	20,459	7,082	1 675	183	6,353
1970	2,326	2,636	22,346	63 736	40 513	13,678	3,731	49	1 714	7 107	4 554	437
1971	797	941	14 231	9,953	8,869	16,751	9 613	10,490	8,453	9 579	5 334	1 446
1972	1,196	1,025	4 733	5,692	9 492	9 406	2,319	746	2 823	7 286	6 786	1 714
1973	1,984	3,983	4 733	19 156	25,786	20 248	5 486	3,204	7 983	7 546	3 171	1,887
1974	1,545	12,706	10 337	36,869	15 449	37,084	27 679	10,425	7,798	5 936	1 891	2,521
1975	3,919	2 067	2,781	3,610	24 920	20,459	7,327	9,866	10,167	7,530	1 578	1,933
1976	3,708	3,361	4 147	3,936	4,294	3,627	1,462	504	2,708	5,952	5 172	1,294
1977	1 545	1,513	2,183	1,480	2,341	829	982	718	872	98	65	1,126
1978	718	420	1 447	11,775	8,536	11,384	9,781	3,407	4,708	3 627	2 082	1 311
1979	784	2 189	1,952	8,986	18,890	11 531	3,479	1,484	5,798	7 497	1 756	1 180
1980	1 309	1,786	2 179	35,324	37,743	21,972	6,857	4,082	3,798	3 610	797	975
1981	797	622	1 106	6,863	8,461	9,839	4,865	716	3,479	6,652	5,678	1,042
1982	1,136	5,880	33,844	31 880	32,879	34,580	46,770	18,557	8,269	5 627	1 773	4 067
1983	7,361	11,831	18 923	16,507	37,254	55 523	24 771	21 029	23,276	6 536	4 261	6,873
1984	5,107	21 585	46,839	25,049	15,525	14,491	3,933	2,586	5,832	8,457	2 488	622
1985	293	2,235	2,886	2,244	5,204	7,953	2,823	2,830	2,790	7 741	6,717	5,008
1986	1 789	1 887	3,822	5,513	46,282	53 832	7,310	2,082	1,042	6 115	2,883	1 887
1987	1,220	739	1,480	2,618	4,582	7,336	3,008	195	3,227	8,146	3,936	84
1988	2,944	1,513	1 301	4 186	1 985	1,578	2 151	1,252	1,210	520	65	17
1989	2,086	672	663	1,952	3,943	12 458	8,218	2,944	2,723	6,983	1 136	3 126
1990	1 903	2,286	2 830	5,221	4,393	3 155	3,865	146	3 082	5 237	761	1 227
1991	2,228	1 798	2 407	1,171	2,885	8 197	3,761	342	1,903	2 570	569	665
1992	1 561	1 008	748	2,749	9,457	3 610	2 773	455	1 887	1 236	49	286
1993	2,326	1 378	982	7 042	9 273	8 229	13 747	9,417	6,873	4 359	1 156	319
1994	1 675	2,672	3,887	3,350	8,121	2,261	1,395	748	2,807	6 635	5 774	0

Flow recommendations are based on water year types as defined on p 23-24 of the SWRCB 1995 WQCP for the Bay Delta

Sacramento Basin 40-30-30 Index
Wet - 1927, 38, 41, 42, 43, 52, 53, 56, 58, 63, 65, 67, 69, 70, 71, 74, 75, 82, 83, 84, & 86
Above Normal - 1922, 28, 40 51, 54, 57, 73, 78, 80, & 93.
Below Normal - 1923, 35, 36, 37, 45, 46, 48, 50, 59, 62, 66, 68, 72, & 79
Dry - 1925, 26, 30, 32, 39, 44, 47, 49 55, 60, 61, 64, 81, 85, 87, & 89
Critical - 1924, 29, 31, 33, 34 76, 77, 88 90, 91, 92, 94

San Joaquin Basin 60-20-20 Index
Wet - 1922, 37, 38, 41 42, 43, 52, 56, 58 65, 67, 69, 74, 75, 78, 80, 82, 83 86, & 93
Above Normal - 1923, 27, 32 35, 36 40 45, 46, 51, 63, 70, 73, 79, & 84
Below Normal - 1925, 28, 44, 48, 49, 50 53, 54, 57, 62, 66, & 71
Dry - 1926, 33, 39, 47, 55, 59 64, 68 72 81, & 85
Critical - 1924, 29, 30, 31, 34, 60, 61, 76 77, 87, 88, 89, 90, 91, 92, 94

Mean Monthly Flow in cfs by Water Year Type

73-year Flow Averages by Month and Water Year Type
Feather River at Nicolaus - CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	2,818	1,576	1,837	1,376	1,804
NOV	4,519	3,183	1,924	1,476	1,864
DEC	12,300	4,817	3,110	1,936	2,383
JAN	21,372	13,042	7,306	4,103	3,146
FEB	25,795	14,686	10,563	5,051	3,850
MAR	23,610	19,998	8,901	5,969	3,083
APR	16,077	10,535	4,356	3,680	2,251
MAY	13,194	7,507	4,996	1,857	762
JUN	9,161	6,452	5,396	4,119	1,967
JUL	6,615	6,881	7,280	6,846	2,312
AUG	2,146	3,407	4,176	3,829	1,152
SEP	2,219	1,096	1 100	1,351	526

CP 16 Yuba River at Marysville, Regulated Flow

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	423	521	978	1,822	4,574	2,911	3,714	6,798	8,033	2,980	2,353	471
1923	455	807	3,968	3,074	1,981	1,870	2,185	1,504	2,084	829	483	571
1924	504	536	880	1,306	1,878	748	286	179	168	65	65	67
1925	276	353	764	1,171	4,826	2,277	1,796	1,675	881	390	585	454
1926	423	538	716	1,496	4,447	2,846	2,218	390	252	65	65	67
1927	423	4,033	2,358	3,741	8,589	5,448	5,781	5,253	4,571	2,244	618	487
1928	423	1,916	1,843	3,074	2,277	7,432	4,420	3,155	790	438	563	454
1929	423	538	983	1,301	1,729	1,431	1,025	342	202	65	65	67
1930	325	319	1,431	2,830	3,205	2,846	1,446	520	286	65	130	471
1931	423	622	504	1,513	1,639	1,203	252	179	168	65	65	67
1932	276	303	1,285	1,529	1,985	2,472	2,084	1,415	2,807	585	834	403
1933	423	454	563	1,301	1,458	1,843	1,180	851	202	65	65	67
1934	342	336	716	1 610	2,251	1,386	454	195	202	65	65	67
1935	325	504	585	1,545	1,747	2,131	4,638	3,584	3,344	618	618	420
1936	472	454	563	4,505	6,189	4,505	4,101	3,334	2,773	667	634	487
1937	423	420	537	1,285	3,151	2,879	2,708	3,236	1,748	488	589	403
1938	423	1,462	4,489	3,706	5,880	8,343	6,151	8,733	7,647	3,155	2,033	538
1939	520	555	569	1,386	1,586	1,658	672	179	168	65	65	67
1940	276	286	293	3,253	5,320	7,400	5,176	4,749	2,000	407	918	504
1941	455	807	3,350	4,538	6,626	5,465	4,389	5,009	3,344	2 586	797	605
1942	520	840	4,245	4,886	7,004	4,635	5,411	5,237	5,025	2 885	882	521
1943	423	2,000	3 448	6,115	5,006	7,221	5,008	4,131	2,806	899	797	538
1944	439	471	802	1,447	2,225	2,293	1,462	764	363	65	65	118
1945	423	1,412	1,724	1,935	4,700	3,724	1,714	1,369	1,864	589	899	487
1946	585	1,546	4,619	4,851	4,231	2,358	2,134	2,179	1,176	537	883	454
1947	423	1,244	1,156	1,285	2,503	2,521	1,328	342	336	65	65	67
1948	423	487	520	2,131	1,443	1,854	3,126	2,131	3,075	813	732	454
1949	423	487	843	1,334	1,873	3,367	2,134	797	252	65	438	454
1950	423	487	637	3,513	4,026	3,236	3,042	2,488	2,252	618	883	471
1951	829	6,006	8,571	6,944	6,158	5,172	4,571	3,415	1,513	589	883	471
1952	764	1,344	4,245	5,985	5,511	5,383	6,201	8,262	8,389	3,789	2,911	1,126
1953	423	487	1,513	5,843	4,123	3,318	2,353	2,183	3,887	2,781	829	521
1954	504	906	732	2,980	3,617	4,017	3,529	828	605	407	618	454
1955	423	588	1,334	2,163	1,785	1,610	1,294	1,008	370	65	65	67
1956	423	565	9,433	10,213	6,676	4,814	3,866	5,302	4,336	2,342	878	622
1957	764	639	553	1,529	4,249	4,115	1,260	2,000	1,833	585	716	538
1958	689	790	1,756	3,318	7,838	6,169	6,705	6,618	6,339	2,944	1,236	823
1959	423	504	553	3,058	3,563	1 769	1,059	407	336	65	65	101
1960	423	454	563	1 773	3,581	2,879	1,328	618	370	65	65	84
1961	423	706	813	1,350	2,289	1,822	941	342	202	65	65	67
1962	342	336	683	1,136	4,988	3,285	2 706	878	1,714	537	716	521
1963	4,131	3,059	3 123	4 196	5,458	4,570	4,874	5 904	3,344	829	884	855
1964	602	2 756	678	2,700	1 878	1,740	1 580	899	454	65	65	67
1965	423	739	10,815	9,756	5 924	4 310	5,495	4,868	3,361	1 626	1,008	672
1966	472	1,176	882	2,553	1,909	2,244	1,781	455	286	65	65	67
1967	423	1,462	3,643	4 928	4,700	4 785	3,006	4,879	5,846	3,285	2 586	622
1968	585	571	884	2,867	4,259	4 017	1 143	472	336	65	65	67
1969	423	706	1,317	10,002	6,734	5,302	5,386	7,123	5,749	2,718	813	555
1970	618	588	4,228	11,027	7,346	5,418	3,529	651	867	602	716	471
1971	618	2,420	4,538	4,472	3,475	4,570	1,714	3,171	3,378	2,618	878	739
1972	586	786	1,513	2,835	2,799	2,978	1,513	683	286	65	634	889
1973	813	1,785	2,797	5,351	6,536	5,080	3 361	2,277	1,109	585	732	706
1974	829	4 959	5,936	7,205	4,718	8,441	7,260	5,887	3,986	2,785	943	605
1975	589	655	634	1,870	4,718	5,367	2,202	3,286	4,186	2,468	3,008	773
1976	1,106	1,183	667	1,382	1,817	1,073	370	179	168	65	65	67
1977	276	286	309	718	828	716	168	179	168	65	130	67
1978	226	151	732	4,228	4,357	5,123	4,470	3,318	3,143	1,464	878	891
1979	455	622	586	2,618	3,367	3,080	1,798	1,822	1,109	520	716	521
1980	813	1 042	1,643	8,229	7,587	6,131	3,933	3,822	3,243	980	813	521
1981	520	471	748	2,309	2,181	2,488	1,428	390	336	65	65	67
1982	423	4,420	7,823	5,822	7,743	7,678	11,814	9,075	5,781	2,618	911	1,126
1983	1,025	2,739	4,261	5,611	7,761	9,709	7,613	7,725	9,310	4,977	2,944	1,513
1984	911	4,437	9,254	5,123	4,866	4,877	3,882	2,326	1,798	883	797	665
1985	683	2,470	1,203	1,610	2,125	2,082	1,479	439	336	65	65	67
1986	423	736	911	3,204	13 486	10,620	6 386	3,545	2 017	802	732	908
1987	683	437	553	1,389	2,251	1,626	487	211	202	65	65	67
1988	342	370	1,008	1,773	1,321	1,122	807	195	202	65	65	67
1989	342	824	667	1,301	1,883	7,400	3,949	1,626	773	390	618	805
1990	1,136	689	439	2,505	1,747	1,854	656	618	235	65	65	67
1991	342	353	423	882	1,082	2,886	1,344	456	202	163	618	403
1992	407	454	456	1,334	3,946	2,017	840	195	202	65	65	67

Sacramento Basin 40-30-30 Index:
Yuba River at Marysville gage

Month	W	AN	BN	D	C
OCT	732	564	457	460	520
NOV	1989	1470	717	817	530
DEC	4349	1893	1306	868	587
JAN	5780	4154	2885	1891	1424
FEB	6360	4867	3498	2527	1771
MAR	6026	5266	2854	2620	1461
APR	5191	3826	2403	1802	880
MAY	5186	3374	1780	714	306
JUN	4548	2485	1585	524	193
JUL	2345	831	461	138	74
AUG	1204	807	540	195	121
SEP	718	556	408	200	98

A2-111

C-032451

C-032451

Sacramento River at Verona

STUDY 1995C06F-SWRCB-485 DWRSIM recrc816-d 21 May 97

ALT 6 - SACRAMENTO RIVER FLOW AT VERONA (CFS)

CP 43 def - CP 64 def - CP 43 in

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	8977	9546	11824	15190	25566	25647	17915	36236	25612	13631	6993	8033
1923	11352	13226	24493	26087	17644	13970	18587	8847	13444	13808	10197	8638
1924	8197	7909	11189	11417	13074	9498	7478	6879	9260	7266	5351	6705
1925	6136	5648	7920	9286	36714	15434	17377	7319	13512	11466	8017	7613
1926	9758	8806	8603	15336	30880	14279	17545	11856	13360	13938	6310	9159
1927	6879	16402	12566	24737	65740	37503	39140	21175	12436	18735	10539	7462
1928	9628	17730	12279	21305	23418	70985	23141	16247	13898	17939	13303	8302
1929	9108	9966	9612	12263	14963	11482	8050	7823	7915	6554	5286	6268
1930	6912	5916	11775	18475	14333	25940	10033	6945	13982	14946	10978	6369
1931	8197	7869	8115	9672	9417	7937	7630	7644	9226	8424	5546	6823
1932	6896	6672	11092	16003	10761	7530	10083	8115	12520	10766	5639	8201
1933	6229	7445	6896	9579	10461	8566	7226	5513	7284	7384	5042	5796
1934	5611	6537	9254	14702	11416	11433	10100	6538	9109	12295	5871	7092
1935	6993	7546	7026	23110	11146	20573	15965	21858	13730	13190	8619	8520
1936	10036	8168	7986	25403	29068	28185	15377	9563	12403	14616	9742	7159
1937	8815	9832	10604	13352	29692	34121	18469	11889	13380	10278	7481	6789
1938	9417	19747	32576	25517	69197	66631	39796	46221	27023	10897	7465	14686
1939	19044	16234	15369	15206	15773	13499	10789	7058	14974	14979	14361	6302
1940	7449	6974	6115	22866	31293	46790	35040	15060	12671	16491	8457	9361
1941	10620	11243	25973	63980	64821	51376	37527	35145	15848	11824	8408	13360
1942	18752	14890	58207	53165	65666	23273	37813	30559	21787	12637	7237	10586
1943	16589	17915	23631	46461	44763	51962	24385	16881	12201	13271	8565	7796
1944	9791	11882	10508	13938	25747	22183	7142	6489	15024	14605	11124	6672
1945	6684	11613	13894	11677	28341	23175	9378	7449	13848	15580	10146	7563
1946	9303	13411	42122	36786	20275	20199	8252	9791	14318	15743	12653	8487
1947	10002	10888	14312	10978	16908	18215	10705	6099	13276	14052	11905	9260
1948	7823	8319	7725	12263	11387	14263	18419	18622	16974	15938	8977	9986
1949	12669	11209	11319	11368	12910	36446	10503	9860	14738	15206	10799	8319
1950	9709	9764	8668	16345	25296	15759	10891	8213	13125	14686	8587	7126
1951	8556	19797	46856	49717	49174	25322	10638	13320	11986	17044	13011	9092
1952	10295	12772	35422	54905	52294	48270	48114	46205	26570	11889	6847	15713
1953	17587	13495	38089	56174	24920	21842	13125	22378	20839	17532	8631	11159
1954	14605	18318	12279	30299	52289	44204	35174	21419	13814	18004	14003	9814
1955	10831	14537	20931	18361	13613	15369	7327	7066	15058	15320	7237	6974
1956	7758	9394	9726	67575	54137	33812	18217	33259	16789	16735	7530	12957
1957	17125	12772	10913	15515	29422	39325	17276	13238	15226	17402	12816	8537
1958	17825	16469	20720	31584	49840	64066	37779	33665	25175	13157	10360	18083
1959	18524	13192	11336	30787	45735	19679	8453	6717	14967	16816	13320	7966
1960	11010	11798	8717	12360	23557	18020	11495	6489	14335	14718	6786	8520
1961	10929	10823	15080	10848	27477	19663	11613	6278	16671	16914	14296	8252
1962	12279	11545	14930	11075	32933	23582	7697	11238	14604	15971	11352	10386
1963	17776	16217	23062	12539	46077	29437	62063	22167	14823	16865	10278	9041
1964	14165	22839	11303	20313	15229	15467	7277	7010	13327	13450	13564	11629
1965	8490	11814	6148	67640	26595	16199	38275	20833	12705	15657	8912	8756
1966	10392	22368	13791	26298	23426	26786	14654	11693	13814	16751	13824	10016
1967	11466	11176	31372	26331	36372	47083	33964	35369	29948	12539	8782	15108
1968	17646	13092	13515	26379	46435	34088	12789	6457	14100	16215	11710	9025
1969	11206	11142	21142	49786	56314	40041	37023	36186	16402	10067	6786	19562
1970	16377	14268	43456	70681	50039	32868	13006	7563	11982	16833	12751	8691
1971	10376	14587	46221	40707	23676	46351	17848	24542	18007	18183	12051	13814
1972	15499	12772	15727	17613	21036	28721	10419	7806	14369	16703	13531	9596
1973	10718	18284	22639	38219	61112	42187	16606	11742	14789	16735	11140	9682
1974	11937	49123	54108	65574	35310	90051	24854	21744	16563	16854	10148	17679
1975	18410	14756	14377	15076	51677	69803	21276	23698	19091	16703	9595	14251
1976	16687	14623	13369	13791	16916	15662	8369	7823	15478	14946	10734	7411
1977	7626	7583	7514	7335	11864	6961	8655	6294	8586	6229	5466	7579
1978	7725	6302	11352	38398	41162	37097	32888	16410	10520	9364	7628	13243
1979	13076	11781	10689	22704	37488	27339	13982	8034	15896	15223	7823	9260
1980	10789	12839	16345	42687	56380	33015	16772	11336	11461	9804	7270	8319
1981	13222	10872	12198	24658	26109	29616	15276	6782	14654	15727	12881	8640
1982	10409	24418	52889	41380	50417	80370	61441	27599	17511	13222	8750	16604
1983	21939	27988	49423	49187	69999	59248	59680	44968	41342	17971	14982	22906
1984	22688	47308	66648	39992	30257	33991	15142	11173	14974	17727	11368	9310
1985	10815	26754	19044	13320	17070	19353	10840	9530	13041	14979	12214	11193
1986	8789	8168	13499	18345	59782	61888	17142	9254	7647	12409	9156	8067
1987	10246	8319	10506	14068	20023	26900	11159	7140	16755	15857	14231	6362
1988	9726	6756	13547	22671	14291	9221	7092	7758	11428	10929	5774	5646
1989	7075	7831	7364	10945	10101	35031	18217	10327	13545	15369	7270	9125
1990	10701	9159	10604	17760	14045	12888	10636	6131	19024	13622	6099	7714
1991	8603	7294	7335	6326	10533	24948	12671	6375	7579	7965	6294	7126
1992	6131	5075	5432	10002	27764	17402	11199	6831	9896	7839	5253	7647
1993	7989	7159	9774	40301	38785	40333	29729	21435	22419	14523	8060	7940
1994	10344	18116	14572	13775	23566	13547	6606	6896	15730	14767	13970	7579

Sacramento Basin 40-30-30 Index

Sacramento River at Verona - CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow

Month	W	AN	BN	D	C
OCT	13,800	10,355	11,295	10,598	9,087
NOV	18,252	12,972	11,908	11,927	9,053
DEC	32,061	16,037	14,448	12,252	9,787
JAN	43,874	31,470	21,420	14,710	12,458
FEB	46,871	40,862	27,150	19,825	14,863
MAR	48,002	40,459	23,603	20,809	12,443
APR	33,161	23,548	13,102	11,718	8,992
MAY	27,267	17,644	10,584	7,885	6,675
JUN	19,079	15,236	14,196	14,298	10,544
JUL	14,748	15,096	15,123	14,518	9,880
AUG	9,585	10,267	10,426	10,362	6,724
SEP	13,138	9,253	8,464	8,299	6,941

American River at H Street Bridge

STUDY 1995C06F-SWRCB-485 DWRSIM recrc818-f 18 Jun 97

CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-485/64/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,870	2,891	2,440	2,196	4,285	4,407	4,369	6,359	8,470	2,537	3,383	3,613
1923	2,374	2,403	6,961	5,080	3,781	2,944	3,143	4,375	5,243	5,074	4,196	3,075
1924	537	992	1,464	943	904	2,049	807	2,636	2,134	342	280	672
1925	374	605	504	456	4,684	2,797	4,285	3,415	5,529	4,700	2,602	2,353
1926	3,188	2,723	3,432	1,691	1,440	1,156	1,126	1,545	4,521	3,269	244	538
1927	1,659	504	504	2,440	13,667	4,928	8,184	3,887	5,042	3,464	3,854	2,067
1928	1,870	2,504	2,636	2,374	2,399	12,604	5,613	3,074	3,583	3,056	1,836	1,899
1929	4,212	2,067	1,952	1,691	1,440	1,106	1,025	1,334	2,388	1,968	280	975
1930	1,756	1,082	504	439	432	2,423	2,370	2,309	4,907	3,838	3,204	640
1931	878	1,210	764	439	432	618	1,662	1,691	3,815	834	472	665
1932	829	1,143	504	455	2,417	2,407	3,042	2,814	8,705	7,497	2,309	941
1933	2,683	1,697	504	439	774	1,155	5,479	1,870	3,344	325	563	1,412
1934	1,706	1,479	504	439	432	2,309	3,126	1,740	5,613	228	244	269
1935	699	504	504	439	432	2,911	6,487	5,513	3,496	6,570	4,050	3,294
1936	960	571	716	3,678	13,213	4,294	5,714	3,562	5,082	3,968	3,724	2,504
1937	2,976	3,815	2,440	2,196	1,946	2,407	3,378	3,919	3,697	2,944	2,163	2,504
1938	2,374	2,403	5,741	3,367	10,263	10,978	8,067	9,075	7,999	3,106	3,903	3,933
1939	2,374	2,403	2,440	2,440	2,431	1,903	1,832	563	4,403	3,350	342	975
1940	1,252	1,260	1,366	439	9,614	10,457	6,487	3,139	3,613	4,033	3,318	1,412
1941	1,870	1,916	2,114	5,904	6,265	4,830	3,815	4,570	4,252	2,228	2,244	3,846
1942	2,374	2,403	5,316	9,742	10,407	3,659	5,277	6,146	5,988	3,009	3,919	3,899
1943	2,374	3,815	4,879	11,433	7,346	12,474	5,294	2,814	4,353	2,228	2,000	3,025
1944	2,374	2,403	2,440	2,440	2,347	1,903	2,370	1,317	4,151	3,448	2,537	2,134
1945	1,724	504	504	1,285	7,851	2,407	2,504	2,895	4,420	3,432	2,228	2,050
1946	1,870	3,008	8,929	5,627	2,971	3,123	4,252	2,761	4,840	3,387	1,988	2,202
1947	2,651	2,403	2,440	2,196	1,946	1,513	1,378	1,317	4,874	3,724	2,309	1,193
1948	1,203	504	1,334	439	2,486	3,009	2,370	2,309	3,647	3,156	2,017	1,815
1949	2,374	2,403	2,440	2,440	2,467	2,407	2,370	2,911	4,101	2,944	3,334	2,168
1950	3,487	3,294	1,447	1,187	2,179	3,253	5,143	2,982	5,126	3,546	2,586	1,328
1951	2,488	17,243	15,467	10,457	8,517	3,497	3,025	3,480	4,538	3,204	2,000	1,766
1952	1,870	2,571	6,146	9,254	9,353	6,086	9,109	10,132	10,302	4,082	4,375	4,134
1953	2,374	2,403	2,749	7,758	2,756	2,407	2,874	3,582	4,252	3,041	4,381	3,126
1954	2,374	2,403	2,440	2,440	3,277	4,536	4,756	3,041	3,075	2,618	1,389	1,486
1955	2,147	1,916	1,962	1,952	1,946	2,781	1,378	1,317	4,084	3,220	3,545	2,487
1956	1,025	504	11,547	16,786	5,894	2,911	3,830	4,619	5,344	2,765	3,867	3,848
1957	2,374	2,403	2,440	2,440	3,223	4,861	3,563	2,309	4,101	3,220	2,033	1,933
1958	1,870	2,403	2,440	2,196	9,921	8,717	10,436	9,156	7,142	2,765	4,017	3,949
1959	2,374	2,403	2,440	2,440	2,521	1,988	1,445	1,317	3,580	2,261	1,025	586
1960	2,521	2,723	943	943	904	2,131	1,815	2,309	3,764	2,683	1,805	1,059
1961	2,505	1,109	943	943	936	716	1,143	1,057	2,889	1,854	927	807
1962	2,147	1,949	943	943	936	2,407	2,655	2,423	3,260	3,497	3,074	1,328
1963	1,870	3,983	3,594	4,115	11,580	2,911	6,689	6,229	3,815	2,976	2,440	2,571
1964	2,374	4,134	2,440	3,074	3,077	2,802	1,378	1,317	4,790	5,107	1,691	1,109
1965	1,155	504	17,581	12,887	5,364	2,407	4,216	4,115	5,008	2,982	2,000	2,941
1966	2,374	2,571	2,440	2,618	2,431	1,988	1,933	1,822	3,596	2,488	1,236	1,587
1967	2,048	908	943	6,652	4,772	6,213	4,536	7,790	8,688	3,757	4,017	4,060
1968	2,374	2,571	2,440	2,618	6,780	2,521	2,235	1,317	3,580	2,472	1,187	1,328
1969	1,382	1,042	943	15,467	9,561	4,407	7,042	7,611	5,798	2,488	3,741	3,882
1970	2,374	2,403	5,595	21,842	6,176	2,407	2,975	2,309	3,344	3,058	2,228	1,378
1971	2,309	1,916	3,903	5,269	4,033	3,789	3,344	3,582	4,252	2,228	2,976	3,880
1972	2,374	2,403	2,927	2,440	3,042	4,294	2,370	2,309	3,986	3,009	1,773	1,798
1973	1,382	1,916	1,962	8,701	7,853	3,952	2,756	3,708	3,731	3,415	2,716	1,143
1974	1,870	6,353	7,335	12,702	3,781	9,482	6,789	4,082	4,252	2,440	3,952	4,017
1975	2,374	2,403	2,440	2,440	3,133	4,586	3,630	4,017	5,284	2,563	3,836	3,479
1976	2,374	3,277	2,440	2,440	2,347	1,903	622	980	3,798	2,244	472	538
1977	927	889	504	439	432	325	168	407	168	280	276	303
1978	390	504	504	1,309	5,390	5,808	4,403	3,220	4,922	2,769	2,358	3,227
1979	2,374	2,403	2,862	2,440	2,431	3,301	2,370	3,708	4,790	3,529	2,017	1,882
1980	1,870	1,916	1,982	17,451	12,917	3,285	2,856	2,814	4,708	2,228	2,114	3,781
1981	2,374	2,822	2,440	2,440	2,431	1,903	1,126	1,057	3,445	2,000	1,008	1,462
1982	1,431	1,813	14,621	8,246	15,071	7,172	14,167	9,579	6,050	2,895	3,952	4,252
1983	2,374	8,453	8,912	7,920	12,820	16,231	7,109	9,254	14,150	5,790	4,884	4,730
1984	2,374	15,310	14,832	6,749	5,561	2,407	2,756	2,309	4,504	3,545	3,139	1,385
1985	1,870	3,479	2,927	2,196	2,385	2,407	1,378	2,586	4,958	3,827	2,911	1,328
1986	1,171	504	504	1,610	33,023	10,508	2,370	2,814	4,252	2,228	2,000	3,983
1987	2,374	2,403	2,440	2,440	2,431	1,903	1,126	797	3,731	2,683	244	639
1988	634	908	504	439	2,451	1,659	639	1,108	2,874	716	244	2,202
1989	1,464	504	504	456	2,809	6,310	4,638	3,186	4,536	3,513	2,228	289
1990	1,382	1,916	1,952	1,691	1,440	1,155	2,000	1,415	4,636	2,765	618	1,109
1991	911	738	862	439	450	1,156	1,378	1,317	2,790	1,564	1,252	773
1992	1,919	2,437	1,952	1,962	1,878	1,513	808	1,269	3,882	1,236	244	289
1993	374	504	504	1,009	6,104	6,146	4,790	3,773	4,874	4,131	2,196	3,438
1994	2,374	2,403	2,440	2,440	2,431	1,903	689	651	3,025	2,636	358	289

Sacramento Basin 40-30-30 Index

American River at H Street bridge - CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

Year Typ	W	AN	BN	D	C
OCT	1,930	1,825	2,084	2,087	1,712
NOV	3,083	3,354	2,085	2,128	1,651
DEC	5,840	3,170	2,635	1,831	1,320
JAN	8,322	4,880	2,368	1,867	1,148
FEB	9,179	6,305	3,786	2,182	1,284
MAR	6,071	6,135	2,910	2,329	1,404
APR	5,824	4,242	3,285	2,047	1,580
MAY	5,802	3,882	2,946	1,863	1,366
JUN	5,908	4,528	4,167	4,574	3,206
JUL	3,030	3,121	3,522	3,591	1,248
AUG	3,412	2,335	2,374	1,953	436
SEP	3,438	2,370	1,948	1,269	787

A2-112

San Joaquin River at Vernalis

STUDY 1995C06F-SWRCB-485 DWRSIM recirc618-f 18 Jun 97

CP # 682 SJR AT VERNALIS TOTAL FLOW DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-485/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,964	1,687	2,486	2,683	6,752	5,351	6,184	5,920	7,284	1,870	1,822	1,916
1923	3,968	2,101	3,741	4,196	4,267	3,415	5,327	5,156	2,186	1,838	1,773	1,849
1924	3,123	1,482	1,496	1,389	1,617	1,691	1,983	1,854	1,428	1,545	1,594	1,277
1925	1,740	1,361	1,252	1,171	2,701	2,423	3,966	3,606	1,949	1,691	1,659	1,647
1926	2,000	1,412	1,382	1,366	2,863	2,277	3,664	3,529	1,697	1,382	1,447	1,428
1927	2,000	1,933	2,179	1,773	5,474	3,578	5,327	5,156	3,412	1,756	1,724	2,773
1928	4,375	1,848	2,326	2,277	2,590	3,871	4,487	3,822	1,765	1,578	1,578	1,583
1929	1,667	1,395	1,317	1,203	1,456	1,691	2,000	1,687	1,366	1,382	1,529	1,280
1930	2,000	1,244	1,138	1,220	1,548	1,935	2,403	1,870	1,381	1,382	1,447	1,361
1931	1,952	1,183	1,138	1,138	1,350	1,317	1,983	1,854	1,344	1,561	1,578	1,294
1932	1,317	1,277	3,058	3,432	8,536	4,538	4,504	3,871	2,151	1,691	1,659	1,714
1933	3,513	1,482	1,317	1,610	2,017	2,086	2,790	2,667	1,580	1,447	1,594	1,378
1934	1,806	1,277	1,203	1,431	2,449	1,659	1,966	1,854	1,344	1,529	1,561	1,361
1935	1,822	1,366	1,350	2,944	3,223	3,497	7,226	6,066	3,933	1,887	1,805	1,682
1936	3,188	1,583	1,578	2,309	12,398	5,757	6,420	5,156	2,588	1,789	1,756	1,849
1937	3,089	1,583	1,870	2,683	15,017	10,984	7,982	8,132	2,686	1,687	1,854	1,949
1938	3,156	1,798	5,074	6,993	23,714	33,340	18,049	24,265	15,784	3,643	1,887	2,638
1939	8,864	2,319	2,293	2,505	3,637	2,765	2,891	2,887	1,681	1,643	1,643	1,583
1940	2,000	1,479	1,389	4,001	8,049	10,474	6,151	5,156	3,412	1,822	1,870	1,986
1941	2,440	1,731	4,001	4,440	15,647	11,986	10,083	9,579	8,285	2,017	1,903	1,889
1942	4,912	2,236	5,138	9,173	10,371	5,936	6,907	5,936	5,647	2,342	1,919	2,101
1943	7,066	3,082	3,582	11,157	10,894	17,760	7,915	6,180	3,412	1,918	1,870	1,966
1944	3,415	1,815	1,919	1,984	3,268	3,106	3,445	2,960	1,865	1,691	1,708	1,781
1945	2,000	1,832	1,691	1,708	6,965	7,989	6,016	3,871	2,252	1,870	1,822	1,983
1946	3,854	2,235	5,611	6,180	6,212	4,381	5,344	3,854	2,134	1,822	1,870	1,963
1947	2,293	2,370	2,732	2,196	2,666	2,277	3,664	2,683	1,597	1,529	1,610	1,580
1948	1,903	1,344	1,203	1,122	1,373	1,740	3,983	3,822	2,289	1,691	1,708	1,731
1949	2,000	1,436	1,285	1,171	1,458	2,586	3,983	2,980	1,748	1,594	1,675	1,661
1950	1,944	1,428	1,285	1,480	2,539	2,293	3,980	3,822	1,731	1,578	1,659	1,647
1951	1,964	6,134	12,881	12,523	9,903	6,196	5,327	5,158	2,118	1,724	1,789	1,865
1952	2,000	1,687	2,521	7,010	7,982	12,311	10,840	15,450	11,226	2,732	1,854	2,218
1953	8,343	2,185	3,058	4,980	5,744	3,627	3,983	3,822	2,286	1,659	1,691	1,697
1954	2,000	1,513	1,415	1,334	2,289	2,407	3,966	3,822	2,286	1,643	1,708	1,714
1955	2,000	1,445	1,360	1,529	1,839	2,261	2,790	2,667	1,714	1,529	1,610	1,583
1956	1,984	1,446	12,378	22,987	15,284	6,457	6,184	6,131	7,546	2,033	1,805	1,949
1957	5,936	1,986	2,082	2,086	3,313	3,156	3,983	3,822	2,288	1,675	1,675	1,661
1958	2,000	1,546	1,447	1,626	4,177	10,887	14,907	13,190	12,923	2,017	1,903	2,134
1959	7,583	2,118	1,903	2,309	4,538	3,643	2,790	2,667	1,583	1,581	1,578	1,496
1960	1,854	1,344	1,171	1,155	1,773	1,903	2,420	1,919	1,528	1,578	1,578	1,513
1961	1,806	1,344	1,236	1,171	1,278	1,350	1,983	1,870	1,412	1,545	1,581	1,428
1962	1,382	1,294	1,155	1,138	5,942	4,489	4,201	2,900	1,714	1,581	1,594	1,630
1963	2,000	1,412	1,269	1,724	6,248	3,415	5,361	5,156	3,412	1,936	1,789	1,986
1964	3,058	2,151	1,806	1,854	2,191	2,277	2,790	2,667	1,580	1,415	1,581	1,446
1965	1,952	1,647	4,684	11,954	7,906	4,781	6,958	5,836	3,412	1,864	1,773	1,746
1966	4,603	3,580	5,090	5,725	6,066	3,708	3,966	2,980	1,687	1,610	1,643	1,613
1967	2,000	1,583	2,651	2,960	4,105	6,977	13,613	16,003	15,024	9,547	1,805	2,874
1968	8,929	2,080	2,196	2,261	4,051	2,797	3,647	2,887	1,613	1,610	1,594	1,529
1969	1,984	1,479	1,724	14,800	32,265	21,045	20,923	26,217	18,386	4,131	1,836	2,586
1970	8,327	2,564	3,594	17,044	9,507	7,432	5,327	5,156	2,118	1,724	1,773	1,882
1971	1,964	1,731	2,147	2,000	3,349	4,017	3,963	3,822	2,289	1,675	1,675	1,714
1972	2,000	1,482	1,545	1,415	2,181	2,277	3,664	2,683	1,479	1,415	1,545	1,306
1973	1,836	1,366	1,317	2,651	7,877	9,075	6,571	5,466	2,336	1,805	1,756	1,882
1974	3,432	2,470	2,895	8,457	7,094	8,441	7,863	5,920	3,412	1,838	1,805	1,949
1975	3,546	2,101	2,423	2,586	6,590	8,847	6,821	5,936	6,286	1,903	1,864	1,889
1976	4,115	1,832	1,805	1,529	2,243	1,724	1,983	1,870	1,386	1,513	1,561	1,412
1977	2,830	2,101	1,610	1,155	1,242	1,203	1,983	1,864	1,344	1,546	1,594	1,143
1978	1,289	1,294	1,350	3,253	7,202	10,978	14,923	10,831	7,075	2,814	1,822	2,723
1979	4,245	1,933	1,691	4,066	9,381	8,701	5,663	5,139	2,118	1,724	1,708	1,815
1980	2,866	1,731	1,870	15,613	23,974	14,572	6,738	6,619	6,184	3,706	1,724	2,606
1981	5,080	2,084	2,098	2,960	2,773	2,980	3,684	2,683	1,613	1,529	1,594	1,583
1982	2,000	1,630	2,000	9,366	19,266	15,304	27,023	15,158	9,865	3,236	1,836	3,949
1983	12,442	8,621	18,044	24,867	36,534	41,114	20,736	18,077	36,461	13,580	1,858	6,521
1984	12,116	13,545	21,500	15,190	9,716	6,001	5,344	5,156	2,134	1,806	1,903	2,000
1985	1,984	1,781	1,891	1,529	2,883	2,358	2,790	2,683	1,864	1,545	1,610	1,583
1986	2,000	1,587	1,545	1,984	26,289	26,444	9,814	8,083	7,613	1,805	1,789	1,933
1987	3,464	1,714	1,545	1,464	1,856	1,919	2,033	1,854	1,445	1,561	1,578	1,496
1988	1,789	1,294	1,138	1,122	1,182	1,285	1,983	1,870	1,385	1,581	1,626	1,344
1989	1,301	1,176	1,171	1,155	1,280	1,626	2,420	1,870	1,381	1,496	1,529	1,306
1990	1,334	1,227	1,138	1,122	1,280	1,382	1,983	1,870	1,311	1,431	1,513	1,344
1991	1,285	1,210	1,122	1,090	1,152	2,358	2,437	1,919	1,428	1,496	1,561	1,277
1992	1,334	1,428	1,138	1,138	2,243	2,049	2,252	1,870	1,496	1,675	1,659	1,479
1993	1,581	1,479	1,464	6,034	3,866	3,389	6,184	5,920	5,082	1,935	1,887	2,050
1994	4,264	1,849	1,447	1,350	1,981	1,561	1,983	1,919	1,681	1,691	1,643	1,529

San Joaquin Basin 60-20-20 Index:

San Joaquin River at Vernalis - CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	3,184	3,626	3,306	4,299	2,261
NOV	2,121	2,913	1,791	1,878	1,443
DEC	4,006	4,480	2,018	1,847	1,301
JAN	6,532	5,686	2,202	1,956	1,240
FEB	14,236	7,848	3,366	2,840	1,618
MAR	13,847	6,031	3,119	2,542	1,866
APR	11,510	5,708	3,984	3,195	2,112
MAY	11,024	4,985	3,533	2,751	1,675
JUN	9,877	2,583	1,989	1,618	1,417
JUL	3,341	1,798	1,637	1,510	1,531
AUG	1,830	1,785	1,864	1,561	1,569
SEP	2,481	1,951	1,675	1,500	1,370

Stanislaus River from Goodwin Dam downstream to confluence with San Joaquin River

STUDY 1995C06F-SWRCB-485 DWRSIM recirc618-f 18 Jun 97

CP # 675 STANISLAUS RIVER AT MOUTH, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-485/675/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	325	353	260	228	504	325	857	602	595	797	829	586
1923	325	353	342	228	234	325	857	602	595	829	862	586
1924	325	353	260	228	226	309	807	569	840	667	813	536
1925	293	319	244	228	366	325	857	602	807	846	894	586
1926	325	353	260	228	252	325	857	602	840	553	699	586
1927	325	336	260	228	366	325	857	602	595	878	894	586
1928	325	353	260	228	226	325	857	602	908	732	829	586
1929	325	353	260	228	234	325	823	602	823	537	764	571
1930	309	319	276	228	218	325	857	602	823	553	699	586
1931	325	319	276	244	216	325	823	569	773	699	797	565
1932	309	319	244	228	313	325	857	602	595	846	911	586
1933	325	353	260	228	234	325	857	602	706	602	846	586
1934	325	336	260	228	234	325	823	586	773	667	781	571
1935	309	319	244	228	216	325	857	602	555	781	846	586
1936	325	353	260	228	782	325	857	602	595	846	878	586
1937	325	353	260	226	488	325	857	602	595	781	813	586
1938	325	353	260	226	1,961	2,781	1,849	1,496	4,654	563	797	586
1939	4,017	638	732	797	826	325	840	602	823	797	878	571
1940	325	336	260	244	296	390	1,311	894	595	829	797	586
1941	423	370	342	293	1,368	992	1,849	1,203	565	651	781	586
1942	504	454	1,122	1,952	1,927	488	1,849	1,203	595	553	748	586
1943	2,797	1,008	1,073	2,944	2,449	3,448	1,849	1,203	595	764	797	586
1944	504	454	423	390	522	325	857	602	874	846	894	586
1945	325	353	260	228	342	358	1,082	748	595	797	829	586
1946	374	387	309	960	1,531	488	1,815	1,187	565	846	862	586
1947	504	437	423	390	366	325	857	602	756	683	878	586
1948	325	336	260	293	226	325	857	602	595	846	894	586
1949	325	353	260	226	234	325	857	602	891	764	911	586
1950	325	353	260	228	252	325	857	602	874	732	911	586
1951	325	370	2,716	2,179	2,197	980	908	634	595	894	927	586
1952	342	370	276	634	2,121	1,431	1,849	1,203	3,764	553	813	586
1953	4,033	723	943	1,480	1,242	358	975	667	565	813	911	586
1954	342	403	293	260	252	325	857	602	595	797	911	586
1955	325	353	260	228	234	325	857	602	857	699	862	586
1956	325	336	563	2,131	2,573	862	1,849	1,203	595	651	846	586
1957	1,675	756	764	797	1,242	366	857	602	565	829	960	586
1958	325	353	260	228	378	797	1,849	1,220	3,294	651	781	586
1959	3,253	773	748	927	1,513	325	857	602	706	732	846	586
1960	325	336	260	226	226	325	840	634	975	732	846	566
1961	325	319	244	228	252	325	823	569	840	683	797	555
1962	309	319	260	260	378	325	857	602	857	732	846	586
1963	325	353	260	228	234	325	857	602	565	748	862	586
1964	325	353	260	228	226	325	857	602	739	569	813	586
1965	325	336	455	358	234	488	1,849	1,203	595	813	862	569
1966	504	454	569	1,106	1,134	325	857	602	840	764	960	586
1967	325	353	260	293	234	488	1,849	1,203	1,781	1,289	846	564
1968	4,570	756	764	862	1,862	325	857	602	756	764	846	564
1969	325	336	260	226	2,233	1,638	1,849	2,423	3,479	553	829	586
1970	3,467	823	1,431	5,009	2,737	1,106	975	667	565	878	862	586
1971	342	403	309	260	1,008	374	1,160	781	595	813	960	586
1972	374	387	309	276	278	325	857	602	622	569	846	586
1973	325	336	260	342	432	439	1,731	1,138	595	846	878	586
1974	488	420	407	1,659	1,945	1,706	1,849	1,203	595	813	846	586
1975	520	823	927	943	1,729	1,171	1,849	1,203	565	764	813	586
1976	504	454	423	390	661	325	823	586	823	651	797	566
1977	309	319	244	244	324	309	773	537	739	651	813	504
1978	276	319	244	309	270	325	857	602	555	553	846	586
1979	325	353	260	228	380	374	1,210	813	595	878	894	586
1980	390	370	325	3,545	4,903	992	1,849	1,203	555	553	894	586
1981	797	723	878	1,289	738	325	857	602	756	683	846	586
1982	325	336	260	226	4,736	3,090	1,849	1,203	1,597	553	813	586
1983	5,204	2,739	3,108	4,310	4,934	5,497	1,849	1,203	4,880	2,521	911	1,109
1984	5,627	3,512	4,879	2,781	2,558	1,382	1,076	732	555	862	781	586
1985	374	387	309	260	584	325	857	602	807	699	862	586
1986	325	336	260	228	4,231	4,944	1,849	1,203	565	846	862	586
1987	504	454	423	390	366	325	823	586	874	699	813	555
1988	309	319	276	276	330	309	807	569	807	683	846	536
1989	293	319	244	244	270	325	857	602	807	634	781	586
1990	325	319	293	276	288	325	823	585	739	569	764	566
1991	309	319	293	325	414	325	823	634	874	651	813	571
1992	309	319	276	260	298	325	823	585	908	797	894	555
1993	325	319	244	228	342	325	857	602	555	748	797	586
1994	309	353	260	228	234	325	823	651	958	829	878	571

San Joaquin Basin 60-20-20 Index:

Stanislaus River from Goodwin Dam to the San Joaquin River confluence - CP # 675 - STANISLAUS RIVER AT MOUTH

Month	W	AN	BN	D	C
OCT	726	932	775	1,341	338
NOV	532	607	436	501	345
DEC	558	868	404	473	286
JAN	1,060	853	480	517	265
FEB	1,976	902	593	631	301
MAR	1,616	532	335	325	322
APR	1,650	1,080	862	856	823
MAY	1,180	745	622	602	582
JUN	1,526	557	735	781	836
JUL	797	840	793	666	668
AUG	826	863	907	836	806
SEP	614	566	586	587	580

A2-113

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Tuolumne River from La Grange Dam downstream to the confluence with the San Joaquin River

STUDY 1995C06F-SWRCB-485 DWRSIM recirc618-f 18 Jun 97

CP # 665, TUOLUMNE RETURN W/O TURLOCK DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-485/665/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	651	571	667	634	954	764	1 428	1 366	538	504	520	521
1923	569	504	602	602	594	520	1 395	1 285	487	455	439	437
1924	504	437	439	423	435	423	336	325	134	130	130	151
1925	276	303	306	293	450	342	941	894	269	260	260	252
1926	342	319	325	309	360	309	706	585	185	179	179	185
1927	309	387	374	358	630	439	1 361	1 269	454	455	439	437
1928	537	521	488	484	522	1 480	1 882	667	235	228	244	235
1929	325	319	309	309	324	309	538	520	134	130	130	151
1930	260	269	260	276	306	309	538	520	134	130	146	151
1931	260	269	260	260	288	260	353	342	134	146	146	151
1932	293	336	520	455	600	407	1 294	1 269	454	455	439	437
1933	520	454	439	455	468	472	605	618	185	163	179	185
1934	309	303	309	306	360	293	353	325	134	130	130	151
1935	293	336	342	504	432	488	1 546	1 317	487	472	439	437
1936	569	504	504	520	1 147	618	1 378	1 285	1 143	455	439	437
1937	651	571	585	585	3 367	4 294	2 235	1 366	823	520	520	521
1938	651	571	911	2 944	7 797	8 050	4 101	5 839	4 117	1 708	520	874
1939	1 171	454	455	618	1 098	829	807	585	185	163	179	185
1940	325	336	342	585	1 165	5 318	2,118	1,285	454	439	439	437
1941	651	571	683	683	5 384	4,765	3,075	1 382	2,521	537	520	521
1942	1,025	588	878	3 806	4 285	2,992	2,655	2 085	1,587	911	537	538
1943	960	588	992	3 708	4 411	6,115	2,353	1,366	1 109	520	520	521
1944	537	487	472	455	522	569	891	862	252	244	244	235
1945	390	403	390	374	2 017	3 334	1 580	1 269	471	439	423	437
1946	569	504	2 553	3 399	2 683	2 440	1 529	1 269	454	455	439	437
1947	520	471	486	439	486	439	588	569	185	163	163	185
1948	293	303	293	293	313	342	975	894	269	260	260	252
1949	358	353	342	325	360	439	672	667	235	228	228	235
1950	358	353	342	374	450	358	891	862	235	244	244	235
1951	390	605	1 513	4 033	3 871	3 074	1 277	1 269	454	455	439	437
1952	651	571	667	894	1 182	4 766	4 101	2 553	4 487	1 578	520	823
1953	927	487	504	1 106	2 719	2 000	941	862	252	244	244	235
1954	356	353	342	342	396	407	1 597	862	235	244	244	235
1955	342	319	325	342	324	309	622	602	202	179	179	185
1956	390	403	1 073	7 969	4 346	3 025	1 513	1 382	4,269	781	520	822
1957	1 008	471	472	456	504	1 594	874	894	269	244	244	235
1958	486	454	439	472	1 044	5 186	5,344	2 749	4,840	618	537	857
1959	927	454	439	439	738	2,066	588	569	185	163	163	185
1960	260	269	260	260	330	293	437	439	134	130	146	151
1961	228	269	276	260	288	260	353	342	134	146	146	151
1962	260	303	293	293	738	423	874	846	218	228	228	235
1963	390	370	374	423	540	423	1 479	1 334	487	472	455	437
1964	520	487	455	456	435	862	605	569	185	163	163	185
1965	390	437	602	5 676	3 987	2,602	2 739	1 366	538	520	520	521
1966	829	1 260	2 456	2 563	2 971	1 984	655	667	235	228	228	235
1967	456	454	569	520	540	2 980	4 285	1,496	5 042	4 521	520	1 042
1968	943	454	455	439	895	1 301	672	569	185	163	163	185
1969	390	403	435	4 245	7 400	5 042	4 857	6 749	7,462	1 968	520	891
1970	1 285	504	764	6 050	3 745	3 432	1 277	1 269	454	439	423	437
1971	537	487	520	488	648	2 505	874	862	252	244	244	235
1972	342	319	342	325	330	651	538	537	151	146	130	168
1973	309	336	342	390	1 170	3 838	1 344	1 269	454	439	423	437
1974	651	588	602	3 399	2 935	3 757	2 605	1 350	521	520	520	521
1975	651	571	589	569	774	4 098	1 630	1 382	2,665	504	504	521
1976	667	454	439	423	539	423	420	423	134	130	146	151
1977	390	269	260	260	270	260	353	358	134	146	146	151
1978	356	403	407	585	846	732	1 714	1 431	538	520	520	521
1979	569	504	504	899	4 375	3 985	1,546	1 285	521	439	423	437
1980	651	588	569	5 042	7 736	4 131	2 151	1 350	3,428	2,440	520	992
1981	1 008	454	456	472	468	1,236	941	602	185	163	163	185
1982	439	454	455	4 570	7 220	5 952	7,631	3,265	4,420	2,065	520	2 151
1983	3,318	2,773	4 863	6 050	7 689	9 660	3 963	1 460	11,125	7,058	520	3 479
1984	1 460	4,773	6 684	4 131	3,842	2,879	1,277	1,252	454	455	439	437
1985	520	471	455	439	486	699	622	585	185	179	179	185
1986	390	420	423	407	6 284	7 335	1 798	1 626	4,571	504	504	521
1987	504	437	423	423	450	439	420	423	134	130	146	151
1988	228	269	260	260	261	260	437	423	134	130	146	151
1989	228	269	276	260	288	293	555	520	134	146	146	151
1990	260	269	260	260	288	276	420	407	134	130	130	151
1991	228	269	260	260	270	390	437	407	151	130	130	151
1992	228	269	260	260	365	293	437	407	151	146	130	151
1993	358	403	407	781	612	569	1 395	1 334	538	504	504	521
1994	520	437	439	423	450	407	538	520	151	130	130	151

San Joaquin Basin 60-20-20 Index

Tuolumne River from LaGrange Dam to the SJR confluence - CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	706	553	523	651	337
NOV	619	743	473	423	317
DEC	840	1 129	589	421	312
JAN	2,877	1,609	822	430	308
FEB	3,940	1,942	863	535	345
MAR	4,340	2,228	1 037	834	324
APR	3,080	1 457	1 006	663	433
MAY	2,146	1,280	820	581	419
JUN	3,257	516	246	183	136
JUL	1,440	452	241	166	135
AUG	520	436	243	167	139
SEP	874	437	236	163	151

Merced River from Crocker Huffman Diversion downstream to confluence with San Joaquin River

STUDY 1995C06F-SWRCB-485 DWRSIM recirc618-f 18 Jun 97

CP # 649, LOWER MERCED RIVER DIVERSION DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-485/649/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	130	151	228	211	414	276	101	81	2,403	33	33	50
1923	2,423	353	1 106	1 220	1 098	163	134	81	34	33	33	34
1924	1,581	151	211	195	313	146	67	65	118	211	163	118
1925	114	151	146	130	270	195	101	81	34	33	33	67
1926	309	151	211	308	1 332	146	101	65	17	33	16	101
1927	374	218	488	195	1 098	228	134	81	34	33	33	1 143
1928	3 041	134	602	553	608	244	84	81	34	33	33	34
1929	49	168	163	146	144	163	67	65	17	16	16	17
1930	407	151	130	146	144	195	67	65	17	16	16	17
1931	716	84	130	146	286	146	67	65	34	211	163	118
1932	146	134	276	228	1 704	195	84	81	585	33	65	118
1933	2 000	151	146	276	414	179	67	65	17	33	195	118
1934	130	134	146	342	684	146	67	65	34	211	163	134
1935	130	151	146	260	234	228	1 227	1 415	1,385	33	114	134
1936	1 626	202	228	748	4 903	309	471	1,041	34	33	81	118
1937	1 431	151	407	520	4 465	927	134	2 196	319	33	146	134
1938	1 464	151	2 423	1 269	4 736	4,603	639	3,367	4,453	130	33	605
1939	2 911	336	358	358	576	179	67	65	34	211	195	84
1940	130	134	146	325	2 469	1 122	84	829	34	33	179	134
1941	553	151	1,594	1 350	2 971	1,317	185	2,049	2,087	33	33	67
1942	2,683	336	1 415	1 561	1 603	211	101	634	2,386	33	33	185
1943	2,683	672	732	2 488	1 783	2 700	454	862	34	33	65	67
1944	1 578	168	260	407	921	244	84	81	34	33	98	134
1945	179	168	163	309	3 637	618	101	81	252	33	33	101
1946	2,244	756	1,805	976	738	195	84	146	34	33	179	134
1947	472	639	829	585	828	146	67	65	34	98	195	134
1948	114	134	130	114	122	179	134	81	34	33	130	134
1949	130	151	146	146	144	244	84	81	34	33	179	134
1950	146	151	146	163	216	179	84	81	34	33	195	134
1951	130	2 823	4 570	1 626	1 404	211	84	81	34	33	179	134
1952	130	151	228	1 594	1 252	1,399	252	3 432	2,185	33	33	252
1953	2,716	151	618	1 073	558	163	84	81	34	33	163	134
1954	130	151	163	146	162	211	84	81	34	33	195	134
1955	146	151	146	179	162	146	67	65	17	33	195	134
1956	130	134	3 724	3 871	1 495	146	84	618	1 882	33	33	67
1957	2 716	218	244	293	828	195	84	81	34	33	146	134
1958	130	151	163	179	792	1 480	1 277	2 885	2 000	33	33	34
1959	2 732	151	146	390	1 080	146	67	65	34	211	195	84
1960	114	151	130	130	156	163	67	65	34	211	195	134
1961	130	151	146	130	126	146	67	65	34	211	153	118
1962	146	134	130	130	466	244	84	81	34	33	98	134
1963	130	151	146	228	3 385	179	202	98	34	33	49	118
1964	1 496	639	407	520	469	146	67	65	17	49	195	101
1965	130	151	1 594	3 058	1 188	163	168	81	622	33	33	50
1966	2,732	1 210	813	828	738	179	84	81	34	81	163	84
1967	130	151	244	228	954	1 464	655	2 163	4,218	1 594	33	723
1968	2 749	134	293	308	887	163	67	65	34	211	163	84
1969	163	134	163	3 459	4,357	1 480	1 260	5 367	3,986	179	33	538
1970	2 927	420	667	2 683	1 314	455	84	81	34	33	130	118
1971	130	151	195	163	630	163	84	81	34	33	114	118
1972	163	151	163	163	156	146	67	65	17	81	179	17
1973	114	134	146	862	2 611	651	101	1 269	403	33	33	84
1974	1 594	1 042	1 138	1 724	756	829	185	829	437	33	49	101
1975	1 675	151	325	484	2 251	846	118	81	2,134	33	114	34
1976	2 326	370	309	146	365	146	67	65	34	211	130	134
1977	228	151	179	130	106	130	67	65	34	211	195	134
1978	163	134	146	260	432	358	303	179	3,949	488	33	1 277
1979	2 814	336	293	1 708	2 125	1 008	101	634	34	33	65	84
1980	1 203	218	390	4 489	4 572	1 334	84	407	1 849	65	33	584
1981	2 732	151	163	455	612	179	67	65	34	81	114	101
1982	114	151	602	2 440	3 745	1 773	4 285	2 960	1,479	33	33	739
1983	3 383	1 681	2 521	3 383	4 321	5 351	118	2 602	7 683	3 448	33	1 781
1984	3 025	1 966	3 464	1 675	1 460	228	84	81	34	33	179	118
1985	130	168	163	228	866	179	67	65	17	49	146	134
1986	163	151	146	634	6 932	3,432	84	1 080	958	33	33	101
1987	1 854	151	146	146	252	163	67	65	34	211	163	134
1988	114	151	130	130	104	163	67	65	17	211	163	101
1989	163	84	146	130	126	163	67	65	34	211	163	118
1990	130	134	130	130	126	146	67	65	34	146	163	134
1991	130	134	130	114	108	228	67	65	34	195	163	134
1992	130	134	130	114	191	163	67	65	34	195	163	134
1993	130	134	146	423	1 332	1 252	84	2 147	1,647	211	163	134
1994	2,635	151	163	163	522	146	67	65	34	211	163	134

San Joaquin Basin 60-20-20 Index

Merced River, Crocker-Huffman Diversion to San Joaquin River confluence - CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	909	1,171	1,141	1,440	676
NOV	308	568	242	257	153
DEC	918	975	300	275	158
JAN	1,881	932	346	343	152
FEB	2,518	2,013	474	653	246
MAR	1,567	414	203	180	160
APR	529	212	90	70	67
MAY	1,702	429	81	65	65
JUN	2,333	210	34	24	36
JUL	327	33	37	98	184
AUG	51	96	129	163	146
SEP	376	184	115	98	113

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C-032454

C-032454

San Joaquin River at Stevinson upstream of Merced River confluence

STUDY 1995C09F-SWRCB-485 DWRSIM record818-1 18 Jun 97

CP # 694 SJR DIVERSION, NON-PROJECT DOWNSTREAM FLOW (CFS)

Project 1995C09F-SWRCB-485/694/FLOW-DOWNSTREAM/01MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	618	454	732	651	2 467	1 285	780	980	3 815	472	472	586
1923	634	807	1 025	1 008	828	716	908	553	565	472	472	686
1924	537	387	342	293	348	537	303	309	319	309	309	487
1925	436	353	276	260	774	667	639	436	437	390	390	622
1926	553	387	325	276	504	553	689	356	370	342	342	555
1927	504	538	407	342	1 693	846	773	436	437	390	390	605
1928	537	504	407	407	574	584	555	374	387	374	374	588
1929	520	353	309	260	386	553	303	325	319	293	293	504
1930	455	319	244	293	414	618	338	325	370	342	342	556
1931	486	336	244	244	308	455	252	260	303	276	276	454
1932	423	303	927	764	2 173	716	403	374	353	308	308	521
1933	472	319	228	309	378	588	319	325	286	276	276	471
1934	436	303	244	244	450	488	303	276	319	293	293	504
1935	486	370	309	846	630	982	1 260	585	454	374	374	588
1936	583	387	325	423	3.321	980	773	472	471	390	390	605
1937	553	387	358	1 080	4 754	1 026	1 143	2 846	471	407	390	622
1938	802	639	1.480	1 986	7 202	12 572	5 109	12 116	2 723	1 008	455	672
1939	813	823	423	390	848	797	538	472	487	455	456	686
1940	634	454	390	1 480	1 825	1.187	723	563	538	488	472	706
1941	651	487	813	1 008	3 836	1 675	1 328	3.074	2 538	537	504	723
1942	764	823	1 090	1 008	1 278	1 073	857	716	605	537	504	723
1943	667	674	472	1 659	1 062	3 757	790	1 610	571	486	488	706
1944	683	555	472	455	782	1 025	605	553	588	537	520	756
1945	683	605	488	455	1 909	1 431	840	618	622	537	537	756
1946	651	521	683	472	630	862	723	537	571	504	472	723
1947	585	504	488	358	540	602	437	423	454	423	423	655
1948	583	387	309	260	346	602	739	455	454	407	407	622
1949	553	387	309	293	450	678	471	407	420	407	407	622
1950	537	387	309	390	738	602	487	360	403	374	374	605
1951	537	1.143	2.944	3.041	792	764	454	439	420	390	358	605
1952	588	420	888	1 805	981	2.098	2.188	7.904	504	455	423	655
1953	716	756	588	732	522	618	471	455	487	439	439	655
1954	585	420	374	358	612	813	555	456	454	439	423	655
1955	588	403	358	423	468	602	454	466	420	407	407	622
1956	588	403	4.407	5.871	3.460	1 203	805	2 618	706	439	423	655
1957	553	454	358	293	486	667	420	520	454	407	374	622
1958	588	403	358	423	918	1 789	2.252	3.289	1.546	472	439	655
1959	698	706	342	342	738	588	403	407	437	407	390	622
1960	553	387	309	293	556	602	437	423	420	390	390	622
1961	504	370	293	244	342	486	336	325	370	358	358	571
1962	504	336	260	244	2 359	911	437	360	387	374	374	588
1963	504	336	276	439	900	683	1 059	602	555	390	358	571
1964	520	454	309	309	400	537	387	374	370	342	342	555
1965	520	437	1.008	1.480	576	651	992	520	454	390	374	605
1966	588	605	553	504	612	634	437	423	437	423	390	639
1967	585	437	797	716	1 116	1.236	3.885	9.059	2.235	2 179	455	672
1968	688	688	390	342	522	634	420	407	437	407	407	622
1969	802	454	504	4.733	14.621	8.278	10.621	12.087	4.033	1.584	472	689
1970	651	790	423	3.513	810	1 073	521	472	471	439	439	672
1971	602	471	586	472	558	634	471	472	504	455	423	672
1972	553	387	407	325	486	537	387	374	420	390	374	622
1973	588	420	358	537	1.945	1.447	736	520	672	439	439	655
1974	585	437	488	1.382	648	1.171	1.082	504	487	439	423	655
1975	602	437	360	358	1 098	1.288	908	618	538	455	455	672
1976	588	437	374	309	417	589	370	342	370	358	358	571
1977	1.041	370	283	276	306	423	252	276	252	244	244	336
1978	325	269	293	1.006	2.575	8 717	8.756	6.310	471	976	423	639
1979	588	739	358	911	1 280	1.301	706	488	420	407	407	622
1980	537	403	325	2.588	5.906	6.440	706	3.389	437	883	390	605
1981	588	706	358	423	504	716	454	360	437	407	407	622
1982	634	504	472	1 252	1 819	1.952	10.688	5.708	1.277	504	504	723
1983	828	1 781	8.282	9.758	17 070	16 384	9 986	12 246	14.316	976	504	571
1984	2.277	3.933	8.326	8.326	800	797	538	504	521	504	504	723
1985	585	487	407	325	578	690	471	423	471	423	423	655
1986	634	504	455	407	8 175	8.536	3.328	3 773	1 949	472	472	686
1987	553	555	309	293	468	634	403	360	420	407	407	622
1988	520	353	276	260	313	472	336	293	336	309	309	521
1989	455	319	260	228	309	553	303	293	336	309	309	521
1990	472	319	228	228	324	486	303	276	319	293	293	504
1991	439	286	211	179	180	781	319	276	303	260	260	454
1992	520	555	244	244	730	585	420	407	454	488	423	588
1993	618	454	423	2.374	936	439	437	588	2.773	504	504	739
1994	602	672	309	276	522	537	420	472	538	504	472	622

San Joaquin Basin 60-20-20 Index

San Joaquin River at Stevinson - CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	602	681	588	602	542
NOV	550	810	488	533	395
DEC	1,191	1,088	398	367	281
JAN	2,077	1,488	380	347	280
FEB	4,030	1,384	735	523	380
MAR	4,008	984	745	619	548
APR	3,320	744	524	451	337
MAY	4,484	511	445	404	329
JUN	2,123	504	451	417	350
JUL	888	431	419	360	338
AUG	454	423	408	366	333
SEP	688	648	637	606	527

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STUDY 1995C06F-SWRCB-485 DWRSIM: recirc818-f, 18 Jun 97
CP # 4, SHASTA LAKE, EOP STORAGE (MAF)

Project. /1995C06F-SWRCB-485/4/STORAGE-EOP//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP*
1922	2.81	2.88	2.82	2.9	3.3	3.72	4.34	4.55	4.4	4	3.56	3.41
1923	3.37	3.25	3.29	3.4	3.4	3.38	3.86	3.55	3.2	2.8	2.38	2.35
1924	2.38	2.38	2.38	2.4	2.5	2.54	2.33	2.09	1.7	1.4	1.13	0.97
1925	1.01	1.16	1.28	1.4	2.7	3.03	3.78	4.07	3.8	3.2	2.91	2.80
1926	2.87	2.8	2.5	2.5	3.1	3.24	3.58	3.42	2.8	2.4	1.89	1.76
1927	1.79	2.3	2.82	3.4	3.5	4.14	4.55	4.56	4.4	3.9	3.43	3.32
1928	3.27	3.25	3.32	3.5	3.9	3.97	4.53	4.41	3.8	3.2	2.74	2.59
1929	2.52	2.53	2.56	2.6	2.8	2.94	2.95	2.79	2.6	2.2	1.91	1.78
1930	1.72	1.7	2.24	2.5	2.8	3.36	3.31	3.62	3.2	2.7	2.38	2.35
1931	2.28	2.27	2.25	2.3	2.4	2.54	2.38	2.2	2	1.6	1.4	1.22
1932	1.15	1.14	1.35	1.5	1.7	2.09	2.34	2.29	2.2	1.9	1.66	1.55
1933	1.52	1.46	1.47	1.5	1.5	2.14	2.31	2.4	2.3	1.9	1.69	1.58
1934	1.55	1.55	1.89	2	2.3	2.82	2.88	2.54	2.3	1.7	1.48	1.27
1935	1.19	1.34	1.41	1.7	2.1	2.48	3.49	3.66	3.6	2.9	2.62	2.51
1936	2.47	2.42	2.38	3	3.6	3.92	4.2	4.14	3.9	3.4	2.85	2.70
1937	2.6	2.51	2.43	2.3	2.4	2.99	3.88	3.9	3.8	3.3	2.91	2.74
1938	2.67	3.18	3.31	3.7	3.6	3.42	4.06	4.55	4.6	4.3	3.96	3.70
1939	3.4	3.25	3.33	3.4	3.4	3.77	3.59	3.42	2.8	2.3	1.79	1.72
1940	1.86	1.58	1.72	2.6	3.3	3.44	4.34	4.43	4.1	3.5	3.04	2.96
1941	2.95	2.98	3.29	3.3	3.4	3.94	4.46	4.65	4.6	4.3	4	3.70
1942	3.4	3.25	3.32	3.4	3.6	3.86	4.56	4.55	4.6	4.3	3.98	3.70
1943	3.4	3.26	3.38	3.5	3.8	4.12	4.56	4.56	4.3	4	3.58	3.44
1944	3.4	3.26	3.2	3.2	3.4	3.83	3.75	3.73	3.2	2.7	2.28	2.15
1945	2.19	2.4	2.73	2.9	3.7	4.06	4.41	4.55	4.3	3.7	3.27	3.10
1946	3.08	3.25	3.27	3.6	3.8	4.1	4.43	4.48	4.1	3.8	3.21	3.04
1947	2.91	2.92	2.93	2.9	3	3.46	3.64	3.38	3	2.6	2.16	1.89
1948	2.02	2.08	2.13	2.7	2.7	2.98	3.98	4.55	4.5	4.3	3.67	3.63
1949	3.4	3.25	3.22	3.1	3.2	4.07	4.44	4.46	3.9	3.5	2.84	2.71
1950	2.58	2.46	2.41	2.6	3	3.4	3.81	3.78	3.5	3	2.58	2.53
1951	2.84	3.25	3.32	3.6	3.8	4.29	4.49	4.55	4.1	3.5	3.12	3.04
1952	3	3.11	3.31	3.6	3.7	4.02	4.29	4.55	4.5	4.3	3.95	3.70
1953	3.4	3.25	3.35	3.4	3.6	4.1	4.51	4.55	4.8	4.3	3.85	3.70
1954	3.4	3.25	3.35	3.6	3.7	4.11	4.55	4.43	4.2	3.7	3.36	3.27
1955	3.21	3.25	3.36	3.4	3.6	3.4	3.72	3.94	3.4	2.9	2.48	2.48
1956	2.45	2.55	3.25	3.3	3.3	4.01	4.55	4.55	4.8	4.3	4	3.70
1957	[illegible]	3.25	3.23	3.3	3.7	4.13	4.3	4.56	4.3	3.9	3.5	3.48
1958	3.4	3.25	3.34	3.5	4.6	3.42	4.17	4.55	4.6	4.3	4	3.70
1959	3.4	3.25	3.26	3.6	3.8	4.14	4.26	4.25	3.7	3.1	2.74	2.80
1960	2.63	2.45	2.44	2.6	3.3	3.95	4.14	4.36	3.8	3.3	2.88	2.79
1961	2.62	2.69	3.1	3.3	3.9	4.28	4.4	4.55	4	3.4	2.94	2.86
1962	2.63	2.55	2.83	2.9	3.7	4.18	4.53	4.53	4.1	3.6	3.08	3.02
1963	3.4	3.25	3.35	3.4	3.9	4.23	4.14	4.55	4.4	4	3.65	3.60
1964	3.4	3.25	3.28	3.6	3.6	3.58	3.44	3.33	2.9	2.5	2.05	1.95
1965	1.93	2.12	3.25	3.4	3.8	4.15	4.5	4.47	4.2	3.8	3.55	3.51
1966	3.4	3.25	3.34	3.7	4	4.23	4.45	4.41	3.9	3.4	3.01	2.87
1967	2.66	3	3.34	3.6	3.9	4.03	4.45	4.55	4.6	4.3	3.99	3.70
1968	3.4	3.25	3.3	3.4	3.7	4.19	4.25	4.31	3.8	3.3	3.1	2.97
1969	2.86	2.89	3.16	3.4	3.6	4.03	4.43	4.56	4.8	4.3	4	3.70
1970	3.4	3.25	3.32	3.3	3.4	4.14	4.21	4.21	3.8	3.3	2.98	2.87
1971	2.82	3.25	3.32	3.6	3.8	3.87	4.47	4.55	4.6	4.3	4	3.70
1972	3.4	3.25	3.36	3.6	3.9	4.25	4.56	4.55	4	3.5	3.2	3.11
1973	3.14	3.25	3.36	3.6	3.6	4.16	4.5	4.56	4.3	3.8	3.47	3.39
1974	3.4	3.25	3.27	3.3	3.7	3.44	4.29	4.55	4.8	4.3	4	3.70
1975	3.4	3.25	3.35	3.4	3.9	3.78	4.39	4.56	4.6	4.3	3.98	3.70
1976	3.4	3.25	3.27	3.3	3.1	3.32	3.49	3.4	2.8	2.4	2.29	2.32
1977	2.36	2.38	2.38	2.4	2.2	2.2	1.86	1.75	1.4	1.1	0.93	0.90
1978	0.79	0.78	1.26	3.2	3.6	4	4.55	4.56	4.5	4.2	3.95	3.70
1979	3.4	3.25	3.16	3.2	3.5	3.91	4.12	4.36	3.9	3.4	3.12	3.02
1980	3.02	3.09	3.15	3.5	3.3	3.98	4.33	4.46	4.2	3.9	3.66	3.67
1981	3.4	3.23	3.3	3.5	3.8	4.26	4.48	4.42	3.8	3.2	2.84	2.71
1982	2.83	3.25	3.28	3.6	3.5	3.95	4.09	4.56	4.6	4.3	4	3.70
1983	3.4	3.25	3.33	3.4	3.3	3.93	[illegible]	4.55	4.6	4.3	4	3.70
1984	3.4	3.25	3.29	3.7	4	4.25	4.44	4.55	4.3	3.8	3.53	3.48
1985	3.4	3.25	3.36	3.4	3.5	3.65	[illegible]	3.67	3.1	2.6	2.31	2.29
1986	2.33	2.4	2.81	3.2	3.3	3.53	[illegible]	4.06	3.8	3.4	3.03	3.11
1987	3.11	3.09	3.07	3.1	3.3	3.99	3.99	3.81	3.1	2.5	1.96	1.84
1988	1.77	1.8	2.37	2.8	2.8	2.91	3.06	3.03	2.6	2	1.7	1.66
1989	1.66	1.89	2	2.1	2.2	3.86	4.21	4.1	3.6	3.1	2.84	2.85
1990	2.93	2.91	2.85	3	3	3.22	3.04	3.19	2.8	2.3	2.02	1.96
1991	1.86	1.82	1.81	1.8	1.8	2.22	2.42	2.42	2.2	2	1.75	1.63
1992	1.62	1.6	1.61	1.7	2.3	2.82	3.09	2.82	2.6	2.3	2.06	1.95
1993	[illegible]	[illegible]	2.06	2.7	3.5	[illegible]	[illegible]	4.56	[illegible]	4.1	3.84	3.81
1994	3.77	3.25	3.29	3.3	3.4	[illegible]	[illegible]	[illegible]	2.9	2.4	2.05	2.00

* EOP September storage used as October 1st of following year
Shading means "disregard"

Year	Oct 1st Storage	AFRP Vol III Recommended Keswick Release
1925	0.97	3250
1927	1.76	3250
1930	1.78	3250
1932	1.22	3250
1933	1.55	3250
1934	1.58	3250
1935	1.27	3250
1940	1.72	3250
1945	2.15	3250
1948	1.89	3250
1965	1.95	3250
1978	0.90	3250
1988	1.84	3250
1989	1.66	3250
1991	1.96	3250
1992	1.63	3250
1993	1.95	3250
1986	2.29	3500
1924	2.35	3750
1931	2.35	3750
1977	2.32	3750
1956	2.48	4000
1929	2.59	4250
1936	2.51	4250
1951	2.53	4250
<None>		4500
1937	2.70	4750
1938	2.74	4750
1950	2.71	4750
1961	2.79	4750
1982	2.71	4750
1926	2.80	5000
1960	2.80	5000
1962	2.86	5000
1967	2.87	5000
1971	2.87	5000
1990	2.85	5000
1941	2.96	5250
1969	2.97	5250
1923	3.41	5500
1928	3.32	5500
1939	3.70	5500
1942	3.70	5500
1943	3.70	5500
1944	3.44	5500
1946	3.10	5500
1947	3.04	5500
1949	3.63	5500
1952	3.04	5500
1953	3.70	5500
1954	3.70	5500
1955	3.27	5500
1957	3.70	5500
1958	3.48	5500
1959	3.70	5500
1963	3.02	5500
1964	3.60	5500
1966	3.51	5500
1968	3.70	5500
1970	3.70	5500
1972	3.70	5500
1973	3.11	5500
1974	3.39	5500
1975	3.70	5500
1976	3.70	5500
1979	3.70	5500
1980	3.02	5500
1981	3.67	5500
1983	3.70	5500
1984	3.70	5500
1985	3.48	5500
1987	3.11	5500
1994	3.81	5500

STUDY: 1995C06F-SWRCB-485 DWRSIM: recirc818-f, 18 Jun 97
CP # 62, KESWICK TOTAL RELEASE, DOWNSTREAM FLOW (CFS)

Project: /1995C06F-SWRCB-485/62/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	4,716	4,269	4,001	4,001	3,997	4,001	4,000	8,473	9,747	11,889	11,010	6,302
1923	5,497	6,991	5,497	5,497	5,996	6,522	5,495	8,831	11,445	11,824	9,937	3,899
1924	3,757	3,748	3,757	3,757	3,616	3,985	7,210	7,384	9,915	9,075	7,335	5,663
1925	3,253	3,243	3,253	3,253	3,241	3,627	3,243	3,253	11,327	12,637	8,847	5,546
1926	6,749	5,764	5,920	4,993	5,006	4,993	5,008	8,246	14,671	12,442	9,628	5,126
1927	3,253	3,243	3,253	3,253	25,586	4,424	12,923	10,831	10,251	12,620	12,734	6,050
1928	5,497	9,293	5,497	5,497	5,302	16,995	5,495	10,213	15,125	14,800	11,645	6,336
1929	5,269	4,722	4,245	4,245	4,249	4,245	7,008	8,343	8,420	9,628	8,620	5,210
1930	4,424	3,764	3,253	3,253	3,241	3,253	3,243	5,546	12,470	10,864	8,961	3,966
1931	4,554	3,748	3,757	3,757	3,745	3,806	7,327	6,538	7,865	9,124	6,635	5,916
1932	4,586	3,580	3,253	3,253	3,129	3,253	6,386	5,123	6,958	7,758	7,286	4,722
1933	3,545	4,554	3,253	3,253	3,241	3,253	5,227	5,936	7,546	9,612	7,319	4,840
1934	3,773	3,445	3,253	3,253	3,241	3,545	5,529	6,440	8,403	12,734	6,896	6,201
1935	4,619	3,243	3,253	3,253	3,241	3,253	3,243	7,058	8,504	12,929	8,815	4,874
1936	4,245	4,252	4,245	4,245	8,032	4,245	4,252	7,010	9,529	13,271	11,628	5,479
1937	4,847	4,805	4,505	4,505	4,501	4,505	4,504	6,180	8,773	11,758	10,522	5,697
1938	4,749	4,756	16,898	4,749	30,952	35,536	14,537	10,100	11,041	11,742	10,864	8,840
1939	10,539	8,201	5,497	5,497	5,492	5,497	10,470	8,311	14,806	12,035	12,442	4,790
1940	4,700	4,974	3,594	3,253	21,818	22,362	3,243	7,156	11,411	14,751	12,523	5,445
1941	5,253	5,260	14,019	25,420	23,696	14,881	16,822	14,897	10,940	12,116	12,067	12,150
1942	11,157	8,470	19,972	20,492	29,422	5,497	5,865	13,613	10,890	11,775	11,287	9,159
1943	10,213	8,840	6,603	12,994	8,679	12,978	6,924	9,726	11,713	11,596	11,222	6,907
1944	5,627	7,899	5,497	5,497	5,302	5,497	5,647	7,253	14,150	13,661	10,913	5,563
1945	3,529	3,243	3,253	4,098	3,241	3,253	3,243	7,140	11,209	14,377	11,124	6,621
1946	5,497	5,731	22,899	7,872	5,492	5,497	5,495	8,294	13,243	13,499	10,815	6,672
1947	6,424	5,495	5,497	5,497	5,492	5,497	5,495	9,823	13,444	12,718	10,295	7,831
1948	3,253	3,243	3,253	3,253	5,302	5,025	3,243	5,432	10,352	12,702	10,344	4,689
1949	8,099	7,277	5,497	5,497	5,600	6,684	5,495	8,327	14,974	13,499	11,531	5,680
1950	6,375	5,916	4,749	4,749	4,754	4,749	4,756	8,246	10,638	11,937	10,165	4,067
1951	4,326	4,252	15,759	8,376	16,385	4,245	6,756	9,108	13,579	14,328	10,962	5,344
1952	5,497	5,495	15,678	8,864	19,263	12,442	19,444	11,189	9,798	10,506	10,490	8,941
1953	9,937	7,563	10,653	29,404	5,492	5,497	5,495	12,149	12,150	12,181	11,726	7,361
1954	10,083	10,453	5,497	13,954	18,942	10,897	12,335	12,783	12,823	15,011	10,441	6,504
1955	6,148	6,386	7,790	5,497	5,492	8,717	5,495	6,017	14,755	13,434	10,165	4,168
1956	4,586	4,000	21,582	31,291	22,566	4,375	5,109	13,808	9,361	11,368	10,051	9,798
1957	10,815	7,932	5,497	5,497	9,471	11,010	9,411	9,644	10,705	13,629	10,604	5,613
1958	9,238	10,201	10,441	13,011	33,887	44,871	15,562	10,230	11,932	12,572	11,677	11,949
1959	11,352	8,369	5,497	10,848	14,585	5,692	8,168	7,953	15,629	14,686	10,783	4,437
1960	7,806	7,848	4,749	4,749	4,590	4,749	6,016	5,596	15,848	13,743	11,124	5,529
1961	7,302	5,042	4,749	4,749	4,772	7,611	7,546	7,156	15,696	15,044	11,775	5,193
1962	8,229	7,731	4,993	4,993	9,741	4,993	5,008	8,016	12,739	13,222	12,214	4,756
1963	5,595	8,554	9,612	5,497	8,787	7,774	32,065	7,611	9,546	12,295	11,417	5,512
1964	8,717	12,150	5,497	5,497	7,267	7,644	9,546	8,018	13,142	11,433	11,271	5,462
1965	4,668	3,243	9,238	21,793	3,241	3,253	13,377	10,213	10,907	12,328	9,026	5,092
1966	6,749	13,024	5,497	6,847	6,824	13,434	10,016	8,994	15,192	13,336	10,571	6,840
1967	8,115	5,008	10,913	9,872	8,193	16,589	12,201	16,328	10,806	11,824	10,376	9,831
1968	10,474	7,932	5,497	5,497	15,925	5,497	8,100	6,993	14,638	13,564	8,473	6,873
1969	7,156	5,445	5,253	22,151	22,237	7,351	13,999	13,482	10,016	11,596	9,888	10,386
1970	10,539	8,067	16,101	54,092	16,710	5,497	9,176	7,969	13,444	13,450	11,466	6,201
1971	6,392	5,378	16,930	15,239	5,834	18,735	6,168	12,409	11,646	12,002	9,791	9,831
1972	10,701	8,571	5,497	5,497	5,302	12,084	8,520	8,213	15,596	13,808	10,035	6,302
1973	5,497	7,176	8,181	15,434	19,699	8,620	5,495	8,815	10,167	13,141	10,750	5,815
1974	6,261	33,124	23,745	40,203	8,895	38,398	10,487	9,872	10,067	12,328	11,010	11,898
1975	11,189	9,041	5,497	5,497	7,310	29,160	5,495	12,263	10,806	11,889	10,880	9,495
1976	11,515	8,773	5,497	5,497	9,284	5,497	5,495	7,985	14,991	11,547	6,034	3,899
1977	4,066	4,353	4,391	3,757	7,454	4,277	9,293	6,066	10,201	8,294	6,944	4,874
1978	6,099	4,806	3,253	3,432	13,757	15,369	7,999	11,059	8,537	9,644	8,847	9,159
1979	9,774	7,579	6,326	5,497	5,492	5,497	5,495	5,855	13,932	12,035	8,376	5,428
1980	5,497	5,495	5,497	15,190	31,015	5,497	5,495	6,701	10,184	10,165	9,075	4,453
1981	9,091	8,487	5,497	5,497	5,492	7,904	5,495	7,937	15,360	13,352	9,888	5,932
1982	5,969	8,537	23,094	7,969	24,218	13,873	26,822	5,611	9,378	10,262	10,035	9,898
1983	10,962	9,932	14,084	20,866	37,470	41,325	21,595	13,287	14,184	13,190	12,718	13,041
1984	13,271	17,209	27,501	9,319	5,946	11,726	7,378	8,717	11,999	13,076	10,311	5,613
1985	7,107	14,268	6,847	5,497	5,492	5,497	5,495	9,221	15,058	12,019	9,075	4,706
1986	4,456	3,899	3,497	3,497	45,969	21,533	3,496	8,343	11,428	11,937	10,766	3,899
1987	5,497	5,495	5,497	5,497	5,492	5,497	7,344	9,264	17,411	13,547	12,474	5,949
1988	5,481	4,117	3,253	3,253	6,763	5,562	4,033	7,693	12,806	14,344	8,262	4,538
1989	3,724	3,243	3,253	3,253	3,241	3,253	3,243	8,571	13,192	11,824	8,408	3,899
1990	4,993	5,008	4,993	4,993	5,006	4,993	7,411	6,668	13,024	12,848	8,620	4,386
1991	5,367	4,386	3,432	3,253	5,402	3,253	3,243	6,213	7,378	7,628	7,514	5,025
1992	3,936	3,243	3,253	3,253	3,129	3,253	3,714	7,953	10,235	8,750	6,961	5,058
1993	5,058	4,504	3,253	3,253	3,241	25,973	3,243	8,733	11,260	13,352	8,864	5,092
1994	5,497	13,444	5,497	5,497	5,492	5,497	5,748	6,440	15,108	10,783	9,660	3,832

Location: Upper Sacramento Rver Below Keswick
CP # 62, Upper Sacramento River below Keswick

Shasta Reservoir Oct 1st Carryove Storage (MAF)	October thru April Average Flows (cfs)	Years included in Average flow Calculations
< 2.2	4,971	1925, 27, 30, 32, 33, 34, 35, 40, 45, 48, 45, 48, 65, 78, 88, 89, 91, 92, 93
>=2.2	12,335	1986
>= 2.3	4,672	1924, 31, 77
>= 2.4	13,358	1956
>= 2.5	6,076	1929, 36, 51
>= 2.6		
>= 2.7	9,498	1937, 38, 50, 61, 82
>= 2.8	7,324	1926, 1960, 1962, 1967, 1971, 1990
>= 2.9	13,496	1941, 69
>= 3	10,032	1923, 28, 39, 42, 43, 44, 46, 47, 49, 52, 53, 54, 55, 57, 58, 59, 63 64, 66, 68, 70, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 94

C-032456

C-032456

Comparison of DWRSIM Study 519A (Flow Alternative 7) flows at various control points with recommended flows from AFRP Working Paper Vol III

Location: Upper Sacramento Rver Below Keswick

CP # 62, Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS

SALMONIDS				
Objective: Enhance rearing, maintain spawning habitat & temperature control Page 3-Xa-14, Vol III				
Shasta Reservoir Oct 1st Carryover *Storage (MAF)*	AFRP Working Paper *Recommended Flows*	October thru April Average Flows (cfs)	Years included in Average flow Calculations	Ratio
< 2.2	3,250	5,085	1925, 27, 30, 32, 33, 34, 35, 40, 45, 48, 65, 78, 88, 89, 91,	1.56
>= 2.2	3,500	8,671	1977, 86	2.48
>= 2.3	3,750	4,264	1924	1.14
>= 2.4	4,000	4,475	1931	1.12
>= 2.5	4,250	9,084	1929, 56	2.14
>= 2.6	4,500	10,457	1960, 82	2.32
>= 2.7	4,750	8,124	1926, 36, 37, 38, 51	1.71
>= 2.8	5,000	5,999	1950, 62	1.20
>= 2.9	5,250	9,375	1961, 63, 67, 69, 71, 90	1.79
>= 3	5,500	10,267	1923, 28, 39, 41, 42, 43, 44, 46, 47, 49, 52, 53, 54, 55, 57, 64, 66, 68, 70, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 94	1.87

Location: Feather River at Nicolaus CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective: Enhance rearing & maintain spawning habitat, Page: 3-Xc-11, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.14	0.60	0.67	0.87												1.14	0.60	0.67	0.87	
Nov	1.78	1.18	0.68	0.82												1.78	1.18	0.68	0.82	
Dec	4.96	1.93	1.16	1.14												4.96	1.93	1.16	1.14	
Jan	8.52	5.09	2.87	2.33												8.52	5.09	2.87	2.33	
Feb	10.25	5.89	4.19	2.82							2.23	1.26				2.23	1.26	4.19	2.82	
Mar	9.44	7.97	3.53	3.62							2.05	1.73				2.05	1.73	3.53	3.62	
Apr	5.39	3.61	1.60	1.99		0.92	0.81	0.38	0.46	0.81	1.41	0.94				0.92	0.81	0.38	0.46	0.81
May	4.37	2.38	1.60	0.67		0.77	0.59	0.47	0.21	0.15	1.14	0.62				0.77	0.59	0.47	0.21	0.15
June	9.25	6.71	5.55	3.90		0.94	1.18	1.13	1.18	0.79						0.94	1.18	1.13	1.18	0.79
July	7.01	7.52	7.36	6.48												7.01	7.52	7.36	6.48	
Aug	2.48	3.61	4.29	3.41												2.48	3.61	4.29	3.41	
Sept	0.86	0.48	0.45	0.97												0.86	0.48	0.45	0.97	
															April-May-June Average:	0.88	0.86	0.66	0.62	0.56

Location: *Yuba River at Marysville* *DEPLETION AREA 67, DOWNSTREAM FLOW*

	SALMONIDS Objective: Optimize migration, spawning and incubation, Page 3-Xo-14-25					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.05	0.81	0.65	0.64	0.74											1.05	0.81	0.65	0.64	0.74
Nov	2.67	2.10	1.02	1.17	0.76											2.67	2.10	1.02	1.17	0.76
Dec	6.21	2.85	1.86	1.27	0.84											6.21	2.85	1.86	1.27	0.84
Jan	8.26	5.93	3.81	2.42	2.03											8.26	5.93	3.81	2.42	2.03
Feb	9.11	7.12	5.00	3.61	2.53											9.11	7.12	5.00	3.61	2.53
Mar	8.61	7.52	4.08	3.74	2.09						No Working Paper flow recommendations					8.61	7.52	4.08	3.74	2.09
Apr	5.19	3.83	2.40	1.60	0.66	0.63	0.54	0.33	0.29	0.24						0.63	0.54	0.33	0.29	0.24
Mary	2.59	1.69	0.88	0.36	0.15	0.52	0.42	0.25	0.15	0.12						0.52	0.42	0.25	0.15	0.12
June	3.03	1.66	1.06	0.35	0.13	0.71	0.64	0.50	0.26	0.14						0.71	0.64	0.50	0.26	0.13
July	5.21	2.07	1.02	0.31	0.16											5.21	2.07	1.02	0.31	0.16
Aug	2.68	2.02	1.20	0.43	0.27											2.68	2.02	1.20	0.43	0.27
Sept	1.60	1.24	0.91	0.44	0.22											1.60	1.24	0.91	0.44	0.22
															April-May-June Average:	0.62	0.53	0.36	0.23	0.16

Location: *Sacramento River at Verona (RM 80)* *(Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)*

	SALMONIDS *Objective:*					AMERICAN SHAD *Objective:*					WHITE AND GREEN STURGEON Objective provide attraction passage, spawning, an larval transport, Page: 3-Xh-8, Vol III					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb											1.57	1.31				1.57	1.31			
Mar	No Working Paper flow recommendations					No Working Paper flow recommendations					1.54	1.31				1.54	1.31			
Apr											1.08	0.78				1.08	0.78			
May											0.87	0.54				0.87	0.54			
June																				
July																				
Aug																				
Sept																				
															April-May Average:	0.97	0.66			

Location: Lower American River at H Street Bridge CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective: optimize conditions in lower Am. River for all life stages, Page: 3-Xc-42, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page. 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.75	0.83	0.98	1.06	2.22											0.75	0.83	0.98	1.06	2.22
Nov	1.27	1.70	0.98	1.18	1.50											1.27	1.70	0.98	1.18	1.50
Dec	2.42	1.61	1.37	1.05	1.15											2.42	1.61	1.37	1.05	1.15
Jan	3.37	2.46	1.21	0.99	1.06											3.37	2.46	1.21	0.99	1.06
Feb	3.68	3.18	2.21	1.27	1.17											3.68	3.18	2.21	1.27	1.17
Mar	1.35	2.04	1.03	1.41	0.94											1.35	2.04	1.03	1.41	0.94
Apr	1.31	1.44	1.16	1.06	1.17	0.58	0.52	0.40	0.33	0.56	No Working Paper flow recommendations					0.58	0.52	0.40	0.33	0.56
May	1.23	1.19	0.96	0.88	0.56	0.46	0.37	0.33	0.29	0.27						0.46	0.37	0.33	0.29	0.27
June	1.31	1.50	1.35	2.24	6.56	0.73	0.94	0.96	1.66	1.93						0.73	0.94	0.96	1.66	1.93
July	1.21	1.24	1.36	2.36	2.69											1.21	1.24	1.36	2.36	2.69
Aug	1.27	1.12	1.07	1.91	0.82											1.27	1.12	1.07	1.91	0.82
Sept	1.42	1.41	0.96	1.89	1.55											1.42	1.41	0.96	1.89	1.55
															April-May-June Average:	0.59	0.61	0.57	0.76	0.92

Location: San Joaquin River at Vernalis — CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective: benefit all life stages of fall-run chinook salmon, Page 3-Xd-47, 3-Xe-20, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page 3-Xg-19, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page 3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.48	3.89	4.09	6.79	3.58											2.48	3.89	4.09	6.79	3.58
Nov	1.11	1.97	1.93	2.12	2.34											1.11	1.97	1.93	2.12	2.34
Dec	1.48	2.21	2.22	2.16	2.04											1.48	2.21	2.22	2.16	2.04
Jan	2.24	2.29	2.09	2.15	1.76											2.24	2.29	2.09	2.15	1.76
Feb	2.90	2.04	1.64	2.07	1.65						1.03	0.57				1.03	0.57	1.64	2.07	1.65
Mar	2.58	1.56	1.18	1.18	0.95						0.99	0.43				0.99	0.43	1.18	1.18	0.95
Apr	0.51	0.45	0.45	0.45	0.43	2.06	1.22	0.79	0.77	0.88	0.77	0.38				0.51	0.38	0.45	0.45	0.43
May	0.51	0.35	0.28	0.29	0.31	1.06	0.47	0.38	0.40	0.53	0.77	0.30				0.51	0.30	0.28	0.29	0.31
June	0.47	0.19	0.23	0.26	0.30	0.96	0.28	0.32	0.40	0.57						0.47	0.19	0.23	0.26	0.30
July	0.79	1.05	1.27	2.15	2.06											0.79	1.05	1.27	2.15	2.06
Aug	1.59	2.11	2.03	1.89	1.73											1.59	2.11	2.03	1.89	1.73
Sept	2.25	2.33	2.26	2.60	2.58											2.25	2.33	2.26	2.60	2.58
															April-May-June Average:	0.50	0.29	0.32	0.33	0.35

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence — CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective: Double natural production, Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-21, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	3.70	3.43	5.39	7.99	3.18						No Working Paper flow recommendations					3.70	3.43	5.39	7.99	3.18
Nov	1.61	2.11	1.58	1.96	1.70											1.61	2.11	1.58	1.96	1.70
Dec	2.04	3.76	1.68	2.49	1.65											2.04	3.76	1.68	2.49	1.65
Jan	3.56	3.31	1.93	2.68	1.43											3.56	3.31	1.93	2.68	1.43
Feb	5.80	3.24	2.70	3.28	1.66											5.80	3.24	2.70	3.28	1.66
Mar	4.09	1.94	1.49	1.60	1.68											4.09	1.94	1.49	1.60	1.68
Apr	0.74	0.70	0.65	1.09	0.90	0.26	0.29	0.26	0.33	0.51						0.26	0.29	0.26	0.33	0.51
May	0.84	0.67	1.03	1.04	0.91	0.19	0.18	0.19	0.28	0.46						0.19	0.18	0.19	0.28	0.46
June	1.24	0.84	3.60	4.90	4.85	0.37	0.20	0.32	0.54	0.97						0.37	0.20	0.32	0.54	0.97
July	2.59	2.85	3.74	4.74	4.52											2.59	2.85	3.74	4.74	4.52
Aug	2.79	2.58	1.98	2.01	1.68											2.79	2.58	1.98	2.01	1.68
Sept	1.66	1.40	1.55	1.93	1.81											1.66	1.40	1.55	1.93	1.81
															April-May-June Average:	0.27	0.22	0.26	0.38	0.64

Location: Tuolumne River from LaGrange Dam to the SJR confluence — CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective: Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.94	1.84	1.75	3.25	2.19											0.94	1.84	1.75	3.25	2.19
Nov	0.49	0.93	1.34	1.43	2.09											0.49	0.93	1.34	1.43	2.09
Dec	0.60	1.09	1.63	1.20	1.55											0.60	1.09	1.63	1.20	1.55
Jan	1.58	1.41	1.25	1.08	1.22											1.58	1.41	1.25	1.08	1.22
Feb	1.88	1.15	0.93	0.82	0.70											1.88	1.15	0.93	0.82	0.70
Mar	1.88	1.31	0.81	0.84	0.36	No Working Paper flow recommendations					No Working Paper flow recommendations					1.88	1.31	0.81	0.84	0.36
Apr	1.05	0.62	0.42	0.35	0.24											1.05	0.62	0.42	0.35	0.24
May	0.41	0.30	0.23	0.22	0.18											0.41	0.30	0.23	0.22	0.18
June	0.65	0.17	0.09	0.12	0.14											0.65	0.17	0.09	0.12	0.14
July	0.67	0.50	0.37	0.67	0.68											0.67	0.50	0.37	0.67	0.68
Aug	1.15	2.18	2.43	1.70	2.79											1.15	2.18	2.43	1.70	2.79
Sept	2.50	2.91	1.59	1.85	3.03											2.50	2.91	1.59	1.85	3.03
															April-May-June Average:	0.71	0.36	0.25	0.23	0.19

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence — CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective: Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.59	3.90	3.80	5.59	2.50											2.59	3.90	3.80	5.59	2.50
Nov	0.87	1.36	0.81	0.86	0.61											0.87	1.36	0.81	0.86	0.61
Dec	1.43	1.77	1.00	0.90	0.63											1.43	1.77	1.00	0.90	0.63
Jan	1.50	1.45	1.15	1.07	0.56											1.50	1.45	1.15	1.07	0.56
Feb	1.86	1.78	0.88	1.97	0.97											1.86	1.78	0.88	1.97	0.97
Mar	1.04	0.39	0.34	0.35	0.40	No Working Paper flow recommendations					No Working Paper flow recommendations					1.04	0.39	0.34	0.35	0.40
Apr	0.29	0.22	0.26	0.20	0.24											0.29	0.22	0.26	0.20	0.24
May	0.58	0.22	0.16	0.15	0.20											0.58	0.22	0.16	0.15	0.20
June	0.82	0.12	0.03	0.04	0.08											0.82	0.12	0.03	0.04	0.08
July	0.28	0.08	0.15	0.50	0.92											0.28	0.08	0.15	0.50	0.92
Aug	0.15	0.32	0.52	0.81	0.73											0.15	0.32	0.52	0.81	0.73
Sept	1.08	0.58	0.46	0.50	0.56											1.08	0.58	0.46	0.50	0.56
															April-May-June Average:	0.56	0.19	0.15	0.13	0.17

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River — CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective: benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb																				
Mar						No Working Paper flow recommendations					No Working Paper flow recommendations									
Apr	0.64	0.28	0.25	0.26	0.27											0.64	0.28	0.25	0.26	0.27
May	0.64	0.11	0.14	0.17	0.20											0.64	0.11	0.14	0.17	0.20
June	0.31	0.14	0.17	0.25	0.34											0.31	0.14	0.17	0.25	0.34
July																				
Aug																				
Sept																				
															April-May-June Average:	0.53	0.18	0.19	0.23	0.27

Feather River at Nicolaus
STUDY 1995C06F-SWRCB-519A DWRSIM recro618-h 03 Sep 97
CP # 37 DA 69 DIV DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-519A/37/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1 773	1 697	1 431	4 086	8 175	12 133	8 638	26 005	18 973	9 156	585	403
1923	967	823	7 367	11,287	5 222	4 716	7 006	2 570	6,188	7 123	5 497	706
1924	1 464	1 731	456	3 269	2 469	3 156	2 773	1 080	1 949	1 220	390	286
1925	1 156	454	618	2,586	11 308	10 311	3 916	2 244	3 880	1 984	553	566
1926	911	1 076	683	5 058	5 906	5 204	4 907	4 261	3 243	5 286	687	1 949
1927	4 212	6 487	3 090	9 693	36 642	18 589	12 705	9 628	5 613	9 839	3 676	252
1928	1 220	1 882	699	8,034	2 330	43 797	6 623	5 790	3 596	8 799	7 107	420
1929	1 545	1 311	797	3 676	2 269	2 960	1 176	504	1 042	927	342	269
1930	1 480	387	2 976	7 790	1 224	10 327	6 467	2 700	3 983	7 107	4 733	992
1931	1 834	2 807	2 797	1 594	2 629	1 626	3 176	1 317	2 538	862	280	336
1932	1 008	1 076	2 277	8 278	4 259	1 156	5 479	2 423	6 487	1 350	276	521
1933	1 156	1 798	1,529	2 179	4 367	2 765	4 403	0	1 765	862	390	387
1934	764	1 385	1 529	4,928	1 134	3 415	5 126	1 106	2 302	1 513	309	857
1935	2 277	538	1 008	8,799	1 062	7 432	8 352	12 539	8 564	3 724	553	2 336
1936	1 171	2 033	2,423	8 977	21 644	17 483	7 714	3 578	5 327	7 286	3,659	67
1937	716	1 546	1 138	2 781	11 452	13 531	6 437	5 611	8,083	3 659	1 643	84
1938	1 156	2 269	19 780	11 384	26 596	37 260	27 158	26 542	17 797	3,838	1 057	4 285
1939	5 139	4 974	5,253	5,416	5,528	5 253	4 101	678	4 564	7 758	5 123	805
1940	1 073	857	280	4,814	5 288	36 349	31 779	6 782	5,889	8 717	1 122	2 739
1941	2 244	2 538	4,983	18,687	29,602	24 037	7 228	14 572	6 470	4,814	1 236	739
1942	4 944	3 176	20,752	18,606	35 472	10 278	22 452	13 515	11,887	7 583	748	504
1943	1 546	6 117	10,718	24,883	16 585	25,647	11 579	5 680	4 403	8 408	2 244	269
1944	1 106	1 193	1 529	2,927	7 806	8 050	2 420	585	4 874	7 432	5 367	50
1945	1 447	2 790	2,982	2 472	10 515	9 612	2 891	407	5 886	7 904	4 277	252
1946	911	2 605	7 693	16 198	8 373	6 441	1 865	1 984	5 411	8 148	6 944	471
1947	2 293	1 748	2,749	1 887	3 439	4 407	4 706	0	2 874	7 400	4 131	34
1948	1 431	1 294	1,286	1,447	2 712	2 423	6 537	8 359	5 386	9,221	4 033	3 385
1949	1 286	874	1 805	1,805	2 269	7 563	1 781	1 342	4 483	7 883	3 367	891
1950	1 822	1 649	1,090	4 277	7 941	4 570	3 899	2 374	6 907	8 587	4 635	982
1951	894	13,582	31,828	28,038	20 761	11 449	5 344	2,879	3 412	8 977	7 156	1 244
1952	1 578	2 521	2,586	25,111	21 888	16 459	27 107	33 421	17 088	5 074	2 198	3 731
1953	4 163	2,151	9,498	21,780	8,481	8 799	4 790	6 852	8,941	10 636	1 220	891
1954	1 171	2,790	2,618	8,506	15 053	16,816	13,041	6 912	4,218	8 786	7 188	1 881
1955	1 041	1 260	3,448	4,342	2,181	1 906	1 126	882	4 672	7 497	2 882	835
1956	520	738	1,026	41,797	19,715	16,588	6,016	16 019	6,117	9 839	1 106	891
1957	2 781	1,260	1,984	4,521	14 261	17 368	6 739	2 886	7,082	8 799	5 989	1 244
1958	1 529	723	2,602	3,529	24 578	31 421	25,986	18,963	11,680	3,985	1 903	3 529
1959	4,326	1,889	2,082	10,799	17 486	5 586	2 538	390	4,000	7 872	6 536	941
1960	781	1,882	1,578	2,563	4,807	3,025	5 764	309	3 593	6,886	390	303
1961	1 708	1,580	618	1,724	5,078	1 529	4,302	146	4,101	7 872	4 505	521
1962	2 049	1 126	851	1,122	12 180	6 375	5 378	2 927	5,916	8 067	2,131	3 126
1963	9 921	3,940	5,643	882	28,847	12 984	26 738	11 824	7,846	8 615	4 277	1 176
1964	1 386	4 336	1,252	6,180	2 208	3 383	1 563	1 870	3,596	7 449	6 831	4 840
1965	1 796	1 849	8,603	43,131	12,408	8 278	11 277	8 946	4,033	8 685	3,156	1 210
1966	867	3,159	4,564	6,717	5,080	6 063	1 849	3 188	3,143	8 376	6 883	471
1967	1 171	1 210	8,928	5,269	23 138	19 956	9 176	14 383	16,967	4 554	2 000	3,042
1968	4 183	1 496	3,139	9,937	14 882	16 186	6 184	0	3 529	8 099	4 246	0
1969	732	1 210	1,838	31,063	31,853	19 142	14 251	20 459	7,082	1 875	183	6,353
1970	2 326	2 838	22,346	63,736	40 513	13 678	4 823	33	1,848	7 205	4 980	437
1971	797	941	14,231	8,294	8,859	16 751	9 747	10 380	8 453	10 132	6 392	1 445
1972	1 156	1,026	3,123	5,692	9 482	9 498	2 605	781	2 988	7 432	7 026	1 714
1973	1 984	3 983	4,733	18 345	25,786	20,248	5 486	3 204	8,117	7 644	3,367	1 697
1974	1,545	11,846	19,337	38,888	15,449	37 084	27 679	10,425	7 798	6 440	1 675	1 983
1975	3,819	2,087	2,781	3,610	24 920	20 459	7 327	9 856	10,167	8 302	1 578	1 933
1976	2 846	3,361	4 147	3,936	4,294	3,627	2 336	33	2,706	5,985	2 570	1,294
1977	1 386	1 344	2,082	1,480	2,305	943	3,529	716	708	183	179	1 126
1978	716	420	1,447	11,775	8,536	11 287	9 781	3,487	5,109	3,773	2,183	1 311
1979	746	1,583	1,982	9,986	18,690	11 531	3,882	1 480	6,285	7,586	1 982	1 160
1980	1 389	1 786	2,179	34,186	37 743	21 972	6,857	4 082	3,798	4,375	781	975
1981	797	822	1,108	6,089	8,481	8,839	6 033	716	3 486	6 798	4 912	1 042
1982	1,269	5 680	33,015	31,880	32 879	34,580	46 770	18 567	8 288	6 180	1 773	3 496
1983	7,351	11,831	19,923	16,507	37 254	58 523	24 771	21,029	23,276	6,538	4 245	6 873
1984	5,107	21 586	46,839	25,046	15 525	14 491	4 958	2 586	5,983	8,556	3 432	822
1985	293	2,236	2,895	2,244	4,015	6 879	2 823	2 088	2,941	7,904	6 993	5,880
1986	1 919	1,887	3,822	5,513	47,356	53,832	7 310	2 082	1,042	5,962	3,074	1 887
1987	1 220	672	1,529	2,618	4,592	7 123	3,260	49	3,210	6,180	3 432	84
1988	2,976	1 513	1,301	4,198	1 843	1 610	2 151	732	1 280	585	98	17
1989	2 085	672	683	1,952	3,925	12 458	8 218	2 049	2,723	7 010	390	2 857
1990	2 085	2,286	4,359	5,221	4 123	3,155	5 311	146	3,108	4,554	781	889
1991	2,423	1 798	2,797	1 171	2 791	8 197	5 277	342	1 690	2,179	748	790
1992	1 389	908	748	2,749	9 457	3 610	2 773	244	1 933	1 236	33	286
1993	2 293	1 378	992	7,042	9 273	7 758	13 747	9 417	8 873	6 164	634	319
1994	867	2 386	3,887	3,350	8 121	2 309	2,564	183	2 823	6 868	5 774	0

Flow recommendations are based on water year types as defined on p 23-24 of the SWRCB 1995 WQCP for the Bay Delta

Sacramento Basin 40-30-30 Index
Wet - 1927, 38, 41, 42, 43, 52, 53, 56, 58, 63, 65, 67, 69, 70, 71, 74, 75, 82, 83, 84, & 86
Above Normal - 1922, 28, 40, 51, 54, 57, 73, 78, 80, & 93
Below Normal - 1923, 35, 36, 37, 45, 46, 48 50, 59, 62, 66, 68, 72, & 79
Dry - 1925, 26, 30, 32, 39, 44, 47, 49, 55, 60, 61, 64, 81, 85, 87, & 89
Critical - 1924, 29, 31, 33, 34, 76, 77, 88, 90, 91, 92, 94

San Joaquin Basin 60-20-20 Index
Wet - 1922, 37, 38, 41, 42, 43, 52, 56, 58, 65 67, 69, 74, 75, 78, 80, 82, 83, 86, & 93.
Above Normal - 1923, 27, 32, 35, 36, 40 45, 46, 51 63, 70, 73, 79, & 84
Below Normal - 1925, 28, 44, 48, 49, 50, 53, 54, 57, 62, 66, & 71
Dry - 1926, 33, 39, 47, 55, 59, 64, 68, 72, 81 & 85
Critical - 1924, 29, 30, 31, 34, 60, 61 76 77 87 88, 89, 90, 91, 92, 94

Mean Monthly Flow in cfs by Water Year Type

73-year Flow Averages by Month and Water Year Type
Feather River at Nicolaus - CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	2,843	1,491	1,682	1 478	1,709
NOV	4,440	2,959	1,896	1,396	1,886
DEC	12,397	4,817	2,893	1,937	2,202
JAN	21,296	12,733	7,178	3 966	3,146
FEB	25,635	14,718	10,479	4,800	3,816
MAR	23,610	19,919	8,818	6,153	3,114
APR	16,184	10,824	4,796	4 180	3,362
MAY	13,120	7,146	4,794	1 411	533
JUN	9,249	6,709	5,546	3 903	1,980
JUL	7,006	7,517	7,364	6,476	2,229
AUG	2,461	3,607	4,285	3 406	969
SEP	2,160	1,203	1,122	1,362	528

CP 15, Yuba River at Marysville, Regulated Flow

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	423	521	978	1,822	4,574	2,911	3,714	6,798	8,033	2,980	2,553	471
1923	455	807	3,988	3,074	1,981	1,870	2,185	1,594	2,084	829	883	571
1924	504	538	699	1,386	1,678	748	286	179	168	65	65	67
1925	276	363	784	1,171	4,826	2,277	1,798	1,675	881	390	585	454
1926	423	538	716	1,498	4,447	2,846	2,218	390	252	65	65	67
1927	423	4,033	2,358	3,741	8,589	5,448	5,781	5,253	4,571	2,244	618	487
1928	423	1,916	1,643	3,074	2,277	7,432	4,420	3,155	780	439	553	454
1929	423	538	683	1,301	1,729	1,431	1,025	342	202	65	65	67
1930	325	319	1,431	2,830	3,206	2,846	1,445	520	286	65	130	471
1931	423	622	504	1,513	1,838	1,203	252	179	168	65	65	67
1932	276	303	1,285	1,529	1,985	2,472	2,084	1,415	2,807	585	634	403
1933	423	454	553	1,301	1,458	1,643	1,180	851	202	65	65	67
1934	342	336	716	1,610	2,251	1,386	454	195	202	65	65	67
1935	325	504	585	1,545	1,747	2,131	4,638	3,584	3,344	618	618	420
1936	472	454	553	4,506	6,189	4 506	4,101	3,334	2,773	867	634	487
1937	423	420	537	1,285	3,151	2,879	2,706	3,236	1,748	488	589	403
1938	423	1,462	4,489	3,708	5,890	8,343	6,151	8,733	7,647	3,156	2,033	538
1939	520	555	589	1,386	1,585	1,859	672	179	168	65	65	67
1940	276	286	293	3,253	5,320	7,400	5,176	4,749	2,000	407	618	504
1941	455	807	3,350	4,538	6,626	5,485	4,389	5,008	3,344	2,586	797	805
1942	520	840	4,245	4,895	7,004	4,836	5,411	5,237	5,025	2,895	862	521
1943	423	2,000	3,448	6,115	5,006	7,221	5,008	4,131	2,805	889	797	538
1944	439	471	602	1,447	2,225	2,293	1,482	764	353	65	65	118
1945	423	1,412	1,724	1,935	4,700	3,724	1,714	1,386	1,884	589	899	487
1946	585	1,546	4,619	4,651	4,231	2,358	2,134	2,179	1,178	537	883	454
1947	423	1,244	1,155	1,285	2,583	2,521	1,328	342	336	65	65	67
1948	423	487	520	2,131	1,443	1,854	3,126	2,131	3,075	813	732	454
1949	423	487	943	1,334	1,873	3,387	2,134	797	252	65	439	454
1950	423	487	537	3,513	4,628	3,236	3,042	2,488	2,252	618	883	471
1951	829	6,000	8,571	6,844	6,158	5,172	4,571	3,415	1,513	589	883	471
1952	764	1,344	4,245	5,985	5,511	5,383	6,201	8,262	8,380	3,780	2,911	1,126
1953	423	487	1,513	5,843	4,123	3,318	2,353	2,163	3,887	2,781	829	521
1954	504	906	732	2,980	3,817	4,017	3,529	829	805	407	618	454
1955	423	586	1,334	2,163	1,785	1 610	1,294	1,008	370	65	65	67
1956	423	555	9,433	10,213	6,676	4,814	3,665	5,302	4,336	2,342	678	822
1957	764	639	553	1,529	4,249	4,115	1,280	2,000	1,833	585	716	538
1958	889	790	1,756	3,318	7,833	6,198	8,705	6,619	6,336	2,944	1,236	823
1959	423	504	553	3,058	3,583	1 789	1,059	407	336	65	65	101
1960	423	454	553	1,773	3,581	2,879	1,328	618	370	65	65	84
1961	423	706	813	1,350	2,209	1 822	941	342	202	65	65	67
1962	342	336	683	1,136	4 968	3,285	2 706	678	1,714	537	718	521
1963	4,131	3,059	3,123	4,196	5 456	4 570	4 674	5,904	3,344	829	894	855
1964	802	2,756	878	2,700	1,878	1,740	1,580	699	454	65	65	67
1965	423	739	10,815	9,758	5,924	4,310	5,486	4,868	3,361	1,626	1,008	672
1966	472	1 178	992	2,553	1,909	2 244	1,781	455	286	65	65	67
1967	423	1,462	3 643	4,928	4,700	4 765	3 008	4,879	5,846	3,285	2,586	622
1968	585	571	894	2,667	4,259	4,017	1,143	472	336	65	65	67
1969	423	706	1,317	10,002	6 734	5,302	5,395	7,123	5,748	2,716	813	556
1970	618	588	4,228	11,027	7,346	5,416	3,529	651	857	602	716	471
1971	618	2,420	4,538	4,472	3,475	4,570	1,714	3,171	3,378	2,618	978	739
1972	585	708	1,513	2,635	2,799	2 976	1 513	683	286	65	634	689
1973	813	1,785	2,797	5,351	6,536	5,080	3,361	2,277	1,109	585	732	706
1974	829	4,958	5,938	7,205	4 718	8 441	7,280	5,887	3,866	2,785	943	805
1975	589	655	834	1,670	4,718	5,387	2,202	3,285	4,185	2,488	1,008	773
1976	1,106	1,193	867	1,382	1,617	1 073	370	179	168	65	65	67
1977	276	286	309	716	828	716	168	179	168	65	130	67
1978	228	151	732	4,228	4,357	5,123	4,470	3 318	3,143	1,464	878	891
1979	455	622	585	2,618	3,367	3,080	1,798	1,822	1,108	520	718	521
1980	813	1,042	1,643	8,229	7,587	6,131	3,933	3,822	3,243	980	813	521
1981	520	471	748	2,309	2,161	2,488	1,428	390	336	65	65	67
1982	423	4,420	7,823	5,822	7,743	7,676	11,814	8 075	5,781	2,618	911	1 126
1983	1,025	2,739	4,261	5,611	7,761	9 709	7,613	7,725	9,310	4 977	2,944	1,513
1984	911	4,437	9,254	5,123	4,888	4 977	3,882	2,326	1,798	883	797	855
1985	883	2,470	1,203	1,610	2,125	2,082	1,479	439	336	65	65	67
1986	423	756	911	3,304	13,486	10,620	6,386	3,545	2,017	602	732	906
1987	883	437	553	1,389	2,251	1,826	487	211	202	65	65	67
1988	342	370	1,008	1,773	1,321	1,122	407	195	202	65	65	67
1989	342	924	867	1,301	1,883	7,400	3,849	1,828	773	390	618	805
1990	1 136	889	439	2,506	1,747	1,854	855	618	235	65	65	67
1991	342	353	423	862	1 062	2 895	1 244	455	202	63	618	403
1992	407	454	455	1,334	3,846	2,017	840	195	202	65	65	67

Sacramento Basin 40-30-30 Index
Yuba River at Marysville gage

Month	W	AN	BN	D	C
OCT	732	564	457	450	520
NOV	1869	1470	717	817	530
DEC	4348	1983	1305	848	587
JAN	5780	4154	2865	1891	1424
FEB	6360	4867	3486	2527	1771
MAR	6026	5266	2854	2620	1461
APR	5191	3626	2403	1602	880
MAY	5188	3374	1760	714	306
JUN	4648	2485	1585	524	193
JUL	2346	931	461	136	74
AUG	1204	907	540	195	121
SEP	718	556	408	200	98

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C-032459

C-032459

Sacramento River at Verona
STUDY 1995C08F-SWRCB-519A DWRSIM recrc818-h 03 Sep 97

ALT 7 - SACRAMENTO RIVER FLOW AT VERONA (CFS)
CP 43 def - CP 64 def - CP 43 in

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	8 789	8 504	11 824	14 133	27 765	25 647	17 915	36 495	25 612	15 829	7 058	8 033
1923	10 018	12 564	24 314	26 087	18 780	15 125	18 570	8 717	12 974	13 970	10 978	6 638
1924	8 538	7 959	7 335	11 417	13 074	9 823	8 336	6 961	8 564	7 058	5 562	6 708
1925	6 229	5 848	7 920	9 286	36 714	24 086	17 377	7 319	11 883	9 156	6 229	7 025
1926	7 886	7 210	7 432	15 076	30 626	15 954	14 907	16 994	13 075	11 628	5 985	8 319
1927	10 311	16 402	12 588	24 720	69 716	37 503	38 140	21 175	14 018	17 565	10 148	7 630
1928	9 828	17 444	12 279	21 191	21 592	70 965	23 141	14 523	14 288	18 378	14 383	8 134
1929	8 538	9 478	9 612	12 263	14 963	12 116	8 285	7 140	7 193	5 936	5 513	6 298
1930	6 886	5 548	11 775	18 475	14 333	25 940	11 989	8 636	14 302	15 469	11 173	6 655
1931	7 839	8 184	8 376	10 116	9 689	7 546	6 736	6 928	7 781	7 579	5 485	6 823
1932	8 898	6 168	11 092	16 003	10 761	7 284	10 804	7 530	11 411	5 904	5 009	6 201
1933	6 229	5 117	6 733	9 579	10 353	8 556	11 108	5 416	6 773	6 083	5 090	5 798
1934	5 497	6 437	9 254	14 702	11 416	12 246	12 386	8 457	8 453	11 937	8 034	7 478
1935	7 888	7 546	7 026	23 110	11 146	20 573	15 948	21 647	13 687	10 978	6 392	8 758
1936	9 028	8 623	10 148	25 908	32 301	28 672	15 881	9 563	12 288	14 084	9 400	6 574
1937	7 839	8 571	9 059	11 807	28 143	32 576	18 721	11 807	13 863	10 571	7 319	6 571
1938	9 417	19 747	40 301	26 509	88 197	65 631	39 786	46 221	27 023	11 027	7 486	14 537
1939	19 044	16 234	15 389	15 208	15 773	13 499	12 739	8 635	15 192	18 052	13 629	6 302
1940	7 461	6 974	6 115	22 886	29 381	46 562	36 040	13 938	12 987	17 026	7 010	8 226
1941	10 425	10 672	28 445	64 485	64 821	51 378	37 527	35 145	15 848	11 905	8 408	13 360
1942	18 854	14 890	56 207	53 165	85 886	23 273	37 813	30 559	21 797	14 621	7 237	10 403
1943	14 816	17 915	23 631	46 481	44 783	51 982	24 365	16 719	13 092	15 792	8 733	7 680
1944	9 680	11 075	10 508	13 938	23 244	22 183	8 033	16 652	15 226	14 930	10 864	6 672
1945	7 237	11 613	13 884	10 864	27 783	22 167	9 932	7 400	12 836	15 857	9 986	6 739
1946	9 303	15 411	41 982	36 788	20 455	20 215	8 252	8 750	13 932	16 038	12 897	7 344
1947	10 246	10 888	14 312	10 978	16 908	18 215	12 352	8 089	13 280	14 718	9 774	7 426
1948	7 839	8 319	7 497	12 263	11 752	14 214	16 419	21 336	17 058	16 182	9 758	9 562
1949	12 523	11 209	11 319	11 368	12 856	36 511	10 503	8 115	14 288	15 271	9 319	7 865
1950	8 620	8 487	8 146	16 589	25 532	16 003	11 243	8 441	13 713	15 223	10 067	7 126
1951	8 984	21 948	46 999	49 717	49 174	25 826	13 545	11 547	12 503	17 321	13 596	8 654
1952	10 083	12 772	33 389	54 792	52 294	48 270	48 114	46 205	26 570	11 889	8 647	15 713
1953	17 587	13 495	38 089	56 174	24 920	21 842	13 125	22 378	20 839	18 168	7 741	12 858
1954	14 605	17 091	12 279	30 288	52 288	44 204	35 174	18 931	14 940	18 459	14 953	9 445
1955	10 197	15 444	20 931	18 361	13 324	14 458	7 327	7 056	15 024	15 483	8 603	6 958
1956	7 774	9 646	10 002	67 103	54 137	33 812	18 217	33 258	18 788	17 256	7 880	12 957
1957	16 475	12 772	10 913	15 515	29 422	36 325	20 083	11 758	18 453	17 808	12 523	7 344
1958	17 711	16 489	20 720	31 584	48 472	84 086	37 779	33 665	25 175	13 157	10 360	18 083
1959	18 524	13 182	11 336	30 787	45 735	20 703	10 388	8 717	15 075	17 239	13 858	7 426
1960	9 205	8 860	9 189	12 118	23 513	17 778	11 940	6 180	14 318	15 336	7 302	7 882
1961	9 693	11 024	15 548	11 352	29 728	19 863	12 184	7 676	15 764	16 995	12 380	7 989
1962	9 628	8 706	14 930	11 075	36 805	24 574	13 428	9 270	14 587	16 345	8 359	10 487
1963	17 434	15 915	23 082	11 498	44 745	29 437	62 063	22 187	15 377	15 434	11 043	9 630
1964	15 759	22 839	11 303	18 882	14 517	14 885	7 445	8 246	12 823	13 889	13 531	10 974
1965	8 538	11 814	6 089	87 640	26 595	18 190	39 275	18 882	13 041	16 898	9 579	8 739
1966	10 344	23 318	13 791	26 298	23 426	26 786	11 645	10 945	14 285	17 223	14 279	8 041
1967	10 018	11 428	34 478	27 420	38 808	47 063	33 964	35 389	29 948	12 539	8 782	15 108
1968	17 646	13 082	13 515	26 379	46 435	34 088	16 268	8 457	14 201	16 719	11 515	7 142
1969	9 303	10 967	21 142	49 961	55 314	40 041	37 023	38 186	16 402	10 067	6 786	19 562
1970	16 377	14 268	43 456	70 681	50 039	32 868	15 562	7 563	11 713	17 083	11 986	8 201
1971	9 254	16 520	46 204	39 049	23 930	46 318	20 839	21 647	19 007	18 752	13 092	13 414
1972	15 469	12 772	14 117	17 613	21 036	26 721	11 988	6 896	14 806	17 223	14 344	7 866
1973	10 718	18 402	22 639	37 408	61 112	42 187	16 906	11 742	15 142	17 028	9 856	9 193
1974	14 117	48 266	54 108	65 574	35 310	90 051	24 854	21 744	16 854	17 044	10 148	17 142
1975	18 410	14 755	14 377	15 076	51 677	69 803	21 276	23 698	18 091	17 223	9 286	14 923
1976	17 841	14 823	13 389	13 791	16 916	16 914	9 243	6 786	15 158	15 256	8 327	7 411
1977	7 546	7 378	7 416	7 075	11 542	8 928	10 789	8 089	8 188	5 989	5 578	7 579
1978	7 579	8 302	11 382	38 414	42 530	36 990	32 868	16 410	10 824	9 823	7 638	12 808
1979	13 080	11 183	9 839	22 704	37 470	27 323	14 671	8 018	15 058	15 532	8 246	8 571
1980	10 788	12 856	16 381	43 586	56 380	33 015	16 772	11 338	11 898	10 889	7 270	8 319
1981	13 108	10 302	12 198	23 793	26 109	29 974	18 167	9 782	14 839	16 198	12 108	7 109
1982	9 305	25 427	52 056	41 380	50 417	60 370	61 441	27 588	17 511	13 775	8 750	16 033
1983	21 939	27 888	43 423	49 197	68 989	58 248	59 660	44 998	41 342	17 971	14 982	22 906
1984	22 888	47 304	66 848	39 982	30 267	33 991	17 713	9 858	15 024	18 020	9 856	9 134
1985	14 100	26 738	19 044	13 320	15 881	18 204	10 957	9 303	13 384	15 304	13 791	11 277
1986	8 815	8 188	13 489	18 345	57 403	61 886	17 142	9 254	7 815	12 230	9 583	8 050
1987	10 246	8 252	10 955	14 088	20 023	26 688	13 226	6 375	16 705	16 198	13 385	7 159
1988	9 756	6 756	13 547	22 671	13 386	9 205	8 302	6 740	11 310	9 872	5 880	5 546
1989	7 091	7 851	7 384	10 992	10 101	35 015	18 217	9 221	13 545	15 532	5 725	8 873
1990	11 124	9 411	12 376	18 004	14 038	12 913	13 286	5 904	15 108	11 388	6 031	7 176
1991	8 457	7 294	7 678	8 326	10 624	24 948	14 167	6 375	7 277	7 585	6 457	7 280
1992	5 989	4 958	5 416	10 018	27 784	17 418	12 888	6 148	10 288	8 831	5 253	7 647
1993	7 839	7 159	9 774	40 285	36 785	41 976	29 729	21 435	22 419	14 885	7 140	7 445
1994	9 756	19 847	14 572	13 775	23 588	14 806	10 722	6 001	15 444	15 141	14 279	7 579

Sacramento Basin 40-30-30 Index
Sacramento River at Verona - CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow

Month	W	AN	BN	D	C
OCT	13,471	10,292	10,881	10,548	8,925
NOV	18,325	12,945	11,614	11,830	9,057
DEC	32,588	18,050	14,243	12,242	9,640
JAN	43,848	31,341	21,305	14,574	12,478
FEB	48,833	40,843	27,757	19,638	14,775
MAR	48,000	40,641	23,696	21,274	12,788
APR	33,548	24,119	13,952	12,374	10,872
MAY	26,988	16,812	10,426	7,896	6,412
JUN	19,242	15,644	14,139	14,050	10,124
JUL	15,183	15,701	15,227	14,256	9,219
AUG	9,544	10,134	10,528	9,830	6,768
SEP	13,117	8,855	7,852	7,794	6,939

American River at H Street Bridge
STUDY 1995C08F-SWRCB-519A DWRSIM recrc818-h 03 Sep 97
CP # 64, AMER R FLW REQT. DOWNSTREAM FLOW (CFS)

Project: /1995C08F-SWRCB-519A/64/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1 870	2 403	2 440	2 198	4 808	4 407	4 380	8 359	8 470	2 521	3 415	3 613
1923	2 374	2 403	6 981	5 080	4 321	2 700	2 907	4 375	4 758	5 286	3 123	1 788
1924	1 870	1 916	1 952	1 952	1 878	2 033	1 445	748	1 326	342	280	672
1925	374	805	504	439	4 882	6 115	2 370	2 309	5 294	4 196	2 078	1 888
1926	2 085	2 050	1 952	1 952	1 945	2 226	1 378	1 758	4 855	4 228	520	538
1927	848	504	504	3 285	13 887	4 926	8 184	3 887	5 075	3 009	2 000	3 529
1928	2 374	2 874	2 635	2 440	2 347	12 572	5 613	2 879	3 884	3 204	2 244	1 082
1929	2 374	1 916	1 952	1 691	1 440	1 317	1 328	1 057	2 302	1 605	280	975
1930	2 000	1 462	943	943	936	2 883	2 370	2 309	4 453	3 497	2 976	555
1931	1 431	958	520	439	432	683	2 723	1 138	4 854	797	472	855
1932	813	1 143	504	486	2 417	3 773	3 496	2 309	7 193	7 205	1 396	941
1933	2 885	2 881	943	943	1 639	716	4 188	1 025	3 338	1 252	472	1 412
1934	1 805	1 479	504	438	432	1 884	3 260	732	6 201	537	244	303
1935	945	504	504	439	792	2 911	6 188	5 302	3 496	4 294	3 074	1 916
1936	1 870	2 403	2 440	4 017	13 213	4 294	5 714	3 562	5 058	3 415	2 361	2 403
1937	2 374	2 403	2 440	2 440	2 883	4 310	4 420	3 919	3 496	3 432	2 228	1 697
1938	2 374	2 403	8 164	3 367	10 293	10 978	8 067	9 075	7 898	3 106	3 903	3 933
1939	2 374	2 403	2 440	2 440	2 431	1 903	2 151	953	4 822	2 882	325	975
1940	1 252	1 260	1 388	439	8 514	10 457	6 487	2 879	3 385	3 871	2 309	1 178
1941	1 870	2 403	3 497	5 904	8 285	4 830	3 815	4 570	4 252	2 226	2 244	3 848
1942	2 374	2 403	5 318	9 742	10 407	3 659	5 277	6 148	5 886	3 080	3 622	3 889
1943	2 374	3 815	4 879	11 433	7 346	12 474	5 294	2 814	4 319	2 749	2 000	2 437
1944	2 374	2 403	2 440	2 440	2 347	1 903	2 370	1 317	4 218	3 676	3 139	555
1945	1 724	504	504	472	9 525	2 407	2 723	2 814	3 889	3 513	2 131	1 546
1946	2 374	3 413	5 928	5 627	3 025	3 058	4 252	2 732	4 855	3 464	2 082	1 294
1947	1 870	2 403	2 440	2 198	1 945	1 881	1 378	2 309	4 756	3 676	2 980	1 176
1948	884	504	1 057	439	2 086	2 982	2 370	2 309	3 697	2 978	2 147	2 437
1949	2 374	2 403	2 440	2 440	2 449	2 407	2 370	2 887	4 588	2 911	2 391	1 479
1950	2 082	1 916	1 952	1 952	5 852	3 253	5 143	2 992	3 042	3 594	2 000	1 983
1951	2 407	17 327	15 467	10 457	8 517	3 497	3 479	3 041	4 521	3 301	2 000	1 280
1952	2 374	2 470	6 148	9 254	9 353	6 086	9 108	10 132	10 302	4 082	4 375	4 134
1953	2 374	2 403	2 749	7 758	2 786	2 407	2 674	3 562	4 252	2 980	3 757	3 885
1954	2 374	2 403	2 440	2 440	3 277	4 538	4 756	2 781	3 378	2 732	1 594	924
1955	1 870	1 916	1 952	1 952	1 945	3 285	1 378	1 317	4 000	3 155	3 080	1 748
1956	2 407	504	11 466	16 768	5 884	2 911	3 630	4 619	5 344	2 785	3 887	3 648
1957	2 374	2 403	2 440	2 440	3 223	4 851	4 033	2 309	3 748	3 367	1 805	1 378
1958	1 870	2 403	2 440	2 374	10 299	8 717	10 436	9 159	7 142	2 785	4 017	3 949
1959	2 374	2 403	2 440	2 440	2 521	2 277	1 714	1 057	3 687	2 440	1 561	269
1960	1 447	1 897	1 843	439	417	3 627	1 815	2 309	3 884	2 570	1 887	739
1961	1 203	1 412	1 447	1 187	1 188	911	1 277	1 057	2 872	1 903	1 080	723
1962	797	908	943	943	2 683	2 749	3 815	2 309	3 277	3 204	2 361	1 428
1963	2 000	4 403	3 594	4 115	11 580	2 911	6 680	6 229	3 832	2 342	2 000	3 954
1964	2 374	4 134	2 440	3 074	2 816	2 586	1 378	1 317	4 855	4 781	2 374	1 059
1965	1 203	504	17 541	12 897	5 384	2 407	4 218	3 822	5 143	3 204	2 000	2 891
1966	2 374	2 571	2 440	2 618	2 431	1 903	1 428	1 610	3 731	2 635	1 773	975
1967	911	908	1 952	7 286	4 772	6 213	4 538	1 790	8 886	3 757	4 017	4 050
1968	2 374	2 571	2 440	2 618	6 780	2 521	2 807	1 317	3 613	2 553	900	555
1969	883	1 412	1 447	15 613	9 561	4 407	7 042	7 611	5 798	2 488	3 741	3 882
1970	2 374	2 403	5 395	21 842	6 176	2 407	3 428	2 309	3 210	3 155	1 464	773
1971	1 870	1 916	5 286	5 289	3 961	3 854	4 252	2 814	4 252	2 228	2 882	3 880
1972	2 374	2 403	2 927	2 440	3 042	4 284	2 773	2 309	4 033	3 108	2 000	588
1973	1 382	1 916	1 952	9 124	7 853	3 952	2 756	3 708	3 630	3 497	2 000	1 280
1974	2 374	6 453	7 336	12 702	3 781	9 482	6 789	4 082	4 302	2 407	3 952	4 017
1975	2 374	2 403	2 440	2 440	3 133	4 586	3 630	4 017	5 294	2 407	3 606	3 781
1976	2 374	3 277	2 440	2 440	2 347	2 309	622	764	3 714	2 147	589	538
1977	629	669	504	439	432	325	188	130	420	260	276	303
1978	380	504	504	1 415	5 080	5 808	4 403	3 220	4 822	2 885	2 440	3 025
1979	2 374	2 403	2 440	2 440	2 808	3 389	2 504	3 594	4 235	3 610	2 131	1 344
1980	1 870	2 403	2 440	17 321	12 917	3 285	2 656	2 814	4 756	2 228	2 086	3 781
1981	2 374	2 403	2 440	2 440	2 431	1 903	1 548	1 057	3 528	2 131	1 187	504
1982	520	2 907	14 621	8 246	15 071	7 172	14 167	9 579	6 050	2 885	3 952	4 252
1983	2 374	8 453	8 912	7 800	12 820	16 231	7 169	9 254	14 150	5 780	4 884	4 738
1984	2 374	15 310	14 832	6 749	5 561	2 407	3 243	2 309	4 437	3 610	2 000	1 311
1985	2 374	3 764	2 827	2 440	2 431	1 903	2 370	1 887	5 193	3 936	2 407	674
1986	1 285	504	504	1 854	33 023	10 506	2 370	2 814	4 336	2 228	2 000	3 889
1987	2 374	2 403	2 440	2 440	2 431	1 903	1 630	580	3 798	2 472	244	487
1988	834	908	504	439	2 017	1 889	1 126	927	2 841	716	244	2 202
1989	1 484	854	504	439	2 791	8 358	4 638	3 041	4 403	3 448	1 610	773
1990	1 670	1 916	1 952	1 952	1 945	1 513	2 202	764	[illegible]	[illegible]	[illegible]	[illegible]
1991	1 252	736	862	439	450	1 155	1 378	1 317	3 630	1 584	1 252	605
1992	1 788	2 437	1 952	1 891	1 391	1 108	1 887	878	3 385	1 803	244	269
1993	374	504	504	1 025	8 104	8 148	4 790	3 773	4 874	3 448	2 521	3 580
1994	2 374	2 403	2 440	2 440	2 431	2 114	674	593	3 176	2 407	342	269

Sacramento Basin 40-30-30 Index
American River at H Street bridge - CP # 64 D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

Year Typ	W	AN	BN	D	C
OCT	1,867	1,867	1,950	1,858	1,774
NOV	3,185	3,400	1,951	2,088	1,802
DEC	6,080	3,219	2,744	1,841	1,377
JAN	8,420	4,929	2,427	1,732	1,275
FEB	9,194	6,352	4,425	2,225	1,403
MAR	6,074	6,131	3,078	2,824	1,408
APR	5,912	4,334	3,481	2,120	1,748
MAY	5,552	3,576	2,872	1,758	836
JUN	5,912	4,506	4,049	4,481	3,280
JUL	3,013	3,106	3,384	3,540	1,346
AUG	3,186	2,238	2,133	1,911	411
SEP	3,542	2,108	1,445	943	778

A2-120

C-032460

C-032460

San Joaquin River at Vernalis

STUDY 1995C06F-SWRCB-519A DWRSIM recrc818-h, 03 Sep 97

CP # 682, SJR AT VERNALIS TOTAL FLOW DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-519A/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	2,082	1,781	2,883	2,862	7,022	5,407	5,940	4,554	7,243	1,870	1,822	1,748
1923	4,147	2,202	4,017	4,440	4,501	2,716	4,739	3,780	2,168	1,822	1,756	1,647
1924	3,186	1,479	1,594	1,496	1,721	1,789	1,849	1,545	1,378	1,334	716	1,082
1925	1,464	1,412	1,382	1,301	2,953	2,521	3,832	3,058	1,949	1,675	1,317	1,482
1926	1,708	1,482	1,464	1,334	2,773	1,870	3,193	2,374	1,684	1,236	781	1,227
1927	1,838	2,087	2,342	1,968	5,744	3,724	5,243	3,741	2,050	1,740	1,594	2,420
1928	4,521	1,889	2,456	2,391	2,764	4,212	4,823	2,927	1,748	1,496	1,025	1,344
1929	1,594	1,428	1,415	1,301	1,603	1,789	1,918	1,643	1,311	1,122	651	1,059
1930	1,447	1,277	1,187	1,317	1,683	2,017	2,033	1,675	1,344	1,171	732	1,180
1931	1,643	1,227	1,203	1,220	1,476	1,415	1,765	1,513	1,280	1,382	781	1,109
1932	1,529	1,361	3,220	3,643	8,414	4,684	4,958	3,334	1,933	1,675	1,382	1,563
1933	3,676	1,496	1,431	1,756	2,161	2,179	2,538	2,163	1,445	1,236	894	1,193
1934	1,480	1,294	1,334	1,350	2,539	1,724	1,865	1,545	1,277	1,171	732	1,180
1935	1,578	1,479	1,513	3,204	3,421	3,643	7,445	6,424	3,885	1,870	1,789	1,681
1936	3,307	1,630	1,724	2,563	12,856	5,904	7,178	4,716	2,807	1,789	1,756	1,864
1937	3,236	1,630	2,017	2,879	15,287	11,140	8,134	8,506	2,838	1,887	1,870	1,781
1938	3,334	1,882	5,286	7,188	22,708	31,177	17,259	23,777	15,192	3,448	1,887	2,470
1939	10,100	2,319	2,293	2,505	3,637	2,862	3,075	2,277	1,630	1,594	1,073	1,361
1940	1,789	1,563	1,545	4,277	8,258	10,571	5,882	4,505	2,080	1,805	1,854	1,786
1941	2,716	2,033	4,798	5,487	16,385	12,051	9,293	9,351	8,252	2,017	1,903	1,714
1942	7,351	2,437	5,334	9,173	10,371	5,920	6,100	5,546	6,319	2,198	1,919	1,933
1943	9,351	3,082	3,582	11,157	10,884	17,825	7,128	5,982	2,622	1,919	1,870	1,798
1944	5,237	2,017	2,147	2,228	3,564	3,204	3,714	2,982	1,885	1,858	1,317	1,580
1945	1,935	1,948	1,870	1,708	9,183	8,083	5,983	4,066	2,202	1,870	1,822	1,798
1946	4,198	2,674	7,270	6,706	6,212	4,391	4,336	3,578	2,017	1,789	1,808	1,781
1947	1,984	2,487	3,139	2,563	3,277	2,017	2,554	2,147	1,529	1,415	980	1,361
1948	1,610	1,395	1,317	1,155	1,289	1,838	3,731	3,155	2,017	1,675	1,464	1,529
1949	1,724	1,479	1,399	1,301	1,621	2,700	3,412	2,814	1,731	1,561	1,203	1,496
1950	1,740	1,479	1,399	1,691	2,773	2,391	3,378	2,683	1,714	1,529	1,171	1,445
1951	1,740	5,126	16,166	12,523	9,921	6,261	3,933	3,383	1,882	1,708	1,513	1,864
1952	2,033	1,748	2,781	7,563	7,980	12,376	10,050	16,361	11,848	2,716	1,854	2,050
1953	9,417	2,185	3,058	4,980	5,744	3,708	3,075	2,700	1,798	1,626	1,285	1,496
1954	1,756	1,513	1,513	1,626	2,866	2,570	4,302	2,879	1,798	1,594	1,268	1,496
1955	1,724	1,479	1,496	1,756	2,179	1,838	2,437	2,293	1,681	1,447	1,025	1,378
1956	1,740	1,528	11,988	24,525	15,264	6,538	4,000	5,887	7,630	2,033	1,805	1,781
1957	8,636	1,983	2,082	2,085	3,313	3,253	2,924	2,814	1,885	1,643	1,268	1,462
1958	1,870	1,613	1,594	1,838	4,806	11,921	14,117	14,361	13,276	2,017	1,903	1,966
1959	8,620	2,118	1,903	2,309	4,536	3,757	2,554	2,082	1,462	1,480	943	1,294
1960	1,578	1,361	1,269	1,252	1,966	2,000	2,168	1,805	1,528	1,464	878	1,294
1961	1,513	1,361	1,334	1,269	1,366	1,447	1,815	1,594	1,378	1,415	813	1,227
1962	1,545	1,328	1,252	1,203	6,194	4,586	4,437	2,830	1,881	1,480	982	1,412
1963	1,724	1,496	1,415	1,887	5,474	2,846	5,579	4,521	2,571	1,919	1,773	1,884
1964	3,204	2,218	1,919	2,033	2,312	2,277	2,470	2,163	1,496	1,285	911	1,244
1965	1,691	1,731	4,651	12,246	8,103	4,765	6,168	4,082	2,807	1,854	1,773	1,563
1966	4,619	3,546	4,944	5,058	6,086	3,806	3,008	2,586	1,647	1,529	1,080	1,385
1967	1,854	1,830	2,879	3,236	3,781	6,886	12,823	15,759	18,301	9,904	1,805	2,773
1968	9,547	2,087	2,196	2,261	4,088	2,911	2,638	2,163	1,583	1,545	976	1,326
1969	1,822	1,563	1,919	14,735	33,959	21,110	20,133	27,368	18,705	3,936	1,838	2,403
1970	9,579	2,584	3,594	17,044	9,507	7,497	4,318	3,578	1,889	1,724	1,546	1,714
1971	1,952	1,786	2,391	2,636	3,277	4,082	2,941	2,683	1,796	1,626	1,236	1,406
1972	1,724	1,496	2,537	2,244	2,312	2,017	2,336	1,984	1,385	1,301	927	1,210
1973	1,675	1,479	1,480	2,228	8,807	9,742	5,916	5,286	2,252	1,789	1,740	1,681
1974	3,448	3,025	4,261	9,140	7,076	8,506	6,873	5,204	2,487	1,854	1,805	1,765
1975	6,294	2,101	2,423	2,586	6,572	8,946	5,832	4,407	6,286	1,903	1,854	1,714
1976	5,486	2,319	2,228	1,789	2,417	1,806	1,889	1,610	1,328	1,350	732	1,176
1977	2,976	2,134	1,708	1,236	1,242	1,285	1,647	1,513	1,227	1,317	888	874
1978	1,382	1,328	1,496	3,513	7,480	11,124	15,175	11,189	7,025	2,618	1,822	2,554
1979	4,424	2,017	1,854	4,456	9,851	8,799	5,512	4,424	2,017	1,708	1,496	1,613
1980	3,008	1,781	1,964	16,085	24,026	14,637	5,932	6,392	6,186	3,513	1,724	2,437
1981	6,087	2,084	2,098	2,976	2,791	3,074	2,991	2,147	1,583	1,431	943	1,361
1982	1,822	1,881	2,086	9,989	20,617	15,389	27,141	14,986	10,886	3,041	1,838	4,101
1983	13,389	8,636	18,044	24,867	36,534	41,179	19,946	18,849	38,233	13,936	1,859	6,974
1984	12,181	13,582	21,500	15,190	9,718	6,083	3,933	3,316	1,916	1,805	1,805	1,815
1985	1,936	1,781	2,049	1,936	2,953	2,374	2,708	2,212	1,613	1,431	978	1,344
1986	1,822	1,887	1,708	1,919	28,053	26,493	9,025	7,872	7,583	1,822	1,789	1,765
1987	4,570	2,101	1,919	1,561	2,125	2,017	2,017	1,691	1,412	1,415	882	1,294
1988	1,513	1,311	1,203	1,155	1,200	1,382	1,815	1,594	1,311	1,334	764	1,143
1989	1,464	1,210	1,269	1,236	1,332	1,724	1,998	1,626	1,328	1,382	797	1,193
1990	1,464	1,260	1,220	1,203	1,366	1,480	1,832	1,513	1,244	1,269	764	1,143
1991	1,431	1,227	1,171	1,073	1,082	2,458	2,353	1,822	1,386	1,269	683	1,082
1992	1,496	1,479	1,203	1,200	2,469	2,147	2,235	1,691	1,462	1,529	927	1,277
1993	1,740	1,580	1,643	6,196	2,845	3,009	3,684	4,928	5,042	1,935	1,887	1,882
1994	4,456	1,882	1,545	1,447	2,053	1,643	1,832	1,724	1,847	1,545	927	1,277

San Joaquin Basin 60-20-20 Index

San Joaquin River at Vernalis - CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	3,598	3,083	3,885	4,753	2,330
NOV	2,225	2,954	1,833	1,910	1,522
DEC	4,206	4,985	2,112	2,048	1,425
JAN	8,858	5,849	2,301	2,151	1,319
FEB	14,468	7,948	3,519	3,000	1,728
MAR	13,824	6,067	3,239	2,471	1,757
APR	10,737	5,354	3,631	2,681	1,938
MAY	10,798	4,190	2,843	2,182	1,631
JUN	9,915	2,259	1,801	1,549	1,364
JUL	3,321	1,787	1,591	1,400	1,342
AUG	1,831	1,686	1,220	946	779
SEP	2,359	1,746	1,488	1,300	1,161

Stanislaus River from Goodwin Dam downstream to confluence with San Joaquin River

STUDY 1995C06F-SWRCB-519A DWRSIM recrc818-h, 03 Sep 97

CP # 675 STANISLAUS RIVER AT MOUTH, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-519A/675/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	520	420	456	423	774	472	1,059	1,008	504	797	829	420
1923	520	464	618	472	488	472	1,059	1,008	571	846	878	420
1924	488	387	374	325	330	407	790	781	975	927	309	336
1925	455	370	374	342	630	439	982	943	807	911	602	387
1926	488	403	390	342	488	439	982	943	958	927	439	387
1927	520	471	407	407	866	472	1,059	1,008	723	878	784	420
1928	488	403	407	358	400	439	982	943	941	960	439	387
1929	488	387	374	342	378	423	807	829	975	894	374	370
1930	472	353	342	309	380	423	840	846	975	911	390	387
1931	488	353	342	325	342	407	790	764	958	943	342	353
1932	488	403	407	439	574	472	1,042	1,008	823	911	634	420
1933	488	387	374	374	380	439	975	927	992	927	407	387
1934	488	370	407	374	414	423	874	943	958	764	325	370
1935	504	403	407	472	396	472	1,059	1,008	504	797	862	420
1936	520	420	407	472	1,080	472	1,089	1,008	504	862	678	420
1937	520	420	423	423	738	472	1,089	1,008	504	781	813	420
1938	520	437	472	423	954	618	1,059	1,008	3,983	358	797	420
1939	5,253	639	748	813	848	439	975	927	975	943	407	373
1940	504	403	407	520	566	472	1,059	1,008	723	846	813	420
1941	890	888	1,156	1,386	2,071	1,057	1,059	1,008	504	651	764	420
1942	2,927	656	1,301	1,968	1,945	472	1,059	1,008	1,244	407	781	420
1943	5,090	1,008	1,073	2,960	2,449	3,513	1,059	1,008	504	764	813	420
1944	2,342	656	667	634	834	439	975	927	874	911	537	387
1945	520	471	438	390	830	472	1,059	1,008	521	797	846	420
1946	890	1,042	1,918	1,545	1,531	472	1,059	1,008	738	862	764	420
1947	488	598	846	748	1,008	439	982	943	982	960	390	387
1948	488	370	374	342	348	439	982	943	756	911	667	387
1949	488	387	390	342	376	439	975	927	941	943	488	387
1950	488	403	374	439	488	439	975	927	941	943	423	387
1951	520	639	5,822	2,179	2,215	1,025	1,042	1,008	874	894	618	420
1952	520	437	537	1,578	2,121	1,486	1,059	2,114	4,386	520	813	437
1953	5,107	723	960	1,496	1,280	439	975	927	908	927	488	387
1954	488	403	390	537	1,026	504	975	927	908	943	472	387
1955	488	403	423	455	756	439	982	943	958	960	407	387
1956	520	403	829	3,643	2,573	927	1,059	1,008	805	651	846	420
1957	4,375	756	781	813	1,280	455	975	927	874	327	520	387
1958	520	437	423	439	1,208	1,822	1,059	2,391	3,647	651	781	420
1959	4,310	773	748	943	1,513	439	975	927	982	960	390	387
1960	488	353	342	325	400	423	823	862	982	911	342	387
1961	488	353	342	309	324	423	807	797	975	927	325	353
1962	472	370	358	342	612	439	975	927	958	960	407	387
1963	520	437	423	423	504	472	1,059	1,008	504	764	862	420
1964	488	420	390	407	348	439	982	943	982	943	407	387
1965	520	420	732	634	432	472	1,059	1,008	504	813	862	420
1966	488	420	423	439	1,134	439	975	927	975	943	407	387
1967	520	437	504	569	450	732	1,059	1,008	5,008	1,626	846	487
1968	5,204	756	784	878	1,652	439	982	943	982	943	390	387
1969	520	420	455	423	3,925	1,919	1,059	3,594	3,815	358	829	420
1970	4,748	823	1,431	5,025	2,737	1,171	1,059	1,008	867	894	634	420
1971	488	437	553	678	1,360	439	975	927	924	927	488	387
1972	488	420	1,317	1,106	974	439	975	927	975	943	407	387
1973	520	420	423	618	1,360	1,122	1,059	1,008	504	862	878	420
1974	520	982	1,773	2,342	1,945	1,773	1,059	1,008	504	813	894	420
1975	3,269	823	927	943	1,747	1,236	1,059	1,008	504	813	878	420
1976	1,870	941	846	651	852	423	807	813	975	927	325	353
1977	472	363	342	325	324	407	756	748	941	527	293	319
1978	472	403	407	585	558	472	1,059	1,008	504	358	846	420
1979	520	437	423	472	630	472	1,059	1,008	756	894	716	420
1980	520	437	439	4,017	4,903	1,073	1,059	1,008	504	358	894	420
1981	3,789	723	878	1,269	756	439	982	943	982	960	390	387
1982	520	420	455	651	6,368	1,155	1,986	1,041	2,420	358	813	739
1983	6,131	2,739	3,123	4,310	4,934	5,582	1,058	1,008	6,665	2,879	927	1,583
1984	5,708	3,512	4,879	2,787	2,588	1,447	1,042	1,008	840	846	683	420
1985	488	403	867	784	1,224	439	982	943	975	960	390	387
1986	520	454	423	374	5,980	5,009	1,089	1,008	504	846	862	420
1987	1,610	823	797	488	684	423	807	846	975	894	325	370
1988	472	363	342	309	348	407	790	797	958	911	309	334
1989	455	363	342	325	342	423	840	829	975	960	358	387
1990	488	353	374	358	396	423	807	781	941	927	390	370
1991	472	353	342	309	324	423	807	846	975	911	325	370
1992	472	363	342	325	504	423	807	846	982	878	325	353
1993	520	437	423	374	612	472	1,059	1,008	504	748	829	420
1994	472	370	358	325	324	423	867	846	975	862	325	370

San Joaquin Basin 60-20-20 Index.

Stanislaus River from Goodwin Dam to the San Joaquin River confluence - CP # 675 - STANISLAUS RIVER AT MOUTH

Month	W	AN	BN	D	C
OCT	1,284	1,201	1,347	1,987	836
NOV	644	738	475	538	425
DEC	816	1,315	504	666	413
JAN	1,422	1,159	590	736	358
FEB	2,318	1,134	810	802	415
MAR	1,836	877	446	439	419
APR	1,104	1,088	979	985	813
MAY	1,284	1,008	931	937	823
JUN	1,895	675	900	961	989
JUL	777	854	934	948	905
AUG	836	774	495	402	336
SEP	487	420	387	385	361

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C-032461

C-032461

Tuolumne River from La Grange Dam downstream to the confluence with the San Joaquin River
STUDY 1995C05F-SWRCB-519A DWRSIM record618-h 03 Sep 97
CP # 665 TUOLUMNE R MOUTH DOWNSTREAM FLOW (TAF)

CP665def = CP761dv + Adj Tuolumne River Flow at AFRP Node

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	651	571	667	634	954	764	1462	1334	538	504	520	521
1923	588	504	602	602	584	520	1445	1252	467	455	438	437
1924	504	437	438	423	435	423	336	325	134	130	130	151
1925	276	303	309	293	450	342	840	748	269	260	260	252
1926	342	336	325	309	378	325	689	553	185	179	179	185
1927	309	367	374	358	630	439	1412	1236	454	455	439	437
1928	537	504	468	468	522	1724	1982	716	235	228	244	235
1929	325	319	309	309	324	309	353	325	134	130	130	151
1930	228	269	260	276	324	308	353	342	134	130	146	151
1931	228	269	260	260	288	260	353	342	134	146	146	151
1932	293	336	520	455	817	407	1344	1252	454	455	439	437
1933	520	454	439	455	468	472	588	589	185	163	179	185
1934	260	269	276	276	324	276	353	325	134	130	130	151
1935	293	336	342	504	450	468	1580	1285	467	472	438	437
1936	588	504	504	520	1130	618	1949	1252	1412	455	438	437
1937	651	571	585	585	3367	4294	2236	1334	874	520	520	521
1938	651	571	911	2944	7797	8050	4101	5839	4117	1708	520	874
1939	1171	454	455	634	1094	829	807	553	185	163	179	185
1940	325	336	342	585	1182	5318	2118	1252	454	439	438	437
1941	651	571	883	883	5420	4785	3075	1360	2564	537	520	521
1942	1025	588	878	3806	4285	2992	2655	2065	1587	911	537	538
1943	880	588	982	3708	4411	6115	2353	1334	1143	520	520	521
1944	537	471	472	455	522	589	790	732	252	244	244	235
1945	380	403	380	374	2251	3334	1580	1236	471	439	423	437
1946	588	504	2586	3388	2663	2440	1529	1236	454	455	439	437
1947	520	471	488	439	486	439	588	537	185	163	163	185
1948	293	303	293	293	313	342	881	748	269	260	260	252
1949	358	353	342	342	360	439	773	716	235	228	228	235
1950	358	353	342	374	450	358	881	797	235	244	244	235
1951	380	605	1691	4033	3671	3074	1311	1236	454	455	439	437
1952	651	571	667	894	1182	4785	4101	2553	4487	1578	520	823
1953	927	471	504	1108	2719	2000	941	813	252	244	244	235
1954	358	353	342	342	398	407	1630	732	235	244	244	235
1955	342	336	325	342	342	325	605	585	202	179	179	185
1956	380	403	1187	7985	4346	3025	1513	1350	4302	781	520	622
1957	1008	471	472	455	504	1594	773	748	269	244	244	235
1958	472	454	455	472	1298	5188	5344	2749	4840	618	537	857
1959	927	454	439	439	734	2085	571	537	185	163	163	185
1960	260	269	260	260	330	293	370	358	134	130	146	151
1961	228	269	276	260	288	260	353	342	134	146	146	151
1962	293	303	293	293	738	423	773	748	218	228	228	235
1963	380	387	374	423	540	423	1513	1301	487	472	455	437
1964	520	487	455	455	800	878	588	553	185	163	163	185
1965	380	437	802	5692	3997	2602	2739	1534	538	520	520	521
1966	882	1260	2456	2553	2971	1984	840	797	235	228	228	235
1967	455	454	589	520	540	2651	4285	1464	5092	4521	520	1042
1968	943	454	455	439	695	1301	672	537	185	163	163	185
1969	380	403	438	4277	7400	5042	4857	6749	7482	1986	520	891
1970	1285	504	764	9050	3745	3432	1311	1236	454	439	423	437
1971	537	471	520	468	648	2505	857	813	252	244	244	235
1972	342	336	342	325	330	699	571	553	185	163	163	185
1973	309	336	342	360	1026	3836	1378	1236	454	439	423	437
1974	651	588	602	3360	2935	3757	2805	1317	521	520	520	521
1975	651	571	589	589	774	4131	1630	1350	2989	504	504	521
1976	667	437	439	423	539	423	353	342	134	130	146	151
1977	380	269	260	260	288	260	353	342	134	146	146	151
1978	358	403	423	585	846	732	1746	1389	538	520	520	521
1979	588	504	504	646	4375	3985	1546	1252	595	439	423	437
1980	651	588	589	5058	7736	4131	2151	1317	3462	2440	520	992
1981	1008	454	455	472	468	1236	841	553	185	163	163	185
1982	380	420	423	4733	7220	5862	7831	3285	4420	2085	520	2151
1983	3318	2773	4983	6050	7899	9980	3983	1447	11159	7058	520	3479
1984	1480	4773	6684	4131	3642	2879	1378	1269	454	455	439	437
1985	520	471	455	439	488	618	605	553	185	179	179	185
1986	380	420	423	407	8320	7335	1798	1626	4571	504	504	521
1987	504	437	423	423	450	439	353	342	134	130	146	151
1988	228	269	260	260	276	260	353	342	134	130	146	151
1989	228	269	276	260	288	293	370	342	134	146	146	151
1990	228	269	260	260	288	276	353	325	134	130	130	151
1991	228	269	260	260	288	360	370	325	151	130	130	151
1992	228	269	260	260	342	293	353	325	151	146	130	151
1993	358	403	407	781	612	589	1428	1301	538	504	504	521
1994	520	437	438	423	450	407	353	342	151	130	130	151

San Joaquin Basin 60-20-20 Index
Tuolumne River from LaGrange Dam to the SJR confluence - CP # 665 TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	705	553	526	651	328
NOV	818	744	468	428	314
DEC	846	1,144	589	421	310
JAN	2,688	1,619	623	432	308
FEB	3,957	1,951	883	572	348
MAR	4,326	2,228	1,057	635	323
APR	3,095	1,528	980	657	355
MAY	2,125	1,252	756	553	336
JUN	3,272	538	246	186	138
JUL	1,440	452	241	167	135
AUG	520	436	243	170	139
SEP	874	437	236	185	151

Merced River from Crocker Huffman Diversion downstream to confluence with San Joaquin River
STUDY 1995C05F-SWRCB-519A DWRSIM record618-h 03 Sep 97
CP # 649, MERCED R MOUTH DOWNSTREAM FLOW (CFS)

CP649def = CP762dv + Adj Merced River Flow at AFRP Node

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	130	151	228	211	414	276	101	81	2403	33	33	50
1923	2423	353	1106	1220	1098	163	185	130	34	33	33	34
1924	1480	151	211	195	313	146	252	244	118	211	163	118
1925	114	151	146	130	270	195	286	260	34	33	33	67
1926	130	151	163	163	960	146	101	65	17	33	16	101
1927	374	218	468	195	1098	228	202	163	34	33	33	1008
1928	3041	134	802	553	608	244	303	276	34	33	33	34
1929	49	168	163	146	144	163	185	163	17	16	16	17
1930	114	151	130	146	144	195	151	146	17	16	16	17
1931	276	84	130	146	288	146	269	260	34	211	163	118
1932	146	134	276	228	1304	195	303	293	134	33	65	118
1933	2000	151	146	276	414	179	218	211	17	33	195	118
1934	130	134	146	130	792	146	84	81	34	211	163	134
1935	130	151	146	260	234	228	1193	1415	1306	33	114	134
1936	1626	202	228	748	4603	309	471	1041	34	33	81	118
1937	1431	151	407	520	4495	927	134	2198	319	33	148	134
1938	1464	151	2423	1269	4736	4603	639	3367	4463	130	33	605
1939	2911	336	358	358	576	179	118	98	34	211	195	84
1940	130	134	146	325	2382	1122	84	629	34	33	179	134
1941	553	151	1594	1350	2871	1317	185	2049	2067	33	33	67
1942	2883	336	1415	1561	1803	211	101	634	2398	33	33	185
1943	2693	672	732	2468	1783	2700	454	662	34	33	65	67
1944	1578	168	260	407	921	244	338	325	34	33	98	134
1945	179	168	163	146	3513	618	101	81	252	33	33	101
1946	2244	756	1808	978	738	195	269	260	34	33	179	134
1947	195	639	829	585	608	146	252	228	34	98	195	134
1948	114	134	130	114	122	179	235	163	34	33	130	134
1949	130	151	146	146	144	244	303	276	34	33	179	134
1950	146	151	146	163	216	179	303	308	34	33	195	134
1951	130	1529	4570	1626	1404	211	303	276	34	33	179	134
1952	130	151	228	1203	1252	1369	252	3432	2185	33	33	252
1953	2716	151	618	1073	558	163	303	293	34	33	163	134
1954	130	151	163	146	180	211	303	293	34	33	195	134
1955	146	151	146	179	182	146	84	81	17	33	195	134
1956	130	134	2927	3871	1495	146	84	618	1882	33	33	67
1957	2716	218	244	293	828	195	303	293	34	33	146	134
1958	130	151	163	179	380	1480	1277	2805	2000	33	33	34
1959	2732	151	146	360	1080	146	286	276	34	211	195	84
1960	114	151	130	130	156	163	67	65	34	211	195	134
1961	130	151	146	130	128	146	218	211	34	211	163	118
1962	146	134	130	130	486	244	303	276	34	33	98	134
1963	130	151	146	179	2323	179	202	96	34	33	49	118
1964	1486	639	407	520	489	146	218	211	17	49	195	101
1965	130	151	1301	3058	1188	163	168	81	822	33	33	50
1966	2732	1210	813	829	738	179	336	325	34	81	163	84
1967	130	151	244	228	414	1464	655	2163	4218	1564	33	723
1968	2749	134	293	309	887	163	218	211	34	211	163	84
1969	163	134	163	3363	4357	1480	1280	5367	3866	179	33	538
1970	2927	420	887	2663	1314	455	303	276	34	33	130	118
1971	130	168	195	163	198	163	319	308	34	33	114	118
1972	163	151	163	163	156	146	286	260	17	81	179	17
1973	114	134	146	179	2467	651	101	1269	403	33	33	84
1974	1594	1042	1138	1724	758	829	185	829	437	33	49	101
1975	1675	151	325	486	2251	646	118	81	2134	33	114	34
1976	2326	370	309	146	365	146	202	195	34	211	130	134
1977	228	151	179	130	106	130	286	276	34	211	195	101
1978	114	101	146	260	432	358	303	163	3949	486	33	1277
1979	2814	336	293	1708	2125	1008	101	634	34	33	65	84
1980	1203	218	380	4486	4572	1334	84	407	1849	65	33	588
1981	2732	151	163	455	612	179	134	130	34	81	114	101
1982	114	151	486	2440	3745	1773	4285	2960	1479	33	33	739
1983	3363	1681	2521	3363	4321	5361	118	2602	7663	3446	33	1781
1984	3025	1966	3464	1675	1486	226	286	293	34	33	179	118
1985	130	168	163	146	324	179	185	179	17	49	146	134
1986	163	151	146	423	6932	3432	84	1060	958	33	33	101
1987	1854	151	146	146	252	163	134	148	34	211	163	134
1988	114	151	130	130	104	163	218	211	17	211	163	101
1989	163	84	146	130	126	163	168	179	34	211	163	118
1990	130	134	130	130	126	146	252	244	34	195	163	134
1991	130	134	130	114	108	228	67	65	34	195	163	134
1992	130	134	130	114	181	163	151	130	34	195	163	134
1993	130	134	146	423	234	1252	84	2147	1647	211	163	134
1994	2636	151	163	163	522	146	118	114	34	211	163	134

San Joaquin Basin 60-20-20 Index
Merced River Crocker-Huffman Diversion to San Joaquin River confluence - CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	907	1,171	1,141	1,399	625
NOV	308	475	244	257	153
DEC	856	975	300	271	158
JAN	1,647	868	348	322	139
FEB	2,414	1,888	439	591	242
MAR	1,567	414	203	180	180
APR	529	293	303	191	178
MAY	1,701	504	283	177	171
JUN	2,333	180	34	24	34
JUL	327	33	37	98	184
AUG	51	96	129	163	146
SEP	376	174	115	98	111

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San Joaquin River at Stevinson upstream of Merced River confluence

STUDY 1995C08F-SWRCB-519A *DWRSIM nsro618-h 03 Sep 97*

CP # 664 SJR NON-PROJECT DIVERSION, DOWNSTREAM FLOW (CFS)

Project : 1995C08F-SWRCB-519A\664\FLOW-DOWNSTREAM\/1MONVOUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	616	454	732	651	2 467	1 285	790	980	3 815	472	472	689
1923	634	807	1 025	1 008	828	716	908	537	538	455	455	672
1924	537	370	325	276	365	537	303	309	336	309	309	487
1925	439	353	276	260	774	667	639	455	454	407	390	621
1926	553	387	542	293	504	553	689	356	370	342	342	555
1927	504	536	407	342	1 693	846	786	439	437	390	374	605
1928	520	504	390	407	574	864	555	356	387	354	358	588
1929	520	353	309	260	396	553	303	325	318	293	293	504
1930	456	319	244	293	414	616	336	309	353	342	342	555
1931	488	336	244	244	306	455	289	276	303	276	276	471
1932	439	303	927	764	2.173	716	403	374	370	325	325	538
1933	472	319	228	309	396	589	319	325	303	276	276	487
1934	455	303	260	244	468	486	303	293	319	309	309	504
1935	488	370	309	846	648	982	1 277	585	437	358	358	588
1936	537	370	325	423	3 306	960	773	472	471	390	390	605
1937	537	387	358	1 090	4 754	1 626	1 143	2 846	471	407	380	622
1938	602	639	1 460	1.998	7 202	12.572	5 109	12 116	2.723	1 008	458	672
1939	613	623	423	390	630	797	538	455	487	455	455	689
1940	634	454	380	1.480	1 625	1 187	706	553	521	472	472	689
1941	634	471	797	1 008	3 835	1 675	1 328	3 074	2.536	537	504	723
1942	764	623	1 090	1.008	1.278	1 073	857	716	605	537	488	723
1943	667	874	472	1.658	1 082	3 773	790	1 626	571	488	488	706
1944	683	555	472	455	765	1 025	605	553	571	520	520	739
1945	683	605	488	439	1 909	1 431	840	618	622	537	537	756
1946	651	521	683	472	630	846	706	520	536	488	488	706
1947	585	504	472	342	540	802	437	423	454	423	423	639
1948	553	387	309	293	348	602	739	455	454	407	407	622
1949	553	387	309	293	432	874	471	407	437	407	390	622
1950	583	387	309	390	738	585	467	360	403	390	374	605
1951	537	1 143	2.944	3.041	792	784	454	439	403	380	380	605
1952	589	403	683	1.805	981	2.098	2 168	7.804	504	455	423	655
1953	716	756	589	732	522	618	471	455	467	439	423	655
1954	585	420	374	358	872	873	555	455	437	423	423	639
1955	589	403	342	407	468	602	454	488	437	407	407	622
1956	589	403	4 407	5.671	3.480	1 203	605	2 618	706	439	423	655
1957	583	454	358	293	486	667	403	504	454	390	390	622
1958	589	403	358	423	918	1 788	2.252	3.269	1 546	472	439	655
1959	716	706	342	342	738	589	403	407	420	407	407	622
1960	553	387	309	293	558	602	437	423	403	390	390	605
1961	504	370	293	244	342	486	336	325	370	358	342	571
1962	504	336	260	244	2.359	911	437	360	387	358	358	571
1963	504	336	260	439	800	683	1 042	602	536	374	342	571
1964	504	454	293	293	400	537	387	374	370	342	342	555
1965	520	454	1 008	1 460	576	651	975	520	454	390	374	605
1966	589	605	553	504	594	634	420	407	420	407	407	622
1967	585	420	781	716	1.134	1 236	3 865	9.059	2.218	2 179	455	672
1968	689	689	590	342	522	634	420	407	437	407	407	622
1969	602	454	504	4.733	14.621	6 278	10 621	12.087	4.033	1 584	472	689
1970	651	790	423	3.513	810	1 073	521	472	471	439	439	672
1971	602	471	585	472	558	634	454	472	504	439	439	655
1972	583	387	390	325	452	537	387	374	405	390	390	605
1973	589	403	358	537	1.945	1 447	723	504	689	423	423	655
1974	589	437	472	1.362	648	1 155	1 082	504	487	439	407	655
1975	602	437	390	358	1.082	1 289	906	602	521	439	407	672
1976	589	437	358	308	400	589	353	325	370	342	342	538
1977	1 025	370	276	276	306	423	235	260	252	226	244	303
1978	283	252	283	862	2.575	6 717	8 756	6.310	471	976	423	639
1979	589	738	358	911	1.242	1.301	689	472	420	390	390	605
1980	537	403	325	2.586	6.033	6.440	706	3.369	437	683	380	605
1981	589	706	358	423	504	716	454	360	437	407	407	622
1982	634	504	472	1.252	1.818	1 952	10 888	5.708	1.277	504	504	723
1983	829	1.781	8.262	9.756	17.070	16.364	9 986	12 246	14 318	976	504	571
1984	2.277	3.933	6.326	6.326	800	797	538	504	521	504	504	723
1985	585	487	407	325	558	689	471	423	471	423	423	639
1986	634	504	439	407	8.175	6 522	3 311	3.757	1.986	472	472	689
1987	553	585	309	309	450	634	403	360	420	407	407	622
1988	520	353	276	260	313	472	336	293	319	309	309	504
1989	485	319	260	228	306	553	303	293	336	309	309	521
1990	472	319	228	228	324	472	286	276	303	293	293	504
1991	439	260	211	179	180	797	319	276	303	260	260	454
1992	520	585	244	244	730	585	420	407	454	504	439	588
1993	616	454	423	2.374	936	439	437	589	2.773	504	472	739
1994	602	672	309	276	504	520	387	455	504	472	439	588

San Joaquin Basin 60-20-20 Index

San Joaquin River at Stevinson - CP # 664, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	586	681	589	602	542
NOV	546	608	456	533	384
DEC	1,187	1,067	397	382	279
JAN	2,076	1,467	389	344	280
FEB	4,031	1,385	729	519	386
MAR	4,007	963	744	619	548
APR	3,318	738	520	451	333
MAY	4,484	506	442	402	327
JUN	2,122	486	450	417	354
JUL	689	424	412	389	337
AUG	448	421	407	388	331
SEP	886	642	630	605	520

A2-123

STUDY: 1995C06F-SWRCE DWRSIM: recirc818-h, 03 Sep 97

CP # 4, CVP SHASTA LAKE [illegible] STORAGE (MAF)

Project: /1995C06F-SWRCB-519A/4/STORAGE-EOP//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP*
1922	2.81	2.89	2.84	2.9	3.3	3.74	4.35	4.55	4.4	4	3.56	3.42
1923	3.37	3.25	3.29	3.4	3.33	3.35	3.64	3.52	3.2	2.8	2.38	2.35
1924	2.36	2.36	2.38	2.4	2.35	2.34	2.33	2.09	1.8	1.4	1.19	1.03
1925	1.07	1.22	1.34	1.5	2.75	2.87	3.62	3.91	3.5	3.2	2.85	2.78
1926	2.75	2.74	2.71	2.7	3.33	3.38	3.73	3.58	3	2.5	2.14	2.02
1927	2	2.5	3.03	3.6	3.46	4.14	4.55	4.55	4.3	3.8	3.43	3.31
1928	3.26	3.28	3.32	3.5	3.91	3.97	4.53	4.44	3.9	3.2	2.72	2.58
1929	2.55	2.59	2.62	2.7	2.82	2.86	2.96	2.88	2.7	2.4	2.08	1.95
1930	1.91	1.91	2.46	2.7	3.06	3.55	3.83	3.8	3.3	2.9	2.53	2.46
1931	2.43	2.41	2.37	2.4	2.47	2.62	2.46	2.28	2.1	1.8	1.6	1.42
1932	1.35	1.34	1.55	1.7	1.85	2.28	2.34	2.49	2.4	2.1	1.86	1.75
1933	1.72	1.73	1.74	1.8	1.82	2.41	2.5	2.58	2.5	2.2	1.98	1.87
1934	1.85	1.83	1.98	2.3	2.63	2.85	2.84	2.73	2.5	2	1.55	1.37
1935	1.31	1.46	1.62	1.8	2.18	[illegible]	3.61	3.8	3.6	3.2	2.88	2.75
1936	2.87	2.8	2.63	3.1	3.59	[illegible]	4.14	4.08	3.9	3.4	2.91	2.79
1937	2.89	2.6	2.5	2.4	2.43	[illegible]	3.69	3.91	3.8	3.3	2.9	2.74
1938	2.87	3.18	3.31	3.7	3.56	[illegible]	4.06	4.55	4.6	4.3	3.95	3.70
1939	3.4	3.25	3.33	3.4	3.4	[illegible]	3.64	3.37	2.8	2.2	1.88	1.61
1940	1.55	1.47	1.61	2.5	3.25	3.44	4.34	4.47	4.2	3.6	3.22	3.16
1941	3.13	3.12	3.29	3.3	3.42	3.94	4.46	4.55	4.6	4.3	4	3.70
1942	3.4	3.25	3.32	3.4	3.62	[illegible]	4.55	4.55	4.6	4.3	3.95	3.70
1943	3.4	3.25	3.36	3.5	3.66	[illegible]	4.55	4.55	4.3	3.9	3.61	3.38
1944	3.35	3.25	3.2	3.2	3.39	3.63	3.75	3.73	3.2	2.7	2.26	2.13
1945	2.17	2.39	2.71	2.9	[illegible]	[illegible]	4.4	4.55	4.4	3.8	3.34	3.22
1946	3.2	3.26	3.27	3.6	3.77	[illegible]	4.42	4.48	4.1	3.8	3.21	3.11
1947	3.04	3.05	3.06	3	3.14	[illegible]	3.77	3.51	3.1	2.6	2.23	2.07
1948	2.2	2.26	2.31	2.9	2.86	[illegible]	4.15	4.55	4.5	4.1	3.63	3.62
1949	3.4	3.25	3.22	3.1	3.23	4.07	4.44	4.5	3.9	3.4	2.96	2.86
1950	2.78	2.73	2.67	2.9	3.21	[illegible]	4.01	3.96	3.6	3.1	2.76	2.70
1951	2.99	3.25	3.32	3.6	[illegible]	[illegible]	4.38	4.55	4.1	3.5	3.11	3.07
1952	3.02	3.13	3.31	3.6	3.74	4.02	4.29	4.55	4.6	4.3	3.95	3.70
1953	3.4	3.25	3.35	3.4	[illegible]	4.1	4.51	4.55	4.6	4.3	3.95	3.70
1954	[illegible]	3.25	3.35	3.6	[illegible]	[illegible]	4.55	4.47	4.2	3.7	3.31	3.28
1955	[illegible]	3.26	3.36	3.4	[illegible]	3.45	3.78	4	3.5	2.9	2.51	2.51
1956	[illegible]	2.57	3.25	3.3	3.29	4.01	4.55	4.55	4.6	4.3	4	3.70
1957	[illegible]	3.25	3.23	3.3	3.58	[illegible]	4.2	4.55	4.3	3.8	3.43	3.47
1958	[illegible]	3.25	3.34	3.5	4.55	3.42	4.17	4.55	4.6	4.3	4	3.70
1959	[illegible]	3.25	3.26	3.6	3.78	4.08	4.15	4.14	3.8	3	2.69	2.68
1960	2.63	2.58	2.54	2.7	[illegible]	4.06	4.27	4.5	4	3.4	2.99	2.91
1961	2.82	2.88	3.26	3.4	3.91	4.28	4.49	4.55	4	3.4	2.93	2.86
1962	2.78	2.87	3.14	3.2	3.58	4.08	4.37	4.43	4	3.5	3.04	2.98
1963	3.38	3.25	3.35	3.5	3.94	4.23	4.14	4.55	4.4	4.3	3.76	3.70
1964	3.4	3.25	3.28	3.6	3.65	3.82	3.49	3.37	3	2.5	2.08	2.07
1965	2.05	2.24	3.25	3.4	3.82	4.15	4.5	4.51	4.2	3.8	3.55	3.51
1966	3.4	3.25	3.34	3.7	4.04	4.23	4.54	4.5	3.9	3.3	3.06	2.98
1967	2.87	3.18	3.34	3.6	3.92	4.03	4.48	4.55	4.6	4.3	3.99	3.70
1968	3.4	3.25	3.3	3.4	3.65	4.19	4.15	4.21	3.7	3.2	2.94	2.93
1969	2.94	2.98	3.25	3.4	3.48	4.03	4.43	4.55	4.6	4.3	4	3.70
1970	3.4	3.25	3.32	3.3	3.43	4.14	4.12	4.12	3.8	3.3	2.96	2.91
1971	2.93	3.26	3.32	3.5	3.82	3.87	4.3	4.55	4.6	4.3	4	3.70
1972	3.4	3.25	3.36	3.6	3.93	4.25	4.48	4.53	4	3.4	3.1	3.11
1973	3.15	3.25	3.35	3.6	3.64	4.16	4.5	4.55	4.3	3.8	3.56	3.52
1974	3.4	3.25	3.27	3.3	3.69	3.44	4.29	4.55	4.5	4.3	4	3.70
1975	3.4	3.25	3.35	3.4	3.94	3.76	4.39	4.55	4.6	4.3	4	3.70
1976	3.4	3.25	3.27	3.3	3.14	3.26	3.41	3.36	2.8	2.3	2.24	2.27
1977	2.3	2.32	2.32	2.4	2.18	[illegible]	1.87	1.77	1.4	1.2	1	0.97
1978	0.87	0.85	1.34	3.3	3.57	4	4.55	4.55	4.6	4.2	3.92	3.70
1979	3.4	3.25	3.21	3.3	3.52	[illegible]	4.15	4.4	4	3.5	3.19	3.13
1980	3.13	3.2	3.26	3.5	3.29	[illegible]	4.53	4.46	4.2	3.9	3.65	3.66
1981	3.4	3.25	3.32	3.5	3.86	[illegible]	4.39	4.33	3.7	3.1	2.72	2.69
1982	2.69	3.25	3.28	3.6	3.53	3.95	4.09	4.55	4.6	4.3	4	3.70
1983	3.4	3.25	3.33	3.4	[illegible]	[illegible]	4.07	4.55	4.6	4.3	4	3.70
1984	3.4	3.26	3.29	3.7	4.01	[illegible]	4.39	4.54	4.3	3.8	3.66	3.69
1985	3.4	3.25	3.36	3.4	[illegible]	[illegible]	3.86	3.83	3	2.6	2.18	2.21
1986	2.25	2.32	2.54	3.1	3.25	3.53	4.01	4.08	3.8	3.4	3.02	3.10
1987	3.1	3.08	3.06	3.1	[illegible]	[illegible]	3.87	3.74	3	2.4	1.88	1.84
1988	1.77	1.8	2.36	2.8	[illegible]	2.98	3.03	3.04	2.8	2.1	1.79	1.75
1989	1.75	1.96	2.1	2.2	[illegible]	3.75	4.3	4.2	3.7	3.2	2.96	2.99
1990	3.05	3.02	2.94	3.1	3.1	3.27	3.02	3.18	2.8	2.4	2.12	2.06
1991	[illegible]	1.96	1.94	2	[illegible]	2.35	2.55	2.55	2.4	2.1	1.88	1.76
1992	[illegible]	1.73	1.74	1.8	[illegible]	[illegible]	[illegible]	[illegible]	2.6	2.4	2.18	2.07
1993	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.5	4.2	3.96	3.95
1994	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.8	2.5	1.94	1.89

* EOM September storage used as October 1st of following year

Shading [illegible] "disregard"

Year	Oct 1st Storage	AFRP Vol III Recommended Keswick Release
1925	1.029	3250
1927	2.017	3250
1930	1.953	3250
1932	1.42	3250
1933	1.746	3250
1934	1.866	3250
1935	1.374	3250
1940	1.614	3250
1945	2.132	3250
1948	2.07	3250
1965	2.068	3250
1978	0.968	3250
1988	1.842	3250
1989	1.749	3250
1991	2.063	3250
1992	1.764	3250
1993	2.07	3250
1977	2.267	3500
1986	2.209	3500
1924	2.353	3750
1931	2.463	4000
1929	2.579	4250
1956	2.508	4250
1960	2.675	4500
1982	2.685	4500
1926	2.777	4750
1936	2.749	4750
1937	2.787	4750
1938	2.743	4750
1951	2.704	4750
1950	2.855	5000
1962	2.862	5000
1961	2.913	5250
1963	2.977	5250
1967	2.98	5250
1969	2.928	5250
1971	2.912	5250
1990	2.993	5250
1923	3.416	5500
1928	3.308	5500
1939	3.7	5500
1941	3.162	5500
1942	3.7	5500
1943	3.7	5500
1944	3.384	5500
1946	3.221	5500
1947	3.112	5500
1949	3.621	5500
1952	3.066	5500
1953	3.7	5500
1954	3.7	5500
1955	3.281	5500
1957	3.7	5500
1958	3.473	5500
1959	3.7	5500
1964	3.7	5500
1966	3.51	5500
1968	3.7	5500
1970	3.7	5500
1972	3.7	5500
1973	3.114	5500
1974	3.524	5500
1975	3.7	5500
1976	3.7	5500
1979	3.7	5500
1980	3.131	5500
1981	3.661	5500
1983	3.7	5500
1984	3.7	5500
1985	3.685	5500
1987	3.097	5500
1994	3.95	5500

STUDY: 1995C06F-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97

CP # 62, CVP KESWICK RES TO [illegible] EASE, DOWNSTREAM FLOW (CFS)

Project: /1995C06F-SWRCB-519A/62/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	4,716	4,000	4,001	4,001	3,997	4,001	4,000	8,733	9,747
1923	5,497	7,025	5,497	5,497	7,040	6,034	5,495	8,831	10,890
1924	3,757	3,748	3,757	3,757	3,616	4,001	7,210	7,384	9,193
1925	3,253	3,243	3,253	3,253	3,241	7,237	3,243	3,253	10,588
1926	4,928	4,890	4,749	4,749	4,754	6,684	4,758	8,181	14,335
1927	4,115	3,243	3,253	3,253	29,224	4,424	12,923	10,831	11,730
1928	5,497	9,025	5,497	5,497	5,302	16,995	5,495	9,709	15,360
1929	4,521	4,252	4,245	4,245	4,249	4,895	6,722	7,514	7,663
1930	4,098	3,395	3,253	3,253	3,241	3,253	3,243	6,050	12,873
1931	4,001	4,000	4,001	4,001	3,997	4,001	7,327	6,538	6,571
1932	4,570	3,580	3,253	3,253	3,129	3,253	6,386	5,123	6,958
1933	3,545	3,243	3,253	3,253	3,241	3,253	6,521	6,229	7,008
1934	3,676	3,580	3,253	3,253	3,241	3,903	6,789	6,408	7,781
1935	4,359	3,243	3,253	3,253	3,241	3,253	3,243	7,010	8,504
1936	4,749	4,756	4,749	4,749	10,066	4,749	4,756	7,010	9,428
1937	4,749	4,756	4,749	4,749	4,754	4,749	4,756	6,180	8,420
1938	4,749	4,756	16,930	4,749	30,952	35,536	14,537	10,100	11,041
1939	10,539	8,201	5,497	5,497	5,492	5,497	11,310	8,311	14,940
1940	4,733	4,974	3,610	3,253	19,906	22,362	3,243	6,538	10,890
1941	5,497	5,495	16,784	25,420	23,696	14,881	16,822	14,897	10,940
1942	11,157	8,470	19,972	20,492	29,422	5,497	5,865	13,613	10,890
1943	10,213	8,840	6,603	12,994	8,679	12,978	6,924	9,726	11,629
1944	5,497	7,092	5,497	5,497	5,302	5,497	5,647	7,253	14,268
1945	3,529	3,243	3,253	3,285	3,241	3,253	3,815	7,107	9,898
1946	5,497	7,731	22,899	7,872	5,672	5,497	5,495	8,181	12,772
1947	5,497	5,495	5,497	5,497	5,492	5,497	5,495	9,823	13,663
1948	3,253	3,243	3,253	3,253	5,546	4,977	3,243	8,132	10,453
1949	7,953	7,277	5,497	5,497	5,546	6,749	5,495	7,693	14,503
1950	5,188	5,008	4,993	4,993	5,006	4,993	5,008	8,246	10,722
1951	4,781	6,605	15,857	8,376	16,385	4,749	8,033	7,367	13,528
1952	5,497	5,495	16,068	8,864	19,263	12,442	19,444	11,189	9,798
1953	9,937	7,563	10,653	29,404	5,492	5,497	5,495	12,149	12,150
1954	10,083	10,453	5,497	13,954	18,942	10,897	12,335	12,100	13,730
1955	5,497	7,294	7,790	5,497	5,492	7,806	5,495	6,017	14,789
1956	4,586	4,252	21,874	31,291	22,566	4,375	5,109	13,808	9,361
1957	10,815	7,932	5,497	5,497	9,471	11,010	10,957	8,148	11,730
1958	9,108	10,201	10,441	13,011	33,887	44,871	15,562	10,230	11,932
1959	11,352	8,369	5,497	10,848	14,585	6,717	9,025	7,953	15,814
1960	5,822	5,731	5,253	4,505	4,346	4,506	6,067	5,595	15,915
1961	6,034	5,243	5,253	5,253	7,040	7,611	6,033	8,620	15,428
1962	5,757	5,008	4,993	4,993	15,395	6,001	6,655	7,188	12,739
1963	5,253	8,235	9,612	5,253	9,057	7,774	32,065	7,611	9,596
1964	10,311	12,150	5,497	5,497	6,654	7,611	9,546	8,018	13,075
1965	4,619	3,243	11,287	21,793	3,241	3,253	13,377	9,514	11,226
1966	6,701	13,024	5,497	6,847	6,824	13,434	8,487	8,994	15,478
1967	6,554	5,243	14,019	9,872	8,193	16,589	12,201	16,328	10,806
1968	10,474	7,932	5,497	5,497	15,925	5,497	9,764	6,993	14,772
1969	5,253	5,243	5,253	23,549	22,237	7,351	13,999	13,482	10,016
1970	10,539	8,067	16,101	54,092	16,710	5,497	10,655	7,969	13,041
1971	5,253	7,327	16,930	15,239	5,870	18,703	9,025	9,644	11,646
1972	10,701	8,571	5,497	5,497	5,302	12,084	9,781	7,186	15,932
1973	5,497	7,277	8,181	15,434	19,699	8,620	5,495	8,815	9,949
1974	8,441	33,124	23,745	40,203	8,895	38,398	10,487	9,872	10,184
1975	11,189	9,041	5,497	5,497	7,310	29,160	5,495	12,263	10,806
1976	11,515	8,773	5,497	5,497	9,284	6,766	5,495	7,400	14,671
1977	4,180	4,353	4,391	3,497	7,148	4,131	8,890	5,855	9,747
1978	5,952	4,606	3,253	3,432	15,125	15,369	7,999	11,059	8,537
1979	9,774	7,579	5,497	5,497	5,492	5,497	5,815	5,855	12,806
1980	5,497	5,495	5,497	17,028	31,015	5,497	5,495	6,701	10,302
1981	8,977	8,117	5,497	5,497	5,492	8,262	7,025	7,937	15,528
1982	4,651	9,546	23,094	7,969	24,218	13,873	26,822	5,611	9,378
1983	10,962	9,932	14,084	20,866	37,470	41,325	21,595	13,287	14,184
1984	13,271	17,209	27,501	9,319	5,946	11,726	8,924	7,384	11,915
1985	10,392	14,268	6,847	5,497	5,492	5,497	5,495	9,742	15,259
1986	4,359	3,899	3,497	3,497	44,529	21,533	3,496	8,343	11,579
1987	5,497	5,495	5,497	5,497	5,492	5,497	9,176	8,620	17,360
1988	5,465	4,117	3,253	3,253	5,998	5,513	5,243	7,205	12,671
1989	3,724	3,243	3,253	3,253	3,241	3,253	3,243	8,343	13,209
1990	5,253	5,243	5,253	5,253	5,258	5,253	8,621	6,457	13,092
1991	5,025	4,386	3,399	3,253	5,366	3,253	3,243	6,213	7,378
1992	3,938	3,243	3,253	3,253	3,129	3,253	5,193	7,497	10,352
1993	4,960	4,504	3,253	3,253	3,241	28,087	3,243	4,733	11,260
1994	5,904	15,461	5,497	5,497	5,492	6,505	6,487	6,115	14,839

Location: Upper Sacramento Rver Below Keswick

CP # 62, Upper Sacramento River below Keswick

Shasta Reservoir Oct 1st Carryover Storage (MAF)	October thru April Average Flows (cfs)	Years included in Average flow Calculations
< 2.2	5,085	1925, 27, 30, 32, 33, 34, 35, 40, 45, 48, 65, 78, 88, 89, 91, 92, 93
>=2.2	8,671	1977, 86
>= 2.3	4,264	1924
>= 2.4	4,475	1931
>= 2.5	9,084	1929, 56
>= 2.6	10,457	1960, 82
>= 2.7	8,124	1926, 36, 37, 38, 51
>= 2.8	5,999	1950, 62
>= 2.9	9,375	1961, 63, 67, 69, 71, 90
>= 3	10,267	1923, 28, 39, 41, 42, 43, 44, 46, 47, 49, 52, 53, 54, 55, 57, 58, 59, 64, 66, 68, 70, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 87, 94

Comparison of DWRSIM Study 492 (Cumulative Impacts Alternative) flows at various control points with recommended flows from AFRP Working Paper Vol III

Location: Upper Sacramento Rver Below Keswick

CP # 62, Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS

SALMONIDS

Objective: Enhance rearing, maintain spawning habitat & temperature control Page 3-Xa-14 Vol III

Shasta Reservoir Oct 1st Carryover Storage (MAF)	AFRP Working Pap Recommended Flow	October thru April Average Flows (cfs)	Years included in Average flow Calculations	Ratio
< 2.2	3,250	4,841	1925, 27, 30, 32, 33, 34, 35, 40, 48, 78, 88, 89, 91,	1.49
>= 2.2	3,500	8,359	1945, 65, 86	2.39
>= 2.3	3,750	4,672	1924, 31, 77	1.25
>= 2.4	4,000		No years in this category	
>= 2.5	4,250	9,179	1936, 56	2.16
>= 2.6	4,500	12,330	1938, 51	2.74
>= 2.7	4,750	4,989	1926, 29, 37, 50	1.05
>= 2.8	5,000	9,477	1960, 62, 82	1.90
>= 2.9	5,250	6,643	1947, 61, 67, 87, 90	1.27
>= 3	5,500	10,559	1923, 28, 39, 41, 42, 43, 44, 46, 49, 52, 53, 54, 55, 58, 59, 63, 64, 66, 68, 69, 70, 71, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 94	1.92

Location: Feather River at Nicolaus CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective Enhance rearing & maintain spawning habitat, Page: 3-Xc-11, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.11	0.71	0.80	0.90												1.11	0.71	0.80	0.90	
Nov	1.75	1.32	0.81	0.89												1.75	1.32	0.81	0.89	
Dec	5.00	1.89	1.26	1.21												5.00	1.89	1.26	1.21	
Jan	8.48	5.09	2.80	2.32												8.48	5.09	2.80	2.32	
Feb	10.22	5.79	3.97	2.88							2.22	1.26				2.22	1.26	3.97	2.88	
Mar	9.41	8.17	3.50	3.34							2.04	1.78				2.04	1.78	3.50	3.34	
Apr	5.36	3.51	1.43	1.76		0.92	0.79	0.34	0.41	0.56	1.40	0.92				0.92	0.79	0.34	0.41	0.56
May	4.42	2.59	1.74	0.79		0.78	0.64	0.52	0.25	0.24	1.15	0.68				0.78	0.64	0.52	0.25	0.24
June	9.06	6.43	5.40	4.07		0.92	1.13	1.10	1.23	0.89						0.92	1.13	1.10	1.23	0.89
July	7.70	8.94	9.59	6.84												7.70	8.94	9.59	6.84	
Aug	2.03	2.47	3.40	2.20												2.03	2.47	3.40	2.20	
Sept	0.87	0.42	0.46	0.53												0.87	0.42	0.46	0.53	
															April-May-June Average:	0.87	0.85	0.65	0.63	0.56

Location: Yuba River at Marysville DEPLETION AREA 67, DOWNSTREAM FLOW

	SALMONIDS Objective Optimize migration, spawning and incubation, Page 3-Xc-14-25					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.05	0.81	0.65	0.64	0.74						No Working Paper flow recommendations					1.05	0.81	0.65	0.64	0.74
Nov	2.67	2.10	1.02	1.17	0.76											2.67	2.10	1.02	1.17	0.76
Dec	6.21	2.85	1.86	1.27	0.84											6.21	2.85	1.86	1.27	0.84
Jan	8.26	5.93	3.81	2.42	2.03											8.26	5.93	3.81	2.42	2.03
Feb	9.11	7.12	5.00	3.61	2.53											9.11	7.12	5.00	3.61	2.53
Mar	8.61	7.52	4.08	3.74	2.09											8.61	7.52	4.08	3.74	2.09
Apr	5.19	3.83	2.40	1.60	0.66	0.63	0.54	0.33	0.29	0.24						0.63	0.54	0.33	0.29	0.24
Mary	2.59	1.69	0.88	0.36	0.15	0.52	0.42	0.25	0.15	0.12						0.52	0.42	0.25	0.15	0.12
June	3.03	1.66	1.06	0.35	0.13	0.71	0.64	0.50	0.26	0.14						0.71	0.64	0.50	0.26	0.13
July	5.21	2.07	1.02	0.31	0.16											5.21	2.07	1.02	0.31	0.16
Aug	2.68	2.02	1.20	0.43	0.27											2.68	2.02	1.20	0.43	0.27
Sept	1.60	1.24	0.91	0.44	0.22											1.60	1.24	0.91	0.44	0.22
															April-May-June Average:	0.62	0.53	0.36	0.23	0.16

Location: Sacramento River at Verona (RM 80) (Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)

	SALMONIDS Objective:					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective provide attraction passage, spawning, an larval transport, Page: 3-Xh-8, Vol III					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb											1.57	1.31				1.57	1.31			
Mar	No Working Paper flow recommendations					No Working Paper flow recommendations					1.54	1.31				1.54	1.31			
Apr											1.07	0.76				1.07	0.76			
May											0.88	0.57				0.88	0.57			
June																				
July																				
Aug																				
Sept																				
															April-May Average:	0.97	0.66			

Location: Lower American River at H Street Bridge CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective optimize conditions in lower Am. River for all life stages, Page: 3-Xc-42, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.81	0.86	0.93	1.10	2.35											0.81	0.86	0.93	1.10	2.35
Nov	1.29	1.71	0.97	1.22	1.43											1.29	1.71	0.97	1.22	1.43
Dec	2.41	1.60	1.35	1.15	1.23											2.41	1.60	1.35	1.15	1.23
Jan	3.36	2.56	1.22	1.07	1.18											3.36	2.56	1.22	1.07	1.18
Feb	3.63	3.09	2.08	1.38	1.21											3.63	3.09	2.08	1.38	1.21
Mar	1.34	2.02	0.94	1.13	0.97											1.34	2.02	0.94	1.13	0.97
Apr	1.27	1.37	1.11	0.95	0.88	0.56	0.49	0.39	0.29	0.43	No Working Paper flow recommendations					0.56	0.49	0.39	0.29	0.43
May	1.21	1.17	0.95	0.99	0.65	0.45	0.37	0.33	0.32	0.32						0.45	0.37	0.33	0.32	0.32
June	1.23	1.26	1.09	1.38	4.60	0.68	0.79	0.78	1.02	1.35						0.68	0.79	0.78	1.02	1.35
July	1.13	1.18	1.32	2.17	2.01											1.13	1.18	1.32	2.17	2.01
Aug	1.22	1.18	1.07	1.83	0.82											1.22	1.18	1.07	1.83	0.82
Sept	1.32	1.26	0.94	1.19	0.74											1.32	1.26	0.94	1.19	0.74
															April-May-June Average	0.56	0.55	0.50	0.55	0.70

Location: San Joaquin River at Vernalis CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-47, 3-Xe-20, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-19, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page 3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.17	3.81	3.56	5.29	3.39											2.17	3.81	3.56	5.29	3.39
Nov	1.05	1.87	1.85	2.09	2.22											1.05	1.87	1.85	2.09	2.22
Dec	1.37	1.88	2.07	1.94	1.86											1.37	1.88	2.07	1.94	1.86
Jan	2.05	2.14	1.90	1.94	1.64											2.05	2.14	1.90	1.94	1.64
Feb	2.65	1.96	1.48	1.93	1.48						0.95	0.55				0.95	0.55	1.48	1.93	1.48
Mar	2.51	1.54	1.10	1.16	0.90						0.96	0.43				0.96	0.43	1.10	1.16	0.90
Apr	0.55	0.46	0.49	0.52	0.47	2.21	1.26	0.86	0.89	0.96	0.82	0.40				0.55	0.40	0.49	0.52	0.47
May	0.52	0.41	0.35	0.37	0.37	1.08	0.56	0.48	0.51	0.62	0.79	0.35				0.52	0.35	0.35	0.37	0.37
June	0.44	0.21	0.24	0.27	0.30	0.91	0.30	0.34	0.42	0.57						0.44	0.21	0.24	0.27	0.30
July	0.79	1.06	1.28	2.16	2.12											0.79	1.06	1.28	2.16	2.12
Aug	1.59	2.23	2.75	2.98	3.07											1.59	2.23	2.75	2.98	3.07
Sept	2.36	2.51	2.57	3.00	3.01											2.36	2.51	2.57	3.00	3.01
															April-May-June Average	0.51	0.32	0.36	0.39	0.38

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective Double natural production, Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective Improve spawning and egg and larval survival, Page: 3-Xg-21, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.18	2.82	3.04	3.88	2.00						No Working Paper flow recommendations					2.18	2.82	3.04	3.88	2.00
Nov	1.28	1.74	1.34	1.81	1.38											1.28	1.74	1.34	1.81	1.38
Dec	1.28	1.97	1.17	1.70	1.14											1.28	1.97	1.17	1.70	1.14
Jan	1.93	2.38	1.24	1.87	1.06											1.93	2.38	1.24	1.87	1.06
Feb	2.99	2.58	1.40	2.48	1.13											2.99	2.58	1.40	2.48	1.13
Mar	3.29	1.64	1.09	1.60	1.29											3.29	1.64	1.09	1.60	1.29
Apr	1.23	0.94	0.98	1.55	1.01	0.44	0.38	0.39	0.47	0.57						0.44	0.38	0.39	0.47	0.57
May	0.99	1.01	1.65	1.48	0.92	0.22	0.27	0.30	0.39	0.46						0.22	0.27	0.30	0.39	0.46
June	0.86	1.04	3.89	4.85	4.85	0.25	0.25	0.35	0.54	0.97						0.25	0.25	0.35	0.54	0.97
July	2.53	2.82	3.72	4.74	4.70											2.53	2.82	3.72	4.74	4.70
Aug	2.75	2.86	3.66	4.76	4.66											2.75	2.86	3.66	4.76	4.66
Sept	2.04	1.96	2.35	2.93	2.72											2.04	1.96	2.35	2.93	2.72
															April-May-June Average:	0.30	0.30	0.34	0.47	0.67

Location: Tuolumne River from LaGrange Dam to the SJR confluence CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.99	2.09	1.91	3.41	2.62	No Working Paper flow recommendations					No Working Paper flow recommendations					0.99	2.09	1.91	3.41	2.62
Nov	0.50	0.93	1.35	1.41	2.11											0.50	0.93	1.35	1.41	2.11
Dec	0.60	1.01	1.63	1.20	1.56											0.60	1.01	1.63	1.20	1.56
Jan	1.49	1.35	1.24	1.08	1.23											1.49	1.35	1.24	1.08	1.23
Feb	1.82	1.11	0.93	0.79	0.69											1.82	1.11	0.93	0.79	0.69
Mar	1.85	1.32	0.74	0.78	0.36											1.85	1.32	0.74	0.78	0.36
Apr	1.05	0.60	0.41	0.39	0.32											1.05	0.60	0.41	0.39	0.32
May	0.42	0.34	0.29	0.28	0.31											0.42	0.34	0.29	0.28	0.31
June	0.65	0.16	0.10	0.14	0.14											0.65	0.16	0.10	0.14	0.14
July	0.67	0.50	0.37	0.66	0.68											0.67	0.50	0.37	0.66	0.68
Aug	1.15	2.18	2.43	1.67	2.79											1.15	2.18	2.43	1.67	2.79
Sept	2.50	2.91	1.59	1.83	3.03											2.50	2.91	1.59	1.83	3.03
															April-May-June Average:	0.71	0.37	0.27	0.27	0.26

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.65	4.09	3.97	5.38	2.63	No Working Paper flow recommendations					No Working Paper flow recommendations					2.65	4.09	3.97	5.38	2.63
Nov	0.87	1.29	0.81	0.86	0.61											0.87	1.29	0.81	0.86	0.61
Dec	1.41	1.73	1.00	0.90	0.63											1.41	1.73	1.00	0.90	0.63
Jan	1.53	1.46	1.15	1.08	0.56											1.53	1.46	1.15	1.08	0.56
Feb	1.68	1.76	0.95	2.09	0.81											1.68	1.76	0.95	2.09	0.81
Mar	1.04	0.42	0.34	0.40	0.40											1.04	0.42	0.34	0.40	0.40
Apr	0.29	0.12	0.13	0.15	0.16											0.29	0.12	0.13	0.15	0.16
May	0.58	0.25	0.13	0.16	0.25											0.58	0.25	0.13	0.16	0.25
June	0.82	0.15	0.04	0.10	0.08											0.82	0.15	0.04	0.10	0.08
July	0.28	0.08	0.15	0.50	0.92											0.28	0.08	0.15	0.50	0.92
Aug	0.15	0.32	0.52	0.81	0.73											0.15	0.32	0.52	0.81	0.73
Sept	1.08	0.42	0.46	0.50	0.57											1.08	0.42	0.46	0.50	0.57
															April-May-June Average:	0.56	0.17	0.10	0.14	0.16

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct						No Working Paper flow recommendations					No Working Paper flow recommendations									
Nov																				
Dec																				
Jan																				
Feb																				
Mar																				
Apr	0.65	0.28	0.26	0.26	0.27											0.65	0.28	0.26	0.26	0.27
May	0.64	0.12	0.15	0.17	0.21											0.64	0.12	0.15	0.17	0.21
June	0.31	0.15	0.17	0.25	0.34											0.31	0.15	0.17	0.25	0.34
July																				
Aug																				
Sept																				
															April-May-June Average:	0.53	0.18	0.19	0.23	0.27

Feather River at Nicolaus
STUDY 1995C06F-SWRCB-492 DWRSIM record18-I 17 Jun 97
CP # 37, DA 69 DIVS DA 67 & 69 RTRN FLOW DOWNSTREAM FLOW (CFS)

Flow recommendations are based on water year types as defined on p 23-24 of the SWRCB 1995 WQCP for the Bay Delta

Project /1995C06F-SWRCB-492/37/FLOW-DOWNSTREAM/1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	2,781	1 897	1 431	4 086	7,066	12 133	8,838	26,006	18 973	8 180	504	403
1923	2,846	1,528	7 546	11 287	2,539	4 928	7,630	2 781	6 151	10 669	5 074	706
1924	1 740	1 731	1 643	3,269	2 469	3 139	1 899	1 008	1,832	978	195	50
1925	1,057	454	618	2 586	11 306	5 269	3 916	2,244	4 389	3 171	563	454
1926	1 080	1 613	813	5,058	5 908	5,204	6,000	5,204	3,284	4 521	862	1 649
1927	2 636	6 487	3,090	9 883	36 085	18 569	12 705	9,628	5,210	12 799	2 636	252
1928	1 220	1 862	899	8,034	1 080	43 456	6 823	7 546	3 864	11 108	1 724	420
1929	1 808	1 311	797	3 878	2 269	2,980	672	407	1 078	1 041	228	50
1930	1 545	471	2 978	7 790	1 224	10 327	4 521	3 383	4 168	6 717	1 203	891
1931	2 000	2 823	8,034	1,594	2,899	2 082	2,087	1,822	2 487	992	276	134
1932	1 008	1 513	2,277	8,278	4 259	1 480	4 974	3,090	6,151	1,380	280	296
1933	1 155	1 832	1,773	2,179	4,357	2,765	2,571	0	2,338	1 415	407	50
1934	764	1,731	1 529	4,928	1 134	4 163	4 117	1 756	2 881	1 756	585	569
1935	1,265	536	1 008	8,799	1 082	7,432	8,362	15,060	9,008	5,969	569	4 033
1936	1,836	2,093	3,188	6,977	14 308	16,947	7,714	3,576	5,344	8 652	634	1 597
1937	2,781	2,941	2,814	4,456	13,144	15 208	6,437	3,676	* 5,411	3,808	3,171	84
1938	1 156	2 269	12,846	11,384	26,585	37,260	27 158	26,542	17,797	4 830	1 041	3,277
1939	5,139	4,974	5,253	5,418	5,528	5,253	2 975	1,171	4,596	7 774	943	303
1940	1,594	1 897	602	4,814	5,268	38,678	31,779	8,408	5,882	6,327	5 318	2,084
1941	2,163	2,538	4,983	13,970	29,802	24,037	7,228	14,572	6,470	7,741	1,220	739
1942	2,033	3,176	20,752	18,606	36 472	10 278	22 452	13,515	11 697	6 652	764	504
1943	2,440	6,117	10 718	24 883	16,585	25,647	11,579	6,749	2,636	7,953	1 918	269
1944	1,109	1 198	1 529	2,927	9,336	8 050	2 218	407	4,823	10 913	5,237	0
1945	1,988	2,790	2,982	2,472	10,515	6,538	2,891	423	6,184	10,425	3,871	622
1946	911	2 605	4 912	15 987	9,111	7 774	1 865	2,944	5 529	11 893	5 822	471
1947	1 789	1 746	2,749	1,887	3 439	4,407	3,059	0	3,412	6 570	2 098	34
1948	1,431	1,294	1,561	1 447	2,903	2 423	6,537	8,359	5,396	9 612	4 131	1 311
1949	1 265	874	1,805	1,805	2,269	7 563	1 781	2,309	4,521	6 766	2 326	891
1950	1,962	2,101	1,708	4,277	7,941	4 579	3,899	2,407	6,016	9,254	3,513	982
1951	894	16,923	31,828	26,038	20 761	11,449	3 714	2,811	1,143	12,507	4 586	1 193
1952	1,578	2,521	5,204	25,241	21,886	16 459	27,107	33,421	17,068	5,074	2,198	3 731
1953	4,163	2,151	9,466	21,780	8,461	8,799	4,790	6,652	8,941	13,726	829	891
1954	1,171	1,984	1,464	8,063	15,063	16,816	13,041	9,660	3,968	12,149	2 374	823
1955	1,041	1,260	3,448	4,342	2,161	1,936	1,126	862	4,708	3,708	894	605
1956	920	739	5,806	42,496	18,715	16,589	6,016	18,019	8,117	9,514	976	891
1957	3,236	1,280	1,984	4,521	14,261	17,386	5,512	2,695	7,036	10,586	1 380	1,244
1958	1,529	723	2,802	3,529	29,082	31,421	25,898	18,963	11,680	3,966	1 903	3,529
1959	4,326	1,899	2,082	10,789	17,488	7,026	1,479	374	4,201	11,336	4,847	941
1960	1,639	2,000	2,683	2,553	4,607	3,025	5,445	309	3,864	5,399	293	303
1961	1,480	1,580	616	1,724	5,078	1,529	2,218	228	4,790	6,587	2,147	521
1962	2,049	906	651	1,122	12,190	6,375	1,311	4,082	5,428	9 866	2,374	2,286
1963	8,921	3,949	5,643	4,098	30,268	12 994	26,736	11,824	6,598	11 271	1 447	1 176
1964	1,366	4,336	1,252	6,679	2,225	3,962	1,395	585	3,918	11,043	7 336	420
1965	1,854	1,849	9,839	43,131	12,406	8,278	11,277	10,783	4,083	5 856	1,561	1,210
1966	867	5,815	4,554	6,717	5,080	6 063	1,849	4,198	3 198	12 019	7 384	289
1967	2,472	1,210	6,928	4,180	18,150	19,240	9,176	14,393	16,957	4 564	2 000	3,042
1968	4,163	1,496	3,139	9,937	14,882	16,166	4,487	0	3,884	11 547	2 277	0
1969	732	1,210	1,836	31,079	31,853	19,142	14,251	20,459	7,082	2,017	183	6,016
1970	2,326	2,636	22,346	63 736	40,513	13,678	3 848	49	1,210	10,734	4 926	437
1971	797	941	14,231	8,115	9,021	14,865	9 813	10,480	8,453	13,043	2 049	1 446
1972	1,156	1,026	4,570	5,692	9,492	9 496	2,319	911	2,861	11 010	1 887	1 714
1973	1,594	3,963	4,733	20,004	25,785	20,248	5,496	3,204	8,403	9,953	2 309	1 697
1974	1,546	10,288	19,337	36,869	16,449	37,084	27,679	10,426	7,796	6,684	1 675	1,815
1975	3,838	2,087	2,781	3,610	24,920	20,459	7,327	9,856	10,167	7 756	1 578	1,933
1976	3,480	3,361	4,147	3,936	4,294	3,627	1,482	520	2,739	7 804	326	1 284
1977	2,082	1,378	2,088	1,480	2,701	992	1,311	1,382	1,344	130	49	151
1978	716	420	1,447	11,775	8,536	12,863	9,781	3,497	4,398	5,822	3,838	1 311
1979	749	1 344	3,318	5,871	18,402	11,531	3,479	1,480	7,109	8,378	2,088	1,180
1980	1,389	1 765	2,179	32,886	37,743	21,972	6,867	4,082	3,798	5,316	781	975
1981	797	822	1,106	5,172	8,481	9,839	4,665	716	3,580	10,246	2,212	1 042
1982	1,203	5,680	33,551	31,860	32,679	34,580	46,770	18,557	8,268	4 369	1 773	5,381
1983	7,351	11,831	19,923	16,507	37,254	56,523	24,771	21,029	23,278	6,536	4 245	6 873
1984	5,107	21,986	46,839	25,046	15,525	14 491	4,117	2,586	5,846	12 100	4 718	622
1985	283	2,236	2,866	2,244	4,015	3 415	2,823	2,976	3,042	11 547	7 253	2,487
1986	3,074	1,862	3,822	5,513	43,034	54,434	7,310	2,082	1,042	4,570	2,944	1 697
1987	1,230	1,482	2,131	2,618	4,592	7,270	3,714	211	3,277	5,986	195	34
1988	3,041	1,513	1,301	4,196	2,536	2,326	2,151	1,360	2,521	716	81	17
1989	2,472	872	663	1 952	3,889	12,456	8,218	3,009	2,807	7 189	1,350	1 630
1990	1,301	2 286	4,440	5,221	4,123	3,156	3,865	183	3,136	4,115	781	218
1991	2,814	1 798	2,017	1,171	3,205	8,187	3,781	342	1,126	2,261	602	0
1992	1,659	1,008	748	2,749	8,457	3,610	2,773	846	2,521	2,131	33	0
1993	3,025	1,815	992	7 042	8,273	8,148	13,747	9,417	6,873	7 497	1 903	319
1994	667	1,244	2,407	3,350	8,121	3,056	1 412	781	2,640	10 246	6,086	0

Sacramento Basin 40-30-30 index:
Wet - 1927, 38, 41, 42, 43, 52, 53, 56, 58, 63, 65, 67, 69, 70, 71, 74, 75, 82, 83, 84, & 86
Above Normal - 1922, 28, 40, 51, 54, 57, 73, 78, 80, & 93.
Below Normal - 1923, 35, 36, 37, 45, 46, 48, 50, 59, 62, 66, 68, 72, & 79.
Dry - 1925, 26, 30, 32, 39, 44, 47, 49, 55, 60, 61, 64, 81, 85, 87, & 89
Critical - 1924, 29, 31, 33, 34, 76, 77, 88, 90, 91, 92, 94

San Joaquin Basin 60-20-20 Index
Wet - 1922, 37, 38, 41, 42, 43, 52, 56, 58, 65, 67, 69, 74, 75, 78, 80, 82, 83, 86, & 93
Above Normal - 1923, 27, 32, 35, 36, 40, 45, 46, 51, 63, 70, 73, 79, & 84
Below Normal - 1925, 28, 44, 48, 49, 50, 53, 54, 57, 62, 66, & 71
Dry - 1926, 33, 39, 47, 55, 59, 64, 68, 72, 81, & 85.
Critical - 1924, 29, 30, 31, 34, 60, 61, 76, 77, 87, 88, 89, 90, 91, 92, 94

Mean Monthly Flow in cfs by Water Year Type

73-year Flow Averages by Month and Water Year Type
Feather River at Nicolaus - CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	2,783	1,763	2,009	1,522	1,876
NOV	4,373	3,311	2,023	1,519	1,835
DEC	12,504	4,736	3,146	2,052	2,578
JAN	21,205	12,725	6,989	3,952	3,146
FEB	25,558	14,460	9,930	4,895	3,964
MAR	23,515	20,414	8,750	5,686	3,339
APR	16,091	10,539	4,303	3,690	2,340
MAY	13,266	7,763	5,224	1,889	865
JUN	9,064	6,435	5,402	4,066	2,237
JUL	7,703	8,946	9,590	6,843	2,807
AUG	2,027	2,469	3,404	2,198	805
SEP	2,177	1,047	1,156	737	213

CP 16 Yuba River at Marysville, Regulated Flow

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	423	521	976	1,822	4,574	2,911	3,714	6,798	8,033	2,980	2,553	471
1923	455	807	3,986	3,074	1,981	1,870	2,165	1,594	2,064	829	663	571
1924	504	536	889	1,366	1,878	746	286	179	188	65	86	67
1925	276	353	764	1,171	4,826	2,277	1,796	1,675	861	380	586	454
1926	423	536	716	1,486	4,447	2,848	2,218	380	252	65	65	67
1927	423	4,033	2,358	3,741	8,589	5,448	5,781	5,253	4,571	2,244	816	487
1928	423	1,916	1,643	3,074	2,277	7,432	4,420	3,156	790	439	553	454
1929	423	536	683	1,301	1,729	1,431	1,025	342	202	65	65	67
1930	325	319	1,431	2,830	3,205	2,849	1,445	520	269	65	130	471
1931	423	622	504	1,513	1,639	1,203	252	179	168	65	65	67
1932	276	303	1,286	1,529	1,965	2,472	2,084	1,415	2,807	585	634	403
1933	423	454	553	1,301	1,458	1,643	1,180	851	202	65	65	67
1934	342	336	716	1,610	2,251	1,366	454	195	202	65	65	67
1935	325	504	585	1,545	1,747	2,131	4,638	3,594	3,344	618	618	420
1936	472	454	553	4,505	6,189	4,505	4,101	3,334	2,773	667	634	487
1937	423	420	537	1,285	3,151	2,879	2,706	3,236	1,748	484	569	403
1938	423	1,482	4,489	3,706	5,880	8,343	6,151	6,733	7,647	3,155	2,033	536
1939	520	365	569	1,366	1,565	1,859	872	179	188	65	65	67
1940	278	286	293	3,253	5,320	7,400	5,176	4,749	2,000	407	618	504
1941	465	807	3,350	4,536	6,826	5,465	4,369	5,009	3,344	2,586	797	605
1942	520	840	4,245	4,886	7,004	4,836	5,411	5,237	5,025	2,886	862	521
1943	423	2,000	3,448	6,115	5,006	7,221	5,008	4,131	2,806	699	797	536
1944	439	471	602	1,447	2,225	2,293	1,462	784	353	65	65	118
1945	423	1,412	1,724	1,835	4,700	3,724	1,714	1,366	1,864	569	699	487
1946	585	1,546	4,619	4,851	4,231	2,358	2,134	2,179	1,176	537	683	454
1947	423	1,244	1,155	1,285	2,593	2,521	1,328	342	336	65	65	67
1948	423	487	520	2,131	1,443	1,854	3,126	2,131	3,075	813	732	454
1949	423	487	943	1,334	1,873	3,367	2,134	797	252	65	439	454
1950	423	487	537	3,513	4,628	3,236	3,042	2,488	2,252	618	683	471
1951	829	6,000	8,571	6,844	6,159	5,172	4,571	3,415	1,513	569	683	471
1952	764	1,344	4,245	5,985	5,511	5,383	6,201	8,282	8,369	3,789	2,911	1,126
1953	423	487	1,513	5,843	4,123	3,318	2,353	2,163	3,887	2,781	829	521
1954	504	908	732	2,960	3,817	4,017	3,529	829	606	407	618	454
1955	423	988	1,334	2,163	1,765	1,810	1,284	1,008	370	65	65	67
1956	423	555	9,433	10,213	6,876	4,814	3,865	5,302	4,336	2,342	876	822
1957	764	838	563	1,529	4,249	4,115	1,280	2,000	1,933	585	718	536
1958	699	790	1,756	3,318	7,838	9,496	6,765	8,619	8,396	2,944	1,236	823
1959	423	504	553	3,058	3,583	1,769	1,059	407	336	65	65	101
1960	423	454	553	1,773	3,581	2,879	1,326	618	370	65	65	84
1961	423	706	813	1,350	2,269	1 822	941	342	202	65	65	67
1962	342	336	683	1,136	4,988	3,265	2,706	878	1,714	537	718	521
1963	4,131	3,089	3,123	4,196	5,456	4,970	4,874	5,904	3,344	829	994	655
1964	602	2,756	878	2,700	1,878	1,740	1,580	699	454	65	65	67
1965	423	739	10,815	9,758	5,924	4,310	5,495	4,868	3,381	1,626	1,008	672
1966	472	1,176	992	2,553	1,909	2,244	1,781	455	286	65	65	67
1967	423	1,482	3,643	4,928	4,700	4,785	3,008	4,879	5,848	3,265	2,586	622
1968	585	571	894	2,867	4,259	4,017	1,143	472	336	65	65	67
1969	423	706	1,317	10,002	6,734	5,302	5,395	7,123	5,746	2,716	813	988
1970	618	586	4,228	11,027	7,346	5,416	3,529	651	857	602	716	471
1971	616	2,420	4,538	4,472	3,475	4,570	1,714	3,171	3,378	2,618	976	739
1972	585	706	1,513	2,635	2,799	2,976	1,513	683	286	65	634	689
1973	813	1,785	2,797	5,351	6,536	5,080	3,361	2,277	1,109	585	732	706
1974	829	4,958	5,936	7,205	4,718	8,441	7,280	5,867	3,896	2,765	943	805
1975	569	855	634	1,870	4,718	5,367	2,202	3,285	4,185	2,406	1,909	773
1976	1,106	1,193	667	1,382	1,617	1,073	370	179	188	65	65	67
1977	276	286	309	716	828	716	168	179	168	65	130	67
1978	226	151	732	4,228	4,357	5,123	4,470	3,318	3,143	1,464	878	691
1979	455	822	585	2,618	3,367	3,080	1,796	1,822	1,108	520	716	521
1980	813	1,042	1,643	8,229	7,597	6,131	3,933	3,822	3,243	960	813	521
1981	520	471	748	2,309	2 161	2,488	1,428	390	336	65	65	67
1982	423	4,420	7 823	5,822	7,743	7,676	11,814	9,075	5,781	2 818	911	1,126
1983	1,025	2,739	4,261	5,611	7,761	9,709	7,613	7,725	9,310	4,977	2,844	1 513
1984	911	4,437	9,254	5,123	4,886	4,877	3,882	2,326	1,798	663	797	655
1985	683	2,470	1,203	1,610	2,125	2,082	1,479	439	336	65	65	67
1986	423	756	911	3,204	13,486	10,820	6,386	3,545	2,017	602	732	908
1987	683	437	553	1,369	2,251	1,826	487	211	202	65	65	67
1988	342	370	1,008	1,773	1,321	1,122	807	195	202	65	65	67
1989	342	924	667	1,301	1,893	7,400	3,849	1,826	773	390	618	806
1990	1,136	699	439	2,505	1,747	1,854	855	618	235	65	65	67
1991	342	353	423	862	1,062	2,895	1,244	458	202	183	618	403
1992	407	454	455	1,334	3,846	2,017	840	195	202	65	65	67

Sacramento Basin 40-30-30 index
Yuba River at Marysville gage

Month	W	AN	BN	D	C
OCT	732	564	467	480	520
NOV	1869	1470	717	817	530
DEC	4349	1363	1305	866	587
JAN	5780	4154	2665	1691	1424
FEB	6360	4967	3496	2527	1771
MAR	6026	5266	2854	2620	1461
APR	5191	3626	2403	1602	980
MAY	5186	3374	1780	714	306
JUN	4549	2465	1586	524	193
JUL	2345	931	461	136	74
AUG	1204	907	540	195	121
SEP	718	566	406	200	96

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Sacramento River at Verona

STUDY 1995C06F-SWRCB-492 DWRSIM recro618-/ 17 June 97

SACRAMENTO RIVER FLOW AT VERONA (TAF converted to CFS)

CP 43 def - CP 64 def - CP 43 in

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	9807	9008	11824	14133	26649	25631	17898	36007	25586	12458	6963	8033
1923	12198	13461	24493	20087	14531	14800	19209	8929	11781	17874	10669	8739
1924	8782	7999	8538	11417	13056	10278	7546	6896	9277	6654	5383	6941
1925	6115	5848	7920	9286	36714	15060	17377	7319	11932	12165	6310	8705
1926	7868	7697	9091	15092	30828	14003	16016	11954	9596	12685	6099	9075
1927	8733	16402	12588	24737	72402	37487	36157	21175	11798	20833	9498	7693
1928	9628	18469	12279	21191	20323	70323	23158	16865	10453	21289	9140	8520
1929	10278	9969	10132	12767	15449	11970	7949	7758	7848	7237	5416	6823
1930	6440	5630	11775	18475	14333	25924	10033	8615	10806	16166	6847	8201
1931	7872	7966	13385	9856	9705	7806	7630	7432	8218	7756	5630	6457
1932	6782	6672	11092	16003	10761	7596	10063	8181	11108	5887	4993	7260
1933	6229	7478	6977	9579	10353	8555	8487	5139	7384	7709	5090	6634
1934	5416	6437	9254	14702	11416	12685	10236	7075	9764	11921	5578	7378
1935	7253	7546	7026	23110	11146	20557	15865	24411	14167	14979	6392	11226
1936	9173	8319	10409	25403	22861	27632	15394	9563	10840	16898	6424	9209
1937	9866	10265	10734	13482	29836	34251	18721	9872	10991	11124	8847	7361
1938	8319	19478	32072	26428	89287	66815	39812	48221	27023	12019	7481	13528
1939	19061	16234	15369	15206	15773	13489	11125	6928	12537	16186	8636	7210
1940	7774	7798	6538	22866	32249	50091	35056	15862	11024	17256	11157	9764
1941	10804	10722	27810	59768	64821	51376	37544	36145	15864	14832	8406	13344
1942	15759	14873	58207	53165	65866	23257	37529	30559	21780	13515	7237	10588
1943	15710	17915	23831	46481	44763	51945	24402	17808	9243	14474	8424	7966
1944	11433	11865	10506	13938	24774	22187	7831	6489	12335	18752	10734	7042
1945	8018	11865	13954	11791	28035	19337	9613	7514	12520	18752	10230	8201
1946	9286	13683	39211	36593	24794	19532	8252	9823	12218	19305	11368	8924
1947	10262	10436	14068	10718	18658	17955	10537	6099	11056	14979	8327	7411
1948	7823	8319	7790	12263	11718	12430	18402	22801	16537	16231	9563	9327
1949	11872	11209	11319	11369	12802	36544	10487	9644	12066	15824	8067	9260
1950	9205	8656	8864	15345	25280	15743	11008	8473	11613	15922	8645	9058
1951	8766	24318	46953	49717	49156	25566	10655	13076	7932	20687	13303	9896
1952	10116	12520	35048	54922	52294	48270	48131	48205	26570	11889	8664	15730
1953	17597	13496	38089	56174	24620	21642	13125	22378	20839	21370	7367	12722
1954	14605	15948	11319	29865	52289	44204	35191	21972	10588	21582	9364	10285
1955	11027	17394	20947	16378	13324	12149	7327	7075	12100	13434	7010	9008
1956	8652	9863	14814	67802	54137	33612	16217	33242	16789	16947	7546	12974
1957	16930	12756	10913	15515	29440	38325	17310	13238	13797	19838	7790	9193
1958	18199	16453	20720	31584	52866	84066	37779	33865	25175	13157	10376	18083
1959	18524	13176	11319	30787	45753	21388	8352	6717	11663	20752	12848	9529
1960	11791	10554	10035	12804	23783	18280	11461	8473	10187	15401	8863	8656
1961	9579	11024	15584	11352	30520	19883	11629	6570	13548	17109	10051	9058
1962	9709	9310	14830	13401	35508	23682	7714	11173	11075	19028	9828	10907
1963	18768	16217	23082	14879	48077	29421	62046	22167	13629	18540	6229	9764
1964	15759	22639	11303	19597	13282	13320	7294	6944	10201	18963	12832	9193
1965	8717	12086	10262	67658	26829	18443	36804	20541	10824	13743	7986	9863
1966	12002	24990	13791	26314	23426	26786	11512	12507	10067	20947	16866	10589
1967	12263	11426	33308	26331	31618	46367	33981	35369	28948	12539	8799	15108
1968	17646	13092	13499	26379	46436	34088	12940	6473	10184	19972	9980	8201
1969	10880	11209	22183	51750	55332	40041	37023	36170	16385	10409	6782	19226
1970	16377	14266	43472	70681	50021	32852	13125	7563	7747	20622	12246	9646
1971	10474	18016	46204	38853	23714	44757	18234	24167	19007	21663	8766	13814
1972	15499	12756	15584	17613	21036	28721	10403	7963	10888	20947	10732	9546
1973	10718	19915	22656	39049	81112	42187	16923	11742	15863	20264	10566	10352
1974	11173	45846	54108	65574	35310	90116	24587	21744	16553	17402	10295	16822
1975	18329	14738	14361	15076	51695	69603	21293	23696	19091	17083	9498	14201
1976	18475	14823	13352	13791	18916	15862	8369	7823	12804	17337	5887	9512
1977	8278	7428	7384	7335	12712	7205	8504	6749	6789	5790	5448	7731
1978	7644	6252	11362	38309	41630	38385	32868	16410	9478	12572	10344	12150
1979	13080	10940	11189	18569	37200	27323	13985	8018	15226	17077	8067	10554
1980	10783	12856	16361	40805	56397	33015	16789	11352	10403	11612	7253	9885
1981	12751	10285	12198	22850	26091	29867	15276	6782	11428	19532	9623	8907
1982	10836	28836	52596	41390	50417	60370	61441	27583	17511	11854	8750	17915
1983	21939	27966	43407	49197	68889	59246	59680	44968	41325	17971	14979	22906
1984	22088	47306	66646	39992	30250	33991	15377	11140	12537	21419	13434	9865
1985	12751	26754	19028	13320	15861	14800	10967	9807	10285	19516	13856	9866
1986	10035	8369	13499	18345	54182	62452	17142	9270	7863	11937	9417	10167
1987	9886	8789	10913	13824	19789	26574	11596	7107	14133	17727	9547	8389
1988	9839	6891	13547	22671	12517	9774	7075	7286	12318	10913	6213	7008
1989	7497	7831	7384	10962	10047	35015	18234	10490	9863	17044	7253	9730
1990	10344	9428	12490	18026	14008	12913	10838	6457	12286	13489	6017	8336
1991	8782	8841	6782	6326	11362	24848	12671	6375	6789	7880	6886	7445
1992	6229	5056	5432	10002	27764	17402	11562	7026	11293	9585	5253	6302
1993	8636	7546	9774	40301	38785	38333	29729	21435	22402	18086	8164	8840
1994	9335	18049	13092	13775	23589	14344	8621	6896	12756	19223	13808	9764

Sacramento Basin 40-30-30 Index

Sacramento River at Verona - CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow

Month	W	AN	BN	D	C
OCT	13,885	10,529	11,377	10,687	9,156
NOV	18,372	13,486	11,864	11,941	9,050
DEC	32,676	15,987	14,484	12,407	10,030
JAN	43,852	31,164	21,297	14,561	12,520
FEB	48,851	40,803	26,989	19,687	14,904
MAR	47,930	40,704	23,302	20,157	12,785
APR	33,177	23,580	12,981	11,704	9,107
MAY	27,276	17,776	11,016	7,917	6,909
JUN	18,448	13,734	12,112	11,435	9,945
JUL	15,920	17,374	17,843	15,709	10,430
AUG	9,256	9,408	9,974	8,578	6,329
SEP	13,414	9,690	9,364	8,586	7,728

American River at H Street Bridge

STUDY 1995C06F-SWRCB-492 DWRSIM recro618-/ 17 Jun 97

CP # 64 AMER R FLW REQT&SACRAMENTO DIV DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-492/64/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1,870	3,008	2,440	2,196	3,727	4 407	4 389	8 018	8,252	2 196	3,253	3,412
1923	2,358	2,403	6,701	5 025	3,457	2,407	3 731	4 212	3,512	4 440	3,171	1 731
1924	1,870	2,403	2,440	2 196	1 878	1 513	387	667	536	280	228	286
1925	374	538	504	456	5,924	2,407	4 487	3,253	4,672	4 505	2 553	1,479
1926	1,870	1,949	3,155	1 936	1 945	1 513	1 109	1 675	2 370	3 448	1 187	252
1927	716	504	1,285	3,985	13,594	4 847	8,050	3,724	4 218	3,009	2,196	3,284
1928	2,358	2,855	2,570	2,440	2,347	12,380	5 479	2 976	2,033	2 976	1 836	1 344
1929	3,123	1,916	1,936	1 936	1 945	1 513	840	1 155	2,484	827	228	289
1930	1,561	1,395	943	943	936	2 423	2 370	2 293	2,773	3 838	2,326	252
1931	1,431	1,109	899	439	432	748	1 647	1,498	3,731	834	278	538
1932	678	1,059	504	456	4,051	3 806	2 958	2 618	6,403	7 156	1 986	252
1933	2 586	1,597	943	943	936	1 155	3 986	1 447	3,412	325	244	420
1934	1,805	1,597	943	943	936	2 226	2 924	1 057	4,841	472	228	269
1935	468	504	504	439	810	2 911	6 537	5 156	3,482	5 432	2,944	1 109
1936	1 919	1,899	1,935	3 529	13 143	4 212	5,579	3 545	4,218	4 001	2 277	1 697
1937	2,358	3,479	2,440	2 440	2 431	3 184	4 285	3 757	3,482	3 497	2 163	1 949
1938	2,440	2,403	4,716	3 301	10 191	10 897	7 932	8,912	7,781	2 862	3 659	3 731
1939	2,358	2,403	2,440	2 440	2 431	1 903	1 260	537	2 336	3 188	374	252
1940	1,350	1,210	1,220	1,317	10,257	10 376	6 353	2 830	2,739	3 724	2 096	941
1941	2,017	2,437	3,269	5,839	8,193	4 749	3 680	4,407	4,218	2 196	1 968	3 294
1942	2,358	2,403	5,058	9 677	10,335	3 859	5,058	5 985	5,748	2 785	3 678	3 697
1943	2,358	3,813	4,814	11 398	7 274	12 393	5 159	2 781	3,482	2,293	1 984	2,823
1944	2,358	2,403	2,440	2 440	2,347	1 903	1 381	2 293	2,554	2,732	3,123	1 244
1945	1,334	504	504	1 203	8,877	2 407	2,370	2,781	3,897	3 399	2 407	1 781
1946	1,870	2,805	8,864	5 582	3,997	2 407	3 748	2 618	3 815	3 236	2 017	2 087
1947	2,440	2,403	2,440	2 196	1 945	1 513	1 395	1 285	2 907	3,464	1 968	252
1948	802	504	1,122	439	2,173	2 407	2 370	2 781	4 218	2 732	1 988	3 243
1949	2,358	2,403	2,440	2 440	2 431	2 407	2,370	2,797	2,723	3 708	2 033	1 260
1950	2,570	2 017	2,226	1 936	4 267	3 171	5,008	2,830	4,218	3,367	1 988	2 134
1951	2,391	17,125	15 401	10 392	8 463	3 415	2 891	3,318	3,462	2,976	3 301	857
1952	2,082	2,403	5,774	9 189	9 284	5 985	8 974	9 989	10,083	3 838	4 131	3,933
1953	2,358	2,403	2,488	7 883	2,683	2,407	2 657	3,545	4,216	2 374	3,350	3,664
1954	2,358	2,403	2,521	2,440	2 773	4 456	4 622	2,797	1,986	2,358	1 805	1 059
1955	1 984	2,403	2,440	2 196	1 945	1 513	1 361	2,293	2,403	2 781	1 594	672
1956	3,285	1,396	12,019	16 703	5,824	2 911	3 613	4 294	5 109	2 521	3 843	3 647
1957	2,358	2,403	2 440	2 440	2 791	4 570	3,344	2,293	2,723	3 285	1 986	1 361
1958	2,358	2,403	2,440	2 440	9,723	6 636	10 302	8 984	6,924	2 521	3,773	3,748
1959	2 358	2,403	2 440	2 440	2 431	2 017	1 328	1 041	2 363	1 789	1 187	252
1960	1 708	1,865	1 447	1 187	1 147	2 895	1 597	2 293	2,202	2 683	1 545	252
1961	1 724	1 899	1 935	1 881	1 440	1 106	874	585	1 445	1 545	537	252
1962	618	1,109	943	1 399	2 269	2 407	3 361	2 358	1 986	3 827	2 472	756
1963	2 618	4 319	3 529	4 050	11 488	2 911	6 487	6,088	3 482	2 521	1 988	2 944
1964	2,358	3 933	2 440	2 944	2 347	1 903	1 361	2 293	2,252	3 058	3 757	941
1965	1,008	504	19,044	12 832	5 330	2 407	4 000	3 708	4 218	2 862	1 986	3 227
1966	2,358	2 403	2,440	2 456	2,431	1 903	1 361	1 859	2 269	2 293	1 936	672
1967	1 366	1,386	1,447	7 107	4 700	6 131	4 403	7 628	8,470	3 513	3,773	3 848
1968	2,358	2,403	2,440	2 456	6 711	2 440	2 094	1 285	2 202	2 183	1 546	269
1969	1 675	1,899	1,936	14 283	9 489	4 407	6 840	7 449	5 579	2 244	3 487	3 680
1970	2,358	2,403	5,334	21,777	6 122	2 407	2 840	2 293	1 986	2,067	1 952	1 143
1971	2,196	1,899	4,847	5 204	3 673	3 986	3 176	3 545	4,218	2 196	2,244	3,479
1972	2,358	2,403	2,867	2 440	2 903	4 212	2,370	2 293	2 538	2 749	2 017	840
1973	1,870	1,899	1,936	9 081	7 581	3 871	2,622	3,545	3,864	3 529	2,391	874
1974	1,870	5,781	7 270	12 637	3,709	9,417	8,656	3,919	4,218	2,196	3,584	3 784
1975	2,358	2,403	2,440	2 440	2,701	4 505	3 613	3 741	5,075	2,391	3 610	3 294
1976	2 358	3,075	2 440	2 440	2 347	1 903	805	781	1 933	1 903	228	252
1977	1 220	655	537	439	612	358	235	130	319	293	276	303
1978	390	521	504	2 098	5 042	5 725	4 269	3 058	4 218	2 797	2 636	2 403
1979	2,358	2 403	2,440	2 440	2,431	3 269	2 370	3 448	3 714	3 627	1 870	1 193
1980	1 870	2 403	2 440	17 012	12 848	3 204	2 521	2,781	4,218	2 196	1 988	3 395
1981	2,358	2 403	2 440	2 440	2 431	1 903	1 109	1 041	1 684	1 659	1 138	252
1982	1,187	3,412	14 556	8 181	15 017	7 091	14 049	9 417	5 832	2 651	3,708	4 050
1983	2,358	8,252	6,847	7,865	12,748	16 150	6 974	9 081	13 932	5 546	4 440	4 534
1984	2 358	15,109	14 767	6 684	5,528	2,407	2,889	2 293	3 462	3,285	2 797	1,311
1985	2,308	3,311	2,862	2 440	2,431	1 903	1 361	2 586	2,773	3 139	3 041	908
1986	1,108	504	504	3 025	32,951	10 425	2,370	2,781	4 218	2 911	1 969	2 168
1987	2,358	2 403	2,440	2,440	2,431	1 903	975	699	2,151	1 789	390	252
1988	504	986	504	439	1 095	1 952	1 109	1 252	2,033	1 122	716	538
1989	1 870	1 412	1 447	1 167	2 413	5 074	4 504	3,041	2 538	3 464	1 724	756
1990	1,870	1,899	1 935	1 936	1 945	1 513	1 897	943	2,470	2,570	228	252
1991	1 581	956	943	943	864	1 171	1 386	1 334	2,134	1 626	1 269	790
1992	1,870	2,336	1,902	1 962	1 878	1 513	437	878	2 470	358	228	252
1993	407	521	504	1 740	6,086	8 087	4 672	3 610	4,672	3 399	2,244	3,277
1994	2,374	2,403	2,440	2 440	2,431	1 903	622	585	1 160	1 578	764	252

Sacramento Basin 40-30-30 Index

American River at H Street bridge - CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

Year Typ	W	AN	BN	D	C
OCT	2,021	1,722	1,851	1,932	1,881
NOV	3,231	3,415	1,931	2,136	1,711
DEC	6,016	3,197	2,890	2,020	1,476
JAN	8,393	5,116	2,443	1,864	1,420
FEB	9,074	6,190	4,167	2,412	1,449
MAR	6,034	6,045	2,811	2,255	1,468
APR	5,701	4,114	3,321	1,903	1,322
MAY	5,454	3,523	2,840	1,974	977
JUN	5,543	3,795	3,260	2,760	2,300
JUL	2,827	2,944	3,311	3,260	1,008
AUG	3,043	2,350	2,139	1,829	408
SEP	3,299	1,892	1,407	596	368

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San Joaquin River at Vernalis
STUDY 1995C06F-SWRCB-492 DWRSIM reoiro818-f 17 Jun 97
CP # 682. SJR AT VERNALIS TOTAL FLOW DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-492/682/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	2,000	1,714	2,505	2,683	6,752	5,351	6,201	5,936	7,260	1,870	1,822	1,916
1923	3,968	2,101	3,741	4,196	4,249	3,415	5,344	5,156	2,168	1,838	1,773	1,832
1924	2,765	1,462	1,513	1,399	1,617	1,708	1,983	1,870	1,378	1,360	1,360	1,277
1925	1,870	1,361	1,252	1,171	2,719	2,423	3,983	3,822	1,949	1,675	1,643	1,647
1926	1,887	1,412	1,334	1,203	2,413	2,277	3,664	3,545	1,731	1,252	1,301	1,445
1927	1,919	1,889	1,854	1,740	5,276	3,578	5,344	5,156	3,428	1,756	1,724	1,933
1928	4,359	1,649	2,326	2,277	2,573	2,960	3,983	3,822	1,765	1,513	1,545	1,583
1929	1,903	1,395	1,317	1,203	1,456	1,691	2,000	1,687	1,311	1,122	1,187	1,260
1930	1,822	1,244	1,138	1,220	1,549	1,919	2,420	1,935	1,328	1,155	1,269	1,344
1931	1,415	1,193	1,138	1,138	1,350	1,317	1,983	1,984	1,277	1,382	1,382	1,311
1932	1,334	1,294	3,058	3,432	7,980	4,536	4,504	3,871	2,151	1,675	1,659	1,714
1933	3,204	1,462	1,317	1,610	2,017	2,066	2,807	2,683	1,766	1,236	1,447	1,378
1934	1,870	1,277	1,203	1,220	1,747	1,659	1,983	1,984	1,277	1,334	1,334	1,361
1935	1,822	1,396	1,350	2,944	3,223	3,497	6,389	6,050	3,916	1,870	1,789	1,849
1936	3,171	1,546	1,578	2,309	12,398	5,757	6,420	5,156	2,134	1,789	1,756	1,849
1937	2,700	1,583	1,870	2,700	12,638	9,417	7,949	8,146	2,656	1,687	1,854	1,949
1938	3,155	1,798	5,090	6,983	22,417	31,047	18,049	23,972	15,175	3,643	1,687	2,638
1939	8,864	2,319	2,293	2,505	3,637	2,749	2,691	2,683	1,630	1,578	1,594	1,583
1940	2,000	1,479	1,399	4,001	7,928	10,425	5,748	5,156	2,134	1,822	1,854	1,949
1941	2,342	1,731	3,936	4,375	14,531	11,482	10,083	9,579	8,265	2,017	1,903	1,899
1942	4,926	2,236	4,993	9,173	10,371	5,936	6,907	5,936	5,647	2,342	1,919	2,101
1943	6,879	3,092	3,582	11,157	10,894	17,776	7,915	6,180	2,638	1,919	1,854	1,996
1944	3,399	1,615	1,919	1,984	3,251	3,106	3,428	2,976	1,865	1,675	1,691	1,781
1945	2,000	1,832	1,891	1,891	8,949	7,989	5,889	3,871	2,252	1,870	1,822	1,983
1946	3,838	2,252	5,611	5,627	6,194	4,391	5,344	3,871	2,134	1,805	1,870	1,983
1947	2,277	2,370	2,732	2,198	2,065	2,277	2,807	2,683	1,549	1,415	1,529	1,583
1948	1,919	1,344	1,203	1,122	1,373	1,740	3,983	3,822	2,286	1,675	1,708	1,714
1949	2,000	1,426	1,285	1,171	1,456	2,586	3,983	2,976	1,748	1,545	1,675	1,681
1950	2,000	1,426	1,265	1,480	2,539	2,293	3,983	3,822	1,731	1,529	1,659	1,647
1951	2,000	4,521	9,677	10,734	9,903	6,196	5,344	5,156	2,134	1,724	1,789	1,865
1952	2,000	1,697	2,537	6,631	6,085	11,368	10,640	15,450	9,478	2,749	1,854	2,218
1953	6,343	2,185	3,056	4,960	5,744	3,627	3,983	3,822	2,286	1,626	1,691	1,697
1954	2,000	1,513	1,415	1,334	2,287	2,407	3,983	3,822	1,815	1,610	1,708	1,714
1955	2,000	1,446	1,350	1,529	2,287	1,724	2,807	2,683	1,714	1,464	1,581	1,580
1956	2,000	1,445	11,845	20,887	12,917	6,089	6,201	6,131	7,563	2,033	1,805	1,949
1957	4,765	1,664	1,756	1,643	2,467	3,139	3,983	3,822	1,866	1,659	1,659	1,661
1958	2,009	1,546	1,447	1,826	3,943	10,604	14,907	13,173	10,184	2,017	1,903	2,134
1959	5,780	2,134	1,919	2,309	4,538	3,643	2,807	2,683	1,513	1,496	1,513	1,496
1960	1,687	1,344	1,171	1,155	1,791	1,903	2,420	1,903	1,528	1,496	1,496	1,496
1961	1,822	1,344	1,238	1,171	1,278	1,350	1,983	1,903	1,378	1,447	1,447	1,428
1962	1,382	1,294	1,155	1,138	5,942	4,489	4,201	2,976	1,765	1,496	1,545	1,613
1963	2,000	1,412	1,289	1,691	5,078	3,415	5,361	5,156	3,428	1,936	1,789	1,865
1964	2,293	2,151	1,822	1,864	1,825	1,740	2,807	2,683	1,664	1,301	1,464	1,446
1965	1,964	1,647	4,017	9,774	7,887	4,619	6,201	5,936	3,428	1,836	1,773	1,731
1966	4,424	3,479	4,798	4,847	5,186	3,706	3,983	2,976	1,697	1,546	1,626	1,613
1967	2,000	1,583	2,651	2,980	3,763	6,852	13,613	16,003	13,614	8,831	1,805	2,874
1968	5,367	2,087	2,196	2,261	4,051	2,797	3,664	2,683	1,583	1,545	1,513	1,529
1969	2,000	1,479	1,724	14,586	30,556	19,711	20,923	26,217	18,369	4,131	1,836	2,584
1970	8,327	2,564	3,594	17,044	8,507	7,432	5,344	5,156	2,134	1,724	1,773	1,842
1971	2,000	1,731	2,147	2,000	2,536	3,988	3,983	3,822	2,286	1,643	1,675	1,697
1972	2,000	1,426	1,496	1,366	2,208	2,277	3,664	2,683	1,513	1,286	1,447	1,395
1973	1,988	1,386	1,317	1,952	7,220	6,750	5,697	5,156	2,353	1,806	1,756	1,865
1974	3,269	2,403	2,765	7,010	5,366	7,774	7,983	5,936	3,428	1,854	1,805	1,949
1975	3,546	1,731	1,935	2,114	6,590	8,647	6,621	5,936	6,302	1,903	1,854	1,899
1976	4,115	1,832	1,822	1,529	1,966	1,708	1,983	1,870	1,344	1,382	1,382	1,365
1977	2,830	2,101	1,610	1,156	1,242	1,203	1,983	1,870	1,277	1,366	1,382	1,176
1978	1,252	1,277	1,350	3,253	7,202	10,978	14,923	10,831	7,082	2,814	1,822	2,723
1979	4,245	1,933	1,708	3,988	9,255	8,652	5,428	5,156	2,134	1,724	1,708	1,798
1980	2,846	1,765	1,854	13,678	23,991	14,588	6,739	6,619	6,184	3,892	1,724	2,805
1981	5,074	2,084	2,098	2,976	2,773	2,980	3,664	2,683	1,583	1,431	1,496	1,546
1982	2,000	1,813	1,919	9,286	16,565	15,304	27,023	15,158	9,865	3,236	1,836	3,949
1983	12,442	8,636	19,081	24,887	38,534	41,114	20,736	19,077	36,451	13,996	1,669	8,504
1984	12,116	13,982	21,500	15,190	9,718	6,017	5,344	5,156	2,134	1,806	1,903	2,000
1985	2,000	1,781	1,708	1,480	2,359	2,309	2,807	2,683	1,630	1,447	1,546	1,583
1986	2,000	1,397	1,581	1,864	22,435	26,428	9,831	8,089	7,613	1,805	1,789	1,933
1987	3,464	1,714	1,545	1,464	1,837	1,919	2,017	1,870	1,412	1,447	1,464	1,479
1988	1,789	1,277	1,138	1,122	1,182	1,285	1,980	1,870	1,338	1,382	1,415	1,361
1989	1,317	1,193	1,171	1,155	1,280	1,626	2,420	1,903	1,344	1,399	1,415	1,412
1990	1,380	1,227	1,138	1,122	1,280	1,382	1,980	1,936	1,244	1,269	1,334	1,344
1991	1,285	1,210	1,122	1,090	1,170	2,374	2,437	1,984	1,385	1,301	1,301	1,294
1992	1,350	1,445	1,138	1,138	2,243	2,049	2,252	1,984	1,482	1,578	1,334	1,227
1993	1,561	1,479	1,464	6,034	3,421	3,415	6,201	5,936	5,092	1,936	1,887	2,050
1994	4,294	1,849	1,447	1,350	1,963	1,581	1,983	1,984	1,664	1,643	1,578	1,513

San Joaquin Basin 60-20-20 Index
San Joaquin River at Vernalis - CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	3,145	3,822	3,205	3,706	2,205
NOV	2,101	2,798	1,758	1,878	1,444
DEC	3,864	4,238	1,967	1,842	1,303
JAN	8,082	5,406	2,084	1,935	1,227
FEB	13,253	7,634	3,173	2,797	1,557
MAR	13,425	6,002	3,037	2,438	1,686
APR	11,477	5,536	3,955	3,126	2,113
MAY	11,013	4,844	3,540	2,782	1,921
JUN	9,326	2,474	1,921	1,621	1,372
JUL	3,306	1,796	1,598	1,406	1,378
AUG	1,830	1,783	1,652	1,482	1,379
SEP	2,479	1,883	1,671	1,500	1,366

Stanislaus River from Goodwin Dam downstream to confluence with San Joaquin River
STUDY 1995C06F-SWRCB-492 DWRSIM reoiro818-f 17 Jun 97
CP # 675, STANISLAUS RIVER MOUTH&RTRN FLW, DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-492/675/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	366	353	260	228	504	325	1,344	2,356	566	787	829	566
1923	325	353	342	228	234	992	1,546	1,984	566	829	862	566
1924	325	353	260	228	226	309	1,006	992	975	943	943	538
1925	342	319	244	228	398	325	1,042	1,138	807	911	927	566
1926	504	363	260	228	252	618	1,176	1,415	941	927	943	566
1927	342	336	260	228	398	325	1,042	1,578	1,528	878	894	566
1928	325	363	260	228	226	325	1,395	1,756	924	943	943	566
1929	520	353	260	228	234	325	823	797	975	894	911	571
1930	366	319	276	228	216	325	941	764	975	894	927	566
1931	325	319	276	244	216	325	823	699	958	943	943	565
1932	309	319	244	228	313	325	857	618	605	911	911	566
1933	325	353	260	228	234	325	674	634	924	927	960	566
1934	342	336	260	228	234	325	840	716	958	943	943	571
1935	325	319	244	211	216	325	857	602	555	797	862	566
1936	325	353	260	228	782	325	857	613	656	846	878	566
1937	325	353	260	228	468	325	857	602	555	781	813	566
1938	325	353	260	228	684	488	1,849	1,203	3,949	563	797	566
1939	4,017	639	732	797	826	325	840	1,350	975	943	943	571
1940	569	336	260	244	296	325	924	1,594	773	829	813	566
1941	342	387	276	244	270	488	1,849	1,203	555	651	764	566
1942	504	454	980	1,952	1,927	488	1,849	1,399	565	553	748	566
1943	2,616	1,008	1,073	2,944	2,449	3,448	1,849	1,203	566	764	813	566
1944	504	454	423	390	504	325	657	1,008	874	911	911	566
1945	504	353	260	228	342	358	975	781	555	797	846	566
1946	342	403	293	407	1,531	488	2,218	1,360	823	846	797	566
1947	504	437	423	390	396	699	1,395	1,529	992	960	943	566
1948	602	336	260	293	365	325	1,126	1,285	891	911	894	566
1949	569	353	290	228	234	325	1,546	1,073	941	943	911	566
1950	472	353	260	228	252	325	1,395	1,513	941	943	911	566
1951	520	370	407	1,067	2,215	980	2,699	2,944	1,076	894	862	566
1952	439	370	276	455	261	488	1,849	1,203	2,033	553	813	566
1953	4,033	723	943	1,480	1,242	366	2,118	2,212	1,344	927	911	566
1954	651	403	293	260	576	326	958	1,773	908	927	894	566
1955	569	353	260	228	648	325	1,227	1,073	941	960	943	566
1956	439	336	553	455	226	488	3,260	1,203	555	634	846	568
1957	504	454	423	390	396	325	2,118	1,867	874	911	911	566
1958	537	353	260	228	378	488	1,849	1,203	565	651	764	566
1959	1,480	773	748	927	1,513	325	1,445	1,675	992	960	980	566
1960	585	336	260	226	226	325	975	797	992	960	980	588
1961	423	319	244	211	252	325	908	781	975	900	980	555
1962	309	319	260	260	378	325	857	651	924	960	943	566
1963	342	353	290	228	234	455	857	829	992	748	862	566
1964	325	353	260	226	226	325	1,193	1,073	958	943	980	566
1965	368	336	456	358	234	325	1,092	2,846	1,126	813	878	566
1966	325	353	290	228	234	325	2,151	1,480	958	943	927	564
1967	472	353	260	293	234	468	1,849	1,203	565	553	846	566
1968	1,025	758	764	862	1,662	325	2,198	1,529	992	943	960	566
1969	537	336	260	228	504	504	1,849	2,423	3,479	553	829	566
1970	3,497	823	1,431	5,009	2,737	1,106	2,319	2,732	1,076	894	862	566
1971	486	403	309	260	252	325	2,151	2,049	1,294	927	911	566
1972	602	353	260	276	730	927	2,202	1,480	992	943	900	566
1973	455	336	260	342	432	325	667	787	555	846	878	566
1974	325	353	260	228	234	1,041	1,849	1,708	1,428	813	846	566
1975	504	454	423	472	1,729	1,171	1,849	2,486	566	784	813	566
1976	504	454	423	390	382	325	941	1,090	975	943	943	556
1977	309	319	244	244	306	309	1,143	992	956	943	943	504
1978	276	319	244	309	270	325	857	602	555	553	846	566
1979	325	363	290	228	380	325	975	1,691	891	894	894	566
1980	342	403	293	1,610	4,903	992	1,849	1,203	555	563	894	566
1981	797	723	878	1,269	738	325	1,714	1,464	992	980	980	566
1982	504	336	260	228	2,017	3,090	1,849	1,203	1,597	563	813	566
1983	5,204	2,739	3,106	4,310	4,934	5,497	1,849	1,203	4,890	2,521	911	1,082
1984	5,627	3,512	4,679	2,781	2,556	1,382	2,756	2,982	1,025	846	781	566
1985	520	387	309	260	270	325	1,140	1,382	975	960	943	566
1986	537	336	260	228	558	4,944	1,849	1,203	566	846	862	566
1987	504	454	423	390	396	325	823	1,008	975	900	900	566
1988	687	319	276	276	330	309	992	978	975	943	943	538
1989	293	319	244	244	270	325	1,008	797	975	900	980	566
1990	325	319	276	276	366	325	891	748	941	927	943	566
1991	309	319	293	325	414	325	823	699	975	943	943	571
1992	308	319	276	260	[illegible]	[illegible]	[illegible]	[illegible]	992	943	732	303
1993	325	319	244	228	1,118	878	3,630	1,984	566	748	781	566
1994	309	353	260	228	234	325	840	718	858	927	843	571

San Joaquin Basin 60-20-20 Index:
Stanislaus River from Goodwin Dam to the San Joaquin River confluence - CP # 675 - STANISLAUS RIVER AT MOUTH

Month	W	AN	BN	D	C
OCT	764	866	760	970	400
NOV	513	608	402	486	345
DEC	512	690	360	469	285
JAN	773	832	373	513	264
FEB	1,195	903	421	681	283
MAR	1,314	573	328	441	322
APR	1,846	1,409	1,476	1,389	913
MAY	1,462	1,522	1,485	1,328	829
JUN	1,286	833	973	970	971
JUL	760	847	930	948	938
AUG	825	857	916	952	931
SEP	613	566	566	547	544

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Tuolumne River from La Grange Dam downstream to the confluence with the San Joaquin River
STUDY 1995C06F-SWRCB-492 DWRSIM reorc618-4 17 Jun 97
CP # 865 TUOLUMNE R MOUTH& MDSTO ID RTRN DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-492/865/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	683	571	667	634	954	764	1 428	1 366	538	504	520	521
1923	569	504	602	602	584	602	1 496	1 480	487	455	439	437
1924	504	437	439	423	435	423	387	472	134	130	130	151
1925	488	303	309	293	450	342	1 042	1 203	269	260	260	252
1926	488	319	325	309	360	439	840	911	218	179	179	185
1927	537	387	374	358	630	439	1 479	1 706	739	456	439	437
1928	553	521	488	488	522	569	773	829	235	228	244	235
1929	455	319	309	309	324	309	538	618	134	130	130	151
1930	456	269	260	276	306	309	622	651	134	130	146	151
1931	260	269	260	260	288	260	565	699	134	146	146	151
1932	293	336	520	456	800	407	1 294	1 838	723	456	439	437
1933	520	454	439	455	408	472	857	1 073	370	163	179	185
1934	537	303	309	309	360	293	437	667	134	130	130	151
1935	504	336	342	504	432	488	1 546	1 317	487	472	439	437
1936	569	504	504	520	1 147	618	1 378	1 578	521	456	439	437
1937	651	571	585	585	1 186	2 718	2 236	1 366	823	520	520	521
1938	651	571	911	2 944	7 797	6 050	4 101	5,839	4 117	1 708	520	874
1939	1 171	454	455	618	1,098	829	807	585	185	163	179	185
1940	390	336	342	585	1 096	5 318	2 118	1 285	454	439	439	437
1941	651	571	683	683	5,366	4 765	3,075	1 382	2 521	537	520	521
1942	1 025	588	878	3,806	4 285	2 992	2 656	2 006	1,587	911	537	536
1943	960	588	992	3,708	4 411	6 115	2 353	1 366	1 109	520	520	521
1944	537	487	472	455	522	569	891	862	252	244	244	235
1945	423	403	390	374	1 981	3,334	1 580	1 269	471	439	423	437
1946	569	504	2 553	3,399	2 883	2 440	1 529	1 269	454	456	439	437
1947	520	471	488	439	486	455	605	602	202	163	163	185
1948	374	303	293	293	348	342	1 025	1 041	336	260	260	252
1949	455	353	342	325	360	439	840	797	252	228	226	235
1950	504	353	342	374	450	358	1 092	1 220	252	244	244	235
1951	504	805	818	3 367	3 871	3 074	1 277	1 289	484	455	436	437
1952	987	571	667	894	1 165	4 765	4 101	2 553	4 467	1 578	520	823
1953	927	487	504	1 106	2 719	2 000	941	878	269	244	244	235
1954	390	353	342	342	414	407	1 513	943	235	244	244	235
1955	439	319	325	342	432	309	689	732	218	179	179	185
1956	553	403	1 073	7 335	4 346	3 025	1 513	1 382	4,289	761	520	622
1957	1 008	471	472	455	504	1 594	874	943	269	244	244	235
1958	520	454	439	472	936	5 188	5 344	2 749	4 840	618	537	857
1959	927	454	439	439	736	2 065	588	569	202	163	163	185
1960	358	269	260	260	330	293	454	472	134	130	146	151
1961	407	269	276	260	288	260	454	585	134	146	146	151
1962	260	303	293	293	738	423	674	1 090	269	226	228	235
1963	618	370	374	423	540	716	1 479	1 708	708	472	455	437
1964	520	487	455	455	435	439	739	813	269	163	163	185
1965	602	437	602	3 513	3,997	2,602	2 739	1 366	538	520	520	521
1966	629	1 260	2,456	2 553	2,971	1 984	773	784	252	228	228	236
1967	553	454	569	520	540	2 651	4 285	1 496	5 042	4 521	520	1 042
1968	943	454	455	439	695	1 301	672	585	185	163	163	185
1969	455	403	439	4 147	7,400	5 042	4 857	6 749	7 462	1 966	520	891
1970	1 286	504	764	6 050	3,745	3,432	1 277	1 285	454	439	423	437
1971	553	487	520	468	594	2 505	924	980	303	244	244	236
1972	423	319	342	325	400	407	723	718	218	146	130	168
1973	472	336	342	390	684	3 627	1 344	1 286	454	439	423	437
1974	651	588	602	3,383	2 936	3,757	2 605	1 350	521	520	520	521
1975	651	571	569	569	774	4 098	1 630	1 382	2,865	504	504	521
1976	667	454	439	423	539	423	420	423	134	130	146	151
1977	390	269	260	260	270	260	437	488	134	146	146	151
1978	358	403	423	585	846	732	1 714	1,431	538	520	520	521
1979	569	504	504	602	4,267	3 985	1 546	1 285	521	439	423	437
1980	651	588	569	5,042	7,736	4 131	2,151	1 390	3,428	2 440	520	992
1981	1 008	454	455	472	468	1,236	941	602	185	163	163	185
1982	504	454	455	4,489	7,220	5 952	7 831	3 285	4 420	2,065	520	2,151
1983	3,318	2,773	4,863	6,050	7 888	9 860	3 963	1 480	11 125	7,058	520	3 479
1984	1,460	4,773	6,684	4,131	3 842	2 679	1 277	1 285	464	455	439	437
1985	537	471	455	439	486	651	639	634	202	179	179	185
1986	455	420	423	407	6,140	7 335	1 798	1 626	4,571	504	504	521
1987	504	437	423	423	450	439	420	423	134	130	146	151
1988	276	269	260	260	261	260	454	504	134	130	146	151
1989	228	269	276	260	288	293	656	634	134	146	146	151
1990	260	269	260	260	288	276	521	667	134	130	130	151
1991	228	269	260	260	270	390	437	520	151	130	130	151
1992	228	269	260	260	365	293	437	618	151	146	130	151
1993	358	403	407	781	612	569	1,395	1 334	538	504	504	521
1994	520	437	439	423	450	407	565	634	151	130	130	151

San Joaquin Basin 60-20-20 Index
Tuolumne River from LaGrange Dam to the SJR confluence - CP # 865, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	746	627	573	682	392
NOV	819	743	473	423	317
DEC	841	1,085	569	421	312
JAN	2,527	1,554	622	430	308
FEB	3,817	1,892	683	552	345
MAR	4,246	2,240	961	782	324
APR	3,080	1,473	964	736	486
MAY	2,146	1,418	961	711	567
JUN	3,257	527	286	223	138
JUL	1,440	452	241	166	135
AUG	520	436	243	167	138
SEP	874	437	236	183	151

Merced River from Crocker Huffman Diversion downstream to confluence with San Joaquin River
STUDY 1995C06F-SWRCB-492 DWRSIM reorc618-4 17 Jun 97
CP # 649, MERCED R MOUTH,NON-PROJECT DIV. DOWNSTREAM FLOW (CFS)

Project /1995C06F-SWRCB-492/649/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	179	151	228	211	414	276	101	81	2,353	33	33	50
1923	2,423	353	1,108	1,220	1,098	260	235	276	34	33	33	34
1924	1 203	151	211	195	313	146	118	211	118	211	163	118
1925	325	151	146	130	270	195	202	390	34	33	33	67
1926	146	151	163	163	882	276	235	390	50	33	16	101
1927	358	185	163	146	900	228	235	520	303	33	33	336
1928	3,041	134	602	563	608	244	151	244	34	33	33	34
1929	179	168	163	146	144	163	67	163	17	16	16	17
1930	325	151	130	146	144	195	151	179	17	16	16	17
1931	179	84	130	146	288	146	252	423	34	211	163	118
1932	146	134	276	228	1 147	195	84	634	303	33	65	118
1933	1 691	151	146	276	414	179	319	520	202	33	195	118
1934	358	134	146	130	182	146	151	407	34	211	163	134
1935	342	151	146	260	234	228	370	1 415	1,395	33	114	134
1936	1 626	202	228	748	4,903	309	471	1 350	84	33	81	118
1937	1 090	151	407	520	4,465	927	134	2 196	319	33	146	134
1938	1 464	151	2,423	1,269	4 736	4 603	639	3,367	4 453	130	33	805
1939	2 911	336	358	358	576	179	67	65	34	211	195	84
1940	195	134	146	325	2 389	1 122	84	846	34	33	179	134
1941	537	151	1 594	1,350	2 871	1 317	185	2 049	2,087	33	33	67
1942	2,683	336	1 415	1,561	1,603	211	101	634	2,386	33	33	185
1943	2,683	872	732	2,488	1,783	2,700	454	862	34	33	65	67
1944	1,578	168	260	407	921	244	84	81	34	33	98	134
1945	211	168	163	293	3,637	618	101	81	262	33	33	101
1946	2,244	756	1,806	976	738	195	84	146	34	33	179	134
1947	472	639	829	585	828	163	67	98	50	98	195	134
1948	211	134	130	114	156	179	185	228	101	33	130	134
1949	228	151	146	146	144	244	235	211	34	33	179	134
1950	293	151	146	163	218	179	286	439	34	33	195	134
1951	244	1 210	4,570	1,628	1 404	211	84	81	34	33	179	134
1952	146	151	228	1 578	1 252	1,399	252	3,432	2 185	33	33	252
1953	2,716	151	618	1 073	568	163	84	81	50	33	163	134
1954	163	151	163	146	198	211	84	163	34	33	195	134
1955	244	151	146	179	270	146	134	179	34	33	185	134
1956	293	134	3,009	3 871	1 495	146	84	618	1 882	33	33	67
1957	2,716	218	244	293	828	195	84	130	34	33	146	134
1958	179	151	163	179	684	1 480	1 277	2 885	2 000	33	33	34
1959	2,732	151	146	390	1 080	146	67	65	50	211	195	84
1960	211	151	130	130	156	163	84	98	34	211	195	134
1961	309	151	146	130	126	146	168	293	34	211	163	118
1962	146	134	130	130	486	244	84	325	84	33	98	134
1963	342	151	146	179	2 215	488	202	472	134	33	49	118
1964	732	639	407	520	489	146	202	309	101	49	195	101
1965	342	151	943	3,058	1 189	163	168	81	622	33	33	50
1966	2 732	1 210	813	829	738	179	202	179	50	81	163	84
1967	228	151	244	228	594	1 464	856	2 183	4,218	1 564	33	723
1968	2,749	134	293	309	887	163	67	81	34	211	163	84
1969	244	134	163	3 562	4,357	1 400	1 260	5,367	3 986	179	33	538
1970	2,827	420	667	2 683	1 314	455	84	98	34	33	130	118
1971	146	151	195	163	576	163	134	179	84	33	114	118
1972	244	151	163	163	226	228	235	244	84	81	179	17
1973	276	134	146	179	2 323	651	101	1 286	387	33	33	84
1974	1 594	1 042	1,138	1 724	756	829	186	829	437	33	49	101
1975	1 675	151	325	488	2 251	846	118	81	2,134	33	114	34
1976	2,326	370	309	146	365	146	67	65	34	211	130	134
1977	228	151	179	130	108	130	134	195	34	211	195	134
1978	114	101	146	260	432	358	303	179	3 949	488	33	1 277
1979	2,814	336	293	1 708	2,125	1 008	101	634	34	33	65	84
1980	1 205	218	390	4 489	4 572	1 334	84	407	1 649	65	33	588
1981	2 732	151	163	455	612	179	67	65	34	81	114	101
1982	179	151	520	2 440	3 745	1 773	4 285	2 980	1,479	33	33	738
1983	3 383	1 681	2,521	3 383	4 321	5 351	118	2 802	7,083	3 448	33	1,781
1984	3,025	1 968	3,464	1 675	1 460	228	84	114	34	33	179	118
1985	146	168	163	179	666	179	84	114	17	49	146	134
1986	228	151	146	504	6,932	3,432	84	1 080	968	33	33	101
1987	1,654	151	146	146	252	163	67	65	34	211	163	134
1988	163	151	130	130	104	163	84	146	17	211	163	101
1989	163	84	146	130	126	163	168	179	34	211	163	118
1990	130	134	130	130	126	146	151	325	34	195	163	134
1991	130	134	130	114	108	228	67	163	34	195	163	134
1992	130	134	130	114	181	163	67	276	34	195	163	134
1993	130	134	146	423	308	1 292	84	2,147	1 647	211	163	134
1994	2 835	151	163	163	622	146	84	179	34	211	163	134

San Joaquin Basin 60-20-20 Index.
Merced River, Crocker-Huffman Diversion to San Joaquin River confluence - CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	829	1,227	1,191	1,345	658
NOV	306	450	242	257	153
DEC	844	951	300	271	158
JAN	1,679	675	348	325	139
FEB	2,443	1,850	475	628	202
MAR	1,987	443	203	180	180
APR	529	166	151	141	118
MAY	1,702	588	221	194	210
JUN	2,330	221	50	63	36
JUL	327	33	37	99	184
AUG	51	96	129	163	146
SEP	378	126	115	98	113

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C-032470

C-032470

San Joaquin River at Stevinson upstream of Merced River confluence

STUDY 1995C08F-SWRCB-492 DWRSIM recrc818-f 17 Jun 97

CP # 694, SJR, NON-PROJECT DIVERSION DOWNSTREAM FLOW (CFS)

Project: /1995C08F-SWRCB-492/694/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	618	454	732	651	2,467	1,285	807	980	3,832	486	472	689
1923	634	807	1,041	1,008	828	718	908	553	595	472	472	689
1924	537	387	342	293	348	537	303	308	319	306	308	487
1925	589	353	276	260	792	667	639	455	454	407	360	622
1926	553	387	342	293	504	589	689	356	370	342	356	571
1927	537	565	407	342	1,693	846	773	439	437	380	380	605
1928	520	504	407	407	574	894	555	374	387	374	374	566
1929	537	353	309	280	300	553	303	325	319	293	293	504
1930	520	319	244	293	414	618	319	308	353	325	325	536
1931	486	319	244	244	306	455	269	276	303	276	293	471
1932	439	303	927	764	2,191	716	403	374	370	309	309	521
1933	472	319	244	309	378	589	319	325	303	276	276	471
1934	486	303	260	244	450	486	303	276	319	293	293	504
1935	486	370	309	846	630	662	1,260	565	437	358	358	566
1936	537	370	325	423	3,321	980	773	472	471	380	380	605
1937	553	387	356	1,090	4,754	1,610	1,180	2,862	471	380	380	622
1938	602	839	1,480	1,988	7,202	12,572	5,109	12,118	2,723	1,008	465	672
1939	813	840	439	407	630	781	538	455	487	455	455	672
1940	667	454	360	1,480	1,843	1,187	723	553	538	472	472	689
1941	651	487	813	1,008	3,799	1,675	1,344	3,074	2,538	537	504	723
1942	784	823	1,080	1,025	1,278	1,073	857	716	622	537	504	723
1943	667	874	488	1,675	1,062	3,773	790	1,626	571	488	488	706
1944	683	555	472	455	765	1,025	605	553	589	520	520	756
1945	683	605	488	455	1,801	1,431	840	618	622	537	537	756
1946	651	521	698	472	630	846	723	537	565	504	504	723
1947	585	521	504	358	522	602	437	423	437	423	423	639
1948	589	387	309	260	348	602	756	455	454	407	407	622
1949	553	387	309	293	450	678	471	407	420	407	407	622
1950	683	387	309	380	738	602	487	380	403	380	380	605
1951	537	1,143	2,944	3,058	792	764	454	455	420	407	380	622
1952	585	420	699	1,622	991	2,099	2,188	7,904	504	472	439	655
1953	716	756	589	732	522	616	471	455	487	439	423	655
1954	585	420	374	358	612	613	565	455	454	439	423	655
1955	589	403	358	423	468	602	454	488	437	407	407	622
1956	589	403	4,381	5,987	3,460	1,203	622	2,618	706	439	439	655
1957	589	454	358	309	486	667	420	504	454	407	407	622
1958	585	403	358	423	918	1,789	2,252	3,285	1,546	472	439	655
1959	716	723	342	342	738	589	403	407	437	407	407	622
1960	589	387	309	293	558	602	437	423	403	380	380	605
1961	520	370	293	244	342	468	336	325	370	358	358	571
1962	504	336	260	244	2,377	911	437	380	387	374	356	588
1963	504	336	276	439	900	683	1,059	802	555	380	356	588
1964	520	471	309	309	400	537	387	374	370	342	342	571
1965	537	454	1,008	1,484	576	651	992	520	454	374	374	605
1966	589	655	553	504	612	634	437	407	437	423	407	639
1967	585	437	797	732	1,134	1,236	3,882	9,059	2,236	2,198	456	672
1968	699	699	407	342	522	634	420	407	437	407	407	622
1969	634	454	504	4,716	14,621	8,278	10,638	12,067	4,033	1,594	472	689
1970	651	790	439	3,513	610	1,073	521	472	471	439	439	672
1971	618	471	585	472	858	634	471	472	504	455	455	672
1972	553	387	407	325	468	537	387	374	420	380	380	622
1973	585	420	358	537	1,945	1,447	736	520	706	439	439	655
1974	585	437	488	1,382	648	1,171	1,092	504	487	439	439	655
1975	602	437	380	358	1,080	1,289	924	618	538	455	455	672
1976	585	437	374	325	417	589	353	342	370	356	356	585
1977	1,041	370	293	276	324	439	269	293	308	260	260	370
1978	358	286	293	1,008	2,575	8,717	8,773	6,310	471	976	423	639
1979	589	738	358	911	1,242	1,301	706	488	420	407	407	622
1980	537	403	342	2,586	6,015	6,440	706	3,369	437	883	380	605
1981	589	708	358	423	504	716	454	374	437	407	407	622
1982	651	504	488	1,252	1,819	1,952	10,088	5,708	1,277	504	504	723
1983	829	1,781	8,282	9,758	17,070	16,384	9,906	12,246	14,318	976	504	571
1984	2,277	3,633	8,343	8,328	800	797	555	504	538	504	504	723
1985	585	487	407	325	558	699	471	423	471	423	423	639
1986	651	504	455	407	9,157	8,522	3,328	3,786	1,948	472	472	689
1987	553	555	309	309	450	634	387	374	420	407	380	622
1988	520	353	276	260	313	472	353	308	336	308	308	521
1989	472	319	260	228	306	553	318	308	336	325	325	538
1990	472	319	244	228	324	486	303	276	319	293	293	504
1991	439	286	211	179	198	797	319	276	303	260	260	454
1992	520	555	244	244	713	585	403	407	454	488	423	589
1993	618	454	423	2,374	936	439	437	589	2,773	504	504	739
1994	602	672	325	276	504	537	403	472	521	504	456	622

San Joaquin Basin 60-20-20 Index

San Joaquin River at Stevinson - CP # 694 SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

Month	W	AN	BN	D	C
OCT	908	667	584	603	554
NOV	882	610	498	538	384
DEC	1,183	1,083	398	374	284
JAN	2,079	1,470	380	351	262
FEB	4,028	1,384	736	516	386
MAR	4,007	983	745	620	551
APR	3,327	746	525	451	336
MAY	4,498	512	443	401	331
JUN	2,124	507	452	419	358
JUL	700	430	420	388	341
AUG	498	426	413	389	333
SEP	666	647	637	607	526

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C-032472

STUDY: 1995C06F-SWI DWRSIM: recirc818-f, 17 Jun 97
CP # 4, CVP SHASTA LAKE, EOP STORAGE (MAF)

Project: /1995C06F-SWRCB-492/4/STORAGE-EOP//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP*
1922	2.61	2.86	2.81	2.9	3.3	3.71	4.32	4.55	4.4	4	3.58	3.43
1923	3.36	3.25	3.29	3.4	3.4	3.47	3.75	3.64	3.4	2.9	2.53	2.39
1924	2.41	2.42	2.42	2.4	2.6	2.54	2.33	2.08	1.7	1.4	1.15	0.97
1925	1.01	1.16	1.27	1.4	2.7	3.05	3.8	4.09	3.8	3.3	2.94	2.76
1926	2.75	2.73	2.62	2.6	3.2	3.4	3.76	3.6	3.2	2.8	2.27	2.09
1927	2.07	2.57	3.1	3.7	3.8	4.14	4.55	4.55	4.4	3.9	3.49	3.37
1928	3.32	3.25	3.32	3.5	3.9	3.97	4.53	4.4	4.1	3.4	2.87	2.70
1929	2.59	2.59	2.6	2.6	2.7	2.88	2.9	2.75	2.5	2.2	1.84	1.67
1930	1.66	1.66	2.21	2.4	2.8	3.32	3.58	3.58	3.3	2.8	2.51	2.35
1931	2.33	2.32	2.29	2.4	2.4	2.59	2.42	2.25	2.1	1.7	1.53	1.34
1932	1.27	1.26	1.47	1.6	1.8	2.2	2.26	2.4	2.3	2	1.78	1.59
1933	1.57	1.5	1.51	1.5	1.8	2.18	2.32	2.41	2.3	2	1.75	1.56
1934	1.55	1.55	1.7	2	2.4	2.62	2.65	2.54	2.3	1.7	1.53	1.32
1935	1.23	1.39	1.45	1.8	2.1	2.62	3.54	3.71	3.5	3	2.68	2.51
1936	2.47	2.42	2.38	3	3.8	3.92	4.2	4.14	4	3.4	2.98	2.78
1937	2.68	2.57	2.47	2.4	2.4	2.99	3.66	3.88	3.8	3.3	2.84	2.64
1938	2.58	3.08	3.31	3.7	3.8	3.42	4.06	4.55	4.6	4.3	3.95	3.70
1939	3.4	3.25	3.33	3.4	3.4	3.77	3.56	3.4	2.9	2.4	1.91	1.77
1940	1.72	1.64	1.78	2.7	3.3	3.44	4.34	4.46	4.3	3.7	3.27	3.14
1941	3.09	3.08	3.29	3.3	3.4	3.94	4.46	4.55	4.6	4.3	4	3.70
1942	3.4	3.25	3.32	3.4	3.5	3.86	4.55	4.55	4.6	4.3	3.96	3.70
1943	3.4	3.25	3.36	3.5	3.8	4.12	4.56	4.55	4.4	4.1	3.69	3.54
1944	3.4	3.25	3.2	3.2	3.4	3.63	3.75	3.73	3.4	2.8	2.41	2.25
1945	2.27	2.47	2.78	2.9	3.7	4.08	4.41	4.55	4.4	3.8	3.3	3.12
1946	3.1	3.25	3.27	3.6	3.6	3.89	4.22	4.28	4	3.5	3.16	2.97
1947	2.86	2.89	2.92	2.8	3	3.49	3.88	3.42	3.2	2.8	2.2	2.04
1948	2.17	2.23	2.28	2.9	2.8	3.23	4.24	4.55	4.6	4.1	3.7	3.58
1949	3.4	3.25	3.22	3.1	3.2	4.07	4.44	4.46	4	3.4	2.98	2.79
1950	2.69	2.65	2.58	2.8	3.2	3.57	3.98	3.95	3.7	3.2	2.8	2.63
1951	2.93	3.25	3.32	3.6	3.8	4.28	4.47	4.55	4.2	3.7	3.12	3.00
1952	2.95	3.08	3.31	3.6	3.7	4.02	4.29	4.55	4.6	4.3	3.95	3.70
1953	3.4	3.25	3.35	3.4	3.5	4.1	4.51	4.55	4.6	4.3	3.95	3.70
1954	3.4	3.26	3.34	3.6	3.7	4.11	4.55	4.45	4.4	3.9	3.57	3.45
1955	3.37	3.25	3.36	3.4	3.6	3.59	3.92	4.14	3.8	3.1	2.7	2.57
1956	2.49	2.58	3.25	3.3	3.3	4.01	4.55	4.55	4.6	4.3	4	3.70
1957	3.4	3.25	3.23	3.3	3.7	4.13	4.29	4.55	4.4	3.9	3.57	3.50
1958	3.4	3.25	3.34	3.5	4.6	3.42	4.17	4.55	4.6	4.3	4	3.70
1959	3.4	3.25	3.26	3.6	3.8	4.12	4.25	4.24	3.9	3.3	2.85	2.82
1960	2.66	2.57	2.57	2.7	3.8	4.03	4.22	4.45	4.1	3.5	3.09	2.97
1961	2.87	2.92	3.3	3.4	3.9	4.28	4.4	4.53	4.2	3.5	2.99	2.89
1962	2.8	2.84	3.11	3	3.7	4.16	4.53	4.54	4.3	3.7	3.21	3.08
1963	3.4	3.25	3.35	3.4	3.9	4.23	4.14	4.55	4.5	4.1	3.79	3.70
1964	3.4	3.25	3.26	3.6	3.7	3.82	3.69	3.57	3.4	2.8	2.43	2.27
1965	2.25	2.4	3.25	3.4	3.8	4.12	4.5	4.53	4.4	4	3.7	3.61
1966	3.4	3.25	3.34	3.7	4	4.23	4.55	4.47	4.2	3.7	3.14	2.97
1967	2.79	3.11	3.34	3.6	3.9	4.03	4.48	4.56	4.6	4.3	3.99	3.70
1968	3.4	3.25	3.3	3.4	3.7	4.19	4.25	4.6	4	3.5	3.29	3.21
1969	3.12	3.14	3.35	3.4	3.8	4.03	4.43	4.55	4.6	4.3	4	3.70
1970	3.4	3.25	3.32	3.3	3.4	4.13	4.2	4.2	4	3.5	3.21	3.06
1971	3.02	3.25	3.32	3.5	3.8	3.87	4.44	4.55	4.6	4.3	4	3.70
1972	3.4	3.25	3.36	3.6	3.9	4.25	4.55	4.55	4.2	3.7	3.29	3.20
1973	3.23	3.25	3.35	3.6	3.8	4.16	4.5	4.55	4.3	3.8	3.38	3.28
1974	3.33	3.25	3.27	3.3	3.7	3.44	4.29	4.55	4.6	4.3	3.99	3.70
1975	3.4	3.25	3.35	3.4	3.9	3.76	4.39	4.55	4.6	4.3	3.96	3.70
1976	3.4	3.25	3.27	3.3	3.1	3.32	3.49	3.4	3	2.5	2.44	2.34
1977	2.38	2.4	2.4	2.4	2.2	2.19	1.88	1.78	1.5	1.2	1.02	0.92
1978	0.81	0.8	1.29	3.2	3.6	4	4.55	4.55	4.5	4.2	3.89	3.70
1979	3.4	3.25	3.21	3.3	3.5	3.96	4.17	4.42	4	3.5	3.22	3.04
1980	3.04	3.11	3.17	3.5	3.3	3.98	4.33	4.46	4.3	4	3.72	3.64
1981	3.4	3.25	3.32	3.5	3.9	4.26	4.48	4.42	4	3.4	3	2.86
1982	2.78	3.25	3.28	3.6	3.5	3.95	4.09	4.55	4.6	4.3	4	3.70
1983	3.4	3.25	3.33	3.4	3.3	3.93	4.07	4.55	4.6	4.3	4	3.70
1984	3.4	3.25	3.29	3.7	4	4.25	4.48	4.55	4.4	4	3.68	3.60
1985	3.4	3.25	3.36	3.4	3.6	3.55	3.86	3.66	3.2	2.7	2.37	2.27
1986	2.31	2.38	2.59	3.2	3.3	3.53	4.01	4.08	3.8	3.3	2.97	2.92
1987	2.93	2.93	2.93	3	3.2	3.89	3.91	3.74	3.1	2.5	1.97	1.86
1988	1.78	1.8	2.36	2.[illegible]	3	3.05	3.2	3.21	2.8	2.2	1.88	1.76
1989	1.76	1.99	2.11	2.[illegible]	2.3	3.76	4.31	4.19	3.9	3.4	3.09	2.98
1990	3.04	3	2.93	3.[illegible]	3.1	3.25	3.08	3.2	3	2.4	2.16	2.00
1991	1.93	1.91	1.91	1.[illegible]	1.8	2.3	2.5	2.5	2.3	2.1	1.83	1.66
1992	1.84	1.82	1.63	[illegible]	2.4	2.34	3.1	2.94	2.5	2.2	1.99	1.82
1993	1.75	1.71	1.96	2.[illegible]	3.4	3.58	4.33	[illegible]	[illegible]	4.2	3.98	3.89
1994	[illegible]	3.25	3.29	3.[illegible]	3.4	[illegible]	3.56	3.53	3.1	2.5	2.22	2.04

* EOM September storage used as October 1st of following year
Shading means "disregard"

Year	Oct 1st Storage	AFRP Vol III Recommended Keswick Release
1925	0.97	3250
1927	2.09	3250
1930	1.67	3250
1932	1.34	3250
1933	1.59	3250
1934	1.56	3250
1935	1.32	3250
1940	1.77	3250
1948	2.04	3250
1978	0.92	3250
1988	1.86	3250
1989	1.76	3250
1991	2.00	3250
1992	1.66	3250
1993	1.82	3250
1945	2.25	3500
1965	2.27	3500
1986	2.27	3500
1924	2.39	3750
1931	2.35	3750
1977	2.34	3750
<None>		4000
1936	2.51	4250
1956	2.57	4250
1938	2.64	4500
1951	2.63	4500
1926	2.76	4750
1929	2.70	4750
1937	2.78	4750
1950	2.79	4750
1960	2.82	5000
1962	2.89	5000
1982	2.86	5000
1947	2.97	5250
1961	2.97	5250
1967	2.97	5250
1987	2.92	5250
1990	2.98	5250
1923	3.43	5500
1928	3.37	5500
1939	3.70	5500
1941	3.14	5500
1942	3.70	5500
1943	3.70	5500
1944	3.54	5500
1946	3.12	5500
1949	3.58	5500
1952	3.00	5500
1953	3.70	5500
1954	3.70	5500
1955	3.45	5500
1957	3.70	5500
1958	3.50	5500
1959	3.70	5500
1963	3.08	5500
1964	3.70	5500
1966	3.61	5500
1968	3.70	5500
1969	3.21	5500
1970	3.70	5500
1971	3.08	5500
1972	3.70	5500
1973	3.20	5500
1974	3.28	5500
1975	3.70	5500
1976	3.70	5500
1979	3.70	5500
1980	3.04	5500
1981	3.64	5500
1983	3.70	5500
1984	3.70	5500
1985	3.60	5500
1994	3.89	5500

STUDY: 1995C06F-SWRCB-492 DWRSIM: recirc818-f, 17 Jun 97
CP # 62, CVP KESWICK RES T[illegible] ELEASE, DOWNSTREAM FLOW (CFS)

Project: /1995C06F-SWRCB-492/62/FLOW-DOWNSTREAM//1MON/OUTPUT/

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1922	4,716	4,504	4,001	4,001	3,997	4,001	4,000	8,246	9,747
1923	5,497	7,226	5,497	5,497	5,492	5,497	5,495	8,831	9,697
1924	3,757	3,748	3,757	3,757	3,618	4,472	7,294	7,384	10,033
1925	3,253	3,243	3,253	3,253	3,241	3,253	3,243	3,253	10,167
1926	4,749	4,823	6,261	4,749	4,754	4,749	4,756	8,213	10,823
1927	4,115	3,243	3,253	3,253	30,484	4,424	12,923	10,831	9,915
1928	5,497	10,050	5,497	5,497	5,302	16,995	5,495	10,311	11,478
1929	6,001	4,773	4,749	4,749	4,754	4,749	6,907	8,248	8,268
1930	3,594	3,395	3,253	3,253	3,241	3,253	3,243	5,546	9,193
1931	3,871	3,748	3,757	3,757	3,745	3,789	7,327	6,538	7,058
1932	4,472	3,647	3,253	3,253	3,129	3,253	6,386	5,123	6,958
1933	3,545	4,588	3,253	3,253	3,241	3,253	5,731	5,936	7,058
1934	3,578	3,243	3,253	3,253	3,241	3,594	5,647	6,375	8,504
1935	4,716	3,243	3,253	3,253	3,241	3,253	3,243	7,270	8,504
1936	4,245	4,252	4,245	4,245	7,980	4,245	4,252	7,010	7,983
1937	4,749	5,058	4,749	4,749	4,754	4,749	4,756	6,180	8,420
1938	4,651	4,504	15,613	4,668	31,060	35,538	14,537	10,100	11,041
1939	10,539	8,201	5,497	5,497	5,492	5,497	10,848	8,311	12,285
1940	4,521	4,941	3,692	3,253	22,792	22,362	3,243	6,652	9,344
1941	5,774	5,563	16,150	25,420	23,696	14,881	16,822	14,897	10,940
1942	11,157	8,470	19,972	20,492	29,422	5,497	5,865	13,613	10,890
1943	10,213	8,840	6,603	12,994	8,679	12,978	6,924	9,726	9,546
1944	7,253	7,899	5,497	5,497	5,302	5,497	5,647	7,253	11,445
1945	3,806	3,496	3,497	4,212	3,493	3,497	3,496	7,205	9,562
1946	5,497	5,983	22,899	7,872	9,273	5,497	5,495	8,294	10,907
1947	6,017	5,243	5,253	5,253	5,258	5,253	5,327	9,823	10,924
1948	3,253	3,243	3,253	3,253	5,320	3,253	3,243	9,595	9,932
1949	7,302	7,277	5,497	5,497	5,492	6,782	5,495	8,278	12,218
1950	5,627	4,890	5,090	4,749	4,754	4,749	4,756	8,246	9,512
1951	4,538	5,630	15,857	8,376	16,385	4,505	8,756	8,847	11,209
1952	5,546	5,243	15,092	8,864	19,263	12,442	19,444	11,189	9,798
1953	9,937	7,563	10,653	29,404	5,492	5,497	5,495	12,149	12,150
1954	10,083	10,453	5,708	13,743	18,942	10,897	12,335	12,425	9,596
1955	6,326	9,226	7,790	5,497	5,492	5,497	5,495	6,017	11,814
1956	5,465	4,252	21,988	31,291	22,566	4,375	5,109	13,808	9,361
1957	10,815	7,932	5,497	5,497	9,471	11,010	9,411	9,628	9,109
1958	9,595	10,201	10,441	13,011	33,887	44,871	15,562	10,230	11,932
1959	11,352	8,369	5,497	10,848	14,585	5,985	8,050	7,953	12,184
1960	7,514	6,470	4,993	4,993	4,833	4,993	5,899	5,595	11,663
1961	6,164	5,243	5,253	5,253	7,833	7,611	7,579	7,432	12,520
1962	5,839	5,832	4,993	7,319	12,298	4,993	5,008	7,937	9,714
1963	6,587	8,554	9,612	5,497	8,787	7,774	32,065	7,611	8,789
1964	10,311	12,150	5,497	5,497	5,302	5,497	9,546	8,018	10,117
1965	4,700	3,496	14,214	21,793	3,493	3,497	12,890	9,351	9,125
1966	8,359	13,024	5,497	6,847	6,824	13,434	8,336	9,547	11,209
1967	7,497	5,243	12,848	9,872	8,193	16,589	12,201	16,328	10,806
1968	10,474	7,932	5,497	5,497	15,925	5,497	8,134	6,993	10,638
1969	6,831	5,495	6,278	25,290	22,237	7,351	13,999	13,482	10,016
1970	10,539	8,067	16,101	54,092	16,710	5,497	9,176	7,969	9,730
1971	6,473	8,806	16,930	15,239	5,492	19,044	6,537	12,061	11,646
1972	10,701	8,571	5,497	5,497	5,302	12,084	8,520	8,213	11,747
1973	5,497	8,789	8,181	15,434	19,699	8,620	5,495	8,815	10,184
1974	5,497	32,300	23,745	40,203	8,895	38,463	10,419	9,872	10,067
1975	11,189	9,041	5,497	5,497	7,310	29,160	5,495	12,263	10,806
1976	11,515	8,773	5,497	5,497	9,284	5,497	5,495	7,969	12,050
1977	4,180	4,353	4,342	3,757	7,923	4,342	8,823	5,855	9,714
1978	6,017	4,756	3,253	3,432	14,225	15,369	7,999	11,059	7,613
1979	9,774	7,579	5,497	5,497	5,492	5,497	5,495	5,855	12,167
1980	5,497	5,495	5,497	15,564	31,015	5,497	5,495	6,701	9,125
1981	8,603	8,117	5,497	5,497	5,492	8,262	5,495	7,937	12,033
1982	6,131	10,940	23,094	7,969	24,218	13,873	26,822	5,611	9,378
1983	10,962	9,932	14,084	20,866	37,470	41,325	21,595	13,287	14,184
1984	13,271	17,209	27,501	9,319	5,946	11,726	7,428	8,668	9,529
1985	9,042	14,268	6,847	5,497	5,492	5,497	5,495	9,368	12,066
1986	4,407	3,899	3,497	3,497	45,627	21,533	3,496	8,343	11,428
1987	5,253	5,243	5,253	5,253	5,258	5,253	7,075	9,189	14,738
1988	5,481	4,336	3,253	3,253	4,433	5,367	4,017	7,107	12,403
1989	3,724	3,243	3,253	3,253	3,241	3,253	3,243	8,668	9,243
1990	5,253	5,243	5,253	5,253	5,258	5,253	7,428	6,993	10,235
1991	4,960	4,033	3,253	3,253	5,708	3,253	3,243	6,213	7,378
1992	3,936	3,243	3,253	3,253	3,129	3,253	4,067	7,758	10,789
1993	5,025	4,437	3,253	3,253	3,241	24,054	3,243	8,733	11,260
1994	5,497	14,823	5,497	5,497	5,492	5,497	5,529	6,392	12,117

Location: Upper Sacramento Rver Below Keswick
CP # 62, Upper Sacramento River below Keswick

Shasta Reservoir Oct 1st Carryove Storage (MAF)	October thru April Average Flows (cfs)	Years included in Average flow Calculations
< 2.2	4,841	1925, 27, 30, 32, 33, 34, 35, 40, 48, 78, 88, 89, 91, 92, 93
>=2.2	8,359	1945, 65, 86
>= 2.3	4,672	1924, 31, 77
>= 2.4		No years in this category
>= 2.5	9,179	1936, 56
>= 2.6	12,330	1938, 51
>= 2.7	4,989	1926, 29, 37, 50
>= 2.8	9,477	1960, 62, 82
>= 2.9	6,643	1947, 61, 67, 87, 90
>= 3	10,559	1923, 28, 39, 41, 42, 43, 44, 46, 49, 52, 53, 54, 55, 57, 58, 59, 63, 64, 66, 68, 69, 70, 71, 72, 73, 74, 75, 76, 79, 80, 81, 83, 84, 85, 94

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Comparison of DWRSIM Study 469 (Bay-Delta Plan) flows at various control points with recommended flows from AFRP Working Paper Vol III

Location: Upper Sacramento Rver Below Keswick

CP # 62, Upper Sacramento River below Keswick, DOWNSTREAM FLOW, CFS

SALMONIDS

Objective: Enhance rearing, maintain spawning habitat, & temperature control Page 3-Xa-14, Vol III

Shasta Reservoir Oct 1st Carryover Storage (MAF)	AFRP Working Paper Recommended Flows	October thru April Average Flows (cfs)	Years included in Average flow Calculations	Ratio
< 2.2	3,250	5,088	1924, 26, 29, 31, 32, 33, 34, 39, 44, 77, 87, 88, 90, 91, 92	1.57
>= 2.2	3,500	8,834	1947, 64, 76	2.52
>= 2.3	3,750	4,266	1923, 85	1.14
>= 2.4	4,000	4,482	1930	1.12
>= 2.5	4,250	9,351	1955	2.20
>= 2.6	4,500	10,746	1935, 37	2.39
>= 2.7	4,750	8,159	1928, 50	1.72
>= 2.8	5,000	6,102	1936, 59, 61, 81	1.22
>= 2.9	5,250	9,595	1949	1.83
>= 3	5,500	10,266	1922, 25, 27, 38, 40, 41, 42, 43, 45, 46, 48, 51, 52, 53, 54, 56, 57, 58, 63, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 78, 79, 80, 82, 83, 84, 86, 89, 93	1.87

Location: Feather River at Nicolaus CP # 37, DEPLETION AREA 13, DOWNSTREAM FLOW

	SALMONIDS Objective: Enhance rearing & maintain spawning habitat, Page: 3-Xc-11, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-8, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage, spawning, and rearing flows, page:3-Xh-16					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.12	0.62	0.70	0.79												1.12	0.62	0.70	0.79	
Nov	1.77	1.23	0.70	0.83												1.77	1.23	0.70	0.83	
Dec	5.05	1.93	1.16	1.15												5.05	1.93	1.16	1.15	
Jan	8.57	5.17	2.87	2.41												8.57	5.17	2.87	2.41	
Feb	10.32	5.96	4.20	2.91							2.24	1.30				2.24	1.30	4.20	2.91	
Mar	9.44	8.02	3.53	3.50							2.05	1.74				2.05	1.74	3.53	3.50	
Apr	5.36	3.51	1.49	1.84		0.92	0.79	0.35	0.43	0.57	1.40	0.92				0.92	0.79	0.35	0.43	0.57
May	4.42	2.54	1.68	0.79		0.77	0.63	0.50	0.25	0.19	1.15	0.66				0.77	0.63	0.50	0.25	0.19
June	9.15	6.60	5.64	4.14		0.93	1.16	1.15	1.26	0.80						0.93	1.16	1.15	1.26	0.80
July	6.56	6.93	7.24	6.64												6.56	6.93	7.24	6.64	
Aug	2.12	3.49	4.41	3.58												2.12	3.49	4.41	3.58	
Sept	0.89	0.44	0.40	0.94												0.89	0.44	0.40	0.94	
															April-May-June Average:	0.88	0.86	0.67	0.65	0.52

Location: Yuba River at Marysville DEPLETION AREA 67, DOWNSTREAM FLOW

	SALMONIDS Objective: Optimize migration, spawning and incubation, Page 3-Xc-14-25					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-10, Vol III					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	1.05	0.81	0.65	0.64	0.74											1.05	0.81	0.65	0.64	0.74
Nov	2.67	2.10	1.02	1.17	0.76											2.67	2.10	1.02	1.17	0.76
Dec	6.21	2.85	1.86	1.27	0.84											6.21	2.85	1.86	1.27	0.84
Jan	8.26	5.93	3.81	2.42	2.03											8.26	5.93	3.81	2.42	2.03
Feb	9.11	7.12	5.00	3.61	2.53											9.11	7.12	5.00	3.61	2.53
Mar	8.61	7.52	4.08	3.74	2.09						No Working Paper flow recommendations					8.61	7.52	4.08	3.74	2.09
Apr	5.19	3.83	2.40	1.60	0.66	0.63	0.54	0.33	0.29	0.24						0.63	0.54	0.33	0.29	0.24
Mary	2.59	1.69	0.88	0.36	0.15	0.52	0.42	0.25	0.15	0.12						0.52	0.42	0.25	0.15	0.12
June	3.03	1.66	1.06	0.35	0.13	0.71	0.64	0.50	0.26	0.14						0.71	0.64	0.50	0.26	0.13
July	5.21	2.07	1.02	0.31	0.16											5.21	2.07	1.02	0.31	0.16
Aug	2.68	2.02	1.20	0.43	0.27											2.68	2.02	1.20	0.43	0.27
Sept	1.60	1.24	0.91	0.44	0.22											1.60	1.24	0.91	0.44	0.22
															April-May-June Average:	0.62	0.53	0.36	0.23	0.16

Location: Sacramento River at Verona (RM 80) (Modeled as CP 43 downstream flow - CP 64 downstream flow - CP 43 local inflow)

	SALMONIDS Objective:					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective provide attraction passage, spawning, an larval transport, Page: 3-Xh-8, Vol III					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct																				
Nov																				
Dec																				
Jan																				
Feb											1.58	1.33				1.58	1.33			
Mar	No Working Paper flow recommendations					No Working Paper flow recommendations					1.54	1.31				1.54	1.31			
Apr											1.07	0.76				1.07	0.76			
May											0.88	0.57				0.88	0.57			
June																				
July																				
Aug																				
Sept																				
															April-May Average.	0.97	0.66			

Location: Lower American River at H Street Bridge CP # 64, D-893 MINIMUM REQUIRED FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective: optimize conditions in lower Am. River for all life stages, Page: 3-Xc-42, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-12, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.77	0.83	0.94	1.06	2.21											0.77	0.83	0.94	1.06	2.21
Nov	1.34	1.70	0.99	1.23	1.45											1.34	1.70	0.99	1.23	1.45
Dec	2.45	1.61	1.36	1.08	1.15											2.45	1.61	1.36	1.08	1.15
Jan	3.34	2.51	1.24	1.03	1.08											3.34	2.51	1.24	1.03	1.08
Feb	3.67	3.18	2.22	1.28	1.20											3.67	3.18	2.22	1.28	1.20
Mar	1.35	2.04	1.03	1.30	1.03											1.35	2.04	1.03	1.30	1.03
Apr	1.29	1.41	1.11	1.05	0.99	0.57	0.50	0.39	0.32	0.48	No Working Paper flow recommendations					0.57	0.50	0.39	0.32	0.48
May	1.24	1.22	0.99	0.93	0.76	0.46	0.38	0.34	0.30	0.37						0.46	0.38	0.34	0.30	0.37
June	1.31	1.43	1.29	2.01	6.90	0.73	0.89	0.92	1.49	2.03						0.73	0.89	0.92	1.49	2.03
July	1.18	1.21	1.34	2.34	2.60											1.18	1.21	1.34	2.34	2.60
Aug	1.28	1.13	0.99	2.09	0.77											1.28	1.13	0.99	2.09	0.77
Sept	1.44	1.38	1.06	2.10	1.58											1.44	1.38	1.06	2.10	1.58
															April-May-June Average	0.59	0.59	0.55	0.71	0.96

Location: San Joaquin River at Vernalis — CP # 682, SJR AT VERNALIS TOTAL FLOW, DOWNSTREAM FLOW

	SALMONIDS Objective: benefit all life stages of fall-run chinook salmon, Page: 3-Xd-47, 3-Xe-20 Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page 3-Xg-19, Vol III					WHITE AND GREEN STURGEON Objective provide suitable passage spawning, and rearing flows, page 3-Xh-34					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommend flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.17	3.81	3.56	5.11	3.43											2.17	3.81	3.56	5.11	3.43
Nov	1.05	1.88	1.85	2.01	2.22											1.05	1.88	1.85	2.01	2.22
Dec	1.36	1.88	2.06	1.90	1.86											1.36	1.88	2.06	1.90	1.86
Jan	2.03	2.13	1.90	1.91	1.64											2.03	2.13	1.90	1.91	1.64
Feb	2.65	1.95	1.47	1.96	1.48						0.95	0.54				0.95	0.54	1.47	1.96	1.48
Mar	2.51	1.54	1.10	1.21	0.90						0.96	0.43				0.96	0.43	1.10	1.21	0.90
Apr	0.55	0.46	0.49	0.53	0.47	2.21	1.25	0.86	0.92	0.96	0.82	0.39				0.55	0.39	0.49	0.53	0.47
May	0.52	0.41	0.35	0.37	0.37	1.08	0.56	0.49	0.51	0.62	0.79	0.35				0.52	0.35	0.35	0.37	0.37
June	0.44	0.21	0.24	0.27	0.30	0.90	0.31	0.34	0.41	0.57						0.44	0.21	0.24	0.27	0.30
July	0.79	1.05	1.28	2.16	2.12											0.79	1.05	1.28	2.16	2.12
Aug	1.59	2.22	2.74	2.99	3.04											1.59	2.22	2.74	2.99	3.04
Sept	2.36	2.51	2.56	3.00	3.01											2.36	2.51	2.56	3.00	3.01
															April-May-June Average:	0.50	0.32	0.36	0.39	0.38

Location: Stanislaus River from Goodwin Dam to the San Joaquin River confluence — CP # 675 - STANISLAUS RIVER AT MOUTH

	SALMONIDS Objective: Double natural production, Page: 3-Xd-34-35, Vol III					AMERICAN SHAD Objective: Improve spawning and egg and larval survival, Page: 3-Xg-21, Vol III					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.20	2.83	3.07	3.39	2.04						No Working Paper flow recommendations					2.20	2.83	3.07	3.39	2.04
Nov	1.27	1.73	1.33	1.61	1.38											1.27	1.73	1.33	1.61	1.38
Dec	1.21	1.97	1.16	1.59	1.14											1.21	1.97	1.16	1.59	1.14
Jan	1.80	2.18	1.23	1.78	1.06											1.80	2.18	1.23	1.78	1.06
Feb	2.87	2.37	1.38	2.63	1.13											2.87	2.37	1.38	2.63	1.13
Mar	3.19	1.66	1.09	1.83	1.29											3.19	1.66	1.09	1.83	1.29
Apr	1.23	0.94	1.01	1.70	1.03	0.44	0.38	0.40	0.51	0.58						0.44	0.38	0.40	0.51	0.58
May	0.98	1.05	1.77	1.53	0.95	0.22	0.28	0.32	0.41	0.47						0.22	0.28	0.32	0.41	0.47
June	0.84	1.19	4.11	4.86	4.85	0.25	0.28	0.37	0.54	0.97						0.25	0.28	0.37	0.54	0.97
July	2.54	2.84	3.74	4.75	4.71											2.54	2.84	3.74	4.75	4.71
Aug	2.76	2.87	3.69	4.75	4.60											2.76	2.87	3.69	4.75	4.60
Sept	2.04	1.96	2.35	2.93	2.72											2.04	1.96	2.35	2.93	2.72
															April-May-June Average:	0.30	0.31	0.36	0.49	0.67

Location: Tuolumne River from LaGrange Dam to the SJR confluence — CP # 665, TUOLUMNE RETURN W/O TURLOCK, DOWNSTREAM FLOW

	SALMONIDS Objective: Double natural production, Page: 3-Xd-22, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	0.99	2.08	1.89	3.37	2.59	No Working Paper flow recommendations					No Working Paper flow recommendations					0.99	2.08	1.89	3.37	2.59
Nov	0.50	0.93	1.35	1.41	2.11											0.50	0.93	1.35	1.41	2.11
Dec	0.60	1.01	1.63	1.20	1.56											0.60	1.01	1.63	1.20	1.56
Jan	1.48	1.37	1.24	1.08	1.23											1.48	1.37	1.24	1.08	1.2[illegible]
Feb	1.82	1.13	0.93	0.78	0.69											1.82	1.13	0.93	0.78	[illegible]
Mar	1.86	1.32	0.74	0.82	0.36											1.86	1.32	0.74	0.82	[illegible]
Apr	1.05	0.60	0.40	0.37	0.32											1.05	0.60	0.40	0.37	0.32
May	0.42	0.33	0.28	0.27	0.30											0.42	0.33	0.28	0.27	0.30
June	0.65	0.16	0.10	0.14	0.14											0.65	0.16	0.10	0.14	0.14
July	0.67	0.50	0.37	0.66	0.68											0.67	0.50	0.37	0.66	0.68
Aug	1.15	2.18	2.43	1.67	2.79											1.15	2.18	2.43	1.67	2.79
Sept	2.50	2.91	1.59	1.83	3.03											2.50	2.91	1.59	1.83	3.03
															April-May-June Average:	0.71	0.36	0.28	0.26	0.25

Location: Merced River, Crocker-Huffman Diversion to San Joaquin River confluence — CP # 649, LOWER MERCED RIVER DIVERSION, DOWNSTREAM FLOW

	SALMONIDS Objective: Double natural production, Page: 3-Xd-9, Vol III					AMERICAN SHAD Objective:					WHITE AND GREEN STURGEON Objective:					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct	2.65	4.08	3.95	5.37	2.73	No Working Paper flow recommendations					No Working Paper flow recommendations					2.65	4.08	3.95	5.37	2.73
Nov	0.87	1.34	0.81	0.86	0.61											0.87	1.34	0.81	0.86	0.61
Dec	1.42	1.73	1.00	0.90	0.63											1.42	1.73	1.00	0.90	0.63
Jan	1.53	1.50	1.15	1.10	0.56											1.53	1.50	1.15	1.10	0.56
Feb	1.70	1.77	0.95	2.09	0.81											1.70	1.77	0.95	2.09	0.81
Mar	1.04	0.41	0.34	0.41	0.40											1.04	0.41	0.34	0.41	0.40
Apr	0.29	0.12	0.11	0.12	0.15											0.29	0.12	0.11	0.12	0.15
May	0.58	0.24	0.12	0.14	0.24											0.58	0.24	0.12	0.14	0.24
June	0.82	0.15	0.04	0.09	0.08											0.82	0.15	0.04	0.09	0.08
July	0.28	0.08	0.15	0.50	0.92											0.28	0.08	0.15	0.50	0.92
Aug	0.15	0.32	0.52	0.81	0.73											0.15	0.32	0.52	0.81	0.73
Sept	1.08	0.44	0.46	0.50	0.57											1.08	0.44	0.46	0.50	0.57
															April-May-June Average:	0.56	0.17	0.09	0.12	0.15

Location: San Joaquin River at Stevison upstream of the confluence with the Merced River — CP # 694, SJR DIVERSION, NON-PROJECT, DOWNSTREAM FLOW

	SALMONIDS Objective: benefit all life stages of fall-run chinook salmon, Page: 3-Xd-50, Vol III					AMERICAN SHAD Objective					WHITE AND GREEN STURGEON Objective					Salmonids, Shad, and White and Green Sturgeon Highest Recommended Flows (where recommended flows differ)				
Month	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical	Wet	Above Normal	Below Normal	Dry	Critical
Oct						No Working Paper flow recommendations					No Working Paper flow recommendations									
Nov																				
Dec																				
Jan																				
Feb																				
Mar																				
Apr	0.64	0.28	0.25	0.26	0.27											0.64	0.28	0.25	0.26	0.27
May	0.64	0.11	0.14	0.18	0.21											0.64	0.11	0.14	0.18	0.21
June	0.31	0.14	0.17	0.25	0.34											0.31	0.14	0.17	0.25	0.34
July																				
Aug																				
Sept																				
															April-May-June Average	0.53	0.18	0.19	0.23	

C-032475

STUDY: 1995C6F-SWRCB-467 DWRSIM: recirc818-f, 17 Jun 97
CP # 4, SHASTA LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C6F-SWRCB-467/4/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 1067'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir El[illegible] Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index = Product

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	989	993	999	1,003	1,019	1,038	1,060	1,067	1,062	1,047	1,030	1,023	29	7	0	5	20	37	44
1923	1,021	1,017	1,019	1,023	1,024	1,026	1,038	1,031	1,018	996	974	973	41	29	36	49	71	93	94
1924	975	976	977	978	986	988	976	963	947	913	893	879	79	91	104	120	154	174	188
1925	883	898	907	917	992	1,008	1,040	1,047	1,037	1,012	994	992	59	27	20	30	55	73	75
1926	991	991	990	989	1,018	1,026	1,041	1,035	1,015	993	972	961	41	26	32	52	74	95	106
1927	960	968	1,010	1,035	1,026	1,052	1,067	1,067	1,062	1,041	1,024	1,019	15	0	0	5	26	43	48
1928	1,017	1,017	1,020	1,028	1,044	1,046	1,066	1,066	1,053	1,027	1,004	998	21	1	1	14	40	63	69
1929	995	995	985	994	999	1,005	1,011	1,008	1,002	986	968	961	62	56	59	65	81	99	106
1930	955	952	983	993	1,010	1,032	1,040	1,037	1,024	1,006	991	985	35	27	30	43	61	76	82
1931	963	981	977	979	981	988	977	967	958	940	912	901	79	90	100	109	127	155	166
1932	902	903	918	930	940	964	968	978	971	958	944	939	103	99	89	96	109	123	128
1933	938	938	939	941	943	977	986	989	986	967	943	936	90	81	78	81	100	124	131
1934	933	933	942	960	979	993	997	992	986	974	943	934	74	70	75	81	93	124	133
1935	925	936	940	958	977	997	1,040	1,055	1,048	1,026	1,009	1,003	70	27	12	19	41	58	64
1936	998	993	989	1,012	1,032	1,042	1,050	1,046	1,040	1,011	989	980	25	17	21	27	56	78	87
1937	974	970	967	964	968	1,000	1,031	1,038	1,031	1,009	987	976	67	36	29	36	58	80	91
1938	976	1,002	1,020	1,035	1,030	1,024	1,049	1,067	1,067	1,058	1,045	1,036	43	18	0	0	9	22	31
1939	1,023	1,017	1,020	1,022	1,024	1,039	1,034	1,027	1,012	992	971	968	28	33	40	55	75	96	99
1940	961	957	963	1,006	1,017	1,025	1,059	1,064	1,052	1,028	1,008	1,004	42	8	3	15	39	59	63
1941	1,003	1,003	1,019	1,020	1,024	1,045	1,064	1,067	1,067	1,053	1,044	1,036	22	3	0	0	14	23	31
1942	1,023	1,017	1,020	1,023	1,028	1,042	1,067	1,067	1,067	1,054	1,041	1,036	25	0	0	0	13	26	31
1943	1,028	1,017	1,022	1,030	1,042	1,051	1,067	1,067	1,063	1,041	1,025	1,019	16	0	0	4	26	42	48
1944	1,018	1,017	1,015	1,014	1,023	1,033	1,036	1,033	1,021	998	974	963	34	31	34	46	69	93	104
1945	982	974	991	1,000	1,035	1,048	1,060	1,064	1,058	1,033	1,012	1,005	19	7	3	9	34	55	62
1946	1,005	1,013	1,018	1,033	1,040	1,052	1,062	1,062	1,049	1,026	1,006	1,001	15	5	5	18	41	61	66
1947	999	1,000	1,002	1,000	1,008	1,029	1,038	1,024	1,018	996	974	964	38	29	43	49	71	93	103
1948	971	975	978	1,003	1,008	1,025	1,062	1,067	1,067	1,046	1,026	1,023	42	5	0	0	21	41	44
1949	1,020	1,017	1,016	1,012	1,016	1,050	1,063	1,064	1,052	1,030	1,009	1,004	17	4	3	15	37	58	63
1950	999	996	993	1,001	1,015	1,032	1,046	1,043	1,031	1,006	987	981	35	21	24	36	61	80	86
1951	995	1,013	1,020	1,033	1,040	1,058	1,065	1,067	1,056	1,033	1,014	1,012	9	2	0	11	34	53	55
1952	1,010	1,015	1,019	1,032	1,038	1,048	1,058	1,067	1,067	1,058	1,046	1,036	19	9	0	0	9	21	31
1953	1,023	1,017	1,021	1,022	1,033	1,051	1,065	1,067	1,067	1,053	1,042	1,036	16	2	0	0	14	25	31
1954	1,023	1,017	1,021	1,030	1,035	1,051	1,067	1,067	1,059	1,039	1,024	1,023	16	0	0	8	28	43	44
1955	1,022	1,017	1,022	1,024	1,027	1,032	1,040	1,046	1,034	1,012	990	988	35	27	21	33	55	77	79
1956	986	990	1,017	1,017	1,019	1,048	1,067	1,067	1,067	1,056	1,045	1,036	19	0	0	0	11	22	31
1957	1,023	1,017	1,016	1,017	1,035	1,052	1,066	1,067	1,063	1,045	1,031	1,034	15	1	0	4	22	36	33
1958	1,023	1,017	1,021	1,029	1,067	1,024	1,053	1,067	1,067	1,058	1,047	1,036	43	14	0	0	9	20	31
1959	1,023	1,017	1,017	1,034	1,039	1,053	1,055	1,053	1,041	1,022	1,003	1,007	14	12	14	26	45	64	60
1960	1,003	1,001	1,000	1,004	1,032	1,056	1,062	1,067	1,055	1,036	1,014	1,010	11	5	0	12	31	53	57
1961	1,008	1,009	1,021	1,026	1,044	1,057	1,062	1,065	1,056	1,035	1,012	1,011	10	5	2	11	32	55	56
1962	1,006	1,008	1,019	1,019	1,035	1,052	1,064	1,064	1,053	1,029	1,009	1,006	15	3	3	14	38	58	61
1963	1,023	1,017	1,021	1,025	1,045	1,055	1,052	1,067	1,064	1,046	1,033	1,031	12	15	0	3	21	34	36
1964	1,023	1,017	1,018	1,033	1,037	1,041	1,033	1,026	1,016	994	972	968	26	34	41	51	73	95	99
1965	987	976	1,017	1,022	1,040	1,052	1,065	1,067	1,061	1,042	1,032	1,030	15	2	0	6	25	35	37
1966	1,023	1,017	1,021	1,037	1,049	1,055	1,067	1,067	1,054	1,036	1,016	1,014	12	0	0	13	31	51	53
1967	1,010	1,017	1,021	1,030	1,044	1,048	1,064	1,067	1,067	1,058	1,047	1,036	19	3	0	0	9	20	31
1968	1,028	1,017	1,019	1,025	1,034	1,054	1,059	1,059	1,049	1,031	1,019	1,017	13	8	8	18	36	48	50
1969	1,017	1,017	1,021	1,022	1,027	1,048	1,063	1,067	1,067	1,058	1,047	1,036	19	4	0	0	9	20	31
1970	1,023	1,017	1,020	1,017	1,025	1,052	1,055	1,055	1,046	1,027	1,011	1,009	15	12	12	21	40	56	58
1971	1,009	1,017	1,020	1,028	1,041	1,043	1,065	1,067	1,067	1,054	1,044	1,036	24	2	0	0	13	23	31
1972	1,023	1,017	1,022	1,033	1,045	1,056	1,066	1,066	1,054	1,037	1,020	1,020	11	1	1	13	30	47	47
1973	1,022	1,017	1,021	1,030	1,034	1,053	1,065	1,067	1,056	1,034	1,021	1,020	14	2	0	11	33	46	47
1974	1,022	1,017	1,018	1,017	1,036	1,025	1,058	1,067	1,067	1,058	1,047	1,036	42	9	0	0	9	20	31
1975	1,023	1,017	1,021	1,024	1,045	1,039	1,061	1,067	1,067	1,058	1,047	1,036	28	6	0	0	9	20	31
1976	1,023	1,017	1,018	1,017	1,012	1,020	1,027	1,025	1,013	994	986	988	47	40	42	54	73	81	79
1977	988	989	988	985	985	985	958	952	930	908	892	896	82	109	115	137	159	175	171
1978	895	903	938	1,020	1,031	1,047	1,067	1,067	1,066	1,051	1,041	1,036	20	0	0	1	16	26	31
1979	1,023	1,017	1,015	1,018	1,029	1,046	1,053	1,060	1,049	1,032	1,016	1,014	21	14	7	18	35	51	53
1980	1,014	1,017	1,019	1,029	1,019	1,046	1,059	1,064	1,058	1,047	1,037	1,036	21	8	3	9	20	30	31
1981	1,023	1,017	1,020	1,029	1,042	1,056	1,064	1,060	1,045	1,025	1,005	1,002	11	3	7	22	42	62	65
1982	1,001	1,017	1,018	1,033	1,029	1,046	1,051	1,067	1,067	1,058	1,047	1,036	21	16	0	0	9	20	31
1983	1,023	1,017	1,020	1,022	1,017	1,045	1,050	1,067	1,067	1,058	1,047	1,036	22	17	0	0	9	20	31
1984	1,023	1,017	1,018	1,034	1,047	1,056	1,067	1,067	1,063	1,044	1,036	1,036	11	0	0	4	23	31	31
1985	1,023	1,017	1,022	1,023	1,027	1,034	1,042	1,034	1,015	995	977	977	33	25	33	52	72	90	90
1986	979	983	992	1,017	1,017	1,029	1,047	1,049	1,038	1,022	1,007	1,010	38	20	18	29	45	60	57
1987	1,010	1,009	1,008	1,009	1,020	1,046	1,050	1,044	1,026	1,003	978	978	21	17	23	41	64	89	89
1988	970	971	997	1,016	1,025	1,032	1,037	1,037	1,028	1,003	973	969	35	30	30	39	64	94	98
1989	964	976	982	987	992	1,042	1,061	1,058	1,046	1,030	1,016	1,017	25	6	9	21	37	51	50
1990	1,018	1,016	1,012	1,018	1,018	1,025	1,020	1,023	1,021	998	982	979	42	47	44	46	69	85	88
1991	972	972	966	958	959	982	989	989	981	967	953	946	85	78	78	86	100	114	121
1992	945	944	943	943	966	1,007	1,020	1,014	1,003	988	966	963	60	47	53	64	79	101	104
1993	957	956	976	1,002	1,034	1,031	1,059	1,067	1,067	1,051	1,041	1,038	36	8	0	0	16	26	29
1994	1,037	1,017	1,019	1,020	1,026	1,030	1,030	1,028	1,014	993	981	978	37	37	39	53	74	86	89

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	4	6	4	1	1	1	18	19	22	7	-5	-15	-17	-7	6	6	6	5	3	2	4	32	576
1923	1	1	1	1	1	1	1	7	2	12	-7	-13	-22	-22	-1	6	6	4	3	1	1	5	26	182
1924	1	1	1	1	1	1	1	7	2	-12	-13	-16	-34	-20	-14	6	3	3	2	1	2	3	20	140
1925	1	1	1	1	1	1	1	7	16	32	7	-10	-25	-18	-2	6	6	6	4	1	2	5	30	210
1926	1	1	1	1	1	1	1	7	8	15	-6	-20	-22	-21	-11	6	6	4	2	1	1	3	23	161
1927	2	6	6	4	1	1	1	21	26	15	0	-5	-21	-17	-5	6	6	6	5	1	2	5	31	651
1928	1	5	5	3	1	1	1	17	2	20	0	-13	-26	-23	-6	6	6	6	3	1	1	4	27	459
1929	1	1	1	1	1	1	1	7	6	6	-3	-6	-16	-18	-7	6	6	5	4	2	2	4	29	203
1930	1	1	1	1	1	1	1	7	22	8	-3	-13	-18	-15	-6	6	6	5	3	2	3	4	29	203
1931	1	1	1	1	1	1	1	7	7	-11	-10	-9	-18	-28	-11	6	3	4	4	2	1	3	23	161
1932	1	1	1	1	1	1	1	7	24	4	10	-7	-13	-14	-5	6	6	6	4	3	3	5	33	231
1933	1	1	1	1	1	1	1	7	34	9	3	-3	-19	-24	-7	6	6	6	5	2	1	4	30	210
1934	1	1	1	1	1	1	1	7	14	4	-5	-6	-12	-31	-9	6	6	5	4	3	1	4	29	203
1935	1	1	3	2	1	1	1	10	20	43	15	-7	-22	-17	-6	6	6	6	4	1	2	4	29	290
1936	1	2	1	1	1	1	1	8	10	8	-4	-6	-29	-22	-9	6	6	5	4	1	1	4	27	216
1937	1	1	1	1	1	1	1	7	32	31	7	-7	-22	-22	-11	6	6	6	4	1	1	3	27	189
1938	1	2	6	6	4	1	1	21	-6	25	18	0	-9	-13	-9	4	6	6	6	4	3	4	33	693
1939	1	1	1	1	1	1	1	7	15	-5	-7	-15	-20	-21	-3	6	5	4	3	2	1	5	26	182
1940	1	4	5	2	1	1	1	15	8	34	5	-12	-24	-20	-4	6	6	6	3	1	2	5	29	435
1941	1	5	6	6	3	1	1	23	21	19	3	0	-14	-9	-6	6	6	6	6	3	4	4	35	805
1942	1	6	6	6	3	1	1	24	14	25	0	0	-13	-13	-5	6	6	6	6	3	3	5	35	840
1943	2	6	6	5	1	1	1	22	9	16	0	-4	-22	-16	-6	6	6	6	5	1	2	4	30	660
1944	1	1	1	1	1	1	1	7	10	3	-3	-12	-23	-24	-11	6	6	5	3	1	1	3	25	175
1945	2	4	5	4	1	1	1	18	13	12	4	-6	-25	-21	-7	6	6	6	4	1	1	4	28	504
1946	2	4	4	2	1	1	1	15	12	10	0	-13	-23	-20	-5	6	6	6	3	1	2	5	29	435
1947	1	1	1	1	1	1	1	7	21	9	-14	-6	-22	-22	-10	6	6	3	4	1	1	4	25	175
1948	1	4	6	6	1	1	1	20	17	37	5	0	-21	-20	-3	6	6	6	6	1	2	5	32	640
1949	2	5	5	2	1	1	1	17	34	13	1	-12	-22	-21	-5	6	6	6	3	1	1	5	28	476
1950	1	1	1	1	1	1	1	7	17	14	-3	-12	-25	-19	-6	6	6	5	3	1	2	4	27	189
1951	4	5	6	3	1	1	1	21	18	7	2	-11	-23	-19	-2	6	6	6	3	1	2	5	29	609
1952	2	4	6	6	4	1	1	24	10	10	9	0	-9	-12	-10	6	6	6	6	4	3	4	35	840
1953	2	5	6	6	3	1	1	24	18	14	2	0	-14	-11	-6	6	6	6	6	3	3	4	34	816
1954	2	6	6	4	1	1	1	21	16	16	0	-8	-20	-15	-1	6	6	6	4	2	3	5	32	672
1955	1	1	1	1	1	1	1	7	5	8	6	-12	-22	-22	-2	6	6	6	3	1	1	5	28	196
1956	2	6	6	6	3	1	1	25	29	19	0	0	-11	-11	-9	6	6	6	6	3	3	4	34	850
1957	2	5	6	5	1	1	1	21	17	14	1	-4	-18	-14	3	6	6	6	5	2	3	6	34	714
1958	1	3	6	6	4	1	1	22	-43	29	14	0	-9	-11	-11	1	6	6	6	4	3	3	29	638
1959	3	3	3	1	1	1	1	13	14	2	-2	-12	-19	-19	4	6	6	5	3	2	2	6	30	390
1960	3	4	6	3	1	1	1	19	24	6	5	-12	-19	-22	-4	6	6	6	3	2	1	5	29	551
1961	3	4	5	3	1	1	1	18	13	5	3	-9	-21	-23	-1	6	6	6	4	1	1	5	29	522
1962	2	5	5	3	1	1	1	18	17	12	0	-11	-24	-20	-3	6	6	6	3	1	2	5	29	522
1963	3	2	6	5	1	1	1	19	10	-3	15	-3	-18	-13	-2	6	5	6	5	2	3	5	32	608
1964	1	1	1	1	1	1	1	7	4	-8	-7	-10	-22	-22	-4	6	4	4	4	1	1	5	25	175
1965	2	5	6	4	1	1	1	20	12	13	2	-6	-19	-10	-2	6	6	6	4	2	4	5	33	660
1966	3	6	6	3	1	1	1	21	6	12	0	-13	-18	-20	-2	6	6	6	3	2	2	5	30	630
1967	2	5	6	6	4	1	1	25	4	16	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1968	3	4	4	2	1	1	1	16	20	5	0	-10	-18	-12	-2	6	6	6	4	2	3	5	32	512
1969	2	5	6	6	4	1	1	25	21	15	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1970	2	3	3	1	1	1	1	12	27	3	0	-9	-19	-16	-2	6	6	6	4	2	2	5	31	372
1971	1	5	6	6	3	1	1	23	2	22	2	0	-13	-10	-8	6	6	6	6	3	4	4	35	805
1972	3	5	5	3	1	1	1	19	11	10	0	-12	-17	-17	0	6	6	6	3	2	2	6	31	589
1973	3	5	6	3	1	1	1	20	19	12	2	-11	-22	-13	-1	6	6	6	3	1	3	5	30	600
1974	1	4	6	6	4	1	1	23	-11	33	9	0	-9	-11	-11	3	6	6	6	4	3	3	31	713
1975	1	4	6	6	4	1	1	23	-6	22	6	0	-9	-11	-11	4	6	6	6	4	3	3	32	736
1976	1	1	1	1	1	1	1	7	8	7	-2	-12	-19	-8	2	6	6	5	3	2	4	6	32	224
1977	1	1	1	1	1	1	1	7	0	-27	-6	-22	-22	-16	4	6	1	4	1	1	2	6	21	147
1978	1	6	6	5	2	1	1	22	16	20	0	-1	-15	-10	-5	6	6	6	5	3	4	5	35	770
1979	1	3	4	2	1	1	1	13	17	7	7	-11	-17	-16	-2	6	6	6	3	2	2	5	30	390
1980	1	4	5	4	1	1	1	17	27	13	5	-6	-11	-10	-1	6	6	6	4	3	4	5	34	578
1981	3	5	4	1	1	1	1	16	14	8	-4	-15	-20	-20	-3	6	6	5	3	2	2	5	29	464
1982	1	2	6	6	4	1	1	21	17	5	16	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1983	1	2	6	6	4	1	1	21	28	5	17	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1984	3	6	6	5	1	1	1	23	9	11	0	-4	-19	-8	0	6	6	6	5	2	4	6	35	805
1985	1	1	1	1	1	1	1	7	7	8	-8	-19	-20	-18	0	6	6	4	2	2	2	6	28	196
1986	1	1	2	1	1	1	1	8	12	18	2	-11	-16	-15	3	6	6	6	3	2	3	6	32	256
1987	1	2	1	1	1	1	1	8	26	4	-6	-18	-23	-25	0	6	6	4	2	1	1	6	26	208
1988	1	1	1	1	1	1	1	7	7	5	0	-9	-25	-30	-4	6	6	6	4	1	1	5	29	203
1989	1	4	4	1	1	1	1	13	50	19	-3	-12	-16	-14	1	6	6	5	3	2	3	6	31	403
1990	1	1	1	1	1	1	1	7	7	-5	3	-2	-23	-16	-3	6	5	6	5	1	2	5	30	210
1991	1	1	1	1	1	1	1	7	23	7	0	-8	-14	-14	-7	6	6	6	4	3	3	4	32	224
1992	1	1	1	1	1	1	1	7	21	13	-6	-11	-15	-22	-3	6	6	4	3	3	1	5	28	196
1993	1	4	6	6	2	1	1	21	-3	28	8	0	-16	-10	-3	5	6	6	6	2	4	5	34	714
1994	1	1	1	1	1	1	1	7	4	0	-2	-14	-21	-12	-3	6	6	5	3	1	3	5	29	203
73 - year Average:								15														73 - year Average:	30	459.4
																						1929 - 34 Average:		201.8

C-032475

STUDY: 1995C6F-SWRCB-467 DWRSIM: recirc818-f, 17 Jun 97
CP # 6, LAKE OROVILLE, EOP SURFACE ELEVATION (FT)
Project: /1995C6F-SWRCB-467/6/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation 900'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	834	837	839	848	850	858	893	900	900	882	866	866	42	7	0	0	18	34	34
1923	870	873	858	862	869	874	895	900	888	864	837	836	26	5	0	12	36	63	64
1924	827	819	786	768	787	792	783	767	745	710	701	696	108	117	133	155	190	199	204
1925	689	693	700	716	784	812	832	838	821	786	773	771	88	68	62	79	114	127	129
1926	762	761	761	773	821	840	882	883	863	832	823	804	60	18	17	37	68	77	96
1927	785	815	813	834	849	863	890	900	890	865	843	840	37	10	0	10	35	57	60
1928	838	848	849	861	871	849	878	884	866	839	805	795	51	22	16	34	61	95	105
1929	775	770	769	773	785	799	805	802	788	756	738	731	101	95	98	112	144	162	169
1930	715	704	763	790	816	847	868	872	857	829	808	804	53	32	28	43	71	92	96
1931	788	779	768	779	790	809	792	780	761	717	702	687	91	108	120	139	183	198	213
1932	669	657	665	690	712	753	767	799	796	769	758	752	147	133	101	104	131	142	148
1933	740	735	731	741	749	752	763	775	765	738	725	716	148	137	125	135	162	175	184
1934	700	695	698	725	748	776	782	770	749	715	702	684	124	118	130	151	185	198	216
1935	661	668	674	702	726	758	848	878	877	852	843	829	142	52	22	23	48	57	71
1936	822	814	795	837	849	860	886	897	894	868	840	836	40	14	3	6	32	60	64
1937	830	822	805	808	823	847	872	894	888	862	844	840	53	28	6	12	38	56	60
1938	837	848	854	858	849	849	882	900	900	893	891	887	51	18	0	0	7	9	13
1939	874	864	854	845	837	833	823	821	799	756	706	704	67	77	79	101	144	194	196
1940	687	678	677	738	834	849	879	890	873	847	820	817	51	21	10	27	53	80	83
1941	810	811	849	849	849	858	886	900	900	886	882	883	42	14	0	0	14	18	17
1942	874	874	849	849	850	867	882	900	900	883	870	870	33	18	0	0	17	30	30
1943	872	869	861	849	856	859	887	897	885	861	841	840	41	13	3	15	39	59	60
1944	841	844	843	849	857	868	879	870	865	835	802	797	32	21	30	35	65	98	103
1945	786	793	809	823	862	865	880	889	878	853	826	823	35	20	11	22	47	74	77
1946	823	828	849	864	868	868	887	887	869	844	816	808	32	13	13	31	56	84	92
1947	791	797	806	811	833	855	864	843	831	794	752	727	45	36	57	69	106	148	173
1948	723	724	715	762	762	782	842	871	877	854	827	811	118	58	29	23	46	73	89
1949	789	784	784	783	791	820	839	844	832	803	766	760	80	61	56	68	97	134	140
1950	738	732	727	754	797	830	863	878	875	852	832	831	70	37	22	25	48	68	89
1951	835	849	854	853	858	870	884	898	895	871	845	843	30	16	2	5	29	55	57
1952	843	846	849	849	852	862	894	900	900	900	899	887	38	6	0	0	0	1	13
1953	874	874	858	850	867	867	883	900	900	883	869	870	33	17	0	0	17	31	30
1954	873	871	874	858	857	859	883	892	875	848	824	812	41	17	8	25	52	76	88
1955	808	809	818	826	832	841	847	845	836	801	759	756	59	53	55	64	99	141	144
1956	737	733	849	849	849	864	892	900	900	884	875	879	36	8	0	0	16	25	21
1957	869	874	874	871	853	863	873	891	883	864	842	842	37	27	9	17	36	58	58
1958	843	846	860	854	849	849	879	900	900	896	892	887	51	21	0	0	4	8	13
1959	874	874	874	862	852	867	870	854	839	807	766	769	33	30	46	61	93	134	131
1960	765	752	746	758	819	857	873	863	847	814	789	770	43	27	37	53	86	111	130
1961	753	755	765	776	806	828	836	823	803	757	706	700	72	64	77	97	143	194	200
1962	675	674	681	693	759	793	834	828	811	773	732	709	107	66	72	89	127	168	191
1963	782	791	823	845	867	858	876	900	892	870	852	853	42	24	0	8	30	48	47
1964	854	865	867	866	874	874	865	850	845	813	770	750	26	35	50	55	87	130	150
1965	727	728	849	849	863	870	887	900	895	876	864	865	30	13	0	5	24	36	35
1966	869	859	860	854	870	874	894	879	861	838	806	794	26	6	21	39	62	94	106
1967	769	780	818	849	860	853	879	900	900	900	896	887	47	21	0	0	0	4	13
1968	874	874	873	858	861	866	872	859	843	812	778	775	34	28	41	57	88	122	125
1969	777	782	805	849	849	865	895	900	900	895	893	874	35	5	0	0	5	7	26
1970	874	874	850	849	849	874	873	875	860	839	811	810	26	27	25	40	61	89	90
1971	813	832	849	864	874	874	893	900	900	883	869	871	26	7	0	0	17	31	29
1972	874	874	865	869	867	874	884	871	854	830	799	788	26	16	29	46	70	101	112
1973	769	785	812	849	849	860	882	900	881	855	833	830	40	18	0	19	45	67	70
1974	833	849	850	854	864	849	883	900	900	890	890	886	51	17	0	0	10	10	14
1975	874	874	874	874	855	852	881	900	900	887	885	886	48	19	0	0	13	15	14
1976	873	874	874	874	874	874	871	863	849	822	789	788	26	29	37	51	78	111	112
1977	765	756	737	725	723	722	663	652	622	599	589	595	178	237	248	278	301	311	305
1978	591	592	628	751	804	859	878	897	896	876	864	872	41	22	3	4	24	36	28
1979	874	874	874	871	853	863	878	896	889	871	848	846	37	22	4	11	29	52	54
1980	850	853	858	850	849	865	881	893	888	871	864	863	35	19	7	12	29	36	37
1981	862	863	871	860	868	865	875	872	852	825	790	790	35	25	28	48	75	110	110
1982	788	849	849	859	862	859	884	900	900	890	887	887	41	16	0	0	10	13	13
1983	873	862	858	853	849	849	877	900	900	900	899	887	51	23	0	0	0	1	13
1984	874	860	849	869	869	871	886	895	894	871	851	852	29	14	5	6	29	49	48
1985	858	862	872	874	874	871	886	866	847	820	780	765	29	14	34	53	80	120	135
1986	749	745	752	785	849	849	871	875	871	845	828	839	51	29	25	29	55	72	61
1987	841	847	848	848	859	867	862	851	832	798	752	747	33	38	49	68	102	148	153
1988	731	733	769	794	802	812	811	805	784	747	702	699	88	89	95	116	153	198	201
1989	682	700	710	718	735	846	870	868	851	823	807	797	54	30	32	49	77	93	103
1990	789	790	768	779	785	810	807	807	792	746	722	719	90	93	93	108	154	178	181
1991	697	689	673	668	681	710	733	747	737	714	699	703	190	167	153	163	186	201	197
1992	697	688	684	688	719	749	764	753	729	700	686	682	151	136	147	171	200	214	218
1993	868	869	874	738	787	861	894	900	900	882	864	863	39	6	0	0	18	36	37
1994	868	874	874	871	862	874	874	871	856	827	794	790	26	26	29	44	73	106	110

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1	4	6	6	2	1	1	21	8	35	7	0	-18	-16	0
1923	1	4	6	3	1	1	1	17	5	21	5	-12	-24	-27	-1
1924	1	1	1	1	1	1	1	7	5	-9	-16	-22	-35	-9	-5
1925	1	1	1	1	1	1	1	7	28	20	6	-17	-35	-13	-2
1926	1	2	2	1	1	1	1	9	19	42	1	-20	-31	-9	-19
1927	1	3	6	3	1	1	1	16	14	27	10	-10	-25	-22	-3
1928	1	1	2	1	1	1	1	8	-22	29	6	-18	-27	-34	-10
1929	1	1	1	1	1	1	1	7	14	6	-3	-14	-32	-18	-7
1930	1	1	1	1	1	1	1	7	31	21	4	-15	-28	-21	-4
1931	1	1	1	1	1	1	1	7	19	-17	-12	-19	-44	-15	-15
1932	1	1	1	1	1	1	1	7	41	14	32	-3	-27	-11	-6
1933	1	1	1	1	1	1	1	7	3	11	12	-10	-27	-13	-9
1934	1	1	1	1	1	1	1	7	28	6	-12	-21	-34	-13	-18
1935	1	1	1	1	1	1	1	7	32	90	30	-1	-25	-9	-14
1936	1	3	5	4	1	1	1	16	11	26	11	-3	-26	-28	-4
1937	1	1	4	3	1	1	1	12	24	25	22	-6	-26	-18	-4
1938	1	2	6	6	4	4	3	26	0	33	18	0	-7	-2	-4
1939	1	1	1	1	1	1	1	7	-4	-10	-2	-22	-43	-50	-2
1940	1	1	3	1	1	1	1	9	15	30	11	-17	-26	-27	-3
1941	1	3	6	6	3	2	2	23	9	28	14	0	-14	-4	1
1942	1	2	6	6	2	1	1	19	17	15	18	0	-17	-13	0
1943	1	3	5	2	1	1	1	14	3	28	10	-12	-24	-20	-1
1944	1	1	1	1	1	1	1	7	11	11	-9	-5	-30	-33	-5
1945	1	1	3	1	1	1	1	9	3	15	9	-11	-25	-27	-3
1946	1	3	3	1	1	1	1	11	0	19	0	-18	-25	-28	-8
1947	1	1	1	1	1	1	1	7	22	9	-21	-12	-37	-42	-25
1948	1	1	1	1	1	1	1	7	20	60	29	6	-23	-27	-16
1949	1	1	1	1	1	1	1	7	29	19	5	-12	-29	-37	-6
1950	1	1	1	1	1	1	1	7	33	33	15	-3	-23	-20	-1
1951	1	2	5	4	1	1	1	15	12	14	14	-3	-24	-26	-2
1952	1	4	6	6	6	5	3	31	10	32	6	0	0	-1	-12
1953	1	2	6	6	2	1	1	19	0	16	17	0	-17	-14	1
1954	1	2	4	1	1	1	1	11	2	24	9	-17	-27	-24	-12
1955	1	1	1	1	1	1	1	7	9	6	-2	-9	-35	-42	-3
1956	1	4	6	6	2	1	1	21	15	28	8	0	-16	-9	4
1957	1	1	4	2	1	1	1	11	10	10	18	-8	-19	-22	0
1958	1	1	6	6	5	4	3	26	0	30	21	0	-4	-4	-5
1959	1	1	1	1	1	1	1	7	15	3	-16	-15	-32	-41	3
1960	1	1	1	1	1	1	1	7	38	16	-10	-16	-33	-25	-19
1961	1	1	1	1	1	1	1	7	22	8	-13	-20	-46	-51	-6
1962	1	1	1	1	1	1	1	7	34	41	-6	-17	-38	-41	-23
1963	1	1	6	4	1	1	1	15	-9	18	24	-8	-22	-18	1
1964	1	1	1	1	1	1	1	7	0	-9	-15	-5	-32	-43	-20
1965	1	3	6	4	1	1	1	17	7	17	13	-5	-19	-12	1
1966	1	4	1	1	1	1	1	10	4	20	-15	-18	-23	-32	-12
1967	1	1	6	6	6	5	3	28	-7	26	21	0	0	-4	-9
1968	1	1	1	1	1	1	1	7	5	6	-13	-16	-31	-34	-3
1969	1	4	6	6	4	4	1	26	16	30	5	0	-5	-2	-19
1970	1	1	1	1	1	1	1	7	25	-1	2	-15	-21	-28	-1
1971	1	4	6	6	2	1	1	21	0	19	7	0	-17	-14	2
1972	1	2	1	1	1	1	1	8	7	10	-13	-17	-24	-31	-11
1973	1	2	6	2	1	1	1	14	11	22	18	-19	-26	-22	-3
1974	1	2	6	6	3	3	3	24	-15	34	17	0	-10	0	-4
1975	1	2	6	6	3	2	3	23	-3	29	19	0	-13	-2	1
1976	1	1	1	1	1	1	1	7	0	-3	-8	-14	-27	-33	-1
1977	1	1	1	1	1	1	1	7	-1	-59	-11	-30	-23	-10	6
1978	1	1	5	5	1	1	1	15	55	19	19	-1	-20	-12	8
1979	1	1	5	3	1	1	1	13	10	15	18	-7	-18	-23	-2
1980	1	2	4	3	1	1	1	13	16	16	12	-5	-17	-7	-1
1981	1	1	1	1	1	1	1	7	-3	10	-3	-20	-27	-35	0
1982	1	2	6	6	3	3	3	24	-3	25	16	0	-10	-3	0
1983	1	1	6	6	6	5	3	28	0	28	23	0	0	-1	-12
1984	1	3	4	4	1	1	1	15	2	15	9	-1	-23	-20	1
1985	1	3	1	1	1	1	1	9	-3	15	-20	-19	-27	-40	-15
1986	1	1	1	1	1	1	1	7	0	22	4	-4	-26	-17	11
1987	1	1	1	1	1	1	1	7	8	-5	-11	-19	-34	-46	-5
1988	1	1	1	1	1	1	1	7	10	-1	-6	-21	-37	-45	-3
1989	1	1	1	1	1	1	1	7	111	24	-2	-17	-28	-16	-10
1990	1	1	1	1	1	1	1	7	25	-3	0	-15	-46	-24	-3
1991	1	1	1	1	1	1	1	7	49	23	14	-10	-23	-15	4
1992	1	1	1	1	1	1	1	7	30	15	-11	-24	-29	-14	-4
1993	1	4	6	6	2	1	1	21	74	33	6	0	-18	-18	-1
1994	1	1	1	1	1	1	1	7	12	0	-3	-15	-29	-33	-4
73 - year Average:								12							

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	6	6	6	2	2	6	34	714
1923	6	6	6	3	1	1	5	28	476
1924	6	4	2	1	1	4	5	23	161
1925	6	6	6	2	1	3	5	29	203
1926	6	6	6	2	1	4	2	27	243
1927	6	6	6	4	1	1	5	29	464
1928	1	6	6	2	1	1	4	21	168
1929	6	6	5	3	1	2	4	27	189
1930	6	6	6	3	1	1	5	28	196
1931	6	2	3	2	1	3	3	20	140
1932	6	6	6	5	1	3	4	31	217
1933	6	6	6	4	1	3	4	30	210
1934	6	6	3	1	1	3	2	22	154
1935	6	6	6	5	1	4	3	31	217
1936	6	6	6	5	1	1	5	30	480
1937	6	6	6	4	1	2	5	30	360
1938	6	6	6	6	4	5	5	38	988
1939	5	4	5	1	1	1	5	22	154
1940	6	6	6	2	1	1	5	27	243
1941	6	6	6	6	3	5	6	38	874
1942	6	6	6	6	2	3	6	35	665
1943	6	6	6	3	1	2	5	29	406
1944	6	6	4	5	1	1	5	28	196
1945	6	6	6	3	1	1	5	28	252
1946	6	6	6	2	1	1	4	26	286
1947	6	6	1	3	1	1	1	19	133
1948	6	6	6	6	1	1	2	28	196
1949	6	6	6	3	1	1	4	27	189
1950	6	6	6	5	1	2	5	31	217
1951	6	6	6	5	1	1	5	30	450
1952	6	6	6	6	6	5	3	38	1178
1953	6	6	6	6	2	3	6	35	665
1954	6	6	6	2	1	1	3	25	275
1955	6	6	5	4	1	1	5	28	196
1956	6	6	6	6	2	4	6	36	756
1957	6	6	6	4	2	1	6	31	341
1958	6	6	6	6	5	5	5	39	1014
1959	6	6	2	3	1	1	6	25	175
1960	6	6	4	2	1	1	2	22	154
1961	6	6	3	2	1	1	4	23	161
1962	6	6	4	2	1	1	1	21	147
1963	4	6	6	4	1	2	6	29	435
1964	6	4	3	5	1	1	2	22	154
1965	6	6	6	5	2	3	6	34	578
1966	6	6	3	2	1	1	3	22	220
1967	4	6	6	6	6	5	4	37	1036
1968	6	6	3	2	1	1	5	24	168
1969	6	6	6	6	5	5	2	36	936
1970	6	5	6	3	1	1	5	27	189
1971	6	6	6	6	2	3	6	35	735
1972	6	6	3	2	1	1	3	22	176
1973	6	6	6	2	1	1	5	27	378
1974	3	6	6	6	4	6	5	36	864
1975	5	6	6	6	3	5	6	37	851
1976	6	5	4	3	1	1	5	25	175
1977	5	1	3	1	1	4	6	21	147
1978	6	6	6	5	2	3	6	34	510
1979	6	6	6	4	2	1	5	30	390
1980	6	6	6	5	2	4	5	34	442
1981	5	6	5	2	1	1	6	26	182
1982	5	6	6	6	4	5	6	38	912
1983	6	6	6	6	6	5	3	38	1064
1984	6	6	6	5	1	2	6	32	480
1985	5	6	2	2	1	1	3	20	180
1986	6	6	6	5	1	2	6	32	224
1987	6	5	3	2	1	1	5	23	161
1988	6	5	4	1	1	1	5	23	161
1989	6	6	5	2	1	2	4	26	182
1990	6	5	6	3	1	1	5	27	189
1991	6	6	6	4	1	3	6	32	224
1992	6	6	3	1	1	3	5	25	175
1993	6	6	6	6	2	2	5	33	693
1994	6	6	5	3	1	1	5	27	189
73 - year Average:								29	387.7
1929 - 34 Average:									184.3

A2-136

C-032476

STUDY: 1995C6F-SWRCB-467 DWRSIM: recirc818-f, 17 Jun 97
CP # 8, FOLSOM LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C6F-SWRCB-467/8/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 466'

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	414	409	414	414	424	428	443	466	466	462	449	434	38	23	0	0	4	17	32	1	1	6	6	5	2	1	22	4	15	23	0	-4	-13	-15	6	6	6	6	5	3	3	35	770
1923	425	423	424	424	424	428	449	466	458	435	422	422	38	17	0	8	31	44	44	1	2	6	4	1	1	1	16	4	21	17	-8	-23	-13	0	6	6	6	4	1	3	6	32	512
1924	407	398	376	358	354	334	335	350	335	333	336	343	132	131	116	131	133	130	123	1	1	1	1	1	1	1	7	-20	1	15	-15	-2	3	7	2	6	6	3	5	6	6	34	238
1925	355	369	384	393	424	437	449	461	442	413	394	390	29	17	5	24	53	72	76	1	2	4	1	1	1	1	11	13	12	12	-19	-29	-19	-4	6	6	6	2	1	2	5	28	308
1926	392	393	392	393	417	424	449	449	432	406	386	394	42	17	17	34	60	80	72	1	2	2	1	1	1	1	9	7	25	0	-17	-26	-20	8	6	6	6	2	1	2	6	29	261
1927	393	414	424	424	424	437	449	466	465	451	446	434	29	17	0	1	15	20	32	1	2	6	5	2	1	1	18	13	12	17	-1	-14	-5	-12	6	6	6	5	3	5	3	34	612
1928	425	424	424	424	424	437	449	457	447	422	408	411	29	17	9	19	44	58	55	1	2	4	2	1	1	1	12	13	12	8	-10	-25	-14	3	6	6	6	4	1	3	6	32	384
1929	404	398	394	383	381	388	400	409	409	369	343	360	78	66	57	57	97	123	106	1	1	1	1	1	1	1	7	7	12	9	0	-40	-26	17	6	6	6	6	1	1	6	32	224
1930	363	372	404	421	424	437	443	442	432	411	396	401	29	23	24	34	55	70	65	1	1	1	1	1	1	1	7	13	6	-1	-10	-21	-15	5	6	6	5	4	1	3	6	31	217
1931	393	390	382	379	378	386	334	359	349	334	333	341	80	132	107	117	132	133	125	1	1	1	1	1	1	1	7	8	-52	25	-10	-15	-1	8	6	1	6	4	3	5	6	31	217
1932	351	362	394	412	424	436	445	461	459	433	398	406	30	21	5	7	33	68	60	1	1	4	4	1	1	1	13	12	9	16	-2	-26	-35	8	6	6	6	5	1	1	6	31	403
1933	398	393	388	378	367	376	368	390	389	334	334	354	90	98	76	77	132	132	112	1	1	1	1	1	1	1	7	9	-8	22	-1	-55	0	20	6	4	6	5	1	6	6	34	238
1934	334	354	385	409	424	437	439	434	411	335	325	336	29	27	32	55	131	141	130	1	1	1	1	1	1	1	7	13	2	-5	-23	-76	-10	11	6	6	5	1	1	4	6	29	203
1935	334	361	378	402	411	414	449	466	461	438	420	418	52	17	0	5	28	46	48	1	2	6	4	1	1	1	16	3	35	17	-5	-23	-18	-2	6	6	6	5	1	2	5	31	496
1936	414	408	403	424	424	437	449	461	461	441	429	429	29	17	5	5	25	37	37	1	2	4	4	1	1	1	14	13	12	12	0	-20	-12	0	6	6	6	6	2	3	6	35	490
1937	421	413	406	399	423	437	449	466	455	442	436	434	29	17	0	11	24	30	32	1	2	6	3	1	1	1	15	14	12	17	-11	-13	-6	-2	6	6	6	3	3	4	5	33	495
1938	426	423	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1939	428	420	415	409	402	409	417	417	410	385	334	351	57	49	49	56	81	132	115	1	1	1	1	1	1	1	7	7	8	0	-7	-25	-51	17	6	6	6	4	1	1	6	30	210
1940	334	352	334	420	424	437	449	464	453	436	428	427	29	17	2	13	30	38	39	1	2	5	3	1	1	1	14	13	12	15	-11	-17	-8	-1	6	6	6	3	2	4	5	32	448
1941	422	418	424	424	424	437	449	466	458	449	444	434	29	17	0	8	17	22	32	1	2	6	4	2	1	1	17	13	12	17	-8	-9	-5	-10	6	6	6	4	4	5	4	35	595
1942	426	422	424	424	424	430	449	466	466	458	449	434	36	17	0	0	8	17	32	1	2	6	6	4	2	1	22	-6	19	17	0	-8	-9	-15	6	6	6	6	4	4	3	35	770
1943	425	424	423	422	422	434	449	459	455	440	436	433	32	17	7	11	26	30	33	1	2	4	3	1	1	1	13	12	15	10	-4	-15	-4	-3	6	6	6	5	3	5	5	36	468
1944	425	418	412	405	406	418	419	433	426	412	396	404	48	47	33	40	54	70	62	1	1	1	1	1	1	1	7	12	1	14	-7	-14	-16	8	6	6	6	4	3	2	6	33	231
1945	399	407	414	416	424	437	449	465	456	442	437	434	29	17	1	10	24	29	32	1	2	5	3	1	1	1	14	13	12	16	-9	-14	-5	-3	6	6	6	4	3	5	5	35	490
1946	427	424	424	424	424	437	449	466	451	433	424	427	29	17	0	15	33	42	39	1	2	6	2	1	1	1	14	13	12	17	-15	-18	-9	3	6	6	6	3	2	4	6	33	462
1947	421	422	421	414	420	437	445	442	431	408	384	393	29	21	24	35	58	82	73	1	1	1	1	1	1	1	7	17	8	-3	-11	-23	-24	9	6	6	5	3	1	1	6	28	196
1948	387	389	368	386	389	390	429	454	456	445	439	434	76	37	12	10	21	27	32	1	1	3	3	1	1	1	11	1	39	25	2	-11	-6	-5	6	6	6	6	3	4	5	36	396
1949	425	419	416	406	400	422	444	461	451	435	423	426	44	22	5	15	31	43	40	1	1	4	2	1	1	1	11	22	22	17	-10	-16	-12	3	6	6	6	4	2	3	6	33	363
1950	416	410	402	424	424	437	449	466	459	445	440	434	29	17	0	7	21	26	32	1	2	6	4	1	1	1	16	13	12	17	-7	-14	-5	-6	6	6	6	4	3	5	4	34	544
1951	421	393	388	388	388	426	448	466	456	439	431	431	40	18	0	10	27	35	35	1	2	6	3	1	1	1	15	38	22	18	-10	-17	-8	0	6	6	6	4	2	4	6	34	510
1952	425	424	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1953	428	423	424	424	424	430	446	457	463	457	449	434	36	20	9	3	9	17	32	1	1	4	5	4	2	1	18	6	16	11	6	-6	-8	-15	6	6	6	6	4	4	3	35	630
1954	425	423	421	422	424	437	449	455	440	418	411	415	29	17	11	26	48	55	51	1	2	3	1	1	1	1	10	13	12	6	-15	-22	-7	4	6	6	6	3	1	4	6	32	320
1955	409	406	414	422	422	418	418	436	430	415	401	408	48	48	30	36	51	65	58	1	1	1	1	1	1	1	7	-4	0	18	-6	-15	-14	7	5	6	6	4	3	3	6	33	231
1956	389	386	420	402	406	425	441	466	466	461	449	434	41	25	0	0	5	17	32	1	1	6	6	4	2	1	21	19	16	25	0	-5	-12	-15	6	6	6	6	5	3	3	35	735
1957	428	422	417	412	424	437	441	466	458	444	439	434	29	25	0	8	22	27	32	1	1	6	4	1	1	1	15	13	4	25	-8	-14	-5	-5	6	6	6	4	3	5	5	35	525
1958	426	421	422	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1959	425	419	412	417	424	428	436	436	424	406	389	398	38	30	30	42	60	77	68	1	1	1	1	1	1	1	7	4	8	0	-12	-18	-17	9	6	6	6	3	2	2	6	31	217
1960	389	382	374	375	414	437	449	448	438	417	406	408	29	17	18	28	49	60	58	1	2	2	1	1	1	1	9	23	12	-1	-10	-21	-11	2	6	6	5	4	1	3	6	31	279
1961	401	399	398	389	390	395	405	417	410	395	387	393	71	61	49	56	71	79	73	1	1	1	1	1	1	1	7	5	10	12	-7	-15	-8	6	6	6	6	4	3	4	6	35	245
1962	391	388	390	389	424	434	449	457	449	428	419	421	32	17	9	17	38	47	45	1	2	4	2	1	1	1	12	10	15	8	-8	-21	-9	2	6	6	6	4	1	4	6	33	396
1963	441	424	424	424	419	430	449	466	461	445	440	434	36	17	0	5	21	26	32	1	2	6	4	1	1	1	16	11	19	17	-5	-16	-5	-6	6	6	6	5	2	5	4	34	544
1964	427	424	424	424	421	419	430	436	430	409	382	390	47	36	30	36	57	84	76	1	1	1	1	1	1	1	7	-2	11	6	-6	-21	-27	8	5	6	6	4	1	1	6	29	203
1965	370	380	393	392	395	414	449	465	460	447	444	434	52	17	1	6	19	22	32	1	2	5	4	2	1	1	16	19	35	16	-5	-13	-3	-10	6	6	6	5	3	5	4	35	560
1966	426	424	424	424	422	430	448	450	436	415	403	405	36	18	16	30	51	63	61	1	2	2	1	1	1	1	9	8	18	2	-14	-21	-12	2	6	6	6	3	1	3	6	31	279
1967	396	399	422	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1968	427	424	423	424	424	437	444	445	433	414	407	409	29	22	21	33	52	59	57	1	1	1	1	1	1	1	7	13	7	1	-12	-19	-7	2	6	6	6	3	2	4	6	33	231
1969	404	407	416	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1970	427	424	423	393	396	426	431	441	434	418	411	414	40	35	25	32	48	55	52	1	1	1	1	1	1	1	7	30	5	10	-7	-16	-7	3	6	6	6	4	2	4	6	34	238
1971	408	421	424	424	424	437	449	463	463	457	449	434	29	17	3	3	9	17	32	1	2	5	5	4	2	1	20	13	12	14	0	-6	-8	-15	6	6	6	6	4	4	3	35	700
1972	425	422	424	424	424	437	443	450	440	423	411	414	29	23	16	26	43	55	52	1	1	2	1	1	1	1	8	13	6	7	-10	-17	-12	3	6	6	6	4	2	3	6	33	264
1973	409	414	424	424	424	437	449	466	449	425	420	425	29	17	0	17	41	46	41	1	2	6	2	1	1	1	14	13	12	17	-17	-24	-5	5	6	6	6	2	1	5	6	32	448
1974	422	423	422	409	417	433	449	466	463	463	449	434	33	17	0	3	3	17	32	1	2	6	5	5	2	1	22	18	16	17	-3	0	-14	-15	6	6	6	5	6	3	3	35	770
1975	426	419	417	415	424	437	441	466	466	463	449	434	29	25	0	0	3	17	32	1	1	6	6	5	2	1	22	13	4	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1976	431	423	419	410	402	396	401	405	396	370	352	357	70	65	61	70	96	114	109	1	1	1	1	1	1	1	7	-6	5	4	-9	-26	-18	5	4	6	6	4	1	2	6	29	203
1977	357	360	353	340	337	338	334	341	334	319	305	291	128	132	125	132	147	161	175	1	1	1	1	1	1	1	7	1	-4	7	-7	-15	-14	-14	6	5	6	4	3	3	3	30	210
1978	286	304	358	424	424	437	449	466	461	451	441	434	29	17	0	5	15	25	32	1	2	6	4	2	1	1	17	13	12	17	-5	-10	-10	-7	6	6	6	5	4	4	4	35	595
1979	423	417	411	418	424	437	447	466	455	443	434	433	29	19	0	11	23	32	33	1	2	6	3	1	1	1	15	13	10	19	-11	-12	-9	-1	6	6	6	3	3	4	5	33	495
1980	426	423	424	405	399	430	449	464	456	455	449	434	36	17	2	10	11	17	32	1	2	5	3	3	2	1	17	31	19	15	-8	-1	-6	-15	6	6	6	4	5	4	3	34	578
1981	425	419	415	413	412	422	433	435	418	399	387	394	44	33	31	48	67	79	72	1	1	1	1	1	1	1	7	10	11	2	-17	-19	-12	7	6	6	6	2	2	3	6	31	217
1982	400	420	392	396	388	424	449	466	466	463	449	434	42	17	0	0	3	17	32	1	2	6	6	5	2	1	23	38	25	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1983	438	415	417	418	418	433	449	466	466	463	449	434	33	17	0	0	3	17	32	1	2	6	6	5	2	1	23	15	16	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1984	435	392	388	388	392	424	443	463	456	441	433	433	42	23	3	10	25	33	33	1	1	5	3	1	1	1	13	32	19	20	-7	-15	-8	0	6	6	6	4	3	4	6	35	455
1985	427	424	424	420	422	428	443	447	432	407	378	388	38	23	19	34	59	88	78	1	1	2	1	1	1	1	8	6	15	4	-15	-25	-29	10	6	6	6	3	1	1	6	29	232
1986	357	375	398	424	396	424	449	464	458	453	449	434	42	17	2	8	13	17	32	1	2	5	4	3	2	1	18	28	25	15	-8	-5	-4	-15	6	6	6	4	5	5	3	35	630
1987	427	420	413	405	404	410	419	420	407	382	334	340	56	47	46	59	84	132	126	1	1	1	1	1	1	1	7	6	9	1	-13	-25	-48	6	6	6	6	3	1	1	6	29	203
1988	334	334	369	396	403	406	407	404	384	356	334	390	60	59	62	82	110	132	76	1	1	1	1	1	1	1	7	3	1	-3	-20	-28	-22	56	6	6	5	2	1	1	6	27	189
1989	385	389	394	397	403	437	449	457	447	431	424	427	29	17	9	19	35	42	39	1	2	4	2	1	1	1	12	34	12	8	-10	-16	-7	3	6	6	6	4	2	4	6	34	408
1990	421	416	409	405	399	408	421	416	407	379	334	354	58	45	50	59	87	132	112	1	1	1	1	1	1	1	7	9	13	-5	-9	-28	-45	20	6	6	5	4	1	1	6	29	203
1991	334	340	334	332	332	383	407	425	426	420	411	409	83	59	41	40	46	55	57	1	1	1	1	1	1	1	7	51	24	18	1	-6	-9	-2	6	6	6	6	4	4	5	37	259
1992	403	398	388	374	393	407	417	416	403	364	334	328	59	49	50	63	102	132	138	1	1	1	1	1	1	1	7	14	10	-1	-13	-39	-30	-6	6	6	5	3	1	1	4	26	182
1993	327	326	363	424	427	434	449	466	466	454	449	434	32	17	0	0	12	17	32	1	2	6	6	3	2	1	21	7	15	17	0	-12	-5	-15	6	6	6	6	3	5	3	35	735
1994	423	413	407	395	390	390	398	403	399	372	335	332	76	68	63	67	94	131	134	1	1	1	1	1	1	1	7	0	8	5	-4	-27	-37	-3	6	6	6	5	1	1	5	30	210
																								73 - year Average:			13												73 - year Average:		33	438.0
																																							1929 - 34 Average:			250.3

A2-137

C-032477

C-032477

STUDY: 199[illegible] SWRCB-467 DWRSIM: 8.18, 27 Nov 96
CP # 10, NEW MELONES RESERVOIR, EOP SURFACE ELEVATION
Project: /1995C6F-SWRCB-467/10/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 1088'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	940	943	949	954	968	978	977	1005	1026	1019	1009	1001
1923	1000	1003	1011	1019	1025	1029	1032	1047	1047	1039	1028	1021
1924	1020	1022	1025	1027	1030	1030	1024	1017	1008	1000	992	987
1925	985	987	989	991	1005	1014	1015	1028	1029	1022	1010	1003
1926	1002	1003	1004	1006	1013	1018	1020	1016	1007	995	983	974
1927	975	978	986	993	1007	1015	1022	1035	1040	1031	1020	1013
1928	1013	1018	1022	1025	1031	1049	1049	1056	1049	1036	1024	1016
1929	1015	1017	1018	1019	1021	1022	1018	1015	1008	998	988	980
1930	980	981	981	984	989	996	996	992	990	978	965	957
1931	957	959	959	960	961	963	958	950	940	931	921	912
1932	909	911	921	927	942	948	948	971	986	980	970	962
1933	962	964	967	969	972	974	969	967	966	955	943	935
1934	935	937	939	943	948	955	949	941	930	920	903	892
1935	889	890	893	901	906	918	930	957	969	960	950	941
1936	941	944	947	958	981	992	1001	1019	1024	1016	1007	1001
1937	1001	1002	1006	1009	1019	1029	1029	1047	1048	1037	1026	1019
1938	1018	1020	1030	1040	1050	1055	1063	1088	1088	1084	1076	1070
1939	1050	1050	1050	1050	1050	1052	1050	1042	1032	1021	1010	1002
1940	1002	1002	1004	1016	1030	1047	1051	1064	1063	1054	1044	1036
1941	1035	1037	1041	1048	1050	1055	1052	1066	1072	1066	1057	1050
1942	1049	1050	1050	1050	1050	1055	1055	1068	1082	1078	1069	1064
1943	1050	1050	1050	1050	1050	1055	1061	1068	1071	1064	1055	1048
1944	1046	1048	1049	1050	1050	1053	1048	1048	1043	1032	1020	1012
1945	1012	1017	1021	1026	1040	1048	1044	1054	1060	1053	1043	1038
1946	1035	1039	1048	1050	1050	1054	1055	1064	1062	1053	1043	1036
1947	1035	1037	1040	1042	1046	1050	1046	1041	1030	1018	1007	1000
1948	1000	1000	1001	1001	1001	1004	1004	1010	1019	1011	1003	997
1949	997	998	1000	1001	1003	1008	1006	1012	1008	999	989	981
1950	980	980	982	989	998	1004	1007	1021	1026	1018	1009	1003
1951	1002	1031	1050	1050	1050	1055	1058	1064	1059	1050	1039	1032
1952	1031	1034	1041	1050	1050	1055	1058	1087	1088	1086	1078	1072
1953	1050	1050	1050	1050	1050	1054	1053	1052	1057	1051	1041	1034
1954	1033	1035	1038	1040	1044	1051	1054	1063	1056	1046	1035	1027
1955	1027	1029	1031	1036	1040	1042	1038	1034	1029	1018	1007	999
1956	998	1000	1026	1050	1050	1055	1055	1069	1079	1074	1065	1060
1957	1050	1050	1050	1050	1050	1055	1052	1056	1059	1049	1039	1031
1958	1026	1030	1032	1039	1047	1055	1062	1088	1088	1083	1074	1067
1959	1050	1050	1050	1050	1050	1053	1049	1040	1030	1019	1008	1001
1960	1000	1000	1001	1002	1008	1013	1011	1007	1000	990	979	969
1961	964	967	969	970	971	973	969	964	954	944	935	928
1962	927	928	929	929	940	946	949	957	963	955	944	935
1963	935	938	941	949	968	975	975	1002	1010	1004	995	988
1964	988	993	996	1001	1004	1008	1004	1001	996	985	974	964
1965	964	967	997	1018	1030	1037	1040	1051	1058	1053	1044	1037
1966	1035	1039	1043	1048	1050	1053	1051	1053	1042	1030	1019	1010
1967	1010	1012	1021	1033	1041	1052	1053	1073	1088	1088	1080	1074
1968	1050	1050	1050	1050	1050	1054	1050	1047	1037	1026	1014	1006
1969	1006	1009	1012	1041	1050	1055	1066	1088	1088	1084	1075	1068
1970	1050	1050	1050	1050	1050	1055	1054	1060	1061	1051	1040	1033
1971	1032	1036	1044	1050	1050	1055	1052	1058	1060	1053	1043	1035
1972	1034	1037	1043	1048	1050	1055	1050	1053	1044	1032	1020	1013
1973	1013	1015	1019	1031	1046	1055	1051	1063	1063	1054	1043	1036
1974	1035	1041	1049	1050	1050	1055	1059	1073	1077	1069	1060	1053
1975	1050	1050	1050	1050	1050	1055	1050	1056	1068	1061	1052	1045
1976	1044	1047	1050	1050	1050	1051	1046	1040	1029	1020	1011	1004
1977	1004	1005	1007	1006	1005	1003	998	992	984	973	963	957
1978	954	953	957	967	980	997	1004	1019	1027	1021	1011	1006
1979	1006	1008	1012	1020	1033	1046	1047	1062	1059	1048	1037	1030
1980	1030	1033	1036	1050	1050	1055	1056	1063	1070	1068	1059	1053
1981	1050	1050	1050	1050	1050	1053	1050	1044	1032	1019	1008	1002
1982	1002	1009	1024	1044	1050	1055	1071	1086	1088	1084	1076	1072
1983	1050	1050	1050	1050	1050	1055	1056	1070	1088	1088	1083	1075
1984	1050	1050	1050	1050	1050	1055	1053	1059	1058	1051	1042	1036
1985	1036	1041	1046	1049	1050	1054	1052	1050	1039	1027	1016	1010
1986	1011	1013	1017	1026	1050	1055	1056	1061	1065	1057	1048	1043
1987	1043	1045	1047	1048	1049	1052	1047	1038	1028	1020	1013	1008
1988	1006	1005	1004	1004	1005	1006	1001	995	987	980	973	966
1989	964	962	961	961	961	973	971	968	961	951	942	936
1990	938	940	942	943	946	949	942	932	922	907	894	885
1991	882	881	884	881	879	887	882	879	866	851	836	829
1992	829	830	833	834	845	854	846	831	816	798	774	759
1993	784	772	783	812	909	960	969	985	994	986	977	972
1994	971	972	975	975	976	982	978	976	968	959	950	945

(FT)
Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevatio[illegible] Table:
If [DFMRE] <= 0', t[illegible] else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	120	110	111	83	62	69	79	1	1	1	1	1	1	1	7
1923	63	59	56	41	41	49	60	1	1	1	1	1	1	1	7
1924	58	58	64	71	80	88	96	1	1	1	1	1	1	1	7
1925	83	74	73	60	59	66	78	1	1	1	1	1	1	1	7
1926	75	70	68	72	81	93	105	1	1	1	1	1	1	1	7
1927	81	73	66	53	48	57	68	1	1	1	1	1	1	1	7
1928	57	39	39	32	39	52	64	1	1	1	1	1	1	1	7
1929	67	66	70	73	80	90	100	1	1	1	1	1	1	1	7
1930	99	92	92	96	98	110	123	1	1	1	1	1	1	1	7
1931	127	125	130	138	148	157	167	1	1	1	1	1	1	1	7
1932	146	140	140	117	102	108	118	1	1	1	1	1	1	1	7
1933	116	114	119	121	122	133	145	1	1	1	1	1	1	1	7
1934	140	133	139	147	158	168	185	1	1	1	1	1	1	1	7
1935	180	170	158	131	119	128	138	1	1	1	1	1	1	1	7
1936	107	96	87	69	64	72	81	1	1	1	1	1	1	1	7
1937	69	59	59	41	40	51	62	1	1	1	1	1	1	1	7
1938	38	33	25	0	0	4	12	1	1	1	6	6	5	3	23
1939	38	36	38	46	56	67	78	1	1	1	1	1	1	1	7
1940	58	41	37	24	25	34	44	1	1	1	1	1	1	1	7
1941	38	33	36	22	16	22	31	1	1	1	1	2	1	1	8
1942	38	33	33	20	6	10	19	1	1	1	1	4	3	2	13
1943	38	33	27	20	17	24	33	1	1	1	1	2	1	1	8
1944	38	35	40	40	45	56	68	1	1	1	1	1	1	1	7
1945	48	40	44	34	28	35	45	1	1	1	1	1	1	1	7
1946	38	34	33	24	26	35	45	1	1	1	1	1	1	1	7
1947	42	38	42	47	58	70	81	1	1	1	1	1	1	1	7
1948	87	84	84	78	69	77	85	1	1	1	1	1	1	1	7
1949	85	80	82	76	80	89	99	1	1	1	1	1	1	1	7
1950	90	84	81	67	62	70	79	1	1	1	1	1	1	1	7
1951	38	33	30	24	29	38	49	1	1	1	1	1	1	1	7
1952	38	33	30	1	0	2	10	1	1	1	5	6	5	3	22
1953	38	34	35	36	31	37	47	1	1	1	1	1	1	1	7
1954	44	37	34	25	32	42	53	1	1	1	1	1	1	1	7
1955	48	46	50	54	59	70	81	1	1	1	1	1	1	1	7
1956	38	33	33	19	9	14	23	1	1	1	2	4	3	1	13
1957	38	33	36	32	29	39	49	1	1	1	1	1	1	1	7
1958	41	33	26	0	0	5	14	1	1	1	6	6	4	3	22
1959	38	35	39	48	58	69	80	1	1	1	1	1	1	1	7
1960	80	75	77	81	88	98	109	1	1	1	1	1	1	1	7
1961	117	115	119	124	134	144	153	1	1	1	1	1	1	1	7
1962	148	142	139	131	125	133	144	1	1	1	1	1	1	1	7
1963	120	113	113	86	78	84	93	1	1	1	1	1	1	1	7
1964	84	80	84	87	92	103	114	1	1	1	1	1	1	1	7
1965	58	51	48	37	30	35	44	1	1	1	1	1	1	1	7
1966	38	35	37	35	46	58	69	1	1	1	1	1	1	1	7
1967	47	36	35	15	0	0	8	1	1	1	2	6	6	4	21
1968	38	34	38	41	51	62	74	1	1	1	1	1	1	1	7
1969	38	33	22	0	0	4	13	1	1	1	6	6	5	3	23
1970	38	33	34	28	27	37	48	1	1	1	1	1	1	1	7
1971	38	33	36	32	28	35	45	1	1	1	1	1	1	1	7
1972	38	33	38	35	44	56	66	1	1	1	1	1	1	1	7
1973	42	33	37	25	25	34	45	1	1	1	1	1	1	1	7
1974	38	33	29	15	11	19	28	1	1	1	2	3	2	1	11
1975	38	33	38	32	20	27	38	1	1	1	1	1	1	1	7
1976	38	37	42	48	59	68	77	1	1	1	1	1	1	1	7
1977	83	85	90	96	104	115	125	1	1	1	1	1	1	1	7
1978	108	91	84	69	61	67	77	1	1	1	1	1	1	1	7
1979	55	42	41	26	29	40	51	1	1	1	1	1	1	1	7
1980	38	33	32	25	18	20	29	1	1	1	1	2	1	1	8
1981	38	35	38	44	56	69	80	1	1	1	1	1	1	1	7
1982	38	33	17	2	0	4	12	1	1	2	5	6	5	3	23
1983	38	33	32	18	0	0	5	1	1	1	2	6	6	4	21
1984	38	33	35	29	30	37	46	1	1	1	1	1	1	1	7
1985	38	34	36	38	49	61	72	1	1	1	1	1	1	1	7
1986	38	33	32	27	23	31	40	1	1	1	1	1	1	1	7
1987	39	36	41	50	60	68	75	1	1	1	1	1	1	1	7
1988	83	82	87	93	101	108	115	1	1	1	1	1	1	1	7
1989	127	115	117	120	127	137	146	1	1	1	1	1	1	1	7
1990	143	139	146	156	166	181	194	1	1	1	1	1	1	1	7
1991	209	201	206	209	222	237	252	1	1	1	1	1	1	1	7
1992	243	234	242	257	272	290	314	1	1	1	1	1	1	1	7
1993	179	128	119	103	94	102	111	1	1	1	1	1	1	1	7
1994	112	106	110	112	120	129	138	1	1	1	1	1	1	1	7
											73 - year Average:				9

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index = Product

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	10	-1	28	21	-7	-10	-8	6	5	6	6	4	4	4	35	245
1923	4	3	15	0	-8	-11	-7	6	6	6	6	4	3	4	35	245
1924	0	-8	-7	-9	-8	-8	-5	6	4	4	4	4	4	5	31	217
1925	9	1	13	1	-7	-12	-7	6	6	6	6	4	3	4	35	245
1926	5	2	-4	-9	-12	-12	-9	6	6	5	4	3	3	4	31	217
1927	8	7	13	5	-9	-11	-7	6	6	6	6	4	3	4	35	245
1928	18	0	7	-7	-13	-12	-8	6	6	6	4	3	3	4	32	224
1929	1	-4	-3	-7	-10	-10	-8	6	5	5	4	4	4	4	32	224
1930	7	0	-4	-2	-12	-13	-8	6	6	5	5	3	3	4	32	224
1931	2	-5	-8	-10	-9	-10	-9	6	5	4	4	4	4	4	31	217
1932	6	0	23	15	-6	-10	-8	6	6	6	6	4	4	4	36	252
1933	2	-5	-2	-1	-11	-12	-8	6	5	5	5	3	3	4	31	217
1934	7	-6	-8	-11	-10	-17	-11	6	4	4	3	4	2	3	26	182
1935	10	12	27	12	-9	-10	-9	6	6	6	6	4	4	4	36	252
1936	11	9	18	5	-8	-9	-6	6	6	6	6	4	4	4	36	252
1937	10	0	18	1	-11	-11	-7	6	6	6	6	3	3	4	34	238
1938	5	8	25	0	-4	-8	-6	6	6	6	6	5	4	4	37	851
1939	2	-2	-8	-10	-11	-11	-8	6	5	4	4	3	3	4	29	203
1940	17	4	13	-1	-9	-10	-8	6	6	6	5	4	4	4	35	245
1941	5	-3	14	6	-6	-9	-7	6	5	6	6	4	4	4	35	280
1942	5	0	13	14	-4	-9	-5	6	6	6	6	5	4	5	38	494
1943	5	6	7	3	-7	-9	-7	6	6	6	6	4	4	4	36	288
1944	3	-5	0	-5	-11	-12	-8	6	5	6	5	3	3	4	32	224
1945	8	-4	10	6	-7	-10	-7	6	5	6	6	4	4	4	35	245
1946	4	1	9	-2	-9	-10	-7	6	6	6	5	4	4	4	35	245
1947	4	-4	-5	-11	-12	-11	-7	6	5	5	3	3	3	4	29	203
1948	3	0	6	9	-8	-8	-6	6	6	6	6	4	4	4	36	252
1949	5	-2	6	-4	-9	-10	-6	6	5	6	5	4	4	4	34	238
1950	6	3	14	5	-8	-9	-6	6	6	6	6	4	4	4	36	252
1951	5	3	6	-5	-9	-11	-7	6	6	6	5	4	3	4	34	238
1952	5	3	29	1	-2	-8	-6	6	6	6	6	5	4	4	37	814
1953	4	-1	-1	5	-6	-10	-7	6	5	5	6	4	4	4	34	238
1954	7	3	9	-7	-10	-11	-8	6	6	6	4	4	3	4	33	231
1955	2	-4	-4	-5	-11	-11	-8	6	5	5	5	3	3	4	31	217
1956	5	0	14	10	-5	-9	-5	6	6	6	6	5	4	5	38	494
1957	5	-3	4	3	-10	-10	-8	6	5	6	6	4	4	4	35	245
1958	8	7	26	0	-5	-9	-7	6	6	6	6	5	4	4	37	814
1959	3	-4	-9	-10	-11	-11	-7	6	5	4	4	3	3	4	29	203
1960	5	-2	-4	-7	-10	-11	-10	6	5	5	4	4	3	4	31	217
1961	2	-4	-5	-10	-10	-9	-7	6	5	5	4	4	4	4	32	224
1962	6	3	8	6	-8	-11	-9	6	6	6	6	4	3	4	35	245
1963	7	0	27	8	-6	-9	-7	6	6	6	6	4	4	4	36	252
1964	4	-4	-3	-5	-11	-11	-10	6	5	5	5	3	3	4	31	217
1965	7	3	11	7	-5	-9	-7	6	6	6	6	5	4	4	37	259
1966	3	-2	2	-11	-12	-11	-9	6	5	6	3	3	3	4	30	210
1967	11	1	20	15	0	-8	-6	6	6	6	6	6	4	4	38	798
1968	4	-4	-3	-10	-11	-12	-8	6	5	5	4	3	3	4	30	210
1969	5	11	22	0	-4	-9	-7	6	6	6	6	5	4	4	37	851
1970	5	-1	6	1	-10	-11	-7	6	5	6	6	4	3	4	34	238
1971	5	-3	4	4	-7	-10	-8	6	5	6	6	4	4	4	35	245
1972	5	-5	3	-9	-12	-12	-7	6	5	6	4	3	3	4	31	217
1973	9	-4	12	0	-9	-11	-7	6	5	6	6	4	3	4	34	238
1974	5	4	14	4	-8	-9	-7	6	6	6	6	4	4	4	36	396
1975	5	-5	6	12	-7	-9	-7	6	5	6	6	4	4	4	35	245
1976	1	-5	-6	-11	-9	-9	-7	6	5	4	3	4	4	4	30	210
1977	-2	-5	-6	-8	-11	-10	-6	5	5	4	4	3	4	4	29	203
1978	17	7	15	8	-6	-10	-5	6	6	6	6	4	4	5	37	259
1979	13	1	15	-3	-11	-11	-7	6	6	6	5	3	3	4	33	231
1980	5	1	7	7	-2	-9	-6	6	6	6	6	5	4	4	37	296
1981	3	-3	-6	-12	-13	-11	-6	6	5	4	3	3	3	4	28	196
1982	5	16	15	2	-4	-8	-4	6	6	6	6	5	4	5	38	874
1983	5	1	14	18	0	-5	-8	6	6	6	6	6	5	4	39	819
1984	5	-2	6	-1	-7	-9	-6	6	5	6	5	4	4	4	34	238
1985	4	-2	-2	-11	-12	-11	-6	6	5	5	3	3	3	4	29	203
1986	5	1	5	4	-8	-9	-5	6	6	6	6	4	4	5	37	259
1987	3	-5	-9	-10	-8	-7	-5	6	5	4	4	4	4	5	32	224
1988	1	-5	-6	-8	-7	-7	-7	6	5	4	4	4	4	4	31	217
1989	12	-2	-3	-7	-10	-9	-6	6	5	5	4	4	4	4	32	224
1990	4	-7	-10	-10	-15	-13	-9	6	4	4	4	3	3	4	28	196
1991	8	-5	-3	-13	-15	-15	-7	6	5	5	3	3	3	4	29	203
1992	9	-8	-15	-15	-18	-24	-15	6	4	3	3	2	1	3	22	154
1993	51	9	16	9	-8	-9	-5	6	6	6	6	4	4	5	37	259
1994	6	-4	-2	-8	-9	-9	-5	6	5	5	4	4	4	5	33	231
											73 - year Average:				33	298.2
													1929 - 34 Average:			219.3

A2-138

C-032478

STUDY F-SWRCB-467 DWRSIM. 8.18, 27 Nov 96
CP # 81, DON PEDRO RESERVOIR, EOP SURFACE ELEVATION (FT)
Project. /1995C6F-SWRCB-467/81/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 832'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	599	582	579	601	656	690	699	724	782	779	763	752	142	133	108	50	53	69	80
1923	746	745	748	761	776	784	789	792	801	795	780	770	48	43	40	31	37	52	62
1924	764	762	757	755	756	754	749	744	735	723	709	701	78	83	88	97	109	123	131
1925	698	698	699	703	725	741	754	767	785	776	760	749	91	78	65	47	56	72	83
1926	743	741	738	735	744	749	763	776	774	759	744	735	83	69	56	58	73	88	97
1927	730	729	733	740	768	783	794	795	814	806	792	782	49	38	37	18	26	40	50
1928	776	776	776	779	787	800	802	819	819	805	790	780	32	30	13	13	27	42	52
1929	774	769	765	764	768	769	769	773	780	771	762	754	63	63	59	52	61	70	78
1930	752	749	748	746	752	759	761	764	777	769	760	753	73	71	68	55	63	72	79
1931	751	750	749	751	754	753	746	737	726	712	699	692	79	86	95	106	120	133	140
1932	689	685	695	710	745	760	761	768	786	781	766	756	72	71	64	46	51	66	76
1933	749	742	737	736	742	745	743	740	757	746	732	722	87	89	92	75	86	100	110
1934	715	713	711	714	725	732	731	727	724	708	693	685	100	101	105	108	124	139	147
1935	681	680	681	693	713	728	749	759	786	774	759	747	104	83	73	46	58	73	85
1936	740	738	733	738	776	792	801	819	832	823	808	798	40	31	13	0	9	24	34
1937	792	786	782	785	800	800	802	815	832	819	805	795	32	30	17	0	13	27	37
1938	789	784	800	800	800	800	800	804	831	832	819	808	32	32	28	1	0	13	24
1939	800	799	799	800	800	800	802	804	799	787	774	766	32	30	28	33	45	58	66
1940	764	763	761	774	800	800	802	816	829	814	799	789	32	30	16	3	18	33	43
1941	783	781	783	798	800	800	800	812	832	831	817	808	32	32	20	0	1	15	24
1942	800	798	800	800	800	800	802	807	831	832	818	808	32	30	25	1	0	14	24
1943	800	800	800	800	800	800	802	821	832	824	810	799	32	30	11	0	8	22	33
1944	794	792	788	787	793	800	801	808	814	802	787	777	32	31	24	18	30	45	55
1945	772	773	776	781	800	800	802	807	831	825	810	799	32	30	25	1	7	22	33
1946	796	797	800	800	800	800	802	806	812	796	780	769	32	30	26	20	36	52	63
1947	763	763	765	768	776	781	778	782	776	764	750	742	51	54	50	56	68	82	90
1948	739	738	737	739	740	740	736	745	770	760	742	732	92	96	87	62	72	90	100
1949	726	720	714	713	720	731	738	748	756	738	719	706	101	94	84	76	94	113	126
1950	700	693	687	693	712	725	733	746	762	747	729	717	107	99	86	70	85	103	115
1951	711	759	800	800	800	800	798	794	798	783	769	759	32	34	38	34	49	63	73
1952	752	750	757	782	800	800	800	820	832	832	819	808	32	32	12	0	0	13	24
1953	800	795	793	800	800	800	802	804	814	810	796	787	32	30	28	18	22	36	45
1954	782	778	775	776	785	797	802	819	820	805	789	780	35	30	13	12	27	43	52
1955	774	770	768	774	781	784	781	785	791	779	767	760	48	51	47	41	53	65	72
1956	755	751	800	800	800	800	802	818	832	832	818	808	32	30	14	0	0	14	24
1957	800	798	793	793	799	800	800	806	827	814	800	791	32	32	26	5	18	32	41
1958	786	781	779	784	800	800	800	821	832	832	819	808	32	32	11	0	0	13	24
1959	800	794	789	793	800	800	802	800	794	782	770	763	32	30	32	38	50	62	69
1960	761	758	755	756	763	769	770	776	779	768	759	753	63	62	56	53	64	73	79
1961	750	748	748	749	752	751	745	737	730	717	705	698	81	87	95	102	115	127	134
1962	695	692	691	692	716	736	746	751	776	768	755	744	96	86	81	56	64	77	88
1963	739	734	731	735	761	773	781	794	819	815	801	792	59	51	38	13	17	31	40
1964	787	788	789	793	800	800	797	795	797	786	775	768	32	35	37	35	46	57	64
1965	766	767	798	800	800	800	802	807	827	827	816	807	32	30	25	5	5	16	25
1966	800	800	800	800	800	800	801	798	791	776	761	752	32	31	34	41	56	71	80
1967	747	745	755	771	789	800	800	817	832	832	820	808	32	32	15	0	0	12	24
1968	800	795	791	792	800	800	802	805	803	791	779	771	32	30	27	29	41	53	61
1969	766	767	770	800	800	800	800	823	832	832	819	808	32	32	9	0	0	13	24
1970	800	799	800	800	800	800	799	799	807	795	780	771	32	33	33	25	37	52	61
1971	765	766	772	788	800	800	801	801	807	798	786	778	32	31	31	25	34	46	54
1972	773	769	772	778	792	800	800	799	796	784	773	767	32	32	33	36	48	59	65
1973	764	762	765	776	800	800	802	812	827	812	797	788	32	30	20	5	20	35	44
1974	783	787	798	800	800	800	800	806	828	819	805	796	32	32	26	4	13	27	36
1975	791	789	788	786	798	800	802	812	832	825	812	803	32	30	20	0	7	20	29
1976	800	800	799	799	800	799	794	787	777	767	757	751	33	38	45	55	65	75	81
1977	748	745	742	741	741	737	728	715	702	687	672	663	95	104	117	130	145	160	169
1978	659	655	658	684	717	749	762	777	814	822	808	803	83	70	55	18	10	24	29
1979	798	794	791	800	800	800	802	822	832	818	803	794	32	30	10	0	14	29	38
1980	789	788	787	800	800	800	800	817	832	832	819	808	32	32	15	0	0	13	24
1981	800	797	794	795	799	800	802	806	805	793	782	774	32	30	26	27	39	50	58
1982	770	776	795	800	800	800	800	820	832	832	820	808	32	32	12	0	0	12	24
1983	800	800	800	800	800	800	800	819	832	832	832	808	32	32	13	0	0	0	24
1984	800	800	800	800	800	800	797	803	814	801	786	776	32	35	29	18	31	46	56
1985	773	773	779	786	794	800	801	799	795	784	772	766	32	31	33	37	48	60	66
1986	763	764	767	774	800	800	802	827	832	825	811	802	32	30	5	0	7	21	30
1987	796	791	786	784	786	788	786	783	779	769	759	752	44	46	49	53	63	73	80
1988	750	749	749	754	759	761	756	747	740	728	716	709	71	76	85	92	104	116	123
1989	705	702	702	705	709	722	734	748	756	744	734	728	110	98	84	76	88	98	104
1990	727	726	726	728	732	734	732	730	728	714	700	692	98	100	102	104	118	132	140
1991	689	686	682	681	681	688	687	703	714	704	694	688	144	145	129	118	128	138	144
1992	687	687	687	689	698	703	706	714	713	699	685	675	129	126	118	119	133	147	157
1993	669	663	663	696	727	756	763	777	808	806	792	783	76	69	55	24	26	40	49
1994	777	771	767	766	769	772	770	773	772	762	752	746	60	62	59	60	70	80	86

Reservoir Elevation S[...]able:
If [DFMRE] <= 0', then [...]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	1	1	1	1	1	7	34	9	25	58	-3	-16	-11	6	6	6	6	5	2	3	34	238
1923	1	1	1	1	1	1	1	7	8	5	3	9	-6	-15	-10	6	6	6	6	4	3	4	35	245
1924	1	1	1	1	1	1	1	7	-2	-5	-5	-9	-12	-14	-8	5	5	5	4	3	3	4	29	203
1925	1	1	1	1	1	1	1	7	16	13	13	18	-9	-16	-11	6	6	6	6	4	2	3	33	231
1926	1	1	1	1	1	1	1	7	5	14	13	-2	-15	-15	-9	6	6	6	5	3	3	4	33	231
1927	1	1	1	2	1	1	1	8	15	11	1	19	-8	-14	-10	6	6	6	6	4	3	4	35	280
1928	1	1	3	3	1	1	1	11	13	2	17	0	-14	-15	-10	6	6	6	6	3	3	4	34	374
1929	1	1	1	1	1	1	1	7	1	0	4	7	-9	-9	-8	6	6	6	6	4	4	4	36	252
1930	1	1	1	1	1	1	1	7	7	2	3	13	-8	-9	-7	6	6	6	6	4	4	4	36	252
1931	1	1	1	1	1	1	1	7	-1	-7	-9	-11	-14	-13	-7	5	4	4	3	3	3	4	26	182
1932	1	1	1	1	1	1	1	7	15	1	7	18	-5	-15	-10	6	6	6	6	5	3	4	36	252
1933	1	1	1	1	1	1	1	7	3	-2	-3	17	-11	-14	-10	6	5	5	6	3	3	4	32	224
1934	1	1	1	1	1	1	1	7	7	-1	-4	-3	-16	-15	-8	6	5	5	5	2	3	4	30	210
1935	1	1	1	1	1	1	1	7	15	21	10	27	-12	-15	-12	6	6	6	6	3	3	3	33	231
1936	1	1	3	6	4	1	1	17	16	9	18	13	-9	-15	-10	6	6	6	6	4	3	4	35	595
1937	1	1	2	6	3	1	1	15	0	2	13	17	-13	-14	-10	6	6	6	6	3	3	4	34	510
1938	1	1	1	5	6	3	1	18	0	0	4	27	1	-13	-11	6	6	6	6	6	3	3	36	648
1939	1	1	1	1	1	1	1	7	0	2	2	-5	-12	-13	-8	6	6	6	5	3	3	4	33	231
1940	1	1	2	5	2	1	1	13	0	2	14	13	-15	-15	-10	6	6	6	6	3	3	4	34	442
1941	1	1	1	6	5	2	1	17	0	0	12	20	-1	-14	-9	6	6	6	6	5	3	4	36	612
1942	1	1	1	5	6	3	1	18	0	2	5	24	1	-14	-10	6	6	6	6	6	3	4	37	666
1943	1	1	3	6	4	1	1	17	0	2	19	11	-8	-14	-11	6	6	6	6	4	3	3	34	578
1944	1	1	1	2	1	1	1	8	7	1	7	6	-12	-15	-10	6	6	6	6	3	3	4	34	272
1945	1	1	1	5	4	1	1	14	0	2	5	24	-6	-15	-11	6	6	6	6	4	3	3	34	476
1946	1	1	1	1	1	1	1	7	0	2	4	6	-16	-16	-11	6	6	6	6	2	2	3	31	217
1947	1	1	1	1	1	1	1	7	5	-3	4	-6	-12	-14	-8	6	5	6	4	3	3	4	31	217
1948	1	1	1	1	1	1	1	7	0	-4	9	25	-10	-18	-10	6	5	6	6	4	2	4	33	231
1949	1	1	1	1	1	1	1	7	11	7	10	8	-18	-19	-13	6	6	6	6	2	2	3	31	217
1950	1	1	1	1	1	1	1	7	13	8	13	16	-15	-18	-12	6	6	6	6	3	2	3	32	224
1951	1	1	1	1	1	1	1	7	0	-2	-4	4	-15	-14	-10	6	5	5	6	3	3	4	32	224
1952	1	1	3	6	6	3	1	21	0	0	20	12	0	-13	-11	6	6	6	6	6	3	3	36	756
1953	1	1	1	2	1	1	1	8	0	2	2	10	-4	-14	-9	6	6	6	6	5	3	4	36	288
1954	1	1	3	3	1	1	1	11	12	5	17	1	-15	-16	-9	6	6	6	6	3	2	4	33	363
1955	1	1	1	1	1	1	1	7	3	-3	4	6	-12	-12	-7	6	5	6	6	3	3	4	33	231
1956	1	1	3	6	6	3	1	21	0	2	16	14	0	-14	-10	6	6	6	6	6	3	4	37	777
1957	1	1	1	4	2	1	1	11	1	0	6	21	-13	-14	-9	6	6	6	6	3	3	4	34	374
1958	1	1	3	6	6	3	1	21	0	0	21	11	0	-13	-11	6	6	6	6	6	3	3	36	756
1959	1	1	1	1	1	1	1	7	0	2	-2	-6	-12	-12	-7	6	6	5	4	3	3	4	31	217
1960	1	1	1	1	1	1	1	7	6	1	6	3	-11	-9	-6	6	6	6	6	3	4	4	35	245
1961	1	1	1	1	1	1	1	7	-1	-6	-8	-7	-13	-12	-7	5	4	4	4	3	3	4	27	189
1962	1	1	1	1	1	1	1	7	20	10	5	25	-8	-13	-11	6	6	6	6	4	3	3	34	238
1963	1	1	1	3	2	1	1	10	12	8	13	25	-4	-14	-9	6	6	6	6	5	3	4	36	360
1964	1	1	1	1	1	1	1	7	0	-3	-2	2	-11	-11	-7	6	5	5	6	3	3	4	32	224
1965	1	1	1	4	4	2	1	14	0	2	5	20	0	-11	-9	6	6	6	6	6	3	4	37	518
1966	1	1	1	1	1	1	1	7	0	1	-3	-7	-15	-15	-9	6	6	5	4	3	3	4	31	217
1967	1	1	2	6	6	3	1	20	11	0	17	15	0	-12	-12	6	6	6	6	6	3	3	36	720
1968	1	1	1	1	1	1	1	7	0	2	3	-2	-12	-12	-8	6	6	6	5	3	3	4	33	231
1969	1	1	4	6	6	3	1	22	0	0	23	9	0	-13	-11	6	6	6	6	6	3	3	36	792
1970	1	1	1	1	1	1	1	7	0	-1	0	8	-12	-15	-9	6	5	6	6	3	3	4	33	231
1971	1	1	1	1	1	1	1	7	0	1	0	6	-9	-12	-8	6	6	6	6	4	3	4	35	245
1972	1	1	1	1	1	1	1	7	8	0	-1	-3	-12	-11	-6	6	6	5	5	3	3	4	32	224
1973	1	1	1	4	1	1	1	10	0	2	10	15	-15	-15	-9	6	6	6	6	3	3	4	34	340
1974	1	1	1	5	3	1	1	13	0	0	6	22	-9	-14	-9	6	6	6	6	4	3	4	35	455
1975	1	1	1	6	4	1	1	15	2	2	10	20	-7	-13	-9	6	6	6	6	4	3	4	35	525
1976	1	1	1	1	1	1	1	7	-1	-5	-7	-10	-10	-10	-6	5	5	4	4	4	4	4	30	210
1977	1	1	1	1	1	1	1	7	-4	-9	-13	-13	-15	-15	-9	5	4	3	3	3	3	4	25	175
1978	1	1	1	2	3	1	1	10	32	13	15	37	8	-14	-5	6	6	6	6	6	3	5	38	380
1979	1	1	3	6	3	1	1	16	0	2	20	10	-14	-15	-9	6	6	6	6	3	3	4	34	544
1980	1	1	2	6	6	3	1	20	0	0	17	15	0	-13	-11	6	6	6	6	6	3	3	36	720
1981	1	1	1	1	1	1	1	7	1	2	4	-1	-12	-11	-8	6	6	6	5	3	3	4	33	231
1982	1	1	3	6	6	3	1	21	0	0	20	12	0	-12	-12	6	6	6	6	6	3	3	36	756
1983	1	1	3	6	6	6	1	24	0	0	19	13	0	0	-24	6	6	6	6	6	6	1	37	888
1984	1	1	1	2	1	1	1	8	0	-3	6	11	-13	-15	-10	6	5	6	6	3	3	4	33	264
1985	1	1	1	1	1	1	1	7	6	1	-2	-4	-11	-12	-6	6	6	5	5	3	3	4	32	224
1986	1	1	4	6	4	1	1	18	0	2	25	5	-7	-14	-9	6	6	6	6	4	3	4	35	630
1987	1	1	1	1	1	1	1	7	2	-2	-3	-4	-10	-10	-7	6	5	5	5	4	4	4	33	231
1988	1	1	1	1	1	1	1	7	2	-5	-9	-7	-12	-12	-7	6	5	4	4	3	3	4	29	203
1989	1	1	1	1	1	1	1	7	13	12	14	8	-12	-10	-6	6	6	6	6	3	4	4	35	245
1990	1	1	1	1	1	1	1	7	2	-2	-2	-2	-14	-14	-8	6	5	5	5	3	3	4	31	217
1991	1	1	1	1	1	1	1	7~	7	-1	16	11	-10	-10	-6	6	5	6	6	4	4	4	35	245
1992	1	1	1	1	1	1	1	7	5	3	8	-1	-14	-14	-10	6	6	6	5	3	3	4	33	231
1993	1	1	1	1	1	1	1	7	29	7	14	31	-2	-14	-9	6	6	6	6	5	3	4	36	252
1994	1	1	1	1	1	1	1	7	3	-2	3	-1	-10	-10	-6	6	5	6	5	4	4	4	34	238
73 - year Average:								10														73 - year Average:	34	358.4
																						1929 - 34 Average:		228.7

C-032479

C-032479

STUDY: 1995C .CB-467 DWRSIM: 8.18, 27 Nov 96
CP # 20, LAKE McCLURE, EOP SURFACE ELEVATION (FT)
Project: /1995C6F-SWRCB-467/20/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 867'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	680	680	696	712	759	779	789	845	867	860	848	836	88	78	22	0	7	21	31
1923	808	808	808	808	808	813	827	854	859	850	835	825	54	40	13	8	17	32	42
1924	808	808	808	808	808	807	809	811	799	781	768	758	60	58	56	68	86	99	109
1925	758	763	768	772	796	805	824	847	851	839	824	812	62	43	20	16	28	43	55
1926	808	808	808	808	808	814	834	832	831	827	820	812	53	33	35	36	40	47	55
1927	808	808	808	808	808	815	818	849	860	856	852	840	52	49	18	7	11	15	27
1928	808	808	808	808	808	809	808	824	822	815	811	807	58	59	43	45	52	56	60
1929	807	806	806	806	807	809	810	814	814	816	819	813	58	57	53	53	51	48	54
1930	808	807	807	807	806	802	806	808	812	815	819	816	65	61	59	55	52	48	51
1931	808	808	808	808	808	808	810	813	801	784	770	761	59	57	54	66	83	97	106
1932	760	760	778	789	808	817	826	852	867	857	843	832	50	41	15	0	10	24	35
1933	808	807	806	808	808	811	816	825	839	827	813	805	56	51	42	28	40	54	62
1934	803	802	805	808	808	816	823	818	809	793	780	770	51	44	49	58	74	87	97
1935	769	773	778	798	806	816	840	859	867	854	839	828	51	27	8	0	13	28	39
1936	808	808	806	808	808	820	840	859	865	853	838	827	47	27	8	2	14	29	40
1937	808	808	806	808	808	820	834	859	867	853	838	827	47	33	8	0	14	29	40
1938	808	808	808	808	808	820	840	859	867	867	855	840	47	27	8	0	0	12	27
1939	808	808	808	808	808	816	831	832	821	803	787	776	51	36	35	46	64	80	91
1940	778	779	780	806	808	820	837	859	861	845	829	816	47	30	8	6	22	38	51
1941	808	808	808	808	808	820	834	859	867	863	850	840	47	33	8	0	4	17	27
1942	808	808	808	808	808	820	838	859	867	860	851	840	47	29	8	0	7	16	27
1943	808	808	808	808	808	820	840	859	864	853	838	828	47	27	8	3	14	29	39
1944	806	808	808	808	808	817	815	838	840	827	810	796	50	52	29	27	40	57	71
1945	794	800	806	808	808	820	833	856	867	856	842	831	47	34	11	0	11	25	36
1946	808	808	808	808	808	818	837	859	857	842	826	813	49	30	8	10	25	41	54
1947	808	808	808	808	808	815	823	836	830	814	799	791	52	44	31	37	53	68	76
1948	790	791	792	794	795	795	799	823	839	825	807	794	72	68	44	28	42	60	73
1949	791	791	792	793	798	804	815	836	835	816	797	782	63	52	31	32	51	70	85
1950	779	779	779	786	798	801	818	838	839	822	803	789	66	49	29	28	45	64	78
1951	786	808	808	808	808	819	827	837	834	816	796	781	48	40	30	33	51	71	86
1952	777	778	791	808	808	820	840	859	867	864	852	840	47	27	8	0	3	15	27
1953	808	808	806	808	808	809	815	816	823	809	790	775	58	52	51	44	58	77	92
1954	772	771	772	775	785	798	815	833	826	805	785	770	69	52	34	41	62	82	97
1955	767	766	768	775	780	782	782	804	814	798	782	772	85	85	63	53	69	85	95
1956	769	769	808	808	808	819	832	859	867	863	850	840	48	35	8	0	4	17	27
1957	808	808	808	808	808	813	813	828	838	822	804	790	54	54	39	29	45	63	77
1958	787	787	792	798	808	820	840	859	867	862	850	840	47	27	8	0	5	17	27
1959	808	808	808	808	808	813	823	826	817	797	780	773	54	44	41	50	70	87	94
1960	772	771	771	772	784	792	806	819	816	801	787	777	75	61	48	51	66	80	90
1961	776	776	779	779	782	783	789	793	784	766	752	740	84	78	74	83	101	115	127
1962	739	739	741	744	784	793	816	831	845	832	815	802	74	51	36	22	35	52	65
1963	800	800	801	808	808	814	823	848	861	852	837	826	53	44	19	6	15	30	41
1964	808	808	808	808	808	808	811	821	819	803	787	777	59	56	46	48	64	80	90
1965	775	778	808	808	808	815	831	854	867	861	850	840	52	36	13	0	6	17	27
1966	808	808	808	808	808	814	828	838	826	804	784	771	53	39	29	41	63	83	96
1967	768	770	795	807	808	820	840	859	867	867	856	840	47	27	8	0	0	11	27
1968	808	808	808	808	808	812	817	821	812	793	777	766	55	50	46	55	74	90	101
1969	763	767	775	808	808	820	840	859	867	867	854	840	47	27	8	0	0	13	27
1970	808	808	808	808	808	820	821	837	837	821	802	789	47	46	30	30	46	65	78
1971	788	788	798	807	808	812	814	826	836	822	804	790	55	53	41	31	45	63	77
1972	787	787	795	799	806	816	819	832	833	818	804	797	51	48	35	34	49	63	70
1973	797	798	804	808	808	820	828	859	867	852	838	828	47	39	8	0	15	29	39
1974	808	808	808	808	808	820	833	859	867	854	839	829	47	34	8	0	13	28	38
1975	808	808	808	806	808	820	823	855	867	856	842	832	47	44	12	0	11	25	35
1976	808	808	808	808	808	809	808	809	798	781	768	759	58	59	58	69	86	99	108
1977	758	756	754	754	754	749	740	728	717	688	659	635	118	127	139	150	179	208	232
1978	629	626	642	693	741	782	815	859	867	867	856	840	85	52	8	0	0	11	27
1979	808	808	808	808	808	820	828	859	863	849	834	823	47	39	8	4	18	33	44
1980	808	808	808	808	808	820	835	859	867	867	855	840	47	32	8	0	0	12	27
1981	808	807	807	808	808	813	823	835	831	816	802	794	54	44	32	36	51	65	73
1982	793	801	808	808	808	820	840	859	867	865	854	840	47	27	8	0	2	13	27
1983	808	808	808	808	808	820	836	859	867	867	864	840	47	31	8	0	0	3	27
1984	808	808	806	808	808	820	827	850	848	832	814	801	47	40	17	19	35	53	66
1985	800	803	807	808	808	814	828	841	835	821	807	797	53	39	26	32	46	60	70
1986	798	800	806	808	808	820	839	859	867	855	841	830	47	28	8	0	12	26	37
1987	808	807	807	807	808	810	818	821	811	795	782	773	57	49	46	56	72	85	94
1988	772	773	775	781	785	791	797	801	794	777	763	753	76	70	66	73	90	104	114
1989	751	750	753	754	759	775	797	808	804	789	775	766	92	70	59	63	78	92	101
1990	768	768	769	771	776	782	793	794	785	769	754	742	85	74	73	82	98	113	125
1991	740	739	738	738	737	758	763	784	797	784	770	761	109	104	83	70	83	97	106
1992	760	761	782	764	777	782	798	803	793	779	766	756	85	69	64	74	88	101	111
1993	765	755	760	802	808	820	837	859	867	861	848	837	47	30	8	0	6	19	30
1994	808	807	806	808	808	810	815	821	813	798	784	775	57	52	46	54	69	83	92

Reservoir Elevation S able:
If [DFMRE] <= 0', ther
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	1	6	4	1	1	15	20	10	56	22	-7	-14	-10	6	6	6	6	4	3	4	35	525
1923	1	1	3	4	2	1	1	13	5	14	27	5	-9	-15	-10	6	6	6	6	4	3	4	35	455
1924	1	1	1	1	1	1	1	7	-1	2	2	-12	-18	-13	-10	5	6	6	3	2	3	4	29	203
1925	1	1	1	2	1	1	1	8	9	19	23	4	-12	-15	-12	6	6	6	6	3	3	3	33	264
1926	1	1	1	1	1	1	1	7	6	20	-2	-1	-4	-7	-8	6	6	5	5	5	4	4	35	245
1927	1	1	2	4	3	2	1	14	7	3	31	11	-4	-4	-12	6	6	6	6	5	5	3	37	518
1928	1	1	1	1	1	1	1	7	1	-1	16	-2	-7	-4	-4	6	5	6	5	4	5	5	36	252
1929	1	1	1	1	1	1	1	7	2	1	4	0	2	3	-6	6	6	6	6	6	6	4	40	280
1930	1	1	1	1	1	1	1	7	-4	4	2	4	3	4	-3	5	6	6	6	6	6	5	40	280
1931	1	1	1	1	1	1	1	7	0	2	3	-12	-17	-14	-9	6	6	6	3	2	3	4	30	210
1932	1	1	2	6	3	1	1	15	9	9	26	15	-10	-14	-11	6	6	6	6	4	3	3	34	510
1933	1	1	1	1	1	1	1	7	3	5	9	14	-12	-14	-8	6	6	6	6	3	3	4	34	238
1934	1	1	1	1	1	1	1	7	8	7	-5	-9	-16	-13	-10	6	6	5	4	2	3	4	30	210
1935	1	1	4	6	3	1	1	17	10	24	19	8	-13	-15	-11	6	6	6	6	3	3	3	33	561
1936	1	1	4	5	3	1	1	16	12	20	19	6	-12	-15	-11	6	6	6	6	3	3	3	33	528
1937	1	1	4	6	3	1	1	17	12	14	25	8	-14	-15	-11	6	6	6	6	3	3	3	33	561
1938	1	1	4	6	6	3	1	22	12	20	19	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1939	1	1	1	1	1	1	1	7	8	15	1	-11	-18	-16	-11	6	6	6	3	2	2	3	28	196
1940	1	1	4	4	1	1	1	13	12	17	22	2	-16	-16	-13	6	6	6	6	2	2	3	31	403
1941	1	1	4	6	5	2	1	20	12	14	25	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1942	1	1	4	6	4	2	1	19	12	18	21	8	-7	-9	-11	6	6	6	6	4	4	3	35	665
1943	1	1	4	5	3	1	1	16	12	20	19	5	-11	-15	-10	6	6	6	6	3	3	4	34	544
1944	1	1	1	1	1	1	1	7	9	-2	23	2	-13	-17	-14	6	5	6	6	3	2	3	31	217
1945	1	1	3	6	3	1	1	16	12	13	23	11	-11	-14	-11	6	6	6	6	3	3	3	33	528
1946	1	1	4	3	1	1	1	12	10	19	22	-2	-15	-16	-13	6	6	6	5	3	2	3	31	372
1947	1	1	1	1	1	1	1	7	7	8	13	-6	-16	-15	-8	6	6	6	4	2	3	4	31	217
1948	1	1	1	1	1	1	1	7	0	4	24	16	-14	-18	-13	6	6	6	6	3	2	3	32	224
1949	1	1	1	1	1	1	1	7	8	11	21	-1	-19	-19	-15	6	6	6	5	2	2	3	30	210
1950	1	1	1	1	1	1	1	7	3	17	20	1	-17	-19	-14	6	6	6	6	2	2	3	31	217
1951	1	1	1	1	1	1	1	7	11	8	10	-3	-18	-20	-15	6	6	6	5	2	2	3	30	210
1952	1	1	4	6	5	2	1	20	12	20	19	8	-3	-12	-12	6	6	6	6	5	3	3	35	700
1953	1	1	1	1	1	1	1	7	1	6	1	7	-14	-19	-15	6	6	6	6	3	2	3	32	224
1954	1	1	1	1	1	1	1	7	13	17	18	-7	-21	-20	-15	6	6	6	4	1	2	3	28	196
1955	1	1	1	1	1	1	1	7	2	0	22	10	-16	-16	-10	6	6	6	6	2	2	4	32	224
1956	1	1	4	6	5	2	1	20	11	13	27	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1957	1	1	1	1	1	1	1	7	5	0	15	10	-16	-18	-14	6	6	6	6	2	2	3	31	217
1958	1	1	4	6	4	2	1	19	12	20	19	8	-5	-12	-10	6	6	6	6	5	3	4	36	684
1959	1	1	1	1	1	1	1	7	5	10	3	-9	-20	-17	-7	6	6	6	4	2	2	4	30	210
1960	1	1	1	1	1	1	1	7	8	14	13	-3	-15	-14	-10	6	6	6	5	3	3	4	33	231
1961	1	1	1	1	1	1	1	7	1	6	4	-9	-18	-14	-12	6	6	6	4	2	3	3	30	210
1962	1	1	1	1	1	1	1	7	9	23	15	14	-13	-17	-13	6	6	6	6	3	2	3	32	224
1963	1	1	2	4	2	1	1	12	6	9	25	13	-9	-15	-11	6	6	6	6	4	3	3	34	408
1964	1	1	1	1	1	1	1	7	0	3	10	-2	-16	-16	-10	6	6	6	5	2	2	4	31	217
1965	1	1	3	6	4	2	1	18	7	16	23	13	-6	-11	-10	6	6	6	6	4	3	4	35	630
1966	1	1	1	1	1	1	1	7	6	14	10	-12	-22	-20	-13	6	6	6	3	1	2	3	27	189
1967	1	1	4	6	6	3	1	22	12	20	19	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1968	1	1	1	1	1	1	1	7	4	5	4	-9	-19	-16	-11	6	6	6	4	2	2	3	29	203
1969	1	1	4	6	6	3	1	22	12	20	19	8	0	-13	-14	6	6	6	6	6	3	3	36	792
1970	1	1	1	1	1	1	1	7	12	1	16	0	-16	-19	-13	6	6	6	6	2	2	3	31	217
1971	1	1	1	1	1	1	1	7	4	2	12	10	-14	-18	-14	6	6	6	6	3	2	3	32	224
1972	1	1	1	1	1	1	1	7	10	3	13	1	-15	-14	-7	6	6	6	6	3	3	4	34	238
1973	1	1	4	6	2	1	1	16	12	8	31	8	-15	-14	-10	6	6	6	6	3	3	4	34	544
1974	1	1	4	6	3	1	1	17	12	13	26	8	-13	-15	-10	6	6	6	6	3	3	4	34	578
1975	1	1	3	6	3	1	1	16	12	3	32	12	-11	-14	-10	6	6	6	6	3	3	4	34	544
1976	1	1	1	1	1	1	1	7	1	-1	1	-11	-17	-13	-9	6	5	6	3	2	3	4	29	203
1977	1	1	1	1	1	1	1	7	-5	-9	-12	-11	-29	-29	-24	5	4	3	3	1	1	1	18	126
1978	1	1	4	6	6	3	1	22	41	33	44	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1979	1	1	4	5	2	1	1	15	12	8	31	4	-14	-15	-11	6	6	6	6	3	3	3	33	495
1980	1	1	4	6	6	3	1	22	12	15	24	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1981	1	1	1	1	1	1	1	7	5	10	12	-4	-15	-14	-8	6	6	6	5	3	3	4	33	231
1982	1	1	4	6	5	3	1	21	12	20	19	8	-2	-11	-14	6	6	6	6	5	3	3	35	735
1983	1	1	4	6	6	5	1	24	12	16	23	8	0	-3	-24	6	6	6	6	6	5	1	36	864
1984	1	1	2	2	1	1	1	9	12	7	23	-2	-16	-18	-13	6	6	6	5	2	2	3	30	270
1985	1	1	1	1	1	1	1	7	6	14	13	-6	-14	-14	-10	6	6	6	4	3	3	4	32	224
1986	1	1	4	6	3	1	1	17	12	19	20	8	-12	-14	-11	6	6	6	6	3	3	3	33	561
1987	1	1	1	1	1	1	1	7	2	8	3	-10	-16	-13	-9	6	6	6	4	2	3	4	31	217
1988	1	1	1	1	1	1	1	7	6	6	4	-7	-17	-14	-10	6	6	6	4	2	3	4	31	217
1989	1	1	1	1	1	1	1	7	16	22	11	-4	-15	-14	-9	6	6	6	5	3	3	4	33	231
1990	1	1	1	1	1	1	1	7	7	11	1	-9	-16	-15	-12	6	6	6	4	2	3	3	30	210
1991	1	1	1	1	1	1	1	7	21	5	21	13	-13	-14	-9	6	6	6	6	3	3	4	34	238
1992	1	1	1	1	1	1	1	7	5	16	5	-10	-14	-13	-10	6	6	6	4	3	3	4	32	224
1993	1	1	4	6	4	2	1	19	12	17	22	8	-6	-13	-11	6	6	6	6	4	3	3	34	646
1994	1	1	1	1	1	1	1	7	2	5	6	-8	-15	-14	-9	6	6	6	4	3	3	4	32	224
73 - year Average:								12								73 - year Average:							33	386.7
1929 - 34 Average																								288.0

STUDY: 1[illegible]-SWRCB-467 DWRSIM: 8.18, 27 Nov 96
CP # 18, MILLERTON LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C6F-SWRCB-467/18/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 576'

Reservoir Elevation S[illegible]ble:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	491	505	527	547	549	566	559	576	576	562	518	491
1923	485	495	520	537	531	517	541	549	540	526	463	470
1924	483	494	508	522	516	503	506	511	505	478	464	466
1925	485	474	490	503	508	493	514	532	522	499	483	475
1926	477	490	505	519	522	508	549	563	535	494	473	485
1927	491	506	528	545	560	561	560	569	576	543	492	482
1928	482	503	525	542	540	543	551	554	522	477	485	477
1929	485	499	513	523	517	513	531	531	527	506	466	477
1930	480	495	507	518	514	510	525	534	518	489	468	482
1931	487	501	513	522	517	508	510	516	508	482	466	468
1932	487	476	503	520	543	531	524	532	552	518	492	477
1933	477	489	501	516	512	501	520	537	526	509	468	467
1934	470	480	500	517	511	503	516	527	523	498	477	486
1935	490	500	515	535	532	509	542	563	574	538	469	479
1936	486	502	518	533	560	558	564	576	563	521	472	478
1937	488	497	516	535	560	570	576	576	576	538	484	469
1938	472	486	533	560	560	542	529	467	572	576	532	520
1939	513	514	529	538	532	524	542	560	539	504	473	495
1940	495	504	517	550	550	552	548	561	553	512	466	471
1941	481	494	528	556	560	573	573	569	576	569	527	506
1942	497	507	532	552	549	553	554	562	576	555	509	477
1943	477	494	518	557	558	576	574	576	562	526	491	476
1944	479	491	508	521	524	507	516	517	501	494	490	480
1945	481	503	523	533	560	568	565	571	576	554	511	491
1946	485	502	531	548	528	524	536	559	546	510	478	480
1947	481	500	526	543	541	530	545	556	535	497	473	481
1948	488	503	518	529	523	530	556	551	541	483	480	484
1949	490	500	513	526	524	511	522	538	521	482	477	489
1950	492	503	519	538	541	524	534	551	539	506	478	482
1951	490	533	560	560	554	546	552	546	514	463	463	481
1952	488	500	530	559	560	567	559	526	576	571	525	508
1953	501	514	533	549	538	532	541	536	518	497	478	481
1954	488	497	514	532	532	527	537	560	544	507	465	483
1955	489	502	522	540	537	520	534	545	537	504	481	487
1956	491	499	560	560	560	576	576	561	576	566	524	505
1957	496	504	517	527	525	529	546	561	562	526	471	481
1958	488	501	525	545	554	565	576	576	576	557	516	498
1959	492	507	523	530	536	528	550	566	551	500	470	475
1960	474	475	480	490	503	498	515	525	509	496	483	481
1961	481	491	505	511	510	511	526	539	527	486	467	467
1962	468	471	484	492	538	529	527	555	569	540	489	476
1963	479	491	501	518	558	558	576	576	576	564	520	503
1964	490	517	542	551	547	544	553	561	551	508	476	484
1965	481	496	529	560	558	554	559	551	561	540	512	496
1966	487	513	546	558	541	526	545	564	550	506	486	486
1967	490	502	539	559	560	571	565	514	570	576	539	522
1968	515	521	539	545	545	539	550	554	539	506	478	482
1969	480	496	513	560	524	521	467	469	576	576	538	513
1970	498	516	540	560	560	554	554	555	544	517	476	477
1971	482	502	534	551	548	533	541	544	520	498	491	478
1972	479	491	519	536	532	524	537	543	540	497	481	481
1973	489	501	523	545	580	560	550	575	576	542	483	477
1974	487	510	545	560	544	550	559	570	573	537	490	473
1975	476	494	515	528	535	526	533	536	567	525	476	482
1976	489	511	531	541	539	544	547	542	519	492	479	494
1977	490	496	500	503	501	464	485	464	462	466	461	462
1978	482	482	484	532	560	552	510	498	576	576	548	539
1979	528	535	549	560	555	562	560	571	563	521	477	482
1980	489	488	508	560	560	558	566	550	576	576	542	513
1981	503	512	520	528	531	533	547	553	543	510	477	488
1982	491	504	536	560	560	576	546	561	576	576	546	541
1983	531	556	560	560	513	484	467	467	483	564	572	576
1984	560	560	560	560	560	568	570	570	557	530	487	483
1985	482	492	511	536	533	526	551	563	539	501	483	483
1986	490	508	534	554	550	552	574	565	576	558	503	479
1987	480	489	492	495	496	511	530	551	539	503	473	480
1988	482	495	507	528	516	527	539	547	527	498	483	486
1989	486	497	505	515	512	516	537	552	540	502	478	484
1990	489	495	502	510	510	517	532	544	525	508	479	483
1991	480	486	492	499	493	489	501	508	512	508	480	486
1992	485	490	494	498	499	490	493	494	480	470	465	466
1993	467	468	476	535	543	556	558	576	576	571	522	499
1994	490	497	507	512	508	520	534	548	528	498	478	484

YEAR	Difference from Maximum Reservoir Elevation [DFMRE]							Reservoir Elevation S[illegible]ble								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Scoring Table								Largemouth Bass Reservoir Habitat Index =
	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	10	17	0	0	14	58	85	3	2	6	6	3	1	1	22	17	-7	17	0	-14	-44	-27	6	4	6	6	3	1	1	27	594
1923	59	35	27	36	50	113	106	1	1	1	1	1	1	1	7	-14	24	8	-9	-14	-63	7	3	6	6	4	3	1	6	29	203
1924	73	70	65	71	98	112	108	1	1	1	1	1	1	1	7	-13	3	5	-6	-27	-14	4	3	6	6	4	1	3	6	29	203
1925	83	62	44	54	77	93	101	1	1	1	1	1	1	1	7	-15	21	18	-10	-23	-16	-8	3	6	6	4	1	2	4	26	182
1926	68	27	13	41	82	103	91	1	1	3	1	1	1	1	9	-14	41	14	-28	-41	-21	12	3	6	6	1	1	1	6	24	216
1927	15	16	7	0	33	84	94	2	2	4	6	1	1	1	17	1	-1	9	7	-33	-51	-10	6	5	6	6	1	1	4	29	493
1928	33	25	22	54	99	111	99	1	1	1	1	1	1	1	7	3	8	3	-32	-45	-12	12	6	6	6	1	1	3	6	29	203
1929	63	45	45	49	70	110	99	1	1	1	1	1	1	1	7	-4	18	0	-4	-21	-40	11	5	6	6	5	1	1	6	30	210
1930	66	51	42	58	87	110	94	1	1	1	1	1	1	1	7	-4	15	9	-16	-29	-23	16	5	6	6	2	1	1	6	27	189
1931	68	66	60	68	94	110	110	1	1	1	1	1	1	1	7	-9	2	6	-8	-26	-16	0	4	6	6	4	1	2	6	29	203
1932	45	52	44	24	58	84	99	1	1	1	1	1	1	1	7	-12	-7	8	20	-34	-26	-15	3	4	6	6	1	1	3	24	168
1933	75	56	39	50	67	110	109	1	1	1	1	1	1	1	7	-11	19	17	-11	-17	-43	1	3	6	6	3	2	1	6	27	189
1934	73	60	49	53	78	99	90	1	1	1	1	1	1	1	7	-8	13	11	-4	-25	-21	9	4	6	6	5	1	1	6	29	203
1935	67	34	13	2	38	107	97	1	1	3	5	1	1	1	13	-23	33	21	11	-36	-69	10	1	6	6	6	1	1	6	27	351
1936	18	12	0	13	55	104	98	2	3	6	3	1	1	1	17	-2	6	12	-13	-42	-49	6	5	6	6	3	1	1	6	28	476
1937	6	0	0	0	38	92	107	4	6	6	6	1	1	1	25	10	6	0	0	-38	-54	-15	6	6	6	6	1	1	3	29	725
1938	34	47	109	4	0	44	58	1	1	1	5	6	1	1	16	-18	-13	-62	105	4	-44	-12	2	3	1	6	6	1	3	22	352
1939	52	34	16	37	72	103	81	1	1	2	1	1	1	1	8	-8	18	16	-21	-35	-31	22	4	6	6	1	1	1	6	25	200
1940	24	28	15	23	64	110	105	1	1	2	1	1	1	1	8	2	-4	13	-8	-41	-46	5	6	5	6	4	1	1	6	29	232
1941	3	3	7	0	7	49	70	5	5	4	6	4	1	1	26	13	0	-4	7	-7	-42	-21	6	6	5	6	4	1	1	29	754
1942	23	22	14	0	21	67	99	1	1	3	6	1	1	1	14	4	1	8	14	-21	-46	-32	6	6	6	6	1	1	1	27	378
1943	0	2	0	14	50	85	100	6	5	6	3	1	1	1	23	20	-2	2	-14	-36	-35	-15	6	5	6	3	1	1	3	25	575
1944	69	60	59	75	82	86	96	1	1	1	1	1	1	1	7	-17	9	1	-16	-7	-4	-10	2	6	6	2	4	5	4	29	203
1945	8	11	5	0	22	65	85	4	3	4	6	1	1	1	20	8	-3	6	5	-22	-43	-20	6	5	6	6	1	1	2	27	540
1946	52	40	17	30	66	98	96	1	1	2	1	1	1	1	8	-4	12	23	-13	-36	-32	2	5	6	6	3	1	1	6	28	224
1947	46	31	20	41	79	103	95	1	1	1	1	1	1	1	7	-11	15	11	-21	-38	-24	8	3	6	6	1	1	1	6	24	168
1948	46	20	25	35	93	96	92	1	1	1	1	1	1	1	7	7	26	-5	-10	-58	-3	4	6	6	5	4	1	5	6	33	231
1949	65	54	38	55	94	99	87	1	1	1	1	1	1	1	7	-13	11	16	-17	-39	-5	12	3	6	6	2	1	5	6	29	203
1950	52	42	25	37	70	100	94	1	1	1	1	1	1	1	7	-17	10	17	-12	-33	-30	6	2	6	6	3	1	1	6	25	175
1951	30	24	30	62	113	113	95	1	1	1	1	1	1	1	7	-8	6	-6	-32	-51	0	18	4	6	4	1	1	6	6	28	196
1952	9	17	50	0	5	51	68	4	2	1	6	4	1	1	19	7	-8	-33	50	-5	-46	-17	6	4	1	6	5	1	2	25	475
1953	44	35	40	58	79	98	95	1	1	1	1	1	1	1	7	-6	9	-5	-18	-21	-19	3	4	6	5	2	1	2	6	26	182
1954	49	39	16	32	69	111	93	1	1	2	1	1	1	1	8	-5	10	23	-16	-37	-42	18	5	6	6	2	1	1	6	27	216
1955	56	42	31	39	72	95	89	1	1	1	1	1	1	1	7	-17	14	11	-8	-33	-23	6	2	6	6	4	1	1	6	26	182
1956	0	0	15	0	10	52	71	6	6	2	6	3	1	1	25	16	0	-15	15	-10	-42	-19	6	6	3	6	4	1	2	28	700
1957	47	30	15	14	50	105	95	1	1	2	3	1	1	1	10	4	17	15	1	-36	-55	10	6	6	6	6	1	1	6	32	320
1958	11	0	0	0	19	60	78	3	6	6	6	2	1	1	25	11	11	0	0	-19	-41	-16	6	6	6	6	2	1	2	29	725
1959	48	26	10	25	76	106	101	1	1	3	1	1	1	1	9	-8	22	16	-15	-51	-30	5	4	6	6	3	1	1	6	27	243
1960	78	61	51	67	80	93	95	1	1	1	1	1	1	1	7	-5	17	10	-16	-13	-13	-2	5	6	6	2	3	3	5	30	210
1961	65	50	37	49	90	109	109	1	1	1	1	1	1	1	7	1	15	13	-12	-41	-19	0	6	6	6	3	1	2	6	30	210
1962	47	49	21	7	36	87	100	1	1	1	4	1	1	1	10	-9	-2	28	14	-29	-51	-13	4	5	6	6	1	1	3	26	260
1963	18	0	0	0	12	56	73	2	6	6	6	3	1	1	25	0	18	0	0	-12	-44	-17	6	6	6	6	3	1	2	30	750
1964	32	23	15	25	68	100	92	1	1	2	1	1	1	1	8	-3	9	8	-10	-43	-32	8	5	6	6	4	1	1	6	29	232
1965	22	17	25	15	36	64	80	1	2	1	2	1	1	1	9	-2	5	-8	10	-21	-28	-16	5	6	4	6	1	1	2	25	225
1966	50	31	12	26	70	90	90	1	1	3	1	1	1	1	9	-15	19	19	-14	-44	-20	0	3	6	6	3	1	2	6	27	243
1967	5	11	62	6	0	37	54	4	3	1	4	6	1	1	20	11	-6	-51	56	6	-37	-17	6	4	1	6	6	1	2	26	520
1968	37	26	22	37	70	98	94	1	1	1	1	1	1	1	7	-6	11	4	-15	-33	-28	4	4	6	6	3	1	1	6	27	189
1969	55	109	107	0	0	38	63	1	1	1	6	6	1	1	17	-3	-54	2	107	0	-38	-25	5	1	6	6	6	1	1	26	442
1970	22	22	21	32	59	100	99	1	1	1	1	1	1	1	7	-8	0	1	-11	-27	-41	1	4	6	6	3	1	1	6	27	189
1971	43	35	32	56	78	85	98	1	1	1	1	1	1	1	7	-15	8	3	-24	-22	-7	-13	3	6	6	1	1	4	3	24	168
1972	52	39	33	36	79	95	95	1	1	1	1	1	1	1	7	-8	13	6	-3	-43	-16	0	4	6	6	5	1	2	6	30	210
1973	16	26	1	0	34	93	99	2	1	5	6	1	1	1	17	0	-10	25	1	-34	-59	-6	6	4	6	6	1	1	4	28	476
1974	26	17	6	3	39	86	103	1	2	4	5	1	1	1	15	6	9	11	3	-36	-47	-17	6	6	6	6	1	1	2	28	420
1975	50	43	40	9	51	100	94	1	1	1	4	1	1	1	10	-9	7	3	31	-42	-49	6	4	6	6	6	1	1	6	30	300
1976	32	29	34	57	84	97	82	1	1	1	1	1	1	1	7	5	3	-5	-23	-27	-13	15	6	6	5	1	1	3	6	28	196
1977	112	111	112	114	110	115	114	1	1	1	1	1	1	1	7	-37	1	-1	-2	4	-5	1	1	6	5	5	6	5	6	34	238
1978	24	66	78	0	0	28	37	1	1	1	6	6	1	1	17	-8	-42	-12	78	0	-28	-9	4	1	3	6	6	1	4	25	425
1979	14	16	5	13	55	99	94	3	2	4	3	1	1	1	15	7	-2	11	-8	-42	-44	5	6	5	6	4	1	1	6	29	435
1980	16	10	26	0	0	34	63	2	3	1	6	6	1	1	20	-2	8	-16	26	0	-34	-29	5	6	2	6	6	1	1	27	540
1981	43	29	23	33	66	99	88	1	1	1	1	1	1	1	7	2	14	6	-10	-33	-33	11	6	6	6	4	1	1	6	30	210
1982	0	30	15	0	0	30	35	6	1	2	6	6	1	1	23	16	-30	15	15	0	-30	-5	6	1	6	6	6	1	5	31	713
1983	92	109	109	93	12	4	0	1	1	1	1	3	5	6	18	-29	-17	0	16	81	8	4	1	2	6	6	6	6	6	33	594
1984	8	6	6	19	46	89	93	4	4	4	2	1	1	1	17	8	2	0	-13	-27	-43	-4	6	6	6	3	1	1	5	28	476
1985	50	25	13	37	75	93	93	1	1	3	1	1	1	1	9	-7	25	12	-24	-38	-18	0	4	6	6	1	1	2	6	26	234
1986	24	2	11	0	18	73	97	1	5	3	6	2	1	1	19	2	22	-9	11	-18	-55	-24	6	6	4	6	2	1	1	26	494
1987	65	46	25	37	73	103	96	1	1	1	1	1	1	1	7	15	19	21	-12	-36	-30	7	6	6	6	3	1	1	6	29	203
1988	49	37	29	49	78	93	90	1	1	1	1	1	1	1	7	11	12	8	-20	-29	-15	3	6	6	6	2	1	3	6	30	210
1989	60	39	24	36	74	98	92	1	1	1	1	1	1	1	7	4	21	15	-12	-38	-24	6	6	6	6	3	1	1	6	29	203
1990	59	44	32	51	68	97	93	1	1	1	1	1	1	1	7	7	15	12	-19	-17	-29	4	6	6	6	2	1	1	6	29	203
1991	87	75	68	64	70	96	90	1	1	1	1	1	1	1	7	-4	12	7	4	-6	-26	6	5	6	6	6	4	1	6	34	238
1992	86	83	82	96	106	111	110	1	1	1	1	1	1	1	7	-9	3	1	-14	-10	-5	1	4	6	6	3	4	5	6	34	238
1993	20	18	0	0	5	54	77	1	2	6	6	4	1	1	21	13	2	18	0	-5	-49	-23	6	6	6	6	5	1	1	31	651
1994	56	42	28	48	78	98	92	1	1	1	1	1	1	1	7	12	14	14	-20	-30	-20	6	6	6	6	2	1	2	6	29	203
														73 - year Average:	12														73 - year Average:	28	329.2
																														1929 - 34 Average:	193.7

A2-141

C-032481

C—032481

STUDY: 1995C6F-SWRCB-467 DWRSIM: recirc818-f, 17 Jun 97
CP # 12, SWP SAN LUIS RESERVIOR, EOP SURFACE ELEVATION (FT)
Project: /1995C6F-SWRCB-467/12/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 544'

Reservoir El[illegible]coring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	Difference from Maximum Reservoir Elevation [DFMRE]												Scoring								Reservoir Change from Previous Month [fluctuation]							Scoring								Product
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	
1922	421	436	471	516	539	544	544	527	484	431	404	420	0	0	17	60	113	140	124	6	6	2	1	1	1	1	1	5	0	-17	-43	-53	-27	16	6	6	2	1	1	1	6	23	414
1923	454	483	499	514	524	528	526	499	439	391	368	355	16	18	45	105	153	176	189	2	2	1	1	1	1	1	1	4	-2	-27	-60	-48	-23	-13	6	5	1	1	1	1	3	18	162
1924	380	404	438	481	521	534	511	499	474	434	392	378	10	33	45	70	110	152	166	3	1	1	1	1	1	1	1	13	-23	-12	-25	-40	-42	-14	6	1	3	1	1	1	3	16	144
1925	370	384	424	433	484	509	524	504	458	429	383	374	35	20	40	86	115	161	170	1	1	1	1	1	1	1	1	25	15	-20	-46	-29	-46	-9	6	6	2	1	1	1	4	21	147
1926	374	386	398	453	497	526	535	517	473	449	393	393	18	9	27	71	95	151	151	2	4	1	1	1	1	1	1	29	9	-18	-44	-24	-56	0	6	6	2	1	1	1	6	23	253
1927	401	439	476	521	544	544	541	516	462	419	392	410	0	3	28	82	125	152	134	6	5	1	1	1	1	1	1	0	-3	-25	-54	-43	-27	18	6	5	1	1	1	1	6	21	336
1928	448	476	493	507	519	525	526	503	451	414	394	386	19	18	41	93	130	150	158	2	2	1	1	1	1	1	1	6	1	-23	-52	-37	-20	-8	6	6	1	1	1	2	4	21	189
1929	404	439	472	503	539	544	538	519	487	465	426	401	0	6	25	57	79	118	143	6	4	1	1	1	1	1	1	5	-6	-19	-32	-22	-39	-25	6	4	2	1	1	1	1	16	240
1930	401	406	451	501	535	543	544	526	486	464	432	418	1	0	18	58	80	112	126	5	6	2	1	1	1	1	1	8	1	-18	-40	-22	-32	-14	6	6	2	1	1	1	3	20	340
1931	418	444	451	476	514	532	522	506	472	447	396	383	12	22	38	72	97	148	161	3	1	1	1	1	1	1	1	18	-10	-16	-34	-25	-51	-13	6	4	2	1	1	1	3	18	162
1932	384	365	425	485	527	537	505	493	458	433	400	380	7	39	51	86	111	144	164	4	1	1	1	1	1	1	1	10	-32	-12	-35	-25	-33	-20	6	1	3	1	1	1	2	15	150
1933	380	390	398	438	485	524	502	487	458	438	396	379	20	42	57	86	106	148	165	1	1	1	1	1	1	1	1	7	39	-22	-15	-29	-20	-42	-17	6	1	3	1	2	1	2	16	112
1934	379	379	421	467	511	538	508	489	454	427	385	369	6	36	55	90	117	159	175	4	1	1	1	1	1	1	1	10	27	-30	-19	-35	-27	-42	-16	6	1	2	1	1	1	2	14	140
1935	369	393	396	461	468	505	520	494	436	392	326	335	39	24	50	108	152	218	209	1	1	1	1	1	1	1	1	7	37	15	-26	-58	-44	-66	9	6	6	1	1	1	1	6	22	154
1936	378	410	445	494	523	527	528	507	452	410	384	380	17	16	37	92	134	160	164	2	2	1	1	1	1	1	1	9	4	1	-21	-55	-42	-26	-4	6	6	1	1	1	1	5	21	189
1937	395	414	449	488	523	532	539	531	487	442	409	408	12	5	13	57	102	135	136	3	4	3	1	1	1	1	1	14	9	7	-8	-44	-45	-33	-1	6	6	4	1	1	1	5	24	336
1938	421	456	493	522	536	544	544	534	505	463	435	452	0	0	10	39	81	109	92	6	6	3	1	1	1	1	1	19	8	0	-10	-29	-42	-28	17	6	6	4	1	1	1	6	25	475
1939	483	509	514	527	540	544	544	520	476	450	429	403	0	0	24	68	94	115	141	6	6	1	1	1	1	1	1	17	4	0	-24	-44	-26	-21	-26	6	6	1	1	1	1	1	17	289
1940	409	415	415	478	521	528	526	497	434	380	355	354	16	18	47	110	164	189	190	2	2	1	1	1	1	1	1	9	7	-2	-29	-63	-54	-25	-1	6	5	1	1	1	1	5	20	180
1941	377	414	449	500	520	525	523	510	476	436	399	421	19	21	34	68	108	145	123	2	1	1	1	1	1	1	1	8	5	-2	-13	-34	-40	-37	22	6	5	3	1	1	1	6	23	184
1942	457	489	497	513	525	529	527	505	469	428	403	423	15	17	39	75	116	141	121	2	2	1	1	1	1	1	1	9	4	-2	-22	-36	-41	-25	20	6	5	1	1	1	1	6	21	189
1943	457	488	498	513	524	535	538	526	465	427	403	408	9	8	18	79	117	141	136	4	4	2	1	1	1	1	1	14	11	1	-10	-61	-38	-24	5	6	6	4	1	1	1	6	25	350
1944	434	465	492	512	525	532	534	510	466	439	424	413	12	10	34	78	105	120	131	3	3	1	1	1	1	1	1	11	7	2	-24	-44	-27	-15	-11	6	6	1	1	1	3	3	21	231
1945	414	452	488	528	544	544	541	515	461	419	392	391	0	3	29	83	125	152	153	6	5	1	1	1	1	1	1	16	0	-3	-26	-54	-42	-27	-1	6	5	1	1	1	1	5	20	320
1946	421	455	487	507	518	523	522	493	434	386	363	356	21	22	51	110	158	181	188	1	1	1	1	1	1	1	1	7	5	-1	-29	-59	-48	-23	-7	6	5	1	1	1	1	4	19	133
1947	381	419	453	498	520	529	530	501	448	411	389	388	15	14	43	96	133	155	156	2	3	1	1	1	1	1	1	10	9	1	-29	-53	-37	-22	-1	6	6	1	1	1	1	5	21	210
1948	388	414	425	481	498	514	531	500	443	391	350	358	30	13	44	101	153	194	186	1	3	1	1	1	1	1	1	9	16	17	-31	-57	-52	-41	8	6	6	1	1	1	1	6	22	198
1949	384	417	445	492	527	538	537	515	465	431	407	400	6	7	29	79	113	137	144	4	4	1	1	1	1	1	1	13	11	-1	-22	-50	-34	-24	-7	6	5	1	1	1	1	4	19	247
1950	407	437	447	497	532	539	538	514	465	427	405	409	5	6	30	79	117	139	135	4	4	1	1	1	1	1	1	13	7	-1	-24	-49	-38	-22	4	6	5	1	1	1	1	6	21	273
1951	423	454	489	522	532	536	533	503	446	389	353	354	8	11	41	98	155	191	190	4	3	1	1	1	1	1	1	12	4	-3	-30	-57	-57	-36	1	6	5	1	1	1	1	6	21	252
1952	387	421	451	502	517	523	529	522	496	458	444	462	21	15	22	48	86	100	82	1	2	1	1	1	1	1	1	8	6	6	-7	-26	-38	-14	18	6	6	4	1	1	3	6	27	216
1953	493	508	514	528	538	543	541	518	472	431	408	427	1	3	26	72	113	136	117	5	5	1	1	1	1	1	1	15	5	-2	-23	-46	-41	-23	19	6	5	1	1	1	1	6	21	315
1954	460	490	506	520	531	536	536	508	451	407	378	384	8	8	36	93	137	166	160	4	4	1	1	1	1	1	1	13	5	0	-28	-57	-44	-29	6	6	6	1	1	1	1	6	22	286
1955	405	437	467	510	535	541	541	514	464	431	414	402	3	3	30	80	113	130	142	5	5	1	1	1	1	1	1	15	6	0	-27	-50	-33	-17	-12	6	6	1	1	1	2	3	20	300
1956	411	443	481	523	536	544	543	520	470	411	375	389	0	1	24	74	133	169	155	6	5	1	1	1	1	1	1	16	8	-1	-23	-50	-59	-36	14	6	5	1	1	1	1	6	21	336
1957	422	451	477	514	526	532	532	507	453	410	383	385	12	12	37	91	134	161	159	3	3	1	1	1	1	1	1	11	6	0	-25	-54	-43	-27	2	6	6	1	1	1	1	6	22	242
1958	422	453	483	525	537	541	542	526	494	442	419	436	3	2	18	50	102	125	108	5	5	2	1	1	1	1	1	16	4	1	-16	-32	-52	-23	17	6	6	2	1	1	1	6	23	368
1959	468	497	505	518	530	536	537	511	462	430	413	409	8	7	33	82	114	131	135	4	4	1	1	1	1	1	1	13	6	1	-26	-49	-32	-17	-4	6	6	1	1	1	2	5	22	286
1960	420	439	449	483	523	544	537	511	463	434	386	391	0	7	33	81	110	158	153	6	4	1	1	1	1	1	1	15	21	-7	-26	-48	-29	-48	5	6	4	1	1	1	1	6	20	300
1961	399	435	468	515	540	544	543	518	472	445	424	408	0	1	26	72	99	120	136	6	5	1	1	1	1	1	1	16	4	-1	-25	-46	-27	-21	-16	6	5	1	1	1	1	2	17	272
1962	408	429	464	513	539	543	542	508	447	398	354	358	1	2	36	97	146	190	186	5	5	1	1	1	1	1	1	15	4	-1	-34	-61	-49	-44	4	6	5	1	1	1	1	6	21	315
1963	399	430	458	501	526	531	530	504	450	404	372	387	13	14	40	94	140	172	157	3	3	1	1	1	1	1	1	11	5	-1	-26	-54	-46	-32	15	6	5	1	1	1	1	6	21	231
1964	423	454	482	506	518	526	528	500	448	413	394	387	18	16	44	96	131	150	157	2	2	1	1	1	1	1	1	9	8	2	-28	-52	-35	-19	-7	6	6	1	1	1	2	4	21	189
1965	394	431	468	518	541	544	544	518	457	405	370	381	0	0	26	87	139	174	163	6	6	1	1	1	1	1	1	17	3	0	-26	-61	-52	-35	11	6	6	1	1	1	1	6	22	374
1966	418	449	479	510	520	526	527	498	445	407	386	383	18	17	46	99	137	158	161	2	2	1	1	1	1	1	1	9	6	1	-29	-53	-38	-21	-3	6	6	1	1	1	1	5	21	189
1967	404	439	477	523	539	543	544	534	505	484	465	480	1	0	10	39	60	79	64	5	6	3	1	1	1	1	1	18	4	1	-10	-29	-21	-19	15	6	6	4	1	1	2	6	26	468
1968	503	514	519	532	542	544	543	516	464	429	409	404	0	1	28	80	115	135	140	6	5	1	1	1	1	1	1	16	2	-1	-27	-52	-35	-20	-5	6	5	1	1	1	2	5	21	336
1969	415	450	482	524	537	544	544	536	511	476	453	469	0	0	8	33	68	91	75	6	6	4	1	1	1	1	1	20	7	0	-8	-25	-35	-23	16	6	6	4	1	1	1	6	25	500
1970	499	513	518	532	544	544	542	518	464	425	402	403	0	2	26	80	119	142	141	6	5	1	1	1	1	1	1	16	0	-2	-24	-54	-39	-23	1	6	5	1	1	1	1	6	21	336
1971	418	453	483	515	525	531	531	505	455	410	383	399	13	13	39	89	134	161	145	3	3	1	1	1	1	1	1	11	6	0	-26	-50	-45	-27	16	6	6	1	1	1	1	6	22	242
1972	431	461	490	526	538	543	543	513	459	411	383	379	1	1	31	85	133	161	165	5	5	1	1	1	1	1	1	15	5	0	-30	-54	-48	-28	-4	6	6	1	1	1	1	5	21	315
1973	414	446	476	520	532	536	533	505	444	394	367	364	8	11	39	100	150	177	180	4	3	1	1	1	1	1	1	12	4	-3	-28	-61	-50	-27	-3	6	5	1	1	1	1	5	20	240
1974	404	437	467	504	516	521	521	497	450	403	374	393	23	23	47	94	141	170	151	1	1	1	1	1	1	1	1	7	5	0	-24	-47	-47	-29	19	6	6	1	1	1	1	6	22	154
1975	428	459	489	509	521	526	524	495	438	381	353	372	18	20	49	106	163	191	172	2	1	1	1	1	1	1	1	8	5	-2	-29	-57	-57	-28	19	6	5	1	1	1	1	6	21	168
1976	408	440	467	505	519	530	528	505	465	444	421	395	14	16	39	79	100	123	149	3	2	1	1	1	1	1	1	10	11	-2	-23	-40	-21	-23	-26	6	5	1	1	1	1	1	16	160
1977	408	414	416	416	437	441	472	469	439	413	387	373	103	72	75	105	131	157	171	1	1	1	1	1	1	1	1	7	4	31	-3	-30	-26	-26	-14	6	6	5	1	1	1	3	23	161
1978	344	351	417	482	513	525	533	529	493	444	410	432	19	11	15	51	100	134	112	2	3	2	1	1	1	1	1	11	12	8	-4	-36	-49	-34	22	6	6	5	1	1	1	6	26	286
1979	465	496	506	522	534	538	536	512	463	420	394	390	6	8	32	81	124	150	154	4	4	1	1	1	1	1	1	13	4	-2	-24	-49	-43	-26	-4	6	5	1	1	1	1	5	20	260
1980	418	453	483	506	522	534	540	533	495	446	410	432	10	4	11	49	98	134	112	3	5	3	1	1	1	1	1	15	12	6	-7	-38	-49	-36	22	6	6	4	1	1	1	6	25	375
1981	465	497	503	517	530	536	536	513	484	431	413	400	8	8	31	80	113	131	144	4	4	1	1	1	1	1	1	13	6	0	-23	-49	-33	-18	-13	6	6	1	1	1	2	3	20	260
1982	407	445	479	525	538	543	544	527	485	430	400	412	1	0	17	59	114	144	132	5	6	2	1	1	1	1	1	17	5	1	-17	-42	-55	-30	12	6	6	2	1	1	1	6	23	391
1983	442	473	504	531	544	544	544	539	523	514	501	509	0	0	5	21	30	43	35	6	6	4	1	1	1	1	1	20	0	0	-5	-16	-9	-13	8	6	6	5	2	4	3	6	32	640
1984	524	536	542	544	544	544	541	517	465	425	399	404	0	3	27	79	119	145	140	6	5	1	1	1	1	1	1	16	0	-3	-24	-52	-40	-26	5	6	5	1	1	1	1	6	21	336
1985	440	472	493	507	520	527	528	499	445	407	385	385	17	16	45	99	137	159	159	2	2	1	1	1	1	1	1	9	7	1	-29	-54	-38	-22	0	6	6	1	1	1	1	6	22	198
1986	396	419	453	503	541	544	544	534	509	481	445	460	0	0	10	35	63	99	84	6	6	3	1	1	1	1	1	19	3	0	-10	-25	-28	-36	15	6	6	4	1	1	1	6	25	475
1987	489	504	524	544	544	544	529	503	456	427	414	387	0	15	41	88	117	130	157	6	2	1	1	1	1	1	1	13	0	-15	-26	-47	-29	-13	-27	6	3	1	1	1	3	1	18	208
1988	391	402	441	491	520	521	496	478	443	426	421	406	23	48	66	101	118	123	138	1	1	1	1	1	1	1	1	7	1	-25	-18	-35	-17	-5	-15	6	1	2	1	2	5	3	20	140
1989	406	429	439	453	480	518	532	512	465	439	387	397	26	12	32	79	105	157	147	1	3	1	1	1	1	1	1	9	38	14	-20	-47	-26	-52	10	6	6	2	1	1	1	6	23	207
1990	428	458	491	528	544	544	541	522	486	471	431	406	0	3	22	58	73	113	138	6	5	1	1	1	1	1	1	16	0	-3	-19	-36	-15	-40	-25	6	5	2	1	3	1	1	19	304
1991	405	406	412	412	442	494	523	519	498	474	431	424	50	21	25	46	70	113	120	1	1	1	1	1	1	1	1	7	52	29	-4	-21	-24	-43	-7	6	6	5	1	1	1	4	24	168
1992	429	435	442	464	502	535	544	525	495	471	431	413	9	0	19	49	73	113	131	4	6	2	1	1	1	1	1	16	33	9	-19	-30	-24	-40	-18	6	6	2	1	1	1	2	19	304
1993	413	419	483	519	534	538	535	515	471	428	401	417	6	9	29	73	116	143	127	4	4	1	1	1	1	1	1	13	4	-3	-20	-44	-43	-27	16	6	5	2	1	1	1	6	22	286
1994	443	475	496	509	522	530	533	512	472	453	434	405	14	11	32	72	91	110	139	3	3	1	1	1	1	1	1	11	8	3	-21	-40	-19	-19	-29	6	6	1	1	2	2	1	19	209
																			73 - year Average:																73 - year Average:								265.0
																																			1929 - 34 Average:								190.7

C-032482

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STUDY: 1995C06F-[illegible]3-468 DWRSIM: recirc818-f, 17 Jun 97
CP # 4, SHASTA LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-468/4/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 1067'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	989	993	999	1,003	1,019	1,038	1,060	1,067	1,062	1,048	1,031	1,025
1923	1,023	1,017	1,019	1,023	1,020	1,021	1,033	1,029	1,015	996	978	976
1924	978	978	978	978	986	986	975	961	944	922	904	889
1925	893	906	915	925	997	1,012	1,043	1,054	1,045	1,027	1,012	1,008
1926	1,006	1,003	1,000	997	1,023	1,025	1,038	1,032	1,011	988	969	962
1927	960	988	1,011	1,035	1,026	1,052	1,067	1,067	1,058	1,044	1,027	1,022
1928	1,020	1,017	1,020	1,028	1,044	1,046	1,066	1,062	1,048	1,021	999	993
1929	991	992	992	992	998	999	1,002	996	988	970	952	944
1930	942	941	972	984	1,001	1,024	1,034	1,035	1,015	996	982	980
1931	976	975	973	975	978	986	977	967	959	939	923	909
1932	904	903	919	930	940	965	968	976	969	955	941	933
1933	931	928	929	932	935	969	980	985	981	961	946	940
1934	938	937	946	963	983	995	995	990	980	947	919	904
1935	898	910	914	937	957	981	1,026	1,034	1,026	1,008	994	989
1936	987	984	981	1,006	1,032	1,044	1,053	1,051	1,043	1,023	1,003	998
1937	993	989	983	977	977	1,004	1,033	1,041	1,037	1,016	997	990
1938	968	1,010	1,020	1,035	1,030	1,024	1,049	1,067	1,067	1,058	1,045	1,036
1939	1,023	1,017	1,020	1,022	1,024	1,039	1,031	1,024	999	977	949	945
1940	942	937	945	993	1,017	1,025	1,059	1,064	1,054	1,034	1,017	1,015
1941	1,014	1,013	1,019	1,020	1,024	1,045	1,064	1,067	1,067	1,058	1,047	1,036
1942	1,023	1,017	1,020	1,023	1,028	1,042	1,067	1,067	1,067	1,058	1,046	1,036
1943	1,023	1,017	1,022	1,030	1,042	1,051	1,067	1,067	1,059	1,045	1,030	1,024
1944	1,023	1,017	1,015	1,014	1,023	1,033	1,038	1,038	1,019	995	974	967
1945	969	981	996	1,005	1,039	1,053	1,065	1,067	1,062	1,040	1,023	1,018
1946	1,012	1,017	1,018	1,033	1,039	1,050	1,062	1,064	1,054	1,038	1,020	1,017
1947	1,014	1,014	1,015	1,011	1,018	1,038	1,044	1,034	1,019	995	977	971
1948	977	980	982	1,007	1,006	1,018	1,056	1,067	1,067	1,052	1,037	1,036
1949	1,023	1,017	1,016	1,012	1,016	1,050	1,063	1,064	1,048	1,026	1,008	1,004
1950	1,000	997	994	1,002	1,016	1,033	1,047	1,046	1,034	1,012	995	993
1951	1,006	1,017	1,020	1,033	1,040	1,057	1,064	1,067	1,051	1,030	1,012	1,010
1952	1,008	1,013	1,019	1,032	1,038	1,048	1,058	1,067	1,067	1,058	1,046	1,036
1953	1,023	1,017	1,021	1,022	1,033	1,051	1,065	1,067	1,067	1,058	1,046	1,036
1954	1,023	1,017	1,021	1,030	1,035	1,051	1,067	1,064	1,059	1,042	1,029	1,029
1955	1,023	1,017	1,022	1,024	1,027	1,025	1,039	1,047	1,028	1,004	987	986
1956	984	987	1,017	1,017	1,019	1,048	1,067	1,067	1,067	1,058	1,047	1,036
1957	1,023	1,017	1,016	1,017	1,035	1,052	1,058	1,067	1,060	1,043	1,029	1,031
1958	1,023	1,017	1,021	1,029	1,067	1,024	1,053	1,067	1,067	1,058	1,047	1,036
1959	1,023	1,017	1,017	1,034	1,039	1,050	1,054	1,054	1,035	1,010	994	998
1960	998	993	990	996	1,024	1,051	1,058	1,066	1,048	1,028	1,009	1,007
1961	1,004	1,006	1,021	1,026	1,044	1,057	1,064	1,067	1,048	1,024	1,003	1,001
1962	998	1,002	1,014	1,016	1,035	1,051	1,062	1,063	1,051	1,031	1,013	1,011
1963	1,023	1,017	1,021	1,025	1,045	1,055	1,052	1,067	1,063	1,052	1,040	1,036
1964	1,023	1,017	1,018	1,033	1,034	1,037	1,031	1,026	1,010	989	969	968
1965	967	977	1,017	1,022	1,040	1,052	1,065	1,066	1,056	1,040	1,030	1,028
1966	1,023	1,017	1,021	1,037	1,049	1,055	1,067	1,064	1,049	1,029	1,013	1,010
1967	1,006	1,017	1,021	1,030	1,044	1,048	1,064	1,067	1,067	1,058	1,047	1,036
1968	1,025	1,017	1,019	1,025	1,034	1,054	1,056	1,058	1,042	1,021	1,013	1,011
1969	1,010	1,011	1,021	1,022	1,027	1,048	1,063	1,067	1,067	1,058	1,047	1,036
1970	1,023	1,017	1,020	1,017	1,025	1,052	1,055	1,055	1,043	1,023	1,010	1,008
1971	1,009	1,017	1,020	1,028	1,040	1,043	1,063	1,067	1,067	1,058	1,047	1,036
1972	1,023	1,017	1,022	1,033	1,045	1,056	1,067	1,067	1,050	1,029	1,015	1,015
1973	1,016	1,017	1,021	1,030	1,034	1,053	1,065	1,067	1,059	1,041	1,029	1,028
1974	1,023	1,017	1,018	1,017	1,036	1,025	1,058	1,067	1,067	1,058	1,047	1,036
1975	1,023	1,017	1,021	1,024	1,045	1,039	1,061	1,067	1,067	1,058	1,047	1,036
1976	1,023	1,017	1,018	1,017	1,012	1,017	1,024	1,020	995	974	969	971
1977	974	975	975	977	967	966	949	943	921	902	883	879
1978	868	867	912	1,017	1,031	1,047	1,067	1,067	1,064	1,054	1,044	1,036
1979	1,023	1,017	1,015	1,018	1,029	1,046	1,053	1,062	1,048	1,030	1,018	1,016
1980	1,016	1,017	1,020	1,029	1,019	1,046	1,059	1,064	1,056	1,045	1,035	1,035
1981	1,023	1,017	1,020	1,029	1,042	1,056	1,064	1,062	1,042	1,018	1,002	999
1982	998	1,017	1,018	1,033	1,029	1,046	1,051	1,067	1,067	1,058	1,047	1,036
1983	1,023	1,017	1,020	1,022	1,017	1,045	1,050	1,067	1,067	1,058	1,047	1,036
1984	1,023	1,017	1,018	1,034	1,047	1,056	1,064	1,067	1,059	1,043	1,036	1,036
1985	1,023	1,017	1,022	1,023	1,027	1,034	1,042	1,033	1,010	989	972	974
1986	976	980	990	1,014	1,017	1,029	1,047	1,049	1,038	1,022	1,006	1,010
1987	1,010	1,009	1,008	1,009	1,019	1,046	1,047	1,040	1,008	985	956	949
1988	945	947	979	1,000	1,001	1,004	1,010	1,009	991	960	945	942
1989	943	955	962	969	976	1,039	1,058	1,054	1,039	1,018	1,007	1,007
1990	1,009	1,007	1,003	1,008	1,008	1,015	1,008	1,013	998	973	957	954
1991	949	947	947	948	944	970	981	981	971	958	943	938
1992	936	933	934	939	977	999	1,011	1,003	988	972	959	953
1993	949	946	950	995	1,027	1,031	1,059	1,067	1,067	1,054	1,046	1,045
1994	1,043	1,017	1,019	1,020	1,026	1,027	1,027	1,026	999	978	955	953

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	29	7	0	5	19	36	42
1923	46	34	38	52	71	89	91
1924	81	92	106	123	145	163	178
1925	55	24	13	22	40	55	59
1926	42	29	35	56	79	98	105
1927	15	0	0	9	23	40	45
1928	21	1	5	19	46	68	74
1929	68	65	71	79	97	115	123
1930	43	33	32	52	71	85	87
1931	81	90	100	108	128	144	158
1932	102	99	91	98	112	126	134
1933	98	87	82	86	106	121	127
1934	72	72	77	87	120	148	163
1935	86	41	33	41	59	73	78
1936	23	14	16	24	44	64	69
1937	63	34	26	30	51	70	77
1938	43	18	0	0	9	22	31
1939	28	36	43	68	90	118	122
1940	42	8	3	13	33	50	52
1941	22	3	0	0	9	20	31
1942	25	0	0	0	9	21	31
1943	16	0	0	8	22	37	43
1944	34	29	29	48	72	93	100
1945	14	2	0	5	27	44	49
1946	17	5	3	13	31	47	50
1947	29	23	33	48	72	90	96
1948	49	11	0	0	15	30	31
1949	17	4	3	19	41	59	63
1950	34	20	21	33	55	72	74
1951	10	3	0	16	37	55	57
1952	19	9	0	0	9	21	31
1953	16	2	0	0	9	21	31
1954	16	0	3	8	25	38	38
1955	42	28	20	39	63	80	81
1956	19	0	0	0	9	20	31
1957	15	9	0	7	24	38	36
1958	43	14	0	0	9	20	31
1959	17	13	13	32	57	73	69
1960	16	9	1	19	39	58	60
1961	10	3	0	19	43	64	66
1962	16	5	4	16	36	54	56
1963	12	15	0	4	15	27	31
1964	30	36	41	57	78	98	99
1965	15	2	1	11	27	37	39
1966	12	0	3	18	38	54	57
1967	19	3	0	0	9	20	31
1968	13	11	9	25	46	54	56
1969	19	4	0	0	9	20	31
1970	15	12	12	24	44	57	59
1971	24	4	0	0	9	20	31
1972	11	0	0	17	38	52	52
1973	14	2	0	8	26	38	39
1974	42	9	0	0	9	20	31
1975	28	6	0	0	9	20	31
1976	50	43	47	72	93	98	96
1977	101	118	124	146	165	184	188
1978	20	0	0	3	13	23	31
1979	21	14	5	19	37	49	51
1980	21	8	3	11	22	32	32
1981	11	3	5	25	49	65	68
1982	21	16	0	0	9	20	31
1983	22	17	0	0	9	20	31
1984	11	3	0	8	24	31	31
1985	33	25	34	57	78	95	93
1986	38	20	18	29	45	61	57
1987	21	20	27	59	82	111	118
1988	63	57	58	76	107	122	125
1989	28	9	13	28	49	60	60
1990	52	59	54	69	94	110	113
1991	97	86	86	96	109	124	131
1992	68	56	64	79	95	108	114
1993	36	8	0	0	13	21	22
1994	40	40	41	68	89	112	114

Reser[illegible]n Scoring Table:
If [DFMRE] [illegible] then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	1	4	6	4	2	1	1	19
1923	1	1	1	1	1	1	1	7
1924	1	1	1	1	1	1	1	7
1925	1	1	3	1	1	1	1	9
1926	1	1	1	1	1	1	1	7
1927	2	6	6	4	1	1	1	21
1928	1	5	4	2	1	1	1	15
1929	1	1	1	1	1	1	1	7
1930	1	1	1	1	1	1	1	7
1931	1	1	1	1	1	1	1	7
1932	1	1	1	1	1	1	1	7
1933	1	1	1	1	1	1	1	7
1934	1	1	1	1	1	1	1	7
1935	1	1	1	1	1	1	1	7
1936	1	3	2	1	1	1	1	10
1937	1	1	1	1	1	1	1	7
1938	1	2	6	6	4	1	1	21
1939	1	1	1	1	1	1	1	7
1940	1	4	5	3	1	1	1	16
1941	1	5	6	6	4	1	1	24
1942	1	6	6	6	4	1	1	25
1943	2	6	6	4	1	1	1	21
1944	1	1	1	1	1	1	1	7
1945	3	5	6	4	1	1	1	21
1946	2	4	5	3	1	1	1	17
1947	1	1	1	1	1	1	1	7
1948	1	3	6	6	2	1	1	20
1949	2	5	5	2	1	1	1	17
1950	1	1	1	1	1	1	1	7
1951	3	5	6	2	1	1	1	19
1952	2	4	6	6	4	1	1	24
1953	2	5	6	6	4	1	1	25
1954	2	6	5	4	1	1	1	20
1955	1	1	1	1	1	1	1	7
1956	2	6	6	6	4	1	1	26
1957	2	4	6	4	1	1	1	19
1958	1	3	6	6	4	1	1	22
1959	2	3	3	1	1	1	1	12
1960	2	4	5	2	1	1	1	16
1961	3	5	6	2	1	1	1	19
1962	2	4	5	2	1	1	1	16
1963	3	2	6	5	2	1	1	20
1964	1	1	1	1	1	1	1	7
1965	2	5	5	3	1	1	1	18
1966	3	6	5	2	1	1	1	19
1967	2	5	6	6	4	1	1	25
1968	3	3	4	1	1	1	1	14
1969	2	5	6	6	4	1	1	25
1970	2	3	3	1	1	1	1	12
1971	1	5	6	6	4	1	1	24
1972	3	6	6	2	1	1	1	20
1973	3	5	6	4	1	1	1	21
1974	1	4	6	6	4	1	1	23
1975	1	4	6	6	4	1	1	23
1976	1	1	1	1	1	1	1	7
1977	1	1	1	1	1	1	1	7
1978	1	6	6	5	3	1	1	23
1979	1	3	4	2	1	1	1	13
1980	1	4	5	3	1	1	1	16
1981	3	5	4	1	1	1	1	16
1982	1	2	6	6	4	1	1	21
1983	1	2	6	6	4	1	1	21
1984	3	5	6	4	1	1	1	21
1985	1	1	1	1	1	1	1	7
1986	1	1	2	1	1	1	1	8
1987	1	1	1	1	1	1	1	7
1988	1	1	1	1	1	1	1	7
1989	1	4	3	1	1	1	1	12
1990	1	1	1	1	1	1	1	7
1991	1	1	1	1	1	1	1	7
1992	1	1	1	1	1	1	1	7
1993	1	4	6	6	3	1	1	22
1994	1	1	1	1	1	1	1	7

73 - year Average: 15

Reservoir Change from Previous Month [fluctuation]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	19	22	7	-5	-14	-17	-6
1923	1	12	-4	-14	-19	-18	-2
1924	0	-11	-14	-17	-22	-18	-15
1925	15	31	11	-9	-18	-15	-4
1926	2	13	-6	-21	-23	-19	-7
1927	26	15	0	-9	-14	-17	-5
1928	2	20	-4	-14	-27	-22	-6
1929	1	3	-6	-8	-18	-18	-8
1930	23	10	1	-20	-19	-14	-2
1931	8	-9	-10	-8	-20	-16	-14
1932	25	3	8	-7	-14	-14	-8
1933	34	11	5	-4	-20	-15	-6
1934	12	0	-5	-10	-33	-28	-15
1935	24	45	8	-8	-18	-14	-5
1936	12	9	-2	-8	-20	-20	-5
1937	27	29	8	-4	-21	-19	-7
1938	-6	25	18	0	-9	-13	-9
1939	15	-8	-7	-25	-22	-28	-4
1940	8	34	5	-10	-20	-17	-2
1941	21	19	3	0	-9	-11	-11
1942	14	25	0	0	-9	-12	-10
1943	9	16	0	-8	-14	-15	-6
1944	10	5	0	-19	-24	-21	-7
1945	14	12	2	-5	-22	-17	-5
1946	11	12	2	-10	-18	-16	-3
1947	20	6	-10	-15	-24	-18	-6
1948	12	38	11	0	-15	-15	-1
1949	34	13	1	-16	-22	-18	-4
1950	17	14	-1	-12	-22	-17	-2
1951	17	7	3	-16	-21	-18	-2
1952	10	10	9	0	-9	-12	-10
1953	18	14	2	0	-9	-12	-10
1954	16	16	-3	-5	-17	-13	0
1955	-2	14	8	-19	-24	-17	-1
1956	29	19	0	0	-9	-11	-11
1957	17	6	9	-7	-17	-14	2
1958	-43	29	14	0	-9	-11	-11
1959	11	4	0	-19	-25	-16	4
1960	27	7	8	-18	-20	-19	-2
1961	13	7	3	-19	-24	-21	-2
1962	16	11	1	-12	-20	-18	-2
1963	10	-3	15	-4	-11	-12	-4
1964	3	-6	-5	-16	-21	-20	-1
1965	12	13	1	-10	-16	-10	-2
1966	6	12	-3	-15	-20	-16	-3
1967	4	16	3	0	-9	-11	-11
1968	20	2	2	-16	-21	-8	-2
1969	21	15	4	0	-9	-11	-11
1970	27	3	0	-12	-20	-13	-2
1971	3	20	4	0	-9	-11	-11
1972	11	11	0	-17	-21	-14	0
1973	19	12	2	-8	-18	-12	-1
1974	-11	33	9	0	-9	-11	-11
1975	-6	22	6	0	-9	-11	-11
1976	5	7	-4	-25	-21	-5	2
1977	-1	-17	-6	-22	-19	-19	-4
1978	16	20	0	-3	-10	-10	-8
1979	17	7	9	-14	-18	-12	-2
1980	27	13	5	-8	-11	-10	0
1981	14	8	-2	-20	-24	-18	-3
1982	17	5	16	0	-9	-11	-11
1983	28	5	17	0	-9	-11	-11
1984	9	8	3	-8	-16	-7	0
1985	7	8	-9	-23	-21	-17	2
1986	12	18	2	-11	-16	-16	4
1987	27	1	-7	-32	-23	-29	-7
1988	3	6	-1	-18	-31	-15	-3
1989	63	19	-4	-15	-21	-11	0
1990	7	-7	5	-15	-25	-16	-3
1991	26	11	0	-10	-13	-15	-7
1992	22	12	-8	-15	-18	-13	-6
1993	4	28	8	0	-13	-8	-1
1994	1	0	-1	-27	-21	-23	-2

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	6	6	5	3	2	4	32	608
1923	6	6	5	3	2	2	5	29	203
1924	6	3	3	2	1	2	3	20	140
1925	6	6	6	4	2	3	5	32	288
1926	6	6	4	1	1	2	4	24	168
1927	6	6	6	4	3	2	5	32	672
1928	6	6	5	3	1	1	4	26	390
1929	6	6	4	4	2	2	4	28	196
1930	6	6	6	2	2	3	5	30	210
1931	6	4	4	4	2	2	3	25	175
1932	6	6	6	4	3	3	4	32	224
1933	6	6	6	5	2	3	4	32	224
1934	6	6	5	4	1	1	3	26	182
1935	6	6	6	4	2	3	5	32	224
1936	6	6	5	4	2	2	5	30	300
1937	6	6	6	5	1	2	4	30	210
1938	4	6	6	6	4	3	4	33	693
1939	6	4	4	1	1	1	5	22	154
1940	6	6	6	4	2	2	5	31	496
1941	6	6	6	6	4	3	3	34	816
1942	6	6	6	6	4	3	4	35	875
1943	6	6	6	4	3	3	4	32	672
1944	6	6	6	2	1	1	4	26	182
1945	6	6	6	5	1	2	5	31	651
1946	6	6	6	4	2	2	5	31	527
1947	6	6	4	3	1	2	4	26	182
1948	6	6	6	6	3	3	5	35	700
1949	6	6	6	2	1	2	5	28	476
1950	6	6	5	3	1	2	5	28	196
1951	6	6	6	2	1	2	5	28	532
1952	6	6	6	6	4	3	4	35	840
1953	6	6	6	6	4	3	4	35	875
1954	6	6	5	5	2	3	6	33	660
1955	5	6	6	2	1	2	5	27	189
1956	6	6	6	6	4	3	3	34	884
1957	6	6	6	4	2	3	6	33	627
1958	1	6	6	6	4	3	3	29	638
1959	6	6	6	2	1	2	6	29	348
1960	6	6	6	2	2	2	5	29	464
1961	6	6	6	2	1	1	5	27	513
1962	6	6	6	3	2	2	5	30	480
1963	6	5	6	5	3	3	5	33	660
1964	6	4	5	2	1	2	5	25	175
1965	6	6	6	4	2	4	5	33	594
1966	6	6	5	3	2	2	5	29	551
1967	6	6	6	6	4	3	3	34	850
1968	6	6	6	2	1	4	5	30	420
1969	6	6	6	6	4	3	3	34	850
1970	6	6	6	3	2	3	5	31	372
1971	6	6	6	6	4	3	3	34	816
1972	6	6	6	2	1	3	6	30	600
1973	6	6	6	4	2	3	5	32	672
1974	3	6	6	6	4	3	3	31	713
1975	4	6	6	6	4	3	3	32	736
1976	6	6	5	1	1	5	6	30	210
1977	5	2	4	1	2	2	5	21	147
1978	6	6	6	5	4	4	4	35	805
1979	6	6	6	3	2	3	5	31	403
1980	6	6	6	4	3	4	6	35	560
1981	6	6	5	2	1	2	5	27	432
1982	6	6	6	6	4	3	3	34	714
1983	6	6	6	6	4	3	3	34	714
1984	6	6	6	4	2	4	6	34	714
1985	6	6	4	1	1	2	6	26	182
1986	6	6	6	3	2	2	6	31	248
1987	6	6	4	1	1	1	4	23	161
1988	6	6	5	2	1	3	5	28	196
1989	6	6	5	3	1	3	6	30	360
1990	6	4	6	3	1	2	5	27	189
1991	6	6	6	4	3	3	4	32	224
1992	6	6	4	3	2	3	4	28	196
1993	6	6	6	6	3	4	5	36	792
1994	6	6	5	1	1	1	5	25	175

73 - year Average: 30 459.1
1929 - '34 Average: 201.8

C-032483

STUDY: 1995C06F-SWRCB-468 DWRSIM: recirc818-f, 17 Jun 97
CP # 6, LAKE OROVILLE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-468/6/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 900'

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE]							Reservoir Elevation Scoring Table								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Scoring Table								Largemouth Bass Reservoir Habitat Index
													MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	833	833	835	844	850	858	893	900	900	880	876	876	42	7	0	0	20	24	24	1	4	6	6	1	1	1	20	8	35	7	0	-20	-4	0	6	6	6	6	2	5	6	37	740
1923	874	874	858	862	869	868	891	897	878	839	805	808	32	9	3	22	61	95	92	1	4	5	1	1	1	1	14	9	23	6	-19	-39	-34	3	6	6	6	2	1	1	6	28	392
1924	800	788	761	766	784	774	761	750	728	709	700	694	126	139	150	172	191	200	206	1	1	1	1	1	1	1	7	-10	-13	-11	-22	-19	-9	-6	4	3	3	1	2	4	4	21	147
1925	695	699	705	722	789	817	836	843	825	793	782	780	83	64	57	75	107	118	120	1	1	1	1	1	1	1	7	28	19	7	-18	-32	-11	-2	6	6	6	2	1	3	5	29	203
1926	777	779	781	794	837	856	887	874	853	812	799	781	44	13	26	47	88	101	119	1	3	1	1	1	1	1	9	19	31	-13	-21	-41	-13	-18	6	6	3	1	1	3	2	22	198
1927	778	809	810	833	849	883	890	900	900	865	854	852	37	10	0	0	35	46	48	1	3	6	6	1	1	1	19	14	27	10	0	-35	-11	-2	6	6	6	6	1	3	5	33	627
1928	849	859	860	868	871	849	878	863	842	788	737	730	51	22	37	58	112	163	170	1	1	1	1	1	1	1	7	-22	29	-15	-21	-54	-51	-7	1	6	3	1	1	1	4	17	119
1929	717	712	710	715	729	746	749	752	744	726	715	709	154	151	148	156	174	185	191	1	1	1	1	1	1	1	7	17	3	3	-8	-18	-11	-6	6	6	6	4	2	3	4	31	217
1930	701	698	760	788	816	848	871	874	855	814	776	772	52	29	26	45	86	124	128	1	1	1	1	1	1	1	7	32	23	3	-19	-41	-38	-4	6	6	6	2	1	1	5	27	189
1931	763	756	748	760	772	789	776	763	740	720	709	702	111	124	137	160	180	191	198	1	1	1	1	1	1	1	7	17	-13	-13	-23	-20	-11	-7	6	3	3	1	2	3	4	22	154
1932	696	688	693	716	740	774	780	805	777	753	742	736	126	120	95	123	147	158	164	1	1	1	1	1	1	1	7	34	6	25	-28	-24	-11	-6	6	6	6	1	1	3	4	27	189
1933	727	715	713	725	735	740	743	758	752	736	725	717	160	157	142	148	164	175	183	1	1	1	1	1	1	1	7	5	3	15	-6	-16	-11	-8	6	6	6	4	2	3	4	31	217
1934	713	705	708	734	756	778	770	760	736	710	700	686	122	130	140	164	190	200	214	1	1	1	1	1	1	1	7	22	-8	-10	-24	-26	-10	-14	6	4	4	1	1	4	3	23	161
1935	671	675	682	710	733	764	852	862	848	824	814	794	136	48	38	52	76	86	106	1	1	1	1	1	1	1	7	31	88	10	-14	-24	-10	-20	6	6	6	3	1	4	2	28	196
1936	785	775	773	823	849	860	886	897	887	847	828	824	40	14	3	13	53	72	76	1	3	5	3	1	1	1	15	11	26	11	-10	-40	-19	-4	6	6	6	4	1	2	5	30	450
1937	817	808	801	804	821	845	870	883	860	834	821	816	55	30	17	40	66	79	84	1	1	2	1	1	1	1	8	24	25	13	-23	-26	-13	-5	6	6	6	1	1	3	5	28	224
1938	811	825	854	858	849	849	882	900	900	899	896	887	51	18	0	0	1	4	13	1	2	6	6	5	5	3	28	0	33	18	0	-1	-3	-9	6	6	6	6	5	5	4	38	1064
1939	874	864	854	845	837	833	822	813	778	713	656	650	67	78	87	122	187	244	250	1	1	1	1	1	1	1	7	-4	-11	-9	-35	-65	-57	-6	5	3	4	1	1	1	4	19	133
1940	639	629	631	704	813	849	879	883	867	829	820	809	51	21	17	33	71	80	91	1	1	2	1	1	1	1	8	36	30	4	-16	-38	-9	-11	6	6	6	2	1	4	3	28	224
1941	801	801	842	849	849	858	886	900	900	890	886	887	42	14	0	0	10	14	13	1	3	6	6	3	3	3	25	9	28	14	0	-10	-4	1	6	6	6	6	4	5	6	39	975
1942	874	874	849	849	850	867	882	900	900	885	882	882	33	18	0	0	15	18	18	1	2	6	6	2	2	2	21	17	15	18	0	-15	-3	0	6	6	6	6	3	5	6	38	798
1943	874	869	861	849	858	859	887	893	892	860	849	850	41	13	7	8	40	51	50	1	3	4	4	1	1	1	15	3	28	6	-1	-32	-11	1	6	6	6	5	1	3	6	33	495
1944	851	853	853	859	857	868	879	895	875	835	797	791	32	21	5	25	65	103	109	1	1	4	1	1	1	1	10	11	11	16	-20	-40	-38	-6	6	6	6	2	1	1	4	26	260
1945	786	793	809	823	862	865	880	896	877	837	813	808	35	20	4	23	63	87	92	1	1	5	1	1	1	1	11	3	15	16	-19	-40	-24	-5	6	6	6	2	1	1	5	27	297
1946	806	816	849	864	868	868	887	892	870	831	788	785	32	13	8	30	69	112	115	1	3	4	1	1	1	1	12	0	19	5	-22	-39	-43	-3	6	6	6	1	1	1	5	26	312
1947	777	783	791	797	823	845	855	850	832	777	731	724	55	45	50	68	123	169	176	1	1	1	1	1	1	1	7	22	10	-5	-18	-55	-46	-7	6	6	5	2	1	1	4	25	175
1948	728	729	725	761	763	783	843	872	878	844	827	821	117	57	28	22	56	73	79	1	1	1	1	1	1	1	7	20	60	29	6	-34	-17	-6	6	6	6	6	1	2	4	31	217
1949	814	812	812	817	823	843	862	866	844	796	759	755	57	38	34	56	104	141	145	1	1	1	1	1	1	1	7	20	19	4	-22	-48	-37	-4	6	6	6	1	1	1	5	26	182
1950	741	740	741	771	818	849	881	900	886	848	820	819	51	19	0	14	52	80	81	1	2	6	3	1	1	1	15	31	32	19	-14	-38	-28	-1	6	6	6	3	1	1	5	28	420
1951	823	849	854	853	858	870	886	900	889	848	819	820	30	14	0	11	52	81	80	1	3	6	3	1	1	1	16	12	16	14	-11	-41	-29	1	6	6	6	3	1	1	6	29	464
1952	824	827	849	849	852	862	894	900	900	900	899	887	38	6	0	0	0	0	1	1	4	6	6	6	5	3	31	10	32	6	0	0	-1	-12	6	6	6	6	6	5	3	38	1178
1953	874	874	858	850	887	867	883	900	900	870	869	870	33	17	0	0	30	31	30	1	2	6	6	1	1	1	18	0	16	17	0	-30	-1	1	6	6	6	6	1	5	6	36	648
1954	872	871	874	858	857	859	883	863	847	800	753	753	41	17	37	53	100	147	147	1	2	1	1	1	1	1	8	2	24	-20	-16	-47	-47	0	6	6	2	2	1	1	6	24	192
1955	754	756	764	777	786	799	808	822	794	730	706	703	101	92	78	106	170	194	197	1	1	1	1	1	1	1	7	13	9	14	-28	-64	-24	-3	6	6	6	1	1	1	5	26	182
1956	694	690	845	849	849	864	892	900	900	873	870	874	38	8	0	0	27	30	26	1	4	6	6	1	1	1	20	15	28	8	0	-27	-3	4	6	6	6	6	1	5	6	36	720
1957	869	874	874	871	853	863	863	881	866	827	795	800	37	37	19	34	73	105	100	1	1	2	1	1	1	1	8	10	0	18	-15	-39	-32	5	6	6	6	3	1	1	6	29	232
1958	802	806	825	845	849	849	879	900	900	898	884	887	51	21	0	0	2	6	13	1	1	6	6	5	4	3	26	0	30	21	0	-2	-4	-7	6	6	6	6	5	5	4	38	988
1959	874	874	874	862	852	867	871	874	853	807	757	761	33	29	26	47	93	143	139	1	1	1	1	1	1	1	7	15	4	3	-21	-46	-50	4	6	6	6	1	1	1	6	27	189
1960	754	742	737	752	813	853	853	859	840	800	788	782	47	47	41	60	100	112	118	1	1	1	1	1	1	1	7	40	0	6	-19	-40	-12	-6	6	6	6	2	1	3	4	28	196
1961	772	774	783	795	823	841	840	846	826	768	727	723	59	60	54	74	132	173	177	1	1	1	1	1	1	1	7	18	-1	6	-20	-58	-41	-4	6	5	6	2	1	1	5	26	182
1962	706	703	712	727	789	823	844	843	828	772	745	724	77	56	57	72	128	155	176	1	1	1	1	1	1	1	7	34	21	-1	-15	-56	-27	-21	6	6	5	3	1	1	1	23	161
1963	796	810	838	859	867	858	876	900	893	857	845	846	42	24	0	7	43	55	54	1	1	6	4	1	1	1	15	-9	18	24	-7	-36	-12	1	4	6	6	4	1	3	6	30	450
1964	847	859	861	866	874	874	880	884	867	826	779	752	26	20	16	33	74	121	148	1	1	2	1	1	1	1	8	0	6	4	-17	-41	-47	-27	6	6	6	2	1	1	1	23	184
1965	739	740	849	849	863	870	887	881	884	854	848	849	30	13	19	16	46	52	51	1	3	2	2	1	1	1	11	7	17	-6	3	-30	-6	1	6	6	4	6	1	4	6	33	363
1966	853	859	860	864	870	874	894	882	862	821	772	767	26	6	18	38	79	128	133	1	4	2	1	1	1	1	11	4	20	-12	-20	-41	-49	-5	6	6	3	2	1	1	5	24	264
1967	753	764	802	849	860	853	879	900	900	900	896	887	47	21	0	0	0	4	13	1	1	6	6	6	5	3	28	-7	26	21	0	0	-4	-9	4	6	6	6	6	5	4	37	1036
1968	874	874	873	858	861	866	863	867	848	801	764	761	34	37	33	52	99	136	139	1	1	1	1	1	1	1	7	5	-3	4	-19	-47	-37	-3	6	5	6	2	1	1	5	26	182
1969	762	787	790	849	849	865	895	900	900	895	893	874	35	5	0	0	5	7	26	1	4	6	6	4	4	1	26	16	30	5	0	-5	-2	-19	6	6	6	6	5	5	2	36	936
1970	874	874	850	849	849	874	869	871	857	818	787	789	26	31	29	43	82	113	111	1	1	1	1	1	1	1	7	25	-5	2	-14	-39	-31	2	6	5	6	3	1	1	6	28	196
1971	792	818	848	864	874	874	893	900	900	871	853	855	26	7	0	0	29	47	45	1	4	6	6	1	1	1	20	0	19	7	0	-29	-18	2	6	6	6	6	1	2	6	33	660
1972	860	866	865	869	867	874	884	886	867	826	781	782	26	16	14	33	74	119	118	1	2	3	1	1	1	1	10	7	10	2	-19	-41	-45	1	6	6	6	2	1	1	6	28	280
1973	778	793	820	849	849	860	882	900	869	829	810	806	40	18	0	31	71	90	94	1	2	6	1	1	1	1	13	11	22	18	-31	-40	-19	-4	6	6	6	1	1	2	5	27	351
1974	810	849	850	854	864	849	883	900	900	889	888	886	51	17	0	0	11	12	14	1	2	6	6	3	3	3	24	-15	34	17	0	-11	-1	-2	3	6	6	6	3	5	5	34	816
1975	874	874	874	874	855	852	881	900	900	877	876	877	48	19	0	0	23	24	23	1	2	6	6	1	1	1	18	-3	29	19	0	-23	-1	1	5	6	6	6	1	5	6	35	630
1976	873	874	874	874	874	874	871	862	840	794	759	759	26	29	38	60	106	141	141	1	1	1	1	1	1	1	7	0	-3	-9	-22	-46	-35	0	6	5	4	1	1	1	6	24	168
1977	749	739	723	719	704	698	674	666	638	614	606	603	202	226	234	262	286	294	297	1	1	1	1	1	1	1	7	-6	-24	-8	-28	-24	-8	-3	4	1	4	1	1	4	5	20	140
1978	592	592	628	751	804	859	878	897	891	871	861	869	41	22	3	9	29	39	31	1	1	5	4	1	1	1	14	55	19	19	-6	-20	-10	8	6	6	6	4	2	4	6	34	476
1979	871	874	874	871	853	863	878	896	862	828	819	816	37	22	4	38	72	81	84	1	1	5	1	1	1	1	11	10	15	18	-34	-34	-9	-3	6	6	6	1	1	4	5	29	319
1980	822	825	833	850	849	865	881	893	888	873	866	865	35	19	7	12	27	34	35	1	2	4	3	1	1	1	13	16	16	12	-5	-15	-7	-1	6	6	6	5	3	4	5	35	455
1981	864	865	873	860	868	865	875	872	851	806	762	762	35	25	28	49	94	138	138	1	1	1	1	1	1	1	7	-3	10	-3	-21	-45	-44	0	5	6	5	1	1	1	6	25	175
1982	770	849	849	859	862	859	884	900	900	889	886	887	41	16	0	0	11	14	13	1	2	6	6	3	3	3	24	-3	25	16	0	-11	-3	1	5	6	6	6	3	5	6	37	888
1983	873	862	858	853	849	849	877	900	900	900	899	887	51	23	0	0	0	1	13	1	1	6	6	6	5	3	28	0	28	23	0	0	-1	-12	6	6	6	6	6	5	3	38	1064
1984	874	860	849	869	869	871	885	894	878	840	830	832	29	15	6	22	60	70	68	1	2	4	1	1	1	1	11	2	14	9	-16	-38	-10	2	6	6	6	2	1	4	6	31	341
1985	836	850	860	868	874	871	886	872	849	804	754	736	29	14	28	51	96	146	164	1	3	1	1	1	1	1	9	-3	15	-14	-23	-45	-50	-18	5	6	3	1	1	1	2	19	171
1986	727	723	730	766	849	849	871	875	871	842	831	842	51	29	25	29	58	69	58	1	1	1	1	1	1	1	7	0	22	4	-4	-29	-11	11	6	6	6	5	1	3	6	33	231
1987	844	850	846	847	858	867	855	845	817	756	717	712	33	45	55	83	144	183	188	1	1	1	1	1	1	1	7	9	-12	-10	-28	-61	-39	-5	6	3	4	1	1	1	5	21	147
1988	700	703	742	769	771	771	770	759	734	714	701	699	129	130	141	166	186	199	201	1	1	1	1	1	1	1	7	0	-1	-11	-25	-20	-13	-2	6	5	3	1	2	3	5	25	175
1989	692	711	721	728	732	844	870	860	843	796	779	777	56	30	40	57	104	121	123	1	1	1	1	1	1	1	7	112	26	-10	-17	-47	-17	-2	6	6	4	2	1	2	5	26	182
1990	788	789	774	787	795	820	808	808	783	727	714	705	80	92	92	117	173	186	195	1	1	1	1	1	1	1	7	25	-12	0	-25	-58	-13	-9	6	3	6	1	1	3	4	24	168
1991	687	678	660	657	645	700	722	737	721	699	693	692	200	178	163	179	201	207	208	1	1	1	1	1	1	1	7	55	22	15	-16	-22	-6	-1	6	6	6	2	1	4	5	30	210
1992	688	684	685	699	720	750	765	754	727	702	690	684	150	135	146	173	198	210	216	1	1	1	1	1	1	1	7	30	15	-11	-27	-25	-12	-6	6	6	3	1	1	3	4	24	168
1993	678	670	689	757	809	861	894	900	900	881	876	875	39	6	0	0	19	24	25	1	4	6	6	2	1	1	21	52	33	6	0	-19	-5	-1	6	6	6	6	2	5	5	36	756
1994	874	874	874	871	862	874	872	866	844	802	754	749	26	28	34	56	98	146	151	1	1	1	1	1	1	1	7	12	-2	-6	-22	-42	-46	-5	6	5	4	1	1	1	5	23	161

73 - year Average: 12

73 - year Average: 29 384.2
1929 - '34 Average: 187.8

STUDY 1995C06F-SWRCB-468 DWRSIM. recirc818-f, 17 Jun 97
CP # 8, FOLSOM LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-468/8/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 466'

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE] MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Reservoir Change from Previous Month [fluctuation] MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Largemouth Bass Reservoir Habitat Index Product
1922	414	409	414	414	424	428	443	466	466	463	449	434	38	23	0	0	3	17	32	1	1	6	6	5	2	1	22	4	15	23	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1923	425	423	424	424	419	420	449	466	451	431	424	422	46	17	0	15	35	42	44	1	2	6	2	1	1	1	14	1	29	17	-15	-20	-7	-2	6	6	6	3	2	4	5	32	448
1924	416	408	398	386	384	365	367	367	334	334	337	334	101	99	99	132	132	129	132	1	1	1	1	1	1	1	7	-19	2	0	-33	0	3	-3	2	6	6	1	6	6	5	32	224
1925	347	361	379	389	424	437	449	466	449	433	421	418	29	17	0	17	33	45	48	1	2	6	2	1	1	1	14	13	12	17	-17	-16	-12	-3	6	6	6	2	2	3	5	30	420
1926	413	406	401	392	412	413	444	442	416	374	335	348	53	22	24	50	92	131	118	1	1	1	1	1	1	1	7	1	31	-2	-26	-42	-39	13	6	6	5	1	1	1	6	26	182
1927	356	398	419	424	424	437	449	466	461	456	449	434	29	17	0	5	10	17	32	1	2	6	4	3	2	1	19	13	12	17	-5	-5	-7	-15	6	6	6	5	5	4	3	35	665
1928	425	424	424	424	424	437	449	453	441	416	406	407	29	17	13	25	50	60	59	1	2	3	1	1	1	1	10	13	12	4	-12	-25	-10	1	6	6	6	3	1	4	6	32	320
1929	400	393	389	377	375	374	388	394	374	335	347	351	92	78	72	92	131	119	115	1	1	1	1	1	1	1	7	-1	14	6	-20	-39	12	4	5	6	6	2	1	6	6	32	224
1930	334	334	384	406	421	437	443	442	415	380	334	335	29	23	24	51	86	132	131	1	1	1	1	1	1	1	7	16	6	-1	-27	-35	-46	1	6	6	5	1	1	1	6	26	182
1931	334	349	362	376	385	399	393	390	335	334	334	334	67	73	76	131	132	132	132	1	1	1	1	1	1	1	7	14	-6	-3	-55	-1	0	0	6	4	5	1	5	6	6	33	231
1932	334	334	380	402	424	436	441	457	443	402	372	376	30	25	9	23	64	94	90	1	1	4	1	1	1	1	10	12	5	16	-14	-41	-30	4	6	6	6	3	1	1	6	29	290
1933	352	334	355	366	369	382	344	370	336	334	345	340	84	122	96	130	132	121	126	1	1	1	1	1	1	1	7	13	-38	26	-34	-2	11	-5	6	1	6	1	5	6	5	30	210
1934	334	335	375	402	420	425	417	412	334	324	313	326	41	49	54	132	142	153	140	1	1	1	1	1	1	1	7	5	-8	-5	-78	-10	-11	13	6	4	5	1	4	3	6	29	203
1935	334	361	378	402	418	421	449	452	452	432	417	411	45	17	14	14	34	49	55	1	2	3	3	1	1	1	12	3	28	3	0	-20	-15	-8	6	6	6	6	2	3	4	33	396
1936	407	403	401	424	424	437	449	461	456	448	441	434	29	17	5	10	18	25	32	1	2	4	3	2	1	1	14	13	12	12	-5	-8	-7	-7	6	6	6	5	4	4	4	35	490
1937	425	417	411	404	424	437	449	466	454	441	433	430	29	17	0	12	25	33	36	1	2	6	3	1	1	1	15	13	12	17	-12	-13	-8	-3	6	6	6	3	3	4	5	33	495
1938	422	419	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1939	426	420	415	409	402	409	415	418	390	334	334	335	57	51	48	76	132	132	131	1	1	1	1	1	1	1	7	7	6	3	-28	-56	0	1	6	6	6	1	1	6	6	32	224
1940	334	334	334	420	424	437	449	461	448	431	424	425	29	17	5	18	35	42	41	1	2	4	2	1	1	1	12	13	12	12	-13	-17	-7	1	6	6	6	3	2	4	6	33	396
1941	420	416	424	424	424	437	449	466	458	455	449	434	29	17	0	8	11	17	32	1	2	6	4	3	2	1	19	13	12	17	-8	-3	-6	-15	6	6	6	4	5	4	3	34	646
1942	426	422	424	424	424	430	449	466	466	463	449	434	36	17	0	0	3	17	32	1	2	6	6	5	2	1	23	6	19	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1943	425	424	423	422	422	434	449	459	451	446	442	434	32	17	7	15	20	24	32	1	2	4	2	1	1	1	12	12	15	10	-8	-5	-4	-8	6	6	6	4	5	5	4	36	432
1944	425	419	413	405	407	419	420	433	413	392	377	372	47	46	33	53	74	89	94	1	1	1	1	1	1	1	7	12	1	13	-20	-21	-15	-5	6	6	6	2	1	3	5	29	203
1945	365	394	413	424	424	437	449	466	455	444	438	434	29	17	0	11	22	28	32	1	2	6	3	1	1	1	15	13	12	17	-11	-11	-6	-4	6	6	6	3	3	4	5	33	495
1946	427	424	424	424	423	437	449	466	451	438	431	430	29	17	0	15	28	35	38	1	2	6	2	1	1	1	14	14	12	17	-15	-13	-7	-1	6	6	6	3	3	4	5	33	462
1947	421	422	421	412	414	431	440	443	416	385	357	360	35	26	23	50	81	109	106	1	1	1	1	1	1	1	7	17	9	3	-27	-31	-28	3	6	6	6	1	1	1	6	27	189
1948	377	389	395	415	411	407	442	462	459	453	448	434	59	24	4	7	13	18	32	1	1	5	4	3	2	1	17	-4	35	20	-3	-6	-5	-14	5	6	6	5	4	5	3	34	578
1949	425	419	416	406	400	422	443	459	442	426	417	416	44	23	7	24	40	49	50	1	1	4	1	1	1	1	10	22	21	16	-17	-16	-9	-1	6	6	6	2	2	4	5	31	310
1950	410	404	395	421	424	437	449	466	455	443	439	434	29	17	0	11	23	27	32	1	2	6	3	1	1	1	15	13	12	17	-11	-12	-4	-5	6	6	6	3	3	5	5	34	510
1951	428	393	388	388	388	426	449	466	450	436	430	431	40	17	0	16	30	38	35	1	2	6	2	1	1	1	14	38	23	17	-16	-14	-6	1	6	6	6	2	4	3	6	33	462
1952	425	424	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1953	428	423	424	424	424	430	446	458	464	463	449	434	36	20	8	2	3	17	32	1	1	4	5	5	2	1	19	6	16	12	6	-1	-14	-15	6	6	6	6	5	3	3	35	665
1954	425	423	421	422	424	437	449	452	441	422	417	420	29	17	14	25	44	49	46	1	2	3	1	1	1	1	10	13	12	3	-11	-19	-5	3	6	6	6	3	2	5	6	34	340
1955	414	408	411	417	418	413	424	434	417	394	378	376	53	42	32	49	72	88	90	1	1	1	1	1	1	1	7	-5	11	10	-17	-23	-16	-2	5	6	6	2	1	2	5	27	189
1956	361	363	420	402	406	425	441	466	466	463	449	434	41	25	0	0	3	17	32	1	1	6	6	5	2	1	22	19	16	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1957	428	422	417	412	424	437	433	459	448	436	429	428	29	33	7	18	30	37	38	1	1	4	2	1	1	1	11	13	-4	26	-11	-12	-7	-1	6	5	6	3	3	4	5	32	352
1958	421	416	417	422	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1959	425	419	412	417	424	425	433	433	411	388	375	385	41	33	33	55	78	91	81	1	1	1	1	1	1	1	7	1	8	0	-22	-23	-13	10	6	6	6	1	1	3	6	29	203
1960	385	380	378	387	424	437	448	446	427	404	393	398	29	18	20	39	62	73	68	1	2	1	1	1	1	1	8	13	11	-2	-19	-23	-11	5	6	6	5	2	1	3	6	29	232
1961	393	391	390	383	389	398	408	420	405	387	377	381	68	58	46	61	79	89	85	1	1	1	1	1	1	1	7	9	10	12	-15	-18	-10	4	6	6	6	3	2	4	6	33	231
1962	382	384	391	392	424	431	447	454	447	427	419	417	35	19	12	19	39	47	49	1	2	3	2	1	1	1	11	7	16	7	-7	-20	-8	-2	6	6	6	4	2	4	5	33	363
1963	441	424	424	424	419	430	449	466	459	454	449	434	36	17	0	7	12	17	32	1	2	6	4	3	2	1	19	11	19	17	-7	-5	-5	-15	6	6	6	4	5	5	3	35	665
1964	427	424	424	424	418	414	425	438	417	381	351	335	52	41	28	49	85	115	131	1	1	1	1	1	1	1	7	-4	11	13	-21	-36	-30	-16	5	6	6	1	1	1	2	22	154
1965	335	367	393	392	395	414	449	463	453	446	443	434	52	17	3	13	20	23	32	1	2	5	3	1	1	1	14	19	35	14	-10	-7	-3	-9	6	6	6	4	4	5	4	35	490
1966	426	424	424	424	422	430	448	447	427	404	393	394	36	18	19	39	62	73	72	1	2	2	1	1	1	1	9	8	18	-1	-20	-23	-11	1	6	6	5	2	1	3	6	29	261
1967	394	402	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1968	427	424	423	424	424	437	439	441	419	395	393	396	29	27	25	47	71	73	70	1	1	1	1	1	1	1	7	13	2	2	-22	-24	-2	3	6	6	6	1	1	5	6	31	217
1969	394	399	408	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1970	427	424	423	393	396	426	431	440	429	413	412	415	40	35	26	37	53	54	51	1	1	1	1	1	1	1	7	30	5	9	-11	-16	-1	3	6	6	6	3	2	5	6	34	238
1971	409	419	424	424	423	437	447	461	461	460	449	434	29	19	5	5	6	17	32	1	2	4	4	4	2	1	18	14	10	14	0	-1	-11	-15	6	6	6	6	5	3	3	35	630
1972	425	422	424	424	424	437	444	451	432	410	403	403	29	22	15	34	56	63	63	1	1	2	1	1	1	1	8	13	7	7	-19	-22	-7	0	6	6	6	2	1	4	6	31	248
1973	402	407	422	424	424	437	449	466	451	434	428	429	29	17	0	15	32	38	37	1	2	6	2	1	1	1	14	13	12	17	-15	-17	-6	1	6	6	6	3	2	4	6	33	462
1974	422	423	422	409	417	433	449	466	463	463	449	434	33	17	0	3	3	17	32	1	2	6	5	5	2	1	22	16	16	17	-3	0	-14	-15	6	6	6	5	6	3	3	35	770
1975	426	419	417	415	424	437	441	466	466	463	449	434	29	25	0	0	3	17	32	1	1	6	6	5	2	1	22	13	4	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1976	431	423	419	410	402	392	397	401	368	334	340	341	74	89	65	100	132	126	125	1	1	1	1	1	1	1	7	-10	5	4	-35	-32	6	1	4	6	6	1	1	6	6	30	210
1977	335	334	330	325	321	323	334	341	334	319	305	291	143	132	125	132	147	161	175	1	1	1	1	1	1	1	7	2	11	7	-7	-15	-14	-14	6	6	6	4	3	3	3	31	217
1978	286	304	358	424	424	437	449	466	459	453	444	434	29	17	0	7	13	22	32	1	2	6	4	3	1	1	18	13	12	17	-7	-6	-9	-10	6	6	6	4	4	4	4	34	612
1979	423	417	411	418	424	437	447	466	449	433	426	425	29	19	0	17	33	40	41	1	2	6	2	1	1	1	14	13	10	19	-17	-16	-7	-1	6	6	6	2	2	4	5	31	434
1980	421	419	420	405	399	430	449	464	453	453	449	434	36	17	2	13	13	17	32	1	2	5	3	3	2	1	17	31	19	15	-11	0	-4	-15	6	6	6	3	6	5	3	35	595
1981	425	419	415	413	412	422	433	435	411	390	384	385	44	33	31	55	76	82	81	1	1	1	1	1	1	1	7	10	11	2	-24	-21	-6	1	6	6	6	1	1	4	6	30	210
1982	395	420	392	398	388	424	449	466	466	463	449	434	42	17	0	0	3	17	32	1	2	6	6	5	2	1	23	36	25	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1983	438	415	417	418	418	433	449	466	466	463	449	434	33	17	0	0	3	17	32	1	2	6	6	5	2	1	23	15	16	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1984	435	392	388	388	392	424	441	464	453	440	435	434	42	25	2	13	26	31	32	1	1	5	3	1	1	1	13	32	17	23	-11	-13	-5	-1	6	6	6	3	3	5	5	34	442
1985	427	424	424	420	422	428	443	442	413	373	335	335	38	23	24	53	93	131	131	1	1	1	1	1	1	1	7	6	15	-1	-29	-40	-38	0	6	6	5	1	1	1	6	26	182
1986	335	366	396	424	396	424	449	464	458	453	448	434	42	17	2	8	13	18	32	1	2	5	4	3	2	1	18	28	25	15	-6	-5	-5	-14	6	6	6	4	5	5	3	35	630
1987	427	420	413	405	404	410	416	418	386	336	324	334	56	50	48	80	130	142	132	1	1	1	1	1	1	1	7	6	6	2	-32	-50	-12	10	6	6	6	1	1	3	6	29	203
1988	334	334	369	396	387	385	393	390	352	324	309	374	81	73	76	114	142	157	92	1	1	1	1	1	1	1	7	-2	8	-3	-38	-28	-15	65	5	6	5	1	1	3	6	27	189
1989	358	378	394	403	402	437	449	452	433	410	405	408	29	17	14	33	56	61	58	1	2	3	1	1	1	1	10	35	12	3	-19	-23	-5	3	6	6	6	2	1	5	6	32	320
1990	405	404	401	400	398	410	413	414	380	334	343	344	56	53	52	86	132	123	122	1	1	1	1	1	1	1	7	12	3	1	-34	-46	9	1	6	6	6	1	1	6	6	32	224
1991	334	334	335	332	332	383	407	425	417	412	408	406	83	59	41	49	54	58	60	1	1	1	1	1	1	1	7	51	24	18	-8	-5	-4	-2	6	6	6	4	5	5	3	37	259
1992	399	387	377	360	364	400	410	406	365	334	323	318	66	56	60	101	132	143	150	1	1	1	1	1	1	1	7	16	10	-4	-41	-31	-11	-7	6	6	5	1	1	3	4	26	182
1993	315	315	357	424	427	434	449	466	466	455	449	434	32	17	0	0	11	17	32	1	2	6	6	3	2	1	21	7	15	17	0	-11	-6	-15	6	6	6	6	3	4	3	34	714
1994	423	413	407	395	390	388	396	401	375	334	334	332	78	70	65	91	132	132	134	1	1	1	1	1	1	1	7	-2	8	5	-26	-41	0	-2	5	6	6	1	1	6	5	30	210

73 - year Average: 13

73 - year Average: 32.14 427.12
1929 - '34 Average: 223.3

A2-145

C-032485

C-032485

STUDY. 199_-SWRCB-468 DWRSIM: 8.18, 27 Nov 96
CP # 10, NEW MELONES RESERVOIR, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-468/10/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 1088'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	939	942	948	953	966	977	973	989	1012	1003	991	981	120	111	115	99	76	85	97	1	1	1	1	1	1	1	7	9	-4	16	23	-9	-12	-10	6	5	6	6	4	3	4	34	238
1923	980	983	993	1001	1008	1007	1004	1008	1008	999	984	975	80	81	84	80	80	89	104	1	1	1	1	1	1	1	7	-1	-3	4	0	-9	-15	-9	5	5	6	6	4	3	4	33	231
1924	974	976	980	984	987	988	978	964	951	939	927	923	101	100	110	124	137	149	161	1	1	1	1	1	1	1	7	1	-10	-14	-13	-12	-12	-4	6	4	3	3	3	3	5	27	189
1925	919	921	925	928	947	958	958	970	973	965	951	944	141	130	130	118	115	123	137	1	1	1	1	1	1	1	7	11	0	12	3	-8	-14	-7	6	6	6	6	4	3	4	35	245
1926	942	943	946	948	958	960	959	944	930	913	891	879	130	128	129	144	158	175	197	1	1	1	1	1	1	1	7	2	-1	-15	-14	-17	-22	-12	6	5	3	3	2	1	3	23	161
1927	876	881	894	905	929	940	947	952	952	941	928	922	159	148	141	136	136	147	160	1	1	1	1	1	1	1	7	11	7	5	0	-11	-13	-6	6	6	6	6	3	3	4	34	238
1928	923	929	934	938	946	969	972	974	966	955	943	936	142	119	116	114	122	133	145	1	1	1	1	1	1	1	7	23	3	2	-8	-11	-12	-7	6	6	6	4	3	3	4	32	224
1929	933	935	938	941	944	946	941	936	929	919	904	894	144	142	147	152	159	169	184	1	1	1	1	1	1	1	7	2	-5	-5	-7	-10	-15	-10	6	5	5	4	4	3	4	31	217
1930	890	892	897	902	912	923	921	911	909	894	877	864	176	165	167	177	179	194	211	1	1	1	1	1	1	1	7	11	-2	-10	-2	-15	-17	-13	6	5	4	5	3	2	3	28	196
1931	865	870	874	878	882	886	873	852	839	827	813	801	206	202	215	236	249	261	275	1	1	1	1	1	1	1	7	4	-13	-21	-13	-12	-14	-12	6	3	1	3	3	3	3	22	154
1932	800	805	817	826	849	859	860	882	907	900	885	873	239	229	228	206	181	188	203	1	1	1	1	1	1	1	7	10	1	22	25	-7	-15	-12	6	6	6	6	4	3	3	34	238
1933	874	876	882	887	891	894	880	864	860	844	828	815	197	194	208	224	228	244	260	1	1	1	1	1	1	1	7	3	-14	-16	-4	-16	-16	-13	6	3	2	5	2	2	3	23	161
1934	811	815	821	827	836	846	835	814	793	770	735	715	252	242	253	274	295	318	353	1	1	1	1	1	1	1	7	10	-11	-21	-21	-23	-35	-20	6	3	1	1	1	1	2	15	105
1935	715	719	730	752	767	783	811	854	875	860	841	828	321	305	277	234	213	228	247	1	1	1	1	1	1	1	7	16	28	43	21	-15	-19	-13	6	6	6	6	3	2	3	32	224
1936	828	832	838	855	891	909	925	943	951	941	928	921	197	179	163	145	137	147	160	1	1	1	1	1	1	1	7	18	16	18	8	-10	-13	-7	6	6	6	6	4	3	4	35	245
1937	921	924	927	932	945	959	960	987	992	981	968	961	143	129	128	101	96	107	120	1	1	1	1	1	1	1	7	14	1	27	5	-11	-13	-7	6	6	6	6	3	3	4	34	238
1938	961	964	977	989	1008	1029	1038	1066	1087	1083	1073	1068	80	59	50	22	1	5	15	1	1	1	1	5	4	2	15	21	9	28	21	-4	-10	-5	6	6	6	6	5	4	5	38	570
1939	1050	1050	1050	1050	1050	1052	1050	1038	1025	1012	999	992	38	36	38	50	63	76	89	1	1	1	1	1	1	1	7	2	-2	-12	-13	-13	-13	-7	6	5	3	3	3	3	4	27	189
1940	988	989	991	1003	1018	1035	1044	1055	1046	1033	1021	1013	70	53	44	33	42	55	67	1	1	1	1	1	1	1	7	17	9	11	-9	-13	-12	-8	6	6	6	4	3	3	4	32	224
1941	1013	1015	1020	1027	1037	1047	1043	1058	1064	1058	1047	1040	51	41	45	30	24	30	41	1	1	1	1	1	1	1	7	10	-4	15	6	-6	-11	-7	6	5	6	6	4	3	4	34	238
1942	1038	1039	1045	1050	1050	1055	1055	1067	1081	1078	1067	1062	38	33	33	21	7	10	21	1	1	1	1	4	3	1	12	5	0	12	14	-3	-11	-5	6	6	6	6	5	3	5	37	444
1943	1050	1050	1050	1050	1050	1055	1061	1068	1067	1059	1048	1041	38	33	27	20	21	29	40	1	1	1	1	1	1	1	7	5	6	7	-1	-8	-11	-7	6	6	6	5	4	3	4	34	238
1944	1039	1040	1042	1043	1046	1050	1045	1041	1034	1021	1008	1000	42	38	43	47	54	67	80	1	1	1	1	1	1	1	7	4	-5	-4	-7	-13	-13	-8	6	5	5	4	3	3	4	30	210
1945	998	1003	1007	1012	1026	1035	1035	1048	1054	1045	1033	1026	62	53	53	40	34	43	55	1	1	1	1	1	1	1	7	9	0	13	6	-9	-12	-7	6	6	6	6	4	3	4	35	245
1946	1025	1030	1040	1048	1050	1054	1052	1060	1057	1048	1034	1027	38	34	36	28	31	42	54	1	1	1	1	1	1	1	7	4	-2	8	-3	-11	-12	-7	6	5	6	5	3	3	4	32	224
1947	1026	1029	1031	1033	1037	1040	1028	1019	1010	999	988	981	51	48	60	69	78	89	100	1	1	1	1	1	1	1	7	3	-12	-9	-9	-11	-11	-7	6	3	4	4	3	3	4	27	189
1948	978	980	982	984	985	989	987	988	996	986	974	967	103	99	101	100	92	102	114	1	1	1	1	1	1	1	7	4	-2	1	8	-10	-12	-7	6	5	6	6	4	3	4	34	238
1949	964	966	970	972	976	982	974	976	970	957	944	937	112	106	114	112	118	131	144	1	1	1	1	1	1	1	7	6	-8	2	-6	-13	-13	-7	6	4	6	4	3	3	4	30	210
1950	933	933	936	944	954	963	959	966	971	960	947	940	134	125	129	122	117	128	141	1	1	1	1	1	1	1	7	9	-4	7	5	-11	-13	-7	6	5	6	6	3	3	4	33	231
1951	936	973	1017	1029	1040	1051	1043	1035	1027	1014	1001	994	48	37	45	53	61	74	87	1	1	1	1	1	1	1	7	11	-8	-8	-8	-13	-13	-7	6	4	4	4	3	3	4	28	196
1952	992	995	1002	1016	1027	1040	1043	1073	1088	1086	1076	1070	61	48	45	15	0	2	12	1	1	1	2	6	5	3	19	13	3	30	15	-2	-10	-6	6	6	6	6	5	4	4	37	703
1953	1050	1050	1050	1050	1050	1054	1046	1036	1037	1028	1016	1008	38	34	42	52	51	60	72	1	1	1	1	1	1	1	7	4	-8	-10	1	-9	-12	-8	6	4	4	6	4	3	4	31	217
1954	1005	1007	1010	1013	1015	1023	1025	1028	1018	1005	992	982	73	65	63	60	70	83	96	1	1	1	1	1	1	1	7	8	2	3	-10	-13	-13	-10	6	6	6	4	3	3	4	32	224
1955	978	981	985	991	991	991	982	975	971	957	944	936	97	97	106	113	117	131	144	1	1	1	1	1	1	1	7	0	-9	-7	-4	-14	-13	-8	6	4	4	5	3	3	4	29	203
1956	933	936	968	1000	1014	1024	1014	1033	1045	1038	1026	1019	74	64	74	55	43	50	62	1	1	1	1	1	1	1	7	10	-10	19	12	-7	-12	-7	6	4	6	6	4	3	4	33	231
1957	1018	1020	1023	1026	1032	1039	1027	1023	1022	1009	997	987	56	49	61	65	66	79	91	1	1	1	1	1	1	1	7	7	-12	-4	-1	-13	-12	-10	6	3	5	5	3	3	4	29	203
1958	981	984	987	995	1003	1018	1025	1055	1069	1064	1054	1047	85	70	63	33	19	24	34	1	1	1	1	2	1	1	8	15	7	30	14	-5	-10	-7	6	6	6	6	5	4	4	37	296
1959	1045	1047	1049	1050	1050	1053	1046	1030	1018	1005	992	983	38	35	42	58	70	83	96	1	1	1	1	1	1	1	7	3	-7	-16	-12	-13	-13	-9	6	4	2	3	3	3	4	25	175
1960	978	980	983	986	993	999	996	990	979	965	952	942	95	89	92	98	109	123	136	1	1	1	1	1	1	1	7	6	-3	-6	-11	-14	-13	-10	6	5	4	3	3	3	4	28	196
1961	935	938	942	945	947	950	944	934	922	904	886	875	141	138	144	154	166	184	202	1	1	1	1	1	1	1	7	3	-6	-10	-12	-18	-18	-11	6	4	4	3	2	2	3	24	168
1962	875	878	882	885	902	912	915	912	916	900	879	865	186	176	173	176	172	188	209	1	1	1	1	1	1	1	7	10	3	-3	4	-16	-21	-14	6	6	5	6	2	1	3	29	203
1963	860	865	871	885	914	916	918	942	947	939	927	920	174	172	170	146	141	149	161	1	1	1	1	1	1	1	7	2	2	24	5	-8	-12	-7	6	6	6	6	4	3	4	35	245
1964	921	926	930	938	938	941	932	921	909	888	868	854	150	147	156	167	179	200	220	1	1	1	1	1	1	1	7	3	-9	-11	-12	-21	-20	-14	6	4	3	3	1	2	3	22	154
1965	848	854	903	936	952	962	974	978	989	984	973	966	136	126	114	110	99	104	115	1	1	1	1	1	1	1	7	10	12	4	11	-5	-11	-7	6	6	6	6	5	3	4	36	252
1966	966	972	978	985	992	997	985	982	969	954	941	932	96	91	103	106	119	134	147	1	1	1	1	1	1	1	7	5	-12	-3	-13	-15	-13	-9	6	3	5	3	3	3	4	27	189
1967	930	933	945	960	970	986	994	1020	1050	1054	1044	1037	118	102	94	68	38	34	44	1	1	1	1	1	1	1	7	16	8	26	30	4	-10	-7	6	6	6	6	6	4	4	38	266
1968	1036	1038	1041	1044	1050	1054	1042	1033	1022	1008	994	984	38	34	46	55	66	80	94	1	1	1	1	1	1	1	7	4	-12	-9	-11	-14	-14	-10	6	3	4	3	3	3	4	26	182
1969	981	986	989	1020	1040	1055	1065	1088	1088	1084	1074	1066	48	33	23	0	0	4	14	1	1	1	6	6	5	3	23	15	10	23	0	-4	-10	-8	6	6	6	6	5	4	4	37	851
1970	1050	1050	1050	1050	1050	1055	1047	1041	1039	1025	1012	1005	38	33	41	47	49	63	76	1	1	1	1	1	1	1	7	5	-8	-6	-2	-14	-13	-7	6	4	4	5	3	3	4	29	203
1971	1003	1007	1015	1022	1029	1035	1026	1021	1021	1010	997	989	59	53	62	67	67	78	91	1	1	1	1	1	1	1	7	6	-9	-5	0	-11	-13	-8	6	4	5	6	3	3	4	31	217
1972	985	989	996	1001	1002	1006	992	989	979	965	951	944	86	82	96	99	109	123	137	1	1	1	1	1	1	1	7	4	-14	-3	-10	-14	-14	-7	6	3	5	4	3	3	4	28	196
1973	941	944	950	966	985	999	1000	1018	1022	1012	1001	996	103	89	88	70	66	76	87	1	1	1	1	1	1	1	7	14	1	18	4	-10	-11	-5	6	6	6	6	4	3	5	36	252
1974	997	1003	1012	1025	1035	1049	1053	1064	1064	1054	1043	1035	53	39	35	24	24	34	45	1	1	1	1	1	1	1	7	14	4	11	0	-10	-11	-8	6	6	6	6	4	3	4	35	245
1975	1034	1036	1039	1043	1050	1055	1050	1049	1061	1053	1042	1034	38	33	38	39	27	35	46	1	1	1	1	1	1	1	7	5	-5	-1	12	-8	-11	-8	6	5	5	6	4	3	4	33	231
1976	1033	1036	1038	1040	1043	1045	1039	1030	1019	1009	1000	994	45	43	49	58	69	79	88	1	1	1	1	1	1	1	7	2	-6	-9	-11	-10	-9	-6	6	4	4	3	4	4	4	29	203
1977	994	995	997	997	997	997	988	975	966	954	942	936	91	91	100	113	122	134	146	1	1	1	1	1	1	1	7	0	-9	-13	-9	-12	-12	-6	6	4	3	4	3	3	4	27	189
1978	934	934	938	949	961	981	991	1009	1020	1018	1008	1005	127	107	97	79	68	70	80	1	1	1	1	1	1	1	7	20	10	18	11	-2	-10	-3	6	6	6	6	5	4	5	38	266
1979	1005	1008	1011	1020	1032	1046	1046	1056	1051	1037	1023	1016	56	42	42	32	37	51	65	1	1	1	1	1	1	1	7	14	0	10	-5	-14	-14	-7	6	6	6	5	3	3	4	33	231
1980	1017	1020	1023	1050	1050	1055	1056	1063	1070	1068	1057	1051	38	33	32	25	18	20	31	1	1	1	1	2	1	1	8	5	1	7	7	-2	-11	-6	6	6	6	6	5	3	4	36	288
1981	1050	1050	1050	1050	1050	1053	1045	1034	1019	1005	992	984	38	35	43	54	69	83	96	1	1	1	1	1	1	1	7	3	-8	-11	-15	-14	-13	-8	6	4	3	3	3	3	4	26	182
1982	982	990	1005	1026	1050	1055	1071	1086	1088	1084	1075	1071	38	33	17	2	0	4	13	1	1	2	5	6	5	3	23	5	16	15	2	-4	-9	-4	6	6	6	6	5	4	5	38	874
1983	1050	1050	1050	1050	1050	1055	1056	1070	1088	1088	1082	1075	38	33	32	18	0	0	6	1	1	1	2	6	6	4	21	5	1	14	18	0	-6	-7	6	6	6	6	6	4	4	38	798
1984	1050	1050	1050	1050	1050	1055	1044	1037	1033	1022	1011	1006	38	33	44	51	55	66	77	1	1	1	1	1	1	1	7	5	-11	-7	-4	-11	-11	-5	6	3	4	5	3	3	5	29	203
1985	1005	1010	1015	1018	1023	1029	1026	1020	1010	1000	989	984	65	59	62	68	78	88	99	1	1	1	1	1	1	1	7	6	-3	-6	-10	-10	-11	-5	6	5	4	4	4	3	5	31	217
1986	982	986	990	1000	1048	1055	1056	1061	1065	1055	1045	1040	40	33	32	27	23	33	43	1	1	1	1	1	1	1	7	7	1	5	4	-10	-10	-5	6	6	6	6	4	4	5	37	259
1987	1039	1041	1044	1044	1046	1049	1044	1034	1023	1014	1006	1002	42	39	44	54	65	74	82	1	1	1	1	1	1	1	7	3	-5	-10	-11	-9	-8	-4	6	5	4	3	4	4	5	31	217
1988	998	998	999	1000	1002	1004	998	987	977	968	959	953	86	84	90	101	111	120	129	1	1	1	1	1	1	1	7	2	-6	-11	-10	-9	-9	-6	6	4	3	4	4	4	4	29	203
1989	952	951	952	953	956	968	963	957	949	937	926	921	132	120	125	131	139	151	162	1	1	1	1	1	1	1	7	12	-5	-6	-8	-12	-11	-5	6	5	4	4	3	3	5	30	210
1990	924	927	931	934	937	941	933	917	898	878	862	853	151	147	155	171	190	210	226	1	1	1	1	1	1	1	7	4	-8	-16	-19	-20	-16	-9	6	4	2	2	2	2	4	22	154
1991	852	854	858	858	858	866	861	855	845	831	818	811	230	222	227	233	243	257	270	1	1	1	1	1	1	1	7	8	-5	-6	-10	-14	-13	-7	6	5	4	4	3	3	4	29	203
1992	812	814	820	823	834	843	835	815	797	775	748	723	254	245	253	273	291	313	340	1	1	1	1	1	1	1	7	9	-6	-20	-18	-22	-27	-25	6	4	2	2	1	1	1	17	119
1993	732	745	762	794	897	948	936	941	952	942	932	927	191	140	152	147	136	148	156	1	1	1	1	1	1	1	7	51	-12	5	11	-10	-10	-5	6	3	6	6	4	4	5	34	238
1994	927	928	931	932	933	939	935	930	920	901	884	876	155	149	153	158	168	187	204	1	1	1	1	1	1	1	7	6	-4	-5	-10	-19	-17	-8	6	5	5	4	2	2	4	28	196

73 - year Average: 8

73 - year Average: 31 253.5

1929 - '34 Average: 178.5

A2-146

C-032486

C 0 3 2 4 8 6

STUDY 1[illegible]6F-SWRCB-468 DWRSIM. 8 18, 27 Nov 96
CP # 81, DON PEDRO RESERVOIR, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-468/81/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 832'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation [illegible]ble:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	599	582	579	601	656	690	699	724	782	779	763	752	142	133	108	50	53	69	80	1	1	1	1	1	1	1	7	34	9	25	58	-3	-16	-11	6	6	6	6	5	2	3	34	238
1923	746	745	748	761	776	784	789	792	801	795	780	770	48	43	40	31	37	52	62	1	1	1	1	1	1	1	7	8	5	3	9	-6	-15	-10	6	6	6	6	4	3	4	35	245
1924	764	762	757	755	756	754	749	744	735	723	709	701	78	83	88	97	109	123	131	1	1	1	1	1	1	1	7	-2	-5	-5	-9	-12	-14	-8	5	5	5	4	3	3	4	29	203
1925	698	698	699	703	725	741	754	767	785	776	760	749	91	78	65	47	56	72	83	1	1	1	1	1	1	1	7	16	13	13	18	-9	-16	-11	6	6	6	6	4	2	3	33	231
1926	743	741	736	735	744	749	763	776	774	759	744	735	83	69	56	58	73	88	97	1	1	1	1	1	1	1	7	5	14	13	-2	-15	-15	-9	6	6	6	5	3	3	4	33	231
1927	730	729	733	740	768	783	794	795	814	806	792	782	49	38	37	18	26	40	50	1	1	1	2	1	1	1	8	15	11	1	19	-8	-14	-10	6	6	6	6	4	3	4	35	280
1928	776	776	778	779	787	800	802	819	819	805	790	780	32	30	13	13	27	42	52	1	1	3	3	1	1	1	11	13	2	17	0	-14	-15	-10	6	6	6	6	3	3	4	34	374
1929	774	769	765	764	768	769	769	773	780	771	762	754	63	63	59	52	61	70	78	1	1	1	1	1	1	1	7	1	0	4	7	-9	-9	-8	6	6	6	6	4	4	4	36	252
1930	752	749	748	748	752	759	761	764	777	769	760	753	73	71	68	55	63	72	79	1	1	1	1	1	1	1	7	7	2	3	13	-8	-9	-7	6	6	6	6	4	4	4	36	252
1931	751	750	749	751	754	753	746	737	726	712	699	692	79	86	95	106	120	133	140	1	1	1	1	1	1	1	7	-1	-7	-9	-11	-14	-13	-7	5	4	4	3	3	3	4	26	182
1932	689	685	695	710	745	760	761	768	786	781	766	756	72	71	64	46	51	66	76	1	1	1	1	1	1	1	7	15	1	7	18	-5	-15	-10	6	6	6	6	5	3	4	36	252
1933	749	742	737	736	742	745	743	740	757	746	732	722	87	89	92	75	86	100	110	1	1	1	1	1	1	1	7	3	-2	-3	17	-11	-14	-10	6	5	5	6	3	3	4	32	224
1934	715	713	711	714	725	732	731	727	724	708	693	685	100	101	105	108	124	139	147	1	1	1	1	1	1	1	7	7	-1	-4	-3	-16	-15	-8	6	5	5	5	2	3	4	30	210
1935	681	680	681	693	713	728	749	759	786	774	759	747	104	83	73	46	58	73	85	1	1	1	1	1	1	1	7	15	21	10	27	-12	-15	-12	6	6	6	6	3	3	3	33	231
1936	740	738	733	738	776	792	801	819	832	823	808	798	40	31	13	0	9	24	34	1	1	3	6	4	1	1	17	16	9	18	13	-9	-15	-10	6	6	6	6	4	3	4	35	595
1937	792	786	782	785	800	800	802	815	832	819	805	795	32	30	17	0	13	27	37	1	1	2	6	3	1	1	15	0	2	13	17	-13	-14	-10	6	6	6	6	3	3	4	34	510
1938	789	784	800	800	800	800	800	804	831	832	819	808	32	32	28	1	0	13	24	1	1	1	5	6	3	1	18	0	0	4	27	1	-13	-11	6	6	6	6	6	3	3	36	648
1939	800	799	799	800	800	800	802	804	799	787	774	766	32	30	28	33	45	58	66	1	1	1	1	1	1	1	7	0	2	2	-5	-12	-13	-8	6	6	6	5	3	3	4	33	231
1940	764	763	761	774	800	800	802	816	829	814	799	789	32	30	16	3	18	33	43	1	1	2	5	2	1	1	13	0	2	14	13	-15	-15	-10	6	6	6	6	3	3	4	34	442
1941	783	781	783	798	800	800	800	812	832	831	817	808	32	32	20	0	1	15	24	1	1	1	6	5	2	1	17	0	0	12	20	-1	-14	-9	6	6	6	6	5	3	4	36	612
1942	800	798	800	800	800	800	802	807	831	832	818	808	32	30	25	1	0	14	24	1	1	1	5	6	3	1	18	0	2	5	24	1	-14	-10	6	6	6	6	6	3	4	37	666
1943	800	800	800	800	800	800	802	821	832	824	810	799	32	30	11	0	8	22	33	1	1	3	6	4	1	1	17	0	2	19	11	-8	-14	-11	6	6	6	6	4	3	3	34	578
1944	794	792	788	787	793	800	801	808	814	802	787	777	32	31	24	18	30	45	55	1	1	1	2	1	1	1	8	7	1	7	6	-12	-15	-10	6	6	6	6	3	3	4	34	272
1945	772	773	776	781	800	800	802	807	831	825	810	799	32	30	25	1	7	22	33	1	1	1	5	4	1	1	14	0	2	5	24	-6	-15	-11	6	6	6	6	4	3	3	34	476
1946	796	797	800	800	800	800	802	806	812	796	780	769	32	30	26	20	36	52	63	1	1	1	1	1	1	1	7	0	2	4	6	-16	-16	-11	6	6	6	6	2	2	3	31	217
1947	763	763	765	768	776	781	778	782	776	764	750	742	51	54	50	56	68	82	90	1	1	1	1	1	1	1	7	5	-3	4	-6	-12	-14	-8	6	5	6	4	3	3	4	31	217
1948	739	738	737	739	740	740	736	745	770	760	742	732	92	96	87	62	72	90	100	1	1	1	1	1	1	1	7	0	-4	9	25	-10	-18	-10	6	5	6	6	4	2	4	33	231
1949	726	720	714	713	720	731	738	748	756	738	719	706	101	94	84	76	94	113	126	1	1	1	1	1	1	1	7	11	7	10	8	-18	-19	-13	6	6	6	6	2	2	3	31	217
1950	700	693	687	693	712	725	733	746	762	747	729	717	107	99	86	70	85	103	115	1	1	1	1	1	1	1	7	13	8	13	16	-15	-18	-12	6	6	6	6	3	2	3	32	224
1951	711	759	800	800	800	800	798	794	798	783	769	759	32	34	38	34	49	63	73	1	1	1	1	1	1	1	7	0	-2	-4	4	-15	-14	-10	6	5	5	6	3	3	4	32	224
1952	752	750	757	782	800	800	800	820	832	832	819	808	32	32	12	0	0	13	24	1	1	3	6	6	3	1	21	0	0	20	12	0	-13	-11	6	6	6	6	6	3	3	36	756
1953	800	795	793	800	800	800	802	804	814	810	796	787	32	30	28	18	22	36	45	1	1	1	2	1	1	1	8	0	2	2	10	-4	-14	-9	6	6	6	6	5	3	4	36	288
1954	782	778	775	776	785	797	802	819	820	805	789	780	35	30	13	12	27	43	52	1	1	3	3	1	1	1	11	12	5	17	1	-15	-16	-9	6	6	6	6	3	2	4	33	363
1955	774	770	768	774	781	784	781	785	791	779	767	760	48	51	47	41	53	65	72	1	1	1	1	1	1	1	7	3	-3	4	6	-12	-12	-7	6	5	6	6	3	3	4	33	231
1956	755	751	800	800	800	800	802	818	832	832	818	808	32	30	14	0	0	14	24	1	1	3	6	6	3	1	21	0	2	16	14	0	-14	-10	6	6	6	6	6	3	4	37	777
1957	800	798	793	793	799	800	800	806	827	814	800	791	32	32	26	5	18	32	41	1	1	1	4	2	1	1	11	1	0	6	21	-13	-14	-9	6	6	6	6	3	3	4	34	374
1958	786	781	779	784	800	800	800	821	832	832	819	808	32	32	11	0	0	13	24	1	1	3	6	6	3	1	21	0	0	21	11	0	-13	-11	6	6	6	6	6	3	3	36	756
1959	800	794	789	793	800	800	802	800	794	782	770	763	32	30	32	38	50	62	69	1	1	1	1	1	1	1	7	0	2	-2	-6	-12	-12	-7	6	6	5	4	3	3	4	31	217
1960	761	758	755	756	763	769	770	776	779	768	759	753	63	62	58	53	64	73	79	1	1	1	1	1	1	1	7	6	1	6	3	-11	-9	-6	6	6	6	6	3	4	4	35	245
1961	750	748	748	749	752	751	745	737	730	717	705	698	81	87	95	102	115	127	134	1	1	1	1	1	1	1	7	-1	-6	-8	-7	-13	-12	-7	5	4	4	4	3	3	4	27	189
1962	695	692	691	692	716	736	746	751	776	768	755	744	96	86	81	56	64	77	88	1	1	1	1	1	1	1	7	20	10	5	25	-8	-13	-11	6	6	6	6	4	3	3	34	238
1963	739	734	731	735	761	773	781	794	819	815	801	792	59	51	38	13	17	31	40	1	1	1	3	2	1	1	10	12	8	13	25	-4	-14	-9	6	6	6	6	5	3	4	36	360
1964	787	788	789	793	800	800	797	795	797	786	775	768	32	35	37	35	46	57	64	1	1	1	1	1	1	1	7	0	-3	-2	2	-11	-11	-7	6	5	5	6	3	3	4	32	224
1965	766	767	798	800	800	800	802	807	827	827	816	807	32	30	25	5	5	16	25	1	1	1	4	4	2	1	14	0	2	5	20	0	-11	-9	6	6	6	6	6	3	4	37	518
1966	800	800	800	800	800	800	801	798	791	776	761	752	32	31	34	41	56	71	80	1	1	1	1	1	1	1	7	0	1	-3	-7	-15	-15	-9	6	6	5	4	3	3	4	31	217
1967	747	745	755	771	789	800	800	817	832	832	820	808	32	32	15	0	0	12	24	1	1	2	6	6	3	1	20	11	0	17	15	0	-12	-12	6	6	6	6	6	3	3	36	720
1968	800	795	791	792	800	800	802	805	803	791	779	771	32	30	27	29	41	53	61	1	1	1	1	1	1	1	7	0	2	3	-2	-12	-12	-8	6	6	6	5	3	3	4	33	231
1969	766	767	770	800	800	800	800	823	832	832	819	808	32	32	9	0	0	13	24	1	1	4	6	6	3	1	22	0	0	23	9	0	-13	-11	6	6	6	6	6	3	3	36	792
1970	800	799	800	800	800	800	799	799	807	795	780	771	32	33	33	25	37	52	61	1	1	1	1	1	1	1	7	0	-1	0	8	-12	-15	-9	6	5	6	6	3	3	4	33	231
1971	785	766	772	788	800	800	801	801	807	798	786	778	32	31	31	25	34	46	54	1	1	1	1	1	1	1	7	0	1	0	6	-9	-12	-8	6	6	6	6	4	3	4	35	245
1972	773	769	772	778	792	800	800	799	796	784	773	767	32	32	33	36	48	59	65	1	1	1	1	1	1	1	7	8	0	-1	-3	-12	-11	-8	6	6	5	5	3	3	4	32	224
1973	764	762	765	776	800	800	802	812	827	812	797	788	32	30	20	5	20	35	44	1	1	1	4	1	1	1	10	0	2	10	15	-15	-15	-9	6	6	6	6	6	3	3	4	34	340
1974	783	787	798	800	800	800	800	806	828	819	805	796	32	32	26	4	13	27	36	1	1	1	5	3	1	1	13	0	0	6	22	-9	-14	-9	6	6	6	6	4	3	4	35	455
1975	791	789	786	786	798	800	802	812	832	825	812	803	32	30	20	0	7	20	29	1	1	1	6	4	1	1	15	2	2	10	20	-7	-13	-9	6	6	6	6	4	3	4	35	525
1976	800	800	799	799	800	799	794	787	777	767	757	751	33	38	45	55	65	75	81	1	1	1	1	1	1	1	7	-1	-5	-7	-10	-10	-10	-6	5	5	4	4	4	4	4	30	210
1977	748	745	742	741	741	737	728	715	702	687	672	663	95	104	117	130	145	160	169	1	1	1	1	1	1	1	7	-4	-9	-13	-13	-15	-15	-9	5	4	3	3	3	3	4	25	175
1978	659	655	658	664	717	749	762	777	814	822	808	803	83	70	55	18	10	24	29	1	1	1	2	3	1	1	10	32	13	15	37	8	-14	-5	6	6	6	6	6	3	5	38	380
1979	798	794	791	800	800	800	802	822	832	818	803	794	32	30	10	0	14	29	38	1	1	3	6	3	1	1	16	0	2	20	10	-14	-15	-9	6	6	6	6	3	3	4	34	544
1980	789	788	787	800	800	800	800	817	832	832	819	808	32	32	15	0	0	13	24	1	1	2	6	6	3	1	20	0	0	17	15	0	-13	-11	6	6	6	6	6	3	3	36	720
1981	800	797	794	795	799	800	802	806	805	793	782	774	32	30	26	27	39	50	58	1	1	1	1	1	1	1	7	1	2	4	-1	-12	-11	-8	6	6	6	5	3	3	4	33	231
1982	770	776	795	800	800	800	800	820	832	832	820	808	32	32	12	0	0	12	24	1	1	3	6	6	3	1	21	0	0	20	12	0	-12	-12	6	6	6	6	6	3	3	36	756
1983	800	800	800	800	800	800	800	819	832	832	832	808	32	32	13	0	0	0	24	1	1	3	6	6	6	1	24	0	0	19	13	0	0	-24	6	6	6	6	6	6	1	37	888
1984	800	800	800	800	800	800	797	803	814	801	786	778	32	35	29	18	31	46	56	1	1	1	2	1	1	1	8	0	-3	6	11	-13	-15	-10	6	5	6	6	3	3	4	33	264
1985	773	773	779	786	794	800	801	799	795	784	772	766	32	31	33	37	48	60	66	1	1	1	1	1	1	1	7	6	1	-2	-4	-11	-12	-8	6	6	5	5	3	3	4	32	224
1986	763	764	767	774	800	800	802	827	832	825	811	802	32	30	5	0	7	21	30	1	1	4	6	4	1	1	18	0	2	25	5	-7	-14	-9	6	6	6	6	4	3	4	35	630
1987	796	791	786	784	786	788	786	783	779	769	759	752	44	46	49	53	63	73	80	1	1	1	1	1	1	1	7	2	-2	-3	-4	-10	-10	-7	6	5	5	5	4	4	4	33	231
1988	750	749	749	754	759	761	756	747	740	728	716	709	71	76	85	92	104	116	123	1	1	1	1	1	1	1	7	2	-5	-9	-7	-12	-12	-7	6	5	4	4	3	3	4	29	203
1989	705	702	702	705	709	722	734	748	758	744	734	728	110	98	84	76	88	98	104	1	1	1	1	1	1	1	7	13	12	14	8	-12	-10	-6	6	6	6	6	3	4	4	35	245
1990	727	726	726	728	732	734	732	730	728	714	700	692	98	100	102	104	118	132	140	1	1	1	1	1	1	1	7	2	-2	-2	-2	-14	-14	-8	6	5	5	5	3	3	4	31	217
1991	689	686	682	681	681	688	687	703	714	704	694	688	144	145	129	118	128	138	144	1	1	1	1	1	1	1	7	7	-1	16	11	-10	-10	-6	6	5	6	6	4	4	4	35	245
1992	687	687	687	689	698	703	706	714	713	699	685	675	129	126	118	119	133	147	157	1	1	1	1	1	1	1	7	5	3	8	-1	-14	-14	-10	6	6	6	5	3	3	4	33	231
1993	669	663	663	696	727	756	763	777	808	806	792	783	76	69	55	24	26	40	49	1	1	1	1	1	1	1	7	29	7	14	31	-2	-14	-9	6	6	6	6	5	3	4	36	252
1994	777	771	767	766	769	772	770	773	772	762	752	746	60	62	59	60	70	80	86	1	1	1	1	1	1	1	7	3	-2	3	-1	-10	-10	-6	6	5	6	5	4	4	4	34	238

73 - year Average: 10

73 - year Average: 34 358.4
1929 - '34 Average: 228.7

A2-147

C-032487

C—032487

STUDY: 199. SWRCB-468 DWRSIM: 8.18, 27 Nov 96
CP # 20, LAKE McCLURE, EOP SURFACE ELEVATION (FT)
Project. /1995C06F-SWRCB-468/20/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation 867'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Table:
If [DFMRE] <= 0', th... else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluct. MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	680	680	696	712	759	779	789	845	867	860	848	836	88	78	22	0	7	21	31	1	1	1	6	4	1	1	15	20	10	56	22	-7	-14	-10	6	6	6	6	4	3	4	35	525
1923	808	808	808	808	808	813	827	854	859	850	835	825	54	40	13	8	17	32	42	1	1	3	4	2	1	1	13	5	14	27	5	-9	-15	-10	6	6	6	6	4	3	4	35	455
1924	808	808	808	808	808	807	809	811	799	781	768	758	60	58	56	68	86	99	109	1	1	1	1	1	1	1	7	-1	2	2	-12	-18	-13	-10	5	6	6	3	2	3	4	29	203
1925	758	763	768	772	798	805	824	847	851	839	824	812	62	43	20	16	28	43	55	1	1	1	2	1	1	1	8	9	19	23	4	-12	-15	-12	6	6	6	6	3	3	3	33	264
1926	808	808	808	808	808	814	834	832	831	827	820	812	53	33	35	36	40	47	55	1	1	1	1	1	1	1	7	6	20	-2	-1	-4	-7	-8	6	6	5	5	5	4	4	35	245
1927	808	808	808	808	808	815	818	849	860	856	852	840	52	49	18	7	11	15	27	1	1	2	4	3	2	1	14	7	3	31	11	-4	-4	-12	6	6	6	6	5	5	3	37	518
1928	808	808	808	808	808	809	808	824	822	815	811	807	58	59	43	45	52	56	60	1	1	1	1	1	1	1	7	1	-1	16	-2	-7	-4	-4	6	5	6	5	4	5	5	36	252
1929	807	808	806	805	807	809	810	814	814	816	819	813	58	57	53	53	51	48	54	1	1	1	1	1	1	1	7	2	1	4	0	2	3	-6	6	6	6	6	6	6	4	40	280
1930	808	807	807	807	806	802	806	808	812	815	819	816	65	61	59	55	52	48	51	1	1	1	1	1	1	1	7	-4	4	2	4	3	4	-3	5	6	6	6	6	6	5	40	280
1931	808	808	808	808	808	808	810	813	801	784	770	761	59	57	54	66	83	97	106	1	1	1	1	1	1	1	7	0	2	3	-12	-17	-14	-9	6	6	6	3	2	3	4	30	210
1932	760	760	778	789	808	817	826	852	867	857	843	832	50	41	15	0	10	24	35	1	1	2	6	3	1	1	15	9	9	26	15	-10	-14	-11	6	6	6	6	4	3	3	34	510
1933	808	807	808	808	808	811	816	825	839	827	813	805	56	51	42	28	40	54	62	1	1	1	1	1	1	1	7	3	5	9	14	-12	-14	-8	6	6	6	6	3	3	4	34	238
1934	803	802	805	808	808	816	823	818	809	793	780	770	51	44	49	58	74	87	97	1	1	1	1	1	1	1	7	8	7	-5	-9	-16	-13	-10	6	6	5	4	2	3	4	30	210
1935	769	773	778	798	808	818	840	859	867	854	839	828	51	27	8	0	13	28	39	1	1	4	6	3	1	1	17	10	24	19	8	-13	-15	-11	6	6	6	6	3	3	3	33	561
1936	808	808	808	808	808	820	840	859	865	853	838	827	47	27	8	2	14	29	40	1	1	4	5	3	1	1	16	12	20	19	6	-12	-15	-11	6	6	6	6	3	3	3	33	528
1937	808	808	808	808	808	820	834	859	867	853	838	827	47	33	8	0	14	29	40	1	1	4	6	3	1	1	17	12	14	25	8	-14	-15	-11	6	6	6	6	3	3	3	33	561
1938	808	808	808	808	808	820	840	859	867	867	855	840	47	27	8	0	0	12	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1939	808	808	808	808	808	816	831	832	821	803	787	776	51	36	35	46	64	80	91	1	1	1	1	1	1	1	7	8	15	1	-11	-18	-16	-11	6	6	6	3	2	2	3	28	196
1940	778	779	780	806	808	820	837	859	861	845	829	816	47	30	8	6	22	38	51	1	1	4	4	1	1	1	13	12	17	22	2	-16	-16	-13	6	6	6	6	2	2	3	31	403
1941	808	808	808	808	808	820	834	859	867	863	850	840	47	33	8	0	4	17	27	1	1	4	6	5	2	1	20	12	14	25	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1942	808	808	808	808	808	820	838	859	867	860	851	840	47	29	8	0	7	16	27	1	1	4	6	4	2	1	19	12	18	21	8	-7	-9	-11	6	6	6	6	4	4	3	35	665
1943	808	808	808	808	808	820	840	859	864	853	838	828	47	27	8	3	14	29	39	1	1	4	5	3	1	1	16	12	20	19	5	-11	-15	-10	6	6	6	6	3	3	4	34	544
1944	808	808	808	806	808	817	815	838	840	827	810	796	50	52	29	27	40	57	71	1	1	1	1	1	1	1	7	9	-2	23	2	-13	-17	-14	6	5	6	6	3	2	3	31	217
1945	794	800	806	808	808	820	833	856	867	856	842	831	47	34	11	0	11	25	36	1	1	3	6	3	1	1	16	12	13	23	11	-11	-14	-11	6	6	6	6	3	3	3	33	528
1946	808	808	808	808	808	818	837	859	857	842	826	813	49	30	8	10	25	41	54	1	1	4	3	1	1	1	12	10	19	22	-2	-15	-16	-13	6	6	6	5	3	2	3	31	372
1947	808	808	808	808	808	815	823	836	830	814	799	791	52	44	31	37	53	68	76	1	1	1	1	1	1	1	7	7	8	13	-6	-16	-15	-8	6	6	6	4	2	3	4	31	217
1948	790	791	792	794	795	795	799	823	839	825	807	794	72	68	44	28	42	60	73	1	1	1	1	1	1	1	7	0	4	24	16	-14	-18	-13	6	6	6	6	3	2	3	32	224
1949	791	791	792	793	798	804	815	836	835	816	797	782	63	52	31	32	51	70	85	1	1	1	1	1	1	1	7	8	11	21	-1	-19	-19	-15	6	6	6	5	2	2	3	30	210
1950	779	779	779	786	798	801	818	838	839	822	803	789	66	49	29	28	45	64	78	1	1	1	1	1	1	1	7	3	17	20	1	-17	-19	-14	6	6	6	6	2	2	3	31	217
1951	786	808	808	808	808	819	827	837	834	816	796	781	48	40	30	33	51	71	86	1	1	1	1	1	1	1	7	11	8	10	-3	-18	-20	-15	6	6	6	5	2	2	3	30	210
1952	777	778	791	808	808	820	840	859	867	864	852	840	47	27	8	0	3	15	27	1	1	4	6	5	2	1	20	12	20	19	8	-3	-12	-12	6	6	6	6	5	3	3	35	700
1953	808	808	808	808	808	809	815	816	823	809	790	775	58	52	51	44	58	77	92	1	1	1	1	1	1	1	7	1	6	1	7	-14	-19	-15	6	6	6	6	3	2	3	32	224
1954	772	771	772	775	785	798	815	833	826	805	785	770	69	52	34	41	62	82	97	1	1	1	1	1	1	1	7	13	17	18	-7	-21	-20	-15	6	6	6	4	1	2	3	28	196
1955	767	766	768	775	780	782	782	804	814	798	782	772	85	85	63	53	69	85	95	1	1	1	1	1	1	1	7	2	0	22	10	-16	-16	-10	6	6	6	6	2	2	4	32	224
1956	769	769	808	808	808	819	832	859	867	863	850	840	48	35	8	0	4	17	27	1	1	4	6	5	2	1	20	11	13	27	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1957	808	808	808	808	808	813	813	828	838	822	804	790	54	54	39	29	45	63	77	1	1	1	1	1	1	1	7	5	0	15	10	-16	-18	-14	6	6	6	6	2	2	3	31	217
1958	787	787	792	798	808	820	840	859	867	862	850	840	47	27	8	0	5	17	27	1	1	4	6	4	2	1	19	12	20	19	8	-5	-12	-10	6	6	6	6	5	3	4	36	684
1959	808	808	808	808	808	813	823	826	817	797	780	773	54	44	41	50	70	87	94	1	1	1	1	1	1	1	7	5	10	3	-9	-20	-17	-7	6	6	6	4	2	2	4	30	210
1960	772	771	771	772	784	792	806	819	816	801	787	777	75	61	48	51	66	80	90	1	1	1	1	1	1	1	7	8	14	13	-3	-15	-14	-10	6	6	6	5	3	3	4	33	231
1961	776	776	779	779	782	783	789	793	784	766	752	740	84	78	74	83	101	115	127	1	1	1	1	1	1	1	7	1	6	4	-9	-18	-14	-12	6	6	6	4	2	3	3	30	210
1962	739	739	741	744	784	793	816	831	845	832	815	802	74	51	36	22	35	52	65	1	1	1	1	1	1	1	7	9	23	15	14	-13	-17	-13	6	6	6	6	3	2	3	32	224
1963	800	800	801	808	808	814	823	848	861	852	837	826	53	44	19	6	15	30	41	1	1	2	4	2	1	1	12	6	9	25	13	-9	-15	-11	6	6	6	6	4	3	3	34	408
1964	808	808	808	808	808	808	811	821	819	803	787	777	59	56	46	48	64	80	90	1	1	1	1	1	1	1	7	0	3	10	-2	-16	-16	-10	6	6	6	5	2	2	4	31	217
1965	775	778	808	808	808	815	831	854	867	861	850	840	52	36	13	0	6	17	27	1	1	3	6	4	2	1	18	7	16	23	13	-6	-11	-10	6	6	6	6	4	3	4	35	630
1966	808	808	808	808	808	814	828	838	826	804	784	771	53	39	29	41	63	83	96	1	1	1	1	1	1	1	7	6	14	10	-12	-22	-20	-13	6	6	6	3	1	2	3	27	189
1967	768	770	795	807	808	820	840	859	867	867	856	840	47	27	8	0	0	11	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1968	808	808	808	808	806	812	817	821	812	793	777	766	55	50	46	55	74	90	101	1	1	1	1	1	1	1	7	4	5	4	-9	-19	-16	-11	6	6	5	4	2	2	3	29	203
1969	763	767	775	808	808	820	840	859	867	867	854	840	47	27	8	0	0	13	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-13	-14	6	6	6	6	6	3	3	36	792
1970	808	808	808	808	808	820	821	837	837	821	802	789	47	46	30	30	46	65	78	1	1	1	1	1	1	1	7	12	1	16	0	-16	-19	-13	6	6	6	6	2	2	3	31	217
1971	786	788	798	807	808	812	814	826	836	822	804	790	55	53	41	31	45	63	77	1	1	1	1	1	1	1	7	4	2	12	10	-14	-18	-14	6	6	6	6	3	2	3	32	224
1972	787	787	795	799	806	816	819	832	833	818	804	797	51	48	35	34	49	63	70	1	1	1	1	1	1	1	7	10	3	13	1	-15	-14	-7	6	6	6	6	3	3	4	34	238
1973	797	798	804	808	808	820	828	859	867	852	838	828	47	39	8	0	15	29	39	1	1	4	6	2	1	1	16	12	8	31	8	-15	-14	-10	6	6	6	6	3	3	4	34	544
1974	808	808	808	808	808	820	833	859	867	854	839	829	47	34	8	0	13	28	38	1	1	4	6	3	1	1	17	12	13	26	8	-13	-15	-10	6	6	6	6	3	3	4	34	578
1975	808	808	808	808	808	820	823	855	867	856	842	832	47	44	12	0	11	25	35	1	1	3	6	3	1	1	16	12	3	32	12	-11	-14	-10	6	6	6	6	3	3	4	34	544
1976	808	808	808	808	808	809	808	809	798	781	768	759	58	59	58	69	86	99	108	1	1	1	1	1	1	1	7	1	-1	1	-11	-17	-13	-9	6	5	6	3	2	3	4	29	203
1977	758	756	754	754	754	749	740	728	717	688	659	635	118	127	139	150	179	208	232	1	1	1	1	1	1	1	7	-5	-9	-12	-11	-29	-29	-24	5	4	3	3	1	1	1	18	126
1978	629	626	642	693	741	782	815	859	867	867	856	840	85	52	8	0	0	11	27	1	1	4	6	6	3	1	22	41	33	44	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1979	808	808	808	808	808	820	828	859	863	849	834	823	47	39	8	4	18	33	44	1	1	4	5	2	1	1	15	12	8	31	4	-14	-15	-11	6	6	6	6	3	3	3	33	495
1980	808	808	808	808	808	820	835	859	867	867	855	840	47	32	8	0	0	12	27	1	1	4	6	6	3	1	22	12	15	24	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1981	808	807	807	808	808	813	823	835	831	816	802	794	54	44	32	36	51	65	73	1	1	1	1	1	1	1	7	5	10	12	-4	-15	-14	-8	6	6	6	5	3	3	4	33	231
1982	793	801	808	808	808	820	840	859	867	865	854	840	47	27	8	0	2	13	27	1	1	4	6	5	3	1	21	12	20	19	8	-2	-11	-14	6	6	6	6	5	3	3	35	735
1983	808	808	808	808	808	820	836	859	867	867	864	840	47	31	8	0	0	3	27	1	1	4	6	6	5	1	24	12	16	23	8	0	-3	-24	6	6	6	6	6	5	1	36	864
1984	808	808	808	806	808	820	827	850	848	832	814	801	47	40	17	19	35	53	66	1	1	2	2	1	1	1	9	12	7	23	-2	-16	-18	-13	6	6	6	5	2	2	3	30	270
1985	800	803	807	808	808	814	828	841	835	821	807	797	53	39	26	32	46	60	70	1	1	1	1	1	1	1	7	6	14	13	-6	-14	-14	-10	6	6	6	4	3	3	4	32	224
1986	798	800	806	808	808	820	839	859	867	855	841	830	47	28	8	0	12	26	37	1	1	4	6	3	1	1	17	12	19	20	8	-12	-14	-11	6	6	6	6	3	3	3	33	561
1987	808	807	807	807	808	810	818	821	811	795	782	773	57	49	46	56	72	85	94	1	1	1	1	1	1	1	7	2	8	3	-10	-16	-13	-9	6	6	6	4	2	3	4	31	217
1988	772	773	775	781	785	791	797	801	794	777	763	753	76	70	66	73	90	104	114	1	1	1	1	1	1	1	7	6	6	4	-7	-17	-14	-10	6	6	6	4	2	3	4	31	217
1989	751	750	753	754	759	775	797	808	804	789	775	766	92	70	59	63	78	92	101	1	1	1	1	1	1	1	7	16	22	11	-4	-15	-14	-9	6	6	6	5	3	3	4	33	231
1990	768	768	769	771	776	782	793	794	785	769	754	742	85	74	73	82	98	113	125	1	1	1	1	1	1	1	7	7	11	1	-9	-16	-15	-12	6	6	6	4	2	3	3	30	210
1991	740	739	738	738	737	758	763	784	797	784	770	761	109	104	83	70	83	97	106	1	1	1	1	1	1	1	7	21	5	21	13	-13	-14	-9	6	6	6	6	3	3	4	34	238
1992	760	761	762	764	777	782	798	803	793	779	766	756	85	69	64	74	88	101	111	1	1	1	1	1	1	1	7	5	16	5	-10	-14	-13	-10	6	6	6	4	3	3	4	32	224
1993	755	755	760	802	808	820	837	859	867	861	848	837	47	30	8	0	6	19	30	1	1	4	6	4	2	1	19	12	17	22	8	-6	-13	-11	6	6	6	6	4	3	3	34	646
1994	808	807	808	808	808	810	815	821	813	798	784	775	57	52	46	54	69	83	92	1	1	1	1	1	1	1	7	2	5	6	-8	-15	-14	-9	6	6	6	4	3	3	4	32	224

73 - year Average: 12

73 - year Average: 33 386.7
1929 - '34 Average: 288.0

A2-148

C—032488

C-032488

STUDY: 1[illegible]6F-SWRCB-468 DWRSIM. 8.18, 27 Nov 96
CP # 18, MILLERTON LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-468/18/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 576'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	491	505	527	547	549	566	559	576	576	562	518	491	10	17	0	0	14	58	85
1923	485	495	520	537	531	517	541	549	540	526	463	470	59	35	27	36	50	113	106
1924	483	494	508	522	516	503	506	511	505	478	464	468	73	70	65	71	98	112	108
1925	465	474	490	503	508	493	514	532	522	499	483	475	83	62	44	54	77	93	101
1926	477	490	505	519	522	508	549	563	535	494	473	485	68	27	13	41	82	103	91
1927	491	506	528	545	560	561	560	569	576	543	492	482	15	16	7	0	33	84	94
1928	482	503	525	542	540	543	551	554	522	477	465	477	33	25	22	54	99	111	99
1929	485	499	513	523	517	513	531	531	527	506	466	477	63	45	45	49	70	110	99
1930	480	495	507	518	514	510	525	534	518	489	466	482	66	51	42	58	87	110	94
1931	487	501	513	522	517	508	510	516	508	482	466	466	68	66	60	68	94	110	110
1932	467	476	503	520	543	531	524	532	552	518	492	477	45	52	44	24	58	84	99
1933	477	489	501	516	512	501	520	537	526	509	466	467	75	56	39	50	67	110	109
1934	470	480	500	517	511	503	516	527	523	498	477	486	73	60	49	53	78	99	90
1935	490	500	515	535	532	509	542	563	574	538	469	479	67	34	13	2	38	107	97
1936	486	502	518	533	560	558	564	576	563	521	472	478	18	12	0	13	55	104	98
1937	488	497	516	535	560	570	576	576	576	538	484	469	6	0	0	0	38	92	107
1938	472	486	533	560	560	542	529	467	572	576	532	520	34	47	109	4	0	44	56
1939	513	514	529	538	532	524	542	560	539	504	473	495	52	34	16	37	72	103	81
1940	495	504	517	550	550	552	548	561	553	512	466	471	24	28	15	23	64	110	105
1941	481	494	528	556	560	573	573	569	576	569	527	506	3	3	7	0	7	49	70
1942	497	507	532	552	549	553	554	562	576	555	509	477	23	22	14	0	21	67	99
1943	477	494	518	557	558	576	574	576	562	526	491	476	0	2	0	14	50	85	100
1944	479	491	508	521	524	507	516	517	501	494	490	480	69	60	59	75	82	86	96
1945	481	503	523	533	560	568	565	571	576	554	511	491	8	11	5	0	22	65	85
1946	485	502	531	548	528	524	536	559	546	510	478	480	52	40	17	30	66	98	96
1947	481	500	526	543	541	530	545	556	535	497	473	481	46	31	20	41	79	103	95
1948	488	503	518	529	523	530	558	551	541	483	480	484	46	20	25	35	93	96	92
1949	490	500	513	526	524	511	522	538	521	482	477	489	65	54	38	55	94	99	87
1950	492	503	519	536	541	524	534	551	539	506	476	482	52	42	25	37	70	100	94
1951	490	533	560	560	554	548	552	546	514	463	463	481	30	24	30	62	113	113	95
1952	488	500	530	559	560	567	559	526	576	571	525	508	9	17	50	0	5	51	68
1953	501	514	533	549	538	532	541	536	518	497	478	481	44	35	40	58	79	98	95
1954	488	497	514	532	532	527	537	560	544	507	465	483	49	39	16	32	69	111	93
1955	489	502	522	540	537	520	534	545	537	504	481	487	56	42	31	39	72	95	89
1956	491	499	560	560	560	576	576	581	576	566	524	505	0	0	15	0	10	52	71
1957	496	504	517	527	525	529	546	561	562	526	471	481	47	30	15	14	50	105	95
1958	488	501	525	545	554	565	576	576	576	557	516	498	11	0	0	0	19	60	78
1959	492	507	523	530	538	528	550	566	551	500	470	475	48	26	10	25	76	106	101
1960	474	475	480	490	503	498	515	525	509	496	483	481	78	61	51	67	80	93	95
1961	481	491	505	511	510	511	526	539	527	486	467	467	65	50	37	49	90	109	109
1962	468	471	484	492	538	529	527	555	569	540	489	476	47	49	21	7	36	87	100
1963	479	491	501	518	558	558	576	576	576	564	520	503	18	0	0	0	12	56	73
1964	490	517	542	551	547	544	553	561	551	508	476	484	32	23	15	25	68	100	92
1965	481	496	529	560	556	554	559	551	561	540	512	496	22	17	25	15	36	64	80
1966	487	513	546	558	541	526	545	564	550	506	486	486	50	31	12	26	70	90	90
1967	490	502	539	559	560	571	565	514	570	576	539	522	5	11	62	6	0	37	54
1968	515	521	539	545	545	539	550	554	539	506	478	482	37	26	22	37	70	98	94
1969	480	496	513	550	524	521	467	469	576	576	538	513	55	109	107	0	0	38	63
1970	498	516	540	560	560	554	554	555	544	517	476	477	22	22	21	32	59	100	99
1971	482	502	534	551	548	533	541	544	520	498	491	478	43	35	32	56	78	85	98
1972	479	491	519	536	532	524	537	543	540	497	481	481	52	39	33	36	79	95	95
1973	489	501	523	545	560	560	550	575	576	542	483	477	16	26	1	0	34	93	99
1974	487	510	545	560	544	550	559	570	573	537	490	473	26	17	6	3	39	86	103
1975	476	494	515	528	535	526	533	536	567	525	476	482	50	43	40	9	51	100	94
1976	489	511	531	541	539	544	547	542	519	492	479	494	32	29	34	57	84	97	82
1977	490	496	500	503	501	464	465	464	462	466	461	462	112	111	112	114	110	115	114
1978	462	462	484	532	560	552	510	498	576	576	548	539	24	66	78	0	0	28	37
1979	528	535	549	560	555	562	560	571	563	521	477	482	14	16	5	13	55	99	94
1980	489	488	508	560	580	558	566	550	576	576	542	513	18	10	26	0	0	34	63
1981	503	512	520	528	531	533	547	553	543	510	477	488	43	29	23	33	66	99	88
1982	491	504	536	560	560	576	546	561	576	576	546	541	0	30	15	0	0	30	35
1983	531	566	560	560	513	484	467	467	483	564	572	576	92	109	109	93	12	4	0
1984	560	560	560	560	560	568	570	570	557	530	487	483	8	6	6	19	46	89	93
1985	482	492	511	536	533	526	551	563	539	501	483	483	50	25	13	37	75	93	93
1986	490	508	534	564	550	552	574	565	576	558	503	479	24	2	11	0	18	73	97
1987	480	489	492	495	496	511	530	551	539	503	473	480	65	46	25	37	73	103	96
1988	482	495	507	526	516	527	539	547	527	498	483	486	49	37	29	49	78	93	90
1989	486	497	505	515	512	516	537	552	540	502	478	484	60	39	24	36	74	98	92
1990	489	495	502	510	510	517	532	544	525	508	479	483	59	44	32	51	68	97	93
1991	480	486	492	499	493	489	501	508	512	506	480	486	87	75	68	64	70	96	90
1992	485	490	494	498	499	490	493	494	480	470	465	466	86	83	82	96	106	111	110
1993	467	466	476	536	543	558	558	576	576	571	522	499	20	18	0	0	5	54	77
1994	490	497	507	512	508	520	534	548	528	498	478	484	56	42	28	48	78	98	92

Reservoir Elevation S[illegible]able:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	3	2	6	6	3	1	1	22	17	-7	17	0	-14	-44	-27	6	4	6	6	3	1	1	27	594
1923	1	1	1	1	1	1	1	7	-14	24	8	-9	-14	-63	7	3	6	6	4	3	1	6	29	203
1924	1	1	1	1	1	1	1	7	-13	3	5	-6	-27	-14	4	3	6	6	4	1	3	6	29	203
1925	1	1	1	1	1	1	1	7	-15	21	18	-10	-23	-16	-8	3	6	6	4	1	2	4	26	182
1926	1	1	3	1	1	1	1	9	-14	41	14	-28	-41	-21	12	3	6	6	1	1	1	6	24	216
1927	2	2	4	6	1	1	1	17	1	-1	9	7	-33	-51	-10	6	5	6	6	1	1	4	29	493
1928	1	1	1	1	1	1	1	7	3	8	3	-32	-45	-12	12	6	6	6	1	1	3	6	29	203
1929	1	1	1	1	1	1	1	7	-4	18	0	-4	-21	-40	11	5	6	6	5	1	1	6	30	210
1930	1	1	1	1	1	1	1	7	-4	15	9	-16	-29	-23	16	5	6	6	2	1	1	6	27	189
1931	1	1	1	1	1	1	1	7	-9	2	6	-8	-26	-16	0	4	6	6	4	1	2	6	29	203
1932	1	1	1	1	1	1	1	7	-12	-7	8	20	-34	-26	-15	3	4	6	6	1	1	3	24	168
1933	1	1	1	1	1	1	1	7	-11	19	17	-11	-17	-43	1	3	6	6	3	2	1	6	27	189
1934	1	1	1	1	1	1	1	7	-8	13	11	-4	-25	-21	9	4	6	6	5	1	1	6	29	203
1935	1	1	3	5	1	1	1	13	-23	33	21	11	-36	-69	10	1	6	6	6	1	1	6	27	351
1936	2	3	6	3	1	1	1	17	-2	8	12	-13	-42	-49	6	5	6	6	3	1	1	6	28	476
1937	4	6	6	6	1	1	1	25	10	6	0	0	-38	-54	-15	6	6	6	6	1	1	3	29	725
1938	1	1	1	5	6	1	1	16	-18	-13	-62	105	4	-44	-12	2	3	1	6	6	1	3	22	352
1939	1	1	2	1	1	1	1	8	-8	18	18	-21	-35	-31	22	4	6	6	1	1	1	6	25	200
1940	1	1	2	1	1	1	1	8	2	-4	13	-8	-41	-46	5	6	5	6	4	1	1	6	29	232
1941	5	5	4	6	4	1	1	26	13	0	-4	7	-7	-42	-21	6	6	5	6	4	1	1	29	754
1942	1	1	3	6	1	1	1	14	4	1	8	14	-21	-46	-32	6	6	6	6	1	1	1	27	378
1943	6	5	6	3	1	1	1	23	20	-2	2	-14	-36	-35	-15	6	5	6	3	1	1	3	25	575
1944	1	1	1	1	1	1	1	7	-17	9	1	-16	-7	-4	-10	2	6	6	2	4	5	4	29	203
1945	4	3	4	6	1	1	1	20	8	-3	6	5	-22	-43	-20	6	5	6	6	1	1	2	27	540
1946	1	1	2	1	1	1	1	8	-4	12	23	-13	-36	-32	2	5	6	6	3	1	1	6	28	224
1947	1	1	1	1	1	1	1	7	-11	15	11	-21	-38	-24	8	3	6	6	1	1	1	6	24	168
1948	1	1	1	1	1	1	1	7	7	26	-5	-10	-58	-3	4	6	6	5	4	1	5	6	33	231
1949	1	1	1	1	1	1	1	7	-13	11	16	-17	-39	-5	12	3	6	6	2	1	5	6	29	203
1950	1	1	1	1	1	1	1	7	-17	10	17	-12	-33	-30	6	2	6	6	3	1	1	6	25	175
1951	1	1	1	1	1	1	1	7	-8	8	-6	-32	-51	0	18	4	6	4	1	1	6	6	28	196
1952	4	2	1	6	4	1	1	19	7	-8	-33	50	-5	-46	-17	6	4	1	6	5	1	2	25	475
1953	1	1	1	1	1	1	1	7	-6	9	-5	-18	-21	-19	3	4	6	5	2	1	2	6	26	182
1954	1	1	2	1	1	1	1	8	-5	10	23	-16	-37	-42	18	5	6	6	2	1	1	6	27	216
1955	1	1	1	1	1	1	1	7	-17	14	11	-8	-33	-23	6	2	6	6	4	1	1	6	26	182
1956	6	6	2	6	3	1	1	25	16	0	-15	15	-10	-42	-19	6	6	3	6	4	1	2	28	700
1957	1	1	2	3	1	1	1	10	4	17	15	1	-36	-55	10	6	6	6	6	1	1	6	32	320
1958	3	6	6	6	2	1	1	25	11	11	0	0	-19	-41	-18	6	6	6	6	2	1	2	29	725
1959	1	1	3	1	1	1	1	9	-8	22	16	-15	-51	-30	5	4	6	6	3	1	1	6	27	243
1960	1	1	1	1	1	1	1	7	-5	17	10	-16	-13	-13	-2	5	6	6	2	3	3	5	30	210
1961	1	1	1	1	1	1	1	7	1	15	13	-12	-41	-19	0	6	6	6	3	1	2	6	30	210
1962	1	1	1	4	1	1	1	10	-9	-2	28	14	-29	-51	-13	4	5	6	6	1	1	3	26	260
1963	2	6	6	6	3	1	1	25	0	18	0	0	-12	-44	-17	6	6	6	6	3	1	2	30	750
1964	1	1	2	1	1	1	1	8	-3	9	8	-10	-43	-32	8	5	6	6	4	1	1	6	29	232
1965	1	2	1	2	1	1	1	9	-2	5	-8	10	-21	-28	-16	5	6	4	6	1	1	2	25	225
1966	1	1	3	1	1	1	1	9	-15	19	19	-14	-44	-20	0	3	6	6	3	1	2	6	27	243
1967	4	3	1	4	6	1	1	20	11	-6	-51	56	6	-37	-17	6	4	1	6	6	1	2	26	520
1968	1	1	1	1	1	1	1	7	-6	11	4	-15	-33	-28	4	4	6	6	3	1	1	6	27	189
1969	1	1	1	6	6	1	1	17	-3	-54	2	107	0	-38	-25	5	1	6	6	6	1	1	26	442
1970	1	1	1	1	1	1	1	7	-6	0	1	-11	-27	-41	1	4	6	6	3	1	1	6	27	189
1971	1	1	1	1	1	1	1	7	-15	8	3	-24	-22	-7	-13	3	6	6	1	1	4	3	24	168
1972	1	1	1	1	1	1	1	7	-8	13	6	-3	-43	-16	0	4	6	6	5	1	2	6	30	210
1973	2	1	5	6	1	1	1	17	0	-10	25	1	-34	-59	-6	6	4	6	6	1	1	4	28	476
1974	1	2	4	5	1	1	1	15	6	9	11	3	-36	-47	-17	6	6	6	6	1	1	2	28	420
1975	1	1	1	4	1	1	1	10	-9	7	3	31	-42	-49	6	4	6	6	6	1	1	6	30	300
1976	1	1	1	1	1	1	1	7	5	3	-5	-23	-27	-13	15	6	6	5	1	1	3	6	28	196
1977	1	1	1	1	1	1	1	7	-37	1	-1	-2	4	-5	1	1	6	5	5	6	5	6	34	238
1978	1	1	1	6	6	1	1	17	-8	-42	-12	78	0	-28	-9	4	1	3	6	6	1	4	25	425
1979	3	2	4	3	1	1	1	15	7	-2	11	-8	-42	-44	5	6	5	6	4	1	1	6	29	435
1980	2	3	1	6	6	1	1	20	-2	8	-16	26	0	-34	-29	5	6	2	6	6	1	1	27	540
1981	1	1	1	1	1	1	1	7	2	14	6	-10	-33	-33	11	6	6	6	4	1	1	6	30	210
1982	6	1	2	6	6	1	1	23	16	-30	15	15	0	-30	-5	6	1	6	6	6	1	5	31	713
1983	1	1	1	1	3	5	6	18	-29	-17	0	16	81	8	4	1	2	6	6	6	6	6	33	594
1984	4	4	4	2	1	1	1	17	8	2	0	-13	-27	-43	-4	6	6	6	3	1	1	5	28	476
1985	1	1	3	1	1	1	1	9	-7	25	12	-24	-38	-18	0	4	6	6	1	1	2	6	26	234
1986	1	5	3	6	2	1	1	19	2	22	-9	11	-18	-55	-24	6	6	4	6	2	1	1	26	494
1987	1	1	1	1	1	1	1	7	15	19	21	-12	-36	-30	7	6	6	6	3	1	1	6	29	203
1988	1	1	1	1	1	1	1	7	11	12	8	-20	-29	-15	3	6	6	6	2	1	3	6	30	210
1989	1	1	1	1	1	1	1	7	4	21	15	-12	-38	-24	6	6	6	6	3	1	1	6	29	203
1990	1	1	1	1	1	1	1	7	7	15	12	-19	-17	-29	4	6	6	6	2	2	1	6	29	203
1991	1	1	1	1	1	1	1	7	-4	12	7	4	-6	-26	6	5	6	6	6	4	1	6	34	238
1992	1	1	1	1	1	1	1	7	-9	3	1	-14	-10	-5	1	4	6	6	3	4	5	6	34	238
1993	1	2	6	6	4	1	1	21	13	2	18	0	-5	-49	-23	6	6	6	6	5	1	1	31	651
1994	1	1	1	1	1	1	1	7	12	14	14	-20	-30	-20	6	6	6	6	2	1	2	6	29	203

73 - year Average: 12 (Reservoir Elevation score SUM)

73 - year Average: 28 (Fluctuation score SUM); 329.2 (Product)
1929 - '34 Average: 193.7

A2-149

STUDY: 1995C06F-[illegible]CB-468 DWRSIM: recirc818-f, 17 Jun 97
CP # 12, SWP SAN LUIS RESERVIOR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-468/12/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 544'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	419	441	479	520	539	544	543	539	524	475	430	439
1923	471	498	500	515	526	532	528	506	470	448	418	405
1924	424	436	485	511	532	532	523	499	466	428	392	389
1925	389	400	444	475	522	533	525	499	459	416	362	343
1926	365	382	401	459	502	514	510	489	455	447	394	384
1927	383	434	474	520	544	544	540	529	498	464	413	427
1928	460	490	499	514	526	532	528	506	459	438	416	402
1929	414	441	469	517	533	543	533	520	499	466	436	433
1930	433	439	484	533	542	544	527	497	468	461	447	425
1931	431	436	437	478	492	492	485	472	451	419	372	372
1932	385	384	448	506	536	529	521	503	482	453	414	398
1933	416	424	426	473	495	503	501	488	459	422	373	373
1934	390	386	437	493	509	509	497	474	451	428	395	388
1935	382	404	424	485	492	527	533	507	471	426	353	357
1936	395	411	425	481	525	542	542	526	492	457	416	410
1937	430	445	470	518	535	544	544	539	510	483	412	401
1938	431	465	499	515	530	540	544	544	537	504	470	486
1939	513	522	526	539	544	544	526	495	464	453	438	419
1940	424	421	416	480	520	527	524	502	461	434	352	350
1941	389	422	460	511	535	539	536	533	518	468	427	446
1942	478	492	497	512	525	529	525	517	508	461	420	438
1943	470	485	490	506	517	529	532	535	507	464	415	421
1944	454	485	501	516	530	537	519	488	455	441	425	413
1945	419	458	492	519	535	541	530	503	466	445	408	400
1946	437	469	495	510	521	528	516	489	448	428	411	399
1947	421	454	487	518	529	538	523	491	458	446	429	409
1948	413	422	422	474	491	513	511	491	457	419	349	359
1949	388	414	446	492	513	541	523	494	452	431	407	395
1950	407	420	431	484	522	530	518	490	455	433	414	404
1951	427	459	495	524	535	540	527	507	465	434	410	405
1952	431	460	490	519	532	537	541	544	536	510	492	499
1953	506	515	519	532	542	544	529	515	493	468	430	446
1954	478	494	500	515	527	533	526	508	460	436	415	403
1955	435	464	494	518	530	538	520	493	465	459	425	418
1956	431	453	494	526	542	544	538	527	507	475	434	444
1957	470	496	500	514	527	533	524	501	468	450	429	420
1958	452	482	506	522	534	537	538	538	530	494	474	488
1959	496	504	509	522	534	541	521	488	453	437	426	421
1960	432	448	457	504	539	544	526	493	460	439	385	381
1961	378	418	455	503	536	544	524	490	461	452	430	409
1962	414	419	457	491	528	534	518	484	433	402	326	336
1963	377	412	443	489	523	529	529	520	496	464	429	444
1964	473	502	514	529	540	544	519	482	439	415	395	397
1965	402	433	469	519	532	539	540	526	495	465	420	427
1966	458	487	498	512	523	529	512	482	435	413	397	387
1967	401	437	476	515	528	533	538	541	534	522	502	505
1968	512	523	527	540	544	544	529	496	458	440	423	417
1969	437	468	501	523	536	544	544	544	537	517	489	503
1970	517	526	530	544	544	544	534	511	470	449	414	409
1971	431	464	496	514	524	530	519	503	476	454	435	447
1972	475	502	513	526	540	544	526	494	455	437	424	410
1973	434	468	497	523	534	540	533	512	481	459	420	418
1974	451	480	502	518	530	535	533	521	492	462	438	450
1975	474	483	488	502	516	520	517	502	477	444	429	440
1976	467	485	491	508	520	532	516	490	473	470	447	431
1977	431	439	441	458	458	458	461	449	429	406	398	412
1978	417	434	484	532	544	544	544	544	526	469	413	433
1979	466	488	492	507	521	528	522	504	474	455	409	405
1980	441	475	502	519	534	544	544	544	527	491	451	468
1981	499	519	525	539	544	544	530	496	459	441	423	411
1982	423	458	492	523	536	543	544	544	531	494	462	472
1983	496	515	521	535	544	544	544	544	537	527	514	521
1984	536	544	544	544	544	544	536	514	478	458	412	413
1985	450	482	497	512	525	532	512	478	434	414	398	397
1986	402	408	446	499	529	543	544	544	532	490	459	468
1987	497	509	535	544	544	544	523	488	460	450	425	411
1988	420	416	455	505	519	519	508	493	483	463	425	421
1989	421	437	454	492	492	527	517	486	450	439	386	395
1990	410	427	456	499	519	524	509	480	463	456	400	384
1991	384	391	391	406	406	470	471	461	443	420	403	405
1992	408	422	437	483	517	541	532	514	495	462	419	412
1993	412	419	466	520	530	534	529	523	507	460	404	409
1994	445	476	488	502	518	526	505	473	449	448	445	432

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	0	1	5	20	69	114	105
1923	12	16	38	74	96	126	139
1924	12	21	45	78	116	152	155
1925	11	19	45	85	128	182	201
1926	30	34	55	89	97	150	160
1927	0	4	15	46	80	131	117
1928	12	16	38	85	106	128	142
1929	1	11	24	45	76	108	111
1930	0	17	47	76	83	97	119
1931	52	59	72	93	125	172	172
1932	15	23	41	62	91	130	146
1933	41	43	56	85	122	171	171
1934	35	47	70	93	116	149	156
1935	17	11	37	73	118	191	187
1936	2	2	18	52	87	128	134
1937	0	0	5	34	81	132	143
1938	4	0	0	7	40	74	58
1939	0	18	49	80	91	106	125
1940	17	20	42	83	110	192	194
1941	5	8	11	26	76	117	98
1942	15	19	27	36	83	124	106
1943	15	12	9	37	80	129	123
1944	7	25	56	89	103	119	131
1945	3	14	41	78	99	136	144
1946	16	28	55	96	116	133	145
1947	6	21	53	86	98	115	135
1948	31	33	53	87	125	195	185
1949	3	21	50	92	113	137	149
1950	14	26	54	89	111	130	140
1951	4	17	37	79	110	134	139
1952	7	3	0	8	34	52	45
1953	0	15	29	51	76	114	98
1954	11	18	36	84	108	129	141
1955	6	24	51	79	85	119	126
1956	0	6	17	37	69	110	100
1957	11	20	43	76	94	115	124
1958	7	6	6	14	50	70	58
1959	3	23	56	91	107	118	123
1960	0	18	51	84	105	159	163
1961	0	20	54	83	92	114	135
1962	10	28	60	111	142	218	208
1963	15	15	24	48	80	115	100
1964	0	25	62	105	129	149	147
1965	5	4	18	49	79	124	117
1966	15	32	62	109	131	147	157
1967	11	6	3	10	22	42	39
1968	0	15	48	86	104	121	127
1969	0	0	0	7	27	55	41
1970	0	10	33	74	95	130	135
1971	14	25	41	68	90	109	97
1972	0	18	50	89	107	120	134
1973	4	11	32	63	85	124	126
1974	9	11	23	52	82	106	94
1975	24	27	42	67	100	115	104
1976	12	28	54	71	74	97	113
1977	86	83	95	115	138	146	132
1978	0	0	0	18	75	131	111
1979	16	22	40	70	89	135	139
1980	0	0	0	17	53	93	76
1981	0	14	48	85	103	121	133
1982	1	0	0	13	50	82	72
1983	0	0	0	7	17	30	23
1984	0	8	30	66	86	132	131
1985	12	32	66	110	130	146	147
1986	1	0	0	12	54	85	76
1987	0	21	56	84	94	119	133
1988	25	36	51	61	81	119	123
1989	17	27	58	94	105	158	149
1990	20	35	64	81	88	144	160
1991	74	73	83	101	124	141	139
1992	3	12	30	49	82	125	132
1993	10	15	21	37	84	140	135
1994	18	39	71	95	98	99	112

Reservoir El[illegible]coring Table:
If [DFMRE] <=[illegible]en 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	6	5	4	1	1	1	1	19
1923	3	2	1	1	1	1	1	10
1924	3	1	1	1	1	1	1	9
1925	3	2	1	1	1	1	1	10
1926	1	1	1	1	1	1	1	7
1927	6	5	2	1	1	1	1	17
1928	3	2	1	1	1	1	1	10
1929	5	3	1	1	1	1	1	13
1930	6	2	1	1	1	1	1	13
1931	1	1	1	1	1	1	1	7
1932	2	1	1	1	1	1	1	8
1933	1	1	1	1	1	1	1	7
1934	1	1	1	1	1	1	1	7
1935	2	3	1	1	1	1	1	10
1936	5	5	2	1	1	1	1	16
1937	6	6	4	1	1	1	1	20
1938	5	6	6	4	1	1	1	24
1939	6	2	1	1	1	1	1	13
1940	2	1	1	1	1	1	1	8
1941	4	4	3	1	1	1	1	15
1942	2	2	1	1	1	1	1	9
1943	2	3	4	1	1	1	1	13
1944	4	1	1	1	1	1	1	10
1945	5	3	1	1	1	1	1	13
1946	2	1	1	1	1	1	1	8
1947	4	1	1	1	1	1	1	10
1948	1	1	1	1	1	1	1	7
1949	5	1	1	1	1	1	1	11
1950	3	1	1	1	1	1	1	9
1951	5	2	1	1	1	1	1	12
1952	4	5	6	4	1	1	1	22
1953	6	2	1	1	1	1	1	13
1954	3	2	1	1	1	1	1	10
1955	4	1	1	1	1	1	1	10
1956	6	4	2	1	1	1	1	16
1957	3	1	1	1	1	1	1	9
1958	4	4	4	3	1	1	1	18
1959	5	1	1	1	1	1	1	11
1960	6	2	1	1	1	1	1	13
1961	6	1	1	1	1	1	1	12
1962	3	1	1	1	1	1	1	9
1963	2	2	1	1	1	1	1	9
1964	6	1	1	1	1	1	1	12
1965	4	5	2	1	1	1	1	15
1966	2	1	1	1	1	1	1	8
1967	3	4	5	3	1	1	1	18
1968	6	2	1	1	1	1	1	13
1969	6	6	6	4	1	1	1	25
1970	6	3	1	1	1	1	1	14
1971	3	1	1	1	1	1	1	9
1972	6	2	1	1	1	1	1	13
1973	5	3	1	1	1	1	1	13
1974	4	3	1	1	1	1	1	12
1975	1	1	1	1	1	1	1	7
1976	3	1	1	1	1	1	1	9
1977	1	1	1	1	1	1	1	7
1978	6	6	6	2	1	1	1	23
1979	2	1	1	1	1	1	1	8
1980	6	6	6	2	1	1	1	23
1981	6	3	1	1	1	1	1	14
1982	5	6	6	3	1	1	1	23
1983	6	6	6	4	2	1	1	26
1984	6	4	1	1	1	1	1	15
1985	3	1	1	1	1	1	1	9
1986	5	6	6	3	1	1	1	23
1987	6	1	1	1	1	1	1	12
1988	1	1	1	1	1	1	1	7
1989	2	1	1	1	1	1	1	8
1990	1	1	1	1	1	1	1	7
1991	1	1	1	1	1	1	1	7
1992	5	3	1	1	1	1	1	13
1993	3	2	1	1	1	1	1	10
1994	2	1	1	1	1	1	1	8

73 - year Average: 12

Reservoir Change from Previous Month [fluctuation]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	5	-1	-4	-15	-49	-45	9
1923	6	-4	-22	-36	-22	-30	-13
1924	0	-9	-24	-33	-38	-36	-3
1925	11	-8	-26	-40	-43	-54	-19
1926	12	-4	-21	-34	-8	-53	-10
1927	0	-4	-11	-31	-34	-51	14
1928	6	-4	-22	-47	-21	-22	-14
1929	10	-10	-13	-21	-31	-32	-3
1930	2	-17	-30	-29	-7	-14	-22
1931	0	-7	-13	-21	-32	-47	0
1932	-7	-8	-18	-21	-29	-39	-16
1933	8	-2	-13	-29	-37	-49	0
1934	0	-12	-23	-23	-23	-33	-7
1935	35	6	-26	-36	-45	-73	4
1936	17	0	-16	-34	-35	-41	-6
1937	9	0	-5	-29	-47	-51	-11
1938	10	4	0	-7	-33	-34	16
1939	0	-18	-31	-31	-11	-15	-19
1940	7	-3	-22	-41	-27	-82	-2
1941	4	-3	-3	-15	-50	-41	19
1942	4	-4	-8	-9	-47	-41	18
1943	12	3	3	-28	-43	-49	6
1944	7	-18	-31	-33	-14	-16	-12
1945	6	-11	-27	-37	-21	-37	-8
1946	7	-12	-27	-41	-20	-17	-12
1947	9	-15	-32	-33	-12	-17	-20
1948	22	-2	-20	-34	-38	-70	10
1949	28	-18	-29	-42	-21	-24	-12
1950	8	-12	-28	-35	-22	-19	-10
1951	5	-13	-20	-42	-31	-24	-5
1952	5	4	3	-8	-26	-18	7
1953	2	-15	-14	-22	-25	-38	16
1954	6	-7	-18	-48	-24	-21	-12
1955	8	-18	-27	-28	-6	-34	-7
1956	2	-6	-11	-20	-32	-41	10
1957	6	-9	-23	-33	-18	-21	-9
1958	3	1	0	-8	-36	-20	14
1959	7	-20	-33	-35	-16	-11	-5
1960	5	-18	-33	-33	-21	-54	-24
1961	8	-20	-34	-29	-9	-22	-21
1962	6	-18	-32	-51	-31	-76	10
1963	6	0	-9	-24	-32	-35	15
1964	4	-25	-37	-43	-24	-20	2
1965	7	1	-14	-31	-30	-45	7
1966	6	-17	-30	-47	-22	-16	-10
1967	5	5	3	-7	-12	-20	3
1968	0	-15	-33	-38	-16	-17	-6
1969	8	0	0	-7	-20	-28	14
1970	0	-10	-23	-41	-21	-35	-5
1971	6	-11	-16	-27	-22	-19	12
1972	4	-18	-32	-39	-18	-13	-14
1973	6	-7	-21	-31	-22	-39	-2
1974	5	-2	-12	-29	-30	-24	12
1975	4	-3	-15	-25	-33	-15	11
1976	12	-16	-26	-17	-3	-23	-16
1977	0	3	-12	-20	-23	-8	14
1978	0	0	0	-18	-57	-58	20
1979	7	-6	-18	-30	-19	-46	-4
1980	10	0	0	-17	-36	-40	17
1981	0	-14	-34	-37	-18	-18	-12
1982	7	1	0	-13	-37	-32	10
1983	0	0	0	-7	-10	-13	7
1984	0	-8	-22	-36	-20	-46	1
1985	7	-20	-34	-44	-20	-16	-1
1986	14	1	0	-12	-42	-31	9
1987	0	-21	-35	-28	-10	-25	-14
1988	0	-11	-15	-10	-20	-38	-4
1989	35	-10	-31	-36	-11	-53	9
1990	5	-15	-29	-17	-7	-56	-16
1991	64	1	-10	-18	-23	-17	2
1992	24	-9	-18	-19	-33	-43	-7
1993	4	-5	-6	-16	-47	-56	5
1994	10	-21	-32	-24	-3	-1	-13

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Largemouth Bass Reservoir Habitat Index Product
1922	6	5	5	3	1	1	6	27	513
1923	6	5	1	1	1	1	3	18	180
1924	6	4	1	1	1	1	5	19	171
1925	6	4	1	1	1	1	2	16	160
1926	6	5	1	1	4	1	4	22	154
1927	6	5	3	1	1	1	6	23	391
1928	6	5	1	1	1	1	3	18	180
1929	6	4	3	1	1	1	5	21	273
1930	6	2	1	1	4	3	1	18	234
1931	6	4	3	1	1	1	6	22	154
1932	4	4	2	1	1	1	2	15	120
1933	6	5	3	1	1	1	6	23	161
1934	6	3	1	1	1	1	4	17	119
1935	6	6	1	1	1	1	6	22	220
1936	6	6	2	1	1	1	4	21	336
1937	6	6	5	1	1	1	3	23	460
1938	6	6	6	4	1	1	6	30	720
1939	6	2	1	1	3	3	2	18	234
1940	6	5	1	1	1	1	5	20	160
1941	6	5	5	3	1	1	6	27	405
1942	6	5	4	4	1	1	6	27	243
1943	6	6	6	1	1	1	6	27	351
1944	6	2	1	1	3	2	3	18	180
1945	6	3	1	1	1	1	4	17	221
1946	6	3	1	1	2	2	3	18	144
1947	6	3	1	1	3	2	2	18	180
1948	6	5	2	1	1	1	6	22	154
1949	6	2	1	1	1	1	3	15	165
1950	6	3	1	1	1	2	4	18	162
1951	6	3	2	1	1	1	5	19	228
1952	6	6	6	4	1	2	6	31	682
1953	6	3	3	1	1	1	6	21	273
1954	6	4	2	1	1	1	3	18	180
1955	6	2	1	1	4	1	4	19	190
1956	6	4	3	2	1	1	6	23	368
1957	6	4	1	1	2	1	4	19	171
1958	6	6	6	4	1	2	6	31	558
1959	6	2	1	1	2	3	5	20	220
1960	6	2	1	1	1	1	1	13	169
1961	6	2	1	1	4	1	1	16	192
1962	6	2	1	1	1	1	6	18	162
1963	6	6	4	1	1	1	6	25	225
1964	6	1	1	1	1	2	6	18	216
1965	6	6	3	1	1	1	6	24	360
1966	6	2	1	1	1	2	4	17	136
1967	6	6	6	4	3	2	6	33	594
1968	6	3	1	1	2	2	4	19	247
1969	6	6	6	4	2	1	6	31	775
1970	6	4	1	1	1	1	5	19	266
1971	6	3	2	1	1	2	6	21	189
1972	6	2	1	1	2	3	3	18	234
1973	6	4	1	1	1	1	5	19	247
1974	6	5	3	1	1	1	6	23	276
1975	6	5	3	1	1	3	6	25	175
1976	6	2	1	2	5	1	2	19	171
1977	6	6	3	2	1	4	6	28	196
1978	6	6	6	2	1	1	6	28	644
1979	6	4	2	1	2	1	5	21	168
1980	6	6	6	2	1	1	6	28	644
1981	6	3	1	1	2	2	3	18	252
1982	6	6	6	3	1	1	6	29	667
1983	6	6	6	4	4	3	6	35	910
1984	6	4	1	1	2	1	6	21	315
1985	6	2	1	1	2	2	5	19	171
1986	6	6	6	3	1	1	6	29	667
1987	6	1	1	1	4	1	3	17	204
1988	6	3	3	4	2	1	5	24	168
1989	6	4	1	1	3	1	6	22	176
1990	6	3	1	2	4	1	2	19	133
1991	6	6	4	2	1	2	6	27	189
1992	6	4	2	2	1	1	4	20	260
1993	6	5	4	2	1	1	6	25	250
1994	6	1	1	1	5	5	3	22	176

73 - year Average: 22 285.5
1929 - '34 Average: 176.8

Pr[illegible] Kevin Long Study 468 - Reservoirs Elevations [illegible]tat Analysis.xls - San Luis Reservoir [illegible]17/1997

STUDY. 1995C06F-SWRCB-469 DWRSIM recirc818-f, 17 Jun 97
CP # 4, SHASTA LAKE, EOP SURFACE ELEVATION (FT)
Project. /1995C06F-SWRCB-469/4/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 1067'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir El. Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass *Reservoir* Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	989	993	999	1,003	1,019	1,038	1,060	1,067	1,062	1,048	1,031	1,025	29	7	0	5	19	36	42	1	4	6	4	2	1	1	19	19	22	7	-5	-14	-17	-6	6	6	6	5	3	2	4	32	608
1923	1,023	1,017	1,019	1,023	1,020	1,021	1,033	1,029	1,015	996	978	976	46	34	38	52	71	89	91	1	1	1	1	1	1	1	7	1	12	-4	-14	-19	-18	-2	6	6	5	3	2	2	5	29	203
1924	978	978	978	978	986	986	975	961	944	921	903	888	81	92	106	123	146	164	179	1	1	1	1	1	1	1	7	0	-11	-14	-17	-23	-18	-15	6	3	3	2	1	2	3	20	140
1925	892	905	914	924	996	1,012	1,043	1,054	1,045	1,027	1,012	1,008	55	24	13	22	40	55	59	1	1	3	1	1	1	1	9	16	31	11	-9	-18	-15	-4	6	6	6	4	2	3	5	32	288
1926	1,005	1,003	1,000	996	1,023	1,024	1,038	1,032	1,011	988	968	961	43	29	35	56	79	99	106	1	1	1	1	1	1	1	7	1	14	-6	-21	-23	-20	-7	6	6	4	1	1	2	4	24	168
1927	960	988	1,010	1,035	1,026	1,052	1,067	1,067	1,058	1,044	1,027	1,022	15	0	0	9	23	40	45	2	6	6	4	1	1	1	21	26	15	0	-9	-14	-17	-5	6	6	6	4	3	2	5	32	672
1928	1,020	1,017	1,020	1,028	1,044	1,046	1,066	1,062	1,048	1,022	1,000	994	21	1	5	19	45	67	73	1	5	4	2	1	1	1	15	2	20	-4	-14	-26	-22	-6	6	6	5	3	1	1	4	26	390
1929	993	993	993	993	999	1,001	1,004	997	989	972	954	947	66	63	70	78	95	113	120	1	1	1	1	1	1	1	7	2	3	-7	-8	-17	-18	-7	6	6	4	4	2	2	4	28	196
1930	945	943	974	988	1,003	1,025	1,036	1,037	1,018	998	985	983	42	31	30	49	69	82	84	1	1	1	1	1	1	1	7	22	11	1	-19	-20	-13	-2	6	6	6	2	2	3	5	30	210
1931	981	980	978	980	984	990	982	973	962	942	929	915	77	85	94	105	125	138	152	1	1	1	1	1	1	1	7	6	-8	-9	-11	-20	-13	-14	6	4	4	3	2	3	3	25	175
1932	910	910	925	937	945	970	973	981	973	959	945	939	97	94	86	94	108	122	128	1	1	1	1	1	1	1	7	25	3	8	-8	-14	-14	-6	6	6	6	4	3	3	4	32	224
1933	938	933	934	938	939	973	984	987	984	964	950	944	94	83	80	83	103	117	123	1	1	1	1	1	1	1	7	34	11	3	-3	-20	-14	-6	6	6	6	5	2	3	4	32	224
1934	943	941	949	966	986	997	997	992	984	952	926	911	70	70	75	83	115	141	156	1	1	1	1	1	1	1	7	11	0	-5	-8	-32	-26	-15	6	6	5	4	1	1	3	26	182
1935	905	917	921	943	962	986	1,030	1,037	1,030	1,011	998	992	81	37	30	37	56	69	75	1	1	1	1	1	1	1	7	24	44	7	-7	-19	-13	-6	6	6	6	4	2	3	4	31	217
1936	990	987	985	1,009	1,032	1,044	1,053	1,051	1,043	1,023	1,003	998	23	14	16	24	44	64	69	1	3	2	1	1	1	1	10	12	9	-2	-8	-20	-20	-5	6	6	5	4	2	2	5	30	300
1937	993	988	983	978	977	1,004	1,032	1,041	1,037	1,016	997	990	63	35	26	30	51	70	77	1	1	1	1	1	1	1	7	27	28	9	-4	-21	-19	-7	6	6	6	5	1	2	4	30	210
1938	988	1,010	1,020	1,035	1,030	1,024	1,049	1,067	1,067	1,058	1,045	1,036	43	18	0	0	9	22	31	1	2	6	6	4	1	1	21	-6	25	18	0	-9	-13	-9	4	6	6	6	4	3	4	33	693
1939	1,023	1,017	1,020	1,022	1,024	1,039	1,031	1,024	999	977	949	945	28	36	43	68	90	118	122	1	1	1	1	1	1	1	7	15	-8	-7	-25	-22	-28	-4	6	4	4	1	1	1	5	22	154
1940	942	937	945	993	1,017	1,025	1,059	1,064	1,054	1,034	1,017	1,015	42	8	3	13	33	50	52	1	4	5	3	1	1	1	16	8	34	5	-10	-20	-17	-2	6	6	6	4	2	2	5	31	496
1941	1,014	1,013	1,019	1,020	1,024	1,045	1,064	1,067	1,007	1,058	1,047	1,036	22	3	0	0	9	20	31	1	5	6	6	4	1	1	24	21	19	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1942	1,023	1,017	1,020	1,023	1,028	1,042	1,067	1,067	1,067	1,058	1,046	1,036	25	0	0	0	9	21	31	1	6	6	6	4	1	1	25	14	25	0	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1943	1,023	1,017	1,022	1,030	1,042	1,051	1,067	1,067	1,059	1,045	1,030	1,024	16	0	0	8	22	37	43	2	6	6	4	1	1	1	21	9	16	0	-8	-14	-15	-6	6	6	6	4	3	3	4	32	672
1944	1,023	1,017	1,015	1,014	1,023	1,033	1,038	1,038	1,019	995	974	967	34	29	29	48	72	93	100	1	1	1	1	1	1	1	7	10	5	0	-19	-24	-21	-7	6	6	6	2	1	1	4	26	182
1945	969	981	996	1,005	1,039	1,053	1,065	1,067	1,062	1,040	1,023	1,018	14	2	0	5	27	44	49	3	5	6	4	1	1	1	21	14	12	2	-5	-22	-17	-5	6	6	6	5	1	2	5	31	651
1946	1,017	1,017	1,018	1,033	1,039	1,050	1,062	1,064	1,054	1,036	1,020	1,017	17	5	3	13	31	47	50	2	4	5	3	1	1	1	17	11	12	2	-10	-18	-16	-3	6	6	6	4	2	2	5	31	527
1947	1,014	1,014	1,015	1,011	1,018	1,038	1,044	1,034	1,019	995	977	971	29	23	33	48	72	90	96	1	1	1	1	1	1	1	7	20	6	-10	-15	-24	-18	-6	6	6	4	3	1	2	4	26	182
1948	977	980	982	1,007	1,006	1,018	1,056	1,067	1,067	1,052	1,037	1,036	49	11	0	0	15	30	31	1	3	6	6	2	1	1	20	12	38	11	0	-15	-15	-1	6	6	6	6	3	3	5	35	700
1949	1,023	1,017	1,016	1,012	1,016	1,050	1,063	1,064	1,048	1,026	1,008	1,004	17	4	3	19	41	59	63	2	5	5	2	1	1	1	17	34	13	1	-16	-22	-18	-4	6	6	6	2	1	2	5	28	476
1950	1,000	997	994	1,002	1,016	1,033	1,047	1,046	1,034	1,012	995	993	34	20	21	33	55	72	74	1	1	1	1	1	1	1	7	17	14	-1	-12	-22	-17	-2	6	6	5	3	1	2	5	28	196
1951	1,006	1,017	1,020	1,033	1,040	1,057	1,064	1,067	1,051	1,030	1,012	1,010	10	3	0	16	37	55	57	3	5	6	2	1	1	1	19	17	7	3	-16	-21	-18	-2	6	6	6	2	1	2	5	28	532
1952	1,009	1,013	1,019	1,032	1,038	1,048	1,058	1,067	1,067	1,058	1,046	1,036	19	9	0	0	9	21	31	2	4	6	6	4	1	1	24	10	10	9	0	-9	-12	-10	6	6	6	6	4	3	4	35	840
1953	1,023	1,017	1,021	1,022	1,033	1,051	1,065	1,067	1,067	1,058	1,046	1,036	16	2	0	0	9	21	31	2	5	6	6	4	1	1	25	18	14	2	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1954	1,023	1,017	1,021	1,030	1,035	1,051	1,067	1,064	1,059	1,042	1,029	1,029	16	0	3	8	25	38	38	2	6	5	4	1	1	1	20	16	16	-3	-5	-17	-13	0	6	6	5	5	2	3	6	33	660
1955	1,023	1,017	1,022	1,024	1,027	1,025	1,039	1,047	1,028	1,004	987	986	42	28	20	39	63	80	81	1	1	1	1	1	1	1	7	-2	14	8	-19	-24	-17	-1	5	6	6	2	1	2	5	27	189
1956	984	987	1,017	1,017	1,019	1,048	1,067	1,067	1,067	1,058	1,047	1,036	19	0	0	0	9	20	31	2	6	6	6	4	1	1	26	29	19	0	0	-9	-11	-11	6	6	6	6	4	3	3	34	884
1957	1,023	1,017	1,016	1,017	1,035	1,052	1,058	1,067	1,060	1,043	1,029	1,031	15	9	0	7	24	38	36	2	4	6	4	1	1	1	19	17	6	9	-7	-17	-14	2	6	6	6	4	2	3	6	33	627
1958	1,023	1,017	1,021	1,029	1,067	1,024	1,053	1,067	1,067	1,058	1,047	1,036	43	14	0	0	9	20	31	1	3	6	6	4	1	1	22	-43	29	14	0	-9	-11	-11	1	6	6	6	4	3	3	29	638
1959	1,023	1,017	1,017	1,034	1,039	1,050	1,054	1,054	1,035	1,010	994	998	17	13	13	32	57	73	69	2	3	3	1	1	1	1	12	11	4	0	-19	-25	-16	4	6	6	6	2	1	2	6	29	348
1960	995	993	990	996	1,024	1,051	1,058	1,066	1,048	1,028	1,009	1,007	16	9	1	19	39	58	60	2	4	5	2	1	1	1	16	27	7	8	-18	-20	-19	-2	6	6	6	2	2	2	5	29	464
1961	1,004	1,006	1,021	1,026	1,044	1,057	1,064	1,067	1,048	1,024	1,003	1,001	10	3	0	19	43	64	66	3	5	6	2	1	1	1	19	13	7	3	-19	-24	-21	-2	6	6	6	2	1	1	5	27	513
1962	998	1,002	1,014	1,016	1,035	1,051	1,062	1,063	1,051	1,031	1,013	1,011	16	5	4	16	36	54	56	2	4	5	2	1	1	1	16	16	11	1	-12	-20	-18	-2	6	6	6	3	2	2	5	30	480
1963	1,023	1,017	1,021	1,025	1,045	1,055	1,052	1,067	1,063	1,052	1,040	1,036	12	15	0	4	15	27	31	3	2	6	5	2	1	1	20	10	-3	15	-4	-11	-12	-4	6	5	6	5	3	3	5	33	660
1964	1,023	1,017	1,018	1,033	1,034	1,037	1,031	1,026	1,011	969	969	968	30	36	41	56	78	98	99	1	1	1	1	1	1	1	7	3	-6	-5	-15	-22	-20	-1	6	4	5	3	1	2	5	26	182
1965	987	977	1,017	1,022	1,040	1,052	1,065	1,066	1,057	1,042	1,032	1,030	15	2	1	10	25	35	37	2	5	5	3	1	1	1	18	12	13	1	-9	-15	-10	-2	6	6	6	4	3	4	5	34	612
1966	1,023	1,017	1,021	1,037	1,049	1,055	1,067	1,064	1,049	1,029	1,013	1,010	12	0	3	18	38	54	57	3	6	5	2	1	1	1	19	6	12	-3	-15	-20	-16	-3	6	6	5	3	2	2	5	29	551
1967	1,006	1,017	1,021	1,030	1,044	1,048	1,064	1,067	1,067	1,058	1,047	1,036	19	3	0	0	9	20	31	2	5	6	6	4	1	1	25	4	16	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1968	1,023	1,017	1,019	1,025	1,034	1,054	1,056	1,058	1,042	1,021	1,013	1,011	13	11	9	25	46	54	56	3	3	4	1	1	1	1	14	20	2	2	-16	-21	-8	-2	6	6	6	2	1	4	5	30	420
1969	1,010	1,011	1,021	1,022	1,027	1,048	1,063	1,067	1,067	1,058	1,047	1,036	19	4	0	0	9	20	31	2	5	6	6	4	1	1	25	21	15	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1970	1,023	1,017	1,020	1,017	1,025	1,052	1,055	1,055	1,043	1,023	1,010	1,008	15	12	12	24	44	57	59	2	3	3	1	1	1	1	12	27	3	0	-12	-20	-13	-2	6	6	6	3	2	3	5	31	372
1971	1,009	1,017	1,020	1,028	1,040	1,043	1,063	1,067	1,067	1,058	1,047	1,036	24	4	0	0	9	20	31	1	5	6	6	4	1	1	24	3	20	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1972	1,023	1,017	1,022	1,033	1,045	1,056	1,067	1,067	1,050	1,029	1,015	1,015	11	0	0	17	38	52	52	3	6	6	2	1	1	1	20	11	11	0	-17	-21	-14	0	6	6	6	2	1	3	6	30	600
1973	1,016	1,017	1,021	1,030	1,034	1,053	1,065	1,067	1,059	1,041	1,029	1,028	14	2	0	8	26	38	39	3	5	6	4	1	1	1	21	19	12	2	-8	-18	-12	-1	6	6	6	4	2	3	5	32	672
1974	1,023	1,017	1,016	1,017	1,036	1,025	1,058	1,067	1,067	1,058	1,047	1,036	42	9	0	0	9	20	31	1	4	6	6	4	1	1	23	-11	33	9	0	-9	-11	-11	3	6	6	6	4	3	3	31	713
1975	1,023	1,017	1,021	1,024	1,045	1,039	1,061	1,067	1,067	1,058	1,047	1,036	28	6	0	0	9	20	31	1	4	6	6	4	1	1	23	-6	22	6	0	-9	-11	-11	4	6	6	6	4	3	3	32	736
1976	1,023	1,017	1,018	1,017	1,012	1,017	1,024	1,020	995	973	969	970	50	43	47	72	94	98	97	1	1	1	1	1	1	1	7	5	7	-4	-25	-22	-4	1	6	6	5	1	1	5	6	30	210
1977	973	974	974	976	966	966	948	942	920	901	882	878	101	119	125	147	166	185	189	1	1	1	1	1	1	1	7	0	-18	-6	-22	-19	-19	-4	6	2	4	1	2	2	5	22	154
1978	867	866	911	1,016	1,031	1,047	1,067	1,067	1,064	1,054	1,044	1,036	20	0	0	3	13	23	31	1	6	6	5	3	1	1	23	16	20	0	-3	-10	-10	-8	6	6	6	5	4	4	4	35	805
1979	1,023	1,017	1,015	1,018	1,029	1,046	1,053	1,062	1,048	1,030	1,018	1,016	21	14	5	19	37	49	51	1	3	4	2	1	1	1	13	17	7	9	-14	-18	-12	-2	6	6	6	3	2	3	5	31	403
1980	1,016	1,017	1,020	1,029	1,019	1,046	1,059	1,064	1,056	1,045	1,035	1,035	21	8	3	11	22	32	32	1	4	5	3	1	1	1	16	27	13	5	-8	-11	-10	0	6	6	6	4	3	4	6	35	560
1981	1,023	1,017	1,020	1,029	1,042	1,056	1,064	1,062	1,042	1,018	1,002	999	11	3	5	25	49	65	68	3	5	4	1	1	1	1	16	14	8	-2	-20	-24	-16	-3	6	6	5	2	1	2	5	27	432
1982	998	1,017	1,016	1,033	1,029	1,046	1,051	1,067	1,067	1,058	1,047	1,036	21	16	0	0	9	20	31	1	2	6	6	4	1	1	21	17	5	16	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1983	1,023	1,017	1,020	1,022	1,017	1,045	1,050	1,067	1,067	1,058	1,047	1,036	22	17	0	0	9	20	31	1	2	6	6	4	1	1	21	28	5	17	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1984	1,023	1,017	1,018	1,034	1,047	1,056	1,064	1,067	1,059	1,043	1,036	1,036	11	3	0	8	24	31	31	3	5	6	4	1	1	1	21	9	8	3	-8	-16	-7	0	6	6	6	4	2	4	6	34	714
1985	1,023	1,017	1,022	1,023	1,027	1,034	1,042	1,033	1,010	989	972	974	33	25	34	57	78	95	93	1	1	1	1	1	1	1	7	7	8	-9	-23	-21	-17	2	6	6	4	1	1	2	6	26	182
1986	976	980	990	1,014	1,017	1,029	1,047	1,049	1,038	1,022	1,006	1,009	38	20	18	29	45	61	58	1	1	2	1	1	1	1	8	12	18	2	-11	-16	-16	3	6	6	6	3	2	2	6	31	248
1987	1,009	1,009	1,008	1,009	1,019	1,046	1,046	1,040	1,008	984	956	949	21	21	27	59	83	111	118	1	1	1	1	1	1	1	7	27	0	-6	-32	-24	-28	-7	6	6	4	1	1	1	4	23	161
1988	946	947	978	1,000	1,001	1,004	1,010	1,009	991	959	944	942	63	57	58	76	108	123	125	1	1	1	1	1	1	1	7	3	6	-1	-18	-32	-15	-2	6	6	5	2	1	3	5	28	196
1989	942	955	961	968	975	1,038	1,058	1,054	1,038	1,018	1,006	1,007	29	9	13	29	49	61	60	1	4	3	1	1	1	1	12	63	20	-4	-16	-20	-12	1	6	6	5	2	2	3	6	30	360
1990	1,009	1,007	1,003	1,008	1,008	1,015	1,007	1,013	998	973	956	953	52	60	54	69	94	111	114	1	1	1	1	1	1	1	7	7	-8	6	-15	-25	-17	-3	6	4	6	3	1	2	5	27	189
1991	949	947	946	947	943	969	980	980	970	957	943	935	98	87	87	97	110	124	132	1	1	1	1	1	1	1	7	26	11	0	-10	-13	-14	-8	6	6	6	4	3	3	4	32	224
1992	934	933	934	938	976	999	1,011	1,003	989	974	961	955	68	56	64	78	93	106	112	1	1	1	1	1	1	1	7	23	12	-8	-14	-15	-13	-6	6	6	4	3	3	3	4	29	203
1993	951	948	962	996	1,028	1,031	1,059	1,067	1,067	1,054	1,046	1,045	38	8	0	0	13	21	22	1	4	6	6	3	1	1	22	3	28	8	0	-13	-8	-1	6	6	6	6	3	4	5	36	792
1994	1,043	1,017	1,019	1,020	1,028	1,027	1,027	1,026	999	978	956	953	40	40	41	68	89	111	114	1	1	1	1	1	1	1	7	1	0	-1	-27	-21	-22	-3	6	6	5	1	1	1	5	25	175

73 - year Average: 15

73 - year Average: 30 459.5
1929 - '34 Average: 201.8

C-032491

C-032491

STUDY. 1995C06F-SWRCB-469 DWRSIM. reckc818-f, 17 Jun 97
CP # 6, LAKE OROVILLE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-469/6/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 900'

Reservoir Elevation Sco le:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	833	833	835	844	850	858	893	900	900	880	876	876
1923	874	874	858	862	859	868	891	897	878	839	805	808
1924	800	788	761	766	784	774	761	750	728	708	699	693
1925	694	698	705	721	789	817	836	843	825	793	782	781
1926	777	779	781	795	837	857	887	874	853	810	797	779
1927	775	807	807	831	849	863	890	900	900	865	854	851
1928	849	859	860	868	871	849	878	863	843	789	737	730
1929	717	712	710	715	729	746	749	752	745	727	718	711
1930	703	700	761	790	817	849	871	875	858	817	779	776
1931	765	758	749	762	775	792	778	765	743	723	713	706
1932	700	692	697	722	744	777	782	806	777	753	743	736
1933	727	715	714	726	735	740	743	758	752	735	724	717
1934	713	705	707	734	756	777	770	760	737	712	702	689
1935	675	680	686	714	737	768	854	864	848	824	814	796
1936	787	777	775	824	849	860	886	897	886	846	827	823
1937	816	804	800	803	820	844	869	882	859	833	820	814
1938	810	824	854	858	849	849	882	900	900	899	896	887
1939	874	864	854	845	837	833	822	813	778	713	655	650
1940	639	628	631	704	813	849	879	883	867	829	821	809
1941	801	801	842	849	849	858	886	900	900	890	886	887
1942	874	874	849	849	850	867	882	900	900	885	882	882
1943	874	869	861	849	856	859	887	893	892	860	849	850
1944	851	853	853	859	857	868	879	895	875	835	797	791
1945	786	793	809	823	862	865	880	896	877	837	813	806
1946	806	816	849	864	868	868	887	892	870	831	788	785
1947	777	783	791	797	823	845	855	850	832	777	730	723
1948	726	728	724	760	763	783	842	871	877	844	827	821
1949	814	812	812	817	823	843	862	866	844	796	759	754
1950	741	740	741	771	818	848	881	900	886	848	820	819
1951	823	849	854	853	858	870	886	900	889	848	820	820
1952	824	827	849	849	852	862	894	900	900	900	899	887
1953	874	874	858	850	867	867	883	900	900	870	869	870
1954	872	871	874	858	857	859	883	863	847	800	753	753
1955	754	756	764	777	786	799	808	822	794	730	706	703
1956	694	690	845	849	849	864	892	900	900	873	870	874
1957	869	874	874	871	853	863	863	881	868	827	795	800
1958	802	808	825	845	849	849	879	900	900	898	894	887
1959	874	874	874	862	852	867	871	874	853	807	757	781
1960	754	742	737	752	813	853	853	859	840	800	788	782
1961	771	774	783	794	823	841	840	846	826	768	725	721
1962	705	701	710	725	787	821	843	842	827	770	744	722
1963	796	808	837	859	867	858	876	900	893	857	845	846
1964	847	859	861	868	874	874	880	884	867	826	779	753
1965	739	740	849	849	863	870	887	882	884	855	850	852
1966	856	859	860	864	870	874	894	882	862	821	772	767
1967	753	764	802	849	860	853	879	900	900	900	896	887
1968	874	874	873	858	861	866	883	867	848	802	764	761
1969	762	768	790	849	849	865	895	900	900	895	893	874
1970	874	874	850	849	849	874	869	871	857	818	787	789
1971	792	818	846	864	874	874	893	900	900	871	853	855
1972	860	866	865	869	867	874	884	886	867	826	781	782
1973	778	793	820	849	849	860	882	900	869	829	810	806
1974	810	849	850	854	864	849	883	900	900	889	888	886
1975	874	874	874	874	855	852	881	900	900	877	876	877
1976	873	874	874	874	874	874	871	862	840	794	758	757
1977	748	738	721	717	702	697	672	664	635	611	603	600
1978	589	589	826	750	802	859	878	897	891	871	861	869
1979	871	874	874	871	853	863	878	896	862	828	819	816
1980	822	825	833	850	849	865	881	893	888	873	866	865
1981	864	865	873	860	868	865	875	872	851	806	762	762
1982	770	849	849	859	862	859	884	900	900	889	886	887
1983	873	862	858	853	849	849	877	900	900	900	899	887
1984	874	860	849	869	869	871	885	894	878	840	830	832
1985	836	850	860	866	874	871	886	872	849	804	754	736
1986	727	723	730	766	849	849	871	875	871	842	831	842
1987	844	850	848	847	858	867	855	845	817	756	716	711
1988	699	702	741	768	770	770	769	758	734	713	701	698
1989	692	710	721	728	731	844	869	860	843	796	780	777
1990	788	789	774	787	795	821	808	809	783	727	713	705
1991	686	678	659	658	644	699	722	736	720	698	693	692
1992	688	684	685	688	720	750	765	754	729	704	693	687
1993	679	673	692	759	812	861	894	900	900	881	876	875
1994	874	874	874	871	862	874	872	866	845	802	754	749

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	42	7	0	0	20	24	24
1923	32	9	3	22	61	95	92
1924	126	139	150	172	192	201	207
1925	83	64	57	75	107	118	119
1926	43	13	26	47	90	103	121
1927	37	10	0	0	35	46	49
1928	51	22	37	57	111	163	170
1929	154	151	148	155	173	182	189
1930	51	29	25	44	83	121	124
1931	108	122	135	157	177	187	194
1932	123	118	94	123	147	157	164
1933	160	157	142	148	165	176	183
1934	123	130	140	163	188	198	211
1935	132	46	36	52	76	86	104
1936	40	14	3	14	54	73	77
1937	56	31	18	41	67	80	86
1938	51	18	0	0	1	4	13
1939	67	78	87	122	187	245	250
1940	51	21	17	33	71	79	91
1941	42	14	0	0	10	14	13
1942	33	18	0	0	15	18	18
1943	41	13	7	8	40	51	50
1944	32	21	5	25	65	103	109
1945	35	20	4	23	63	87	92
1946	32	13	8	30	69	112	115
1947	55	45	50	68	123	170	177
1948	117	58	29	23	56	73	79
1949	57	38	34	56	104	141	146
1950	52	19	0	14	52	80	81
1951	30	14	0	11	52	80	80
1952	38	6	0	0	0	1	13
1953	33	17	0	0	30	31	30
1954	41	17	37	53	100	147	147
1955	101	92	78	106	170	194	197
1956	36	8	0	0	27	30	28
1957	37	37	19	34	73	105	100
1958	51	21	0	0	2	6	13
1959	33	29	28	47	93	143	139
1960	47	47	41	60	100	112	118
1961	59	60	54	74	132	175	179
1962	79	57	58	73	130	156	178
1963	42	24	0	7	43	55	54
1964	26	20	16	33	74	121	147
1965	30	13	18	16	45	50	48
1966	26	6	18	38	79	128	133
1967	47	21	0	0	0	4	13
1968	34	37	33	52	98	136	139
1969	35	5	0	0	5	7	26
1970	26	31	29	43	82	113	111
1971	26	7	0	0	29	47	45
1972	26	16	14	33	74	119	118
1973	40	18	0	31	71	90	94
1974	51	17	0	0	11	12	14
1975	48	19	0	0	23	24	23
1976	26	29	38	60	106	142	143
1977	203	228	236	265	289	297	300
1978	41	22	3	9	29	39	31
1979	37	22	4	38	72	81	84
1980	35	19	7	12	27	34	35
1981	35	25	28	49	94	138	138
1982	41	16	0	0	11	14	13
1983	51	23	0	0	0	1	13
1984	29	15	6	22	60	70	68
1985	29	14	28	51	96	146	164
1986	51	29	25	29	58	69	58
1987	33	45	55	83	144	184	189
1988	130	131	142	166	187	199	202
1989	56	31	40	57	104	120	123
1990	79	92	91	117	173	187	195
1991	201	178	164	180	202	207	208
1992	150	135	146	171	196	207	213
1993	39	6	0	0	19	24	25
1994	26	28	34	55	98	146	151

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	1	4	6	6	1	1	1	20
1923	1	4	5	1	1	1	1	14
1924	1	1	1	1	1	1	1	7
1925	1	1	1	1	1	1	1	7
1926	1	3	1	1	1	1	1	9
1927	1	3	6	6	1	1	1	19
1928	1	1	1	1	1	1	1	7
1929	1	1	1	1	1	1	1	7
1930	1	1	1	1	1	1	1	7
1931	1	1	1	1	1	1	1	7
1932	1	1	1	1	1	1	1	7
1933	1	1	1	1	1	1	1	7
1934	1	1	1	1	1	1	1	7
1935	1	1	1	1	1	1	1	7
1936	1	3	5	3	1	1	1	15
1937	1	1	2	1	1	1	1	8
1938	1	2	6	6	5	5	3	28
1939	1	1	1	1	1	1	1	7
1940	1	1	2	1	1	1	1	8
1941	1	3	6	6	3	3	3	25
1942	1	2	6	6	2	2	2	21
1943	1	3	4	4	1	1	1	15
1944	1	1	4	1	1	1	1	10
1945	1	1	5	1	1	1	1	11
1946	1	3	4	1	1	1	1	12
1947	1	1	1	1	1	1	1	7
1948	1	1	1	1	1	1	1	7
1949	1	1	1	1	1	1	1	7
1950	1	2	6	3	1	1	1	15
1951	1	3	6	3	1	1	1	16
1952	1	4	6	6	6	5	3	31
1953	1	2	6	6	1	1	1	18
1954	1	2	1	1	1	1	1	8
1955	1	1	1	1	1	1	1	7
1956	1	4	6	6	1	1	1	20
1957	1	1	2	1	1	1	1	8
1958	1	1	6	6	5	4	3	26
1959	1	1	1	1	1	1	1	7
1960	1	1	1	1	1	1	1	7
1961	1	1	1	1	1	1	1	7
1962	1	1	1	1	1	1	1	7
1963	1	1	6	4	1	1	1	15
1964	1	1	2	1	1	1	1	8
1965	1	3	2	2	1	1	1	11
1966	1	4	2	1	1	1	1	11
1967	1	1	6	6	6	5	3	28
1968	1	1	1	1	1	1	1	7
1969	1	4	6	6	4	4	1	26
1970	1	1	1	1	1	1	1	7
1971	1	4	6	6	1	1	1	20
1972	1	2	3	1	1	1	1	10
1973	1	2	6	1	1	1	1	13
1974	1	2	6	6	3	3	3	24
1975	1	2	6	6	1	1	1	18
1976	1	1	1	1	1	1	1	7
1977	1	1	1	1	1	1	1	7
1978	1	1	5	4	1	1	1	14
1979	1	1	5	1	1	1	1	11
1980	1	2	4	3	1	1	1	13
1981	1	1	1	1	1	1	1	7
1982	1	2	6	6	3	3	3	24
1983	1	1	6	6	6	5	3	28
1984	1	2	4	1	1	1	1	11
1985	1	3	1	1	1	1	1	9
1986	1	1	1	1	1	1	1	7
1987	1	1	1	1	1	1	1	7
1988	1	1	1	1	1	1	1	7
1989	1	1	1	1	1	1	1	7
1990	1	1	1	1	1	1	1	7
1991	1	1	1	1	1	1	1	7
1992	1	1	1	1	1	1	1	7
1993	1	4	6	6	2	1	1	21
1994	1	1	1	1	1	1	1	7

73 - year Average: 12

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	8	35	7	0	-20	-4	0
1923	9	23	6	-19	-39	-34	3
1924	-10	-13	-11	-22	-20	-9	-6
1925	28	19	7	-18	-32	-11	-1
1926	20	30	-13	-21	-43	-13	-18
1927	14	27	10	0	-35	-11	-3
1928	-22	29	-15	-20	-54	-52	-7
1929	17	3	3	-7	-18	-9	-7
1930	32	22	4	-19	-39	-38	-3
1931	17	-14	-13	-22	-20	-10	-7
1932	33	5	24	-29	-24	-10	-7
1933	5	3	15	-6	-17	-11	-7
1934	21	-7	-10	-23	-25	-10	-13
1935	31	86	10	-16	-24	-10	-18
1936	11	26	11	-11	-40	-19	-4
1937	24	25	13	-23	-26	-13	-6
1938	0	33	18	0	-1	-3	-9
1939	-4	-11	-9	-35	-65	-58	-5
1940	38	30	4	-16	-38	-8	-12
1941	9	28	14	0	-10	-4	1
1942	17	15	18	0	-15	-3	0
1943	3	28	6	-1	-32	-11	1
1944	11	11	16	-20	-40	-38	-6
1945	3	15	16	-19	-40	-24	-5
1946	0	19	5	-22	-39	-43	-3
1947	22	10	-5	-18	-55	-47	-7
1948	20	59	29	6	-33	-17	-6
1949	20	19	4	-22	-48	-37	-5
1950	30	33	19	-14	-38	-28	-1
1951	12	16	14	-11	-41	-28	0
1952	10	32	6	0	0	-1	-12
1953	0	16	17	0	-30	-1	1
1954	2	24	-20	-16	-47	-47	0
1955	13	9	14	-28	-64	-24	-3
1956	15	28	8	0	-27	-3	4
1957	10	0	18	-15	-39	-32	5
1958	0	30	21	0	-2	-4	-7
1959	15	4	3	-21	-46	-50	4
1960	40	0	6	-19	-40	-12	-6
1961	18	-1	6	-20	-58	-43	-4
1962	34	22	-1	-15	-57	-26	-22
1963	-9	18	24	-7	-36	-12	1
1964	0	6	4	-17	-41	-47	-26
1965	7	17	-5	2	-29	-5	2
1966	4	20	-12	-20	-41	-49	-5
1967	-7	26	21	0	0	-4	-9
1968	5	-3	4	-19	-46	-38	-3
1969	16	30	5	0	-5	-2	-19
1970	25	-5	2	-14	-39	-31	2
1971	0	19	7	0	-29	-18	2
1972	7	10	2	-19	-41	-45	1
1973	11	22	18	-31	-40	-19	-4
1974	-15	34	17	0	-11	-1	-2
1975	-3	29	19	0	-23	-1	1
1976	0	-3	-9	-22	-46	-36	-1
1977	-5	-25	-8	-29	-24	-8	-3
1978	57	19	19	-6	-20	-10	8
1979	10	15	18	-34	-34	-9	-3
1980	16	16	12	-5	-15	-7	-1
1981	-3	10	-3	-21	-45	-44	0
1982	-3	25	16	0	-11	-3	1
1983	0	28	23	0	0	-1	-12
1984	2	14	9	-16	-38	-10	2
1985	-3	15	-14	-23	-45	-50	-18
1986	0	22	4	-4	-29	-11	11
1987	9	-12	-10	-28	-61	-40	-5
1988	0	-1	-11	-24	-21	-12	-3
1989	113	25	-9	-17	-47	-16	-3
1990	26	-13	1	-26	-56	-14	-8
1991	55	23	14	-16	-22	-5	-1
1992	30	15	-11	-25	-25	-11	-6
1993	49	33	6	0	-19	-5	-1
1994	12	-2	-6	-21	-43	-48	-5

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	6	6	2	5	6	37		740
1923	6	6	6	2	1	1	6	28	392
1924	4	3	3	1	2	4	4	21	147
1925	6	6	6	2	1	3	5	29	203
1926	6	6	3	1	1	3	2	22	198
1927	6	6	6	6	1	3	5	33	627
1928	1	6	3	2	1	1	4	18	126
1929	6	6	6	4	2	4	4	32	224
1930	6	6	6	2	1	1	5	27	189
1931	6	3	3	1	2	4	4	23	161
1932	6	6	6	1	1	4	4	28	196
1933	6	6	6	4	2	3	4	31	217
1934	6	4	4	1	1	4	3	23	161
1935	6	6	6	2	1	4	2	27	189
1936	6	6	6	3	1	2	5	29	435
1937	6	6	6	1	1	3	4	27	216
1938	6	6	6	6	5	5	4	38	1064
1939	5	3	4	1	1	1	5	20	140
1940	6	6	6	2	1	4	3	28	224
1941	6	6	6	6	4	5	6	39	975
1942	6	6	6	6	3	5	6	38	798
1943	6	6	6	5	1	3	6	33	495
1944	6	6	6	2	1	1	4	26	260
1945	6	6	6	2	1	1	5	27	297
1946	6	6	6	1	1	1	5	26	312
1947	6	6	5	2	1	1	4	25	175
1948	6	6	6	6	1	2	4	31	217
1949	6	6	6	1	1	1	5	26	182
1950	6	6	6	3	1	1	5	28	420
1951	6	6	6	3	1	1	6	29	464
1952	6	6	6	6	6	5	3	38	1178
1953	6	6	6	6	1	5	6	36	648
1954	6	6	2	2	1	1	6	24	192
1955	6	6	6	1	1	1	5	26	182
1956	6	6	6	6	1	5	6	36	720
1957	6	6	6	3	1	1	6	29	232
1958	6	6	6	6	5	5	4	38	988
1959	6	6	6	1	1	1	6	27	189
1960	6	6	6	2	1	3	4	28	196
1961	6	5	6	2	1	1	5	26	182
1962	6	6	5	3	1	1	1	23	161
1963	4	6	6	4	1	3	6	30	450
1964	6	6	6	2	1	1	1	23	184
1965	6	6	5	6	1	5	6	35	385
1966	6	6	3	2	1	1	5	24	264
1967	4	6	6	6	6	5	4	37	1036
1968	6	5	6	2	1	1	5	26	182
1969	6	6	6	6	5	5	2	36	936
1970	6	5	6	3	1	1	6	28	196
1971	6	6	6	6	1	2	6	33	660
1972	6	6	6	2	1	1	6	28	280
1973	6	6	6	1	1	2	5	27	351
1974	3	6	6	6	3	5	5	34	816
1975	5	6	6	6	1	5	6	35	630
1976	6	5	4	1	1	1	5	23	161
1977	5	1	4	1	1	4	5	21	147
1978	6	6	6	4	2	4	6	34	476
1979	6	6	6	1	1	4	5	29	319
1980	6	6	6	5	3	4	5	35	455
1981	5	6	5	1	1	1	6	25	175
1982	5	6	6	6	3	5	6	37	888
1983	6	6	6	6	6	5	3	38	1064
1984	6	6	6	2	1	4	6	31	341
1985	5	6	3	1	1	1	2	19	171
1986	6	6	6	5	1	3	6	33	231
1987	6	3	4	1	1	1	5	21	147
1988	6	5	3	1	1	3	5	24	168
1989	6	6	4	2	1	2	5	26	182
1990	6	3	6	1	1	3	4	24	168
1991	6	6	6	2	1	5	5	31	217
1992	6	6	3	1	1	3	4	24	168
1993	6	6	6	6	2	5	5	36	756
1994	6	5	4	1	1	1	5	23	161

Largemouth Bass Reservoir Habitat Index

73 - year Average: 29 384.6
1929 - '34 Average: 191.3

A2-152
C-032492
C—032492

STUDY: 1995C06F-SWRCB-469 DWRSIM: reckc818-f, 17 Jun 97
CP # 8, FOLSOM LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-469/8/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 466'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Scor... le:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	414	409	414	414	424	428	443	466	466	463	449	434	38	23	0	0	3	17	32	1	1	6	6	5	2	1	22	4	15	23	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1923	425	423	424	424	419	420	449	466	451	431	424	422	46	17	0	15	35	42	44	1	2	6	2	1	1	1	14	1	29	17	-15	-20	-7	-2	6	6	6	3	2	4	5	32	448
1924	416	408	398	386	384	365	367	366	334	334	337	334	101	99	100	132	132	129	132	1	1	1	1	1	1	1	7	-19	2	-1	-32	0	3	-3	2	6	5	1	6	6	5	31	217
1925	349	383	380	390	424	437	449	466	449	433	421	417	29	17	0	17	33	45	49	1	2	6	2	1	1	1	14	13	12	17	-17	-16	-12	-4	6	6	6	2	2	3	5	30	420
1926	413	406	401	392	412	413	444	442	416	373	335	348	53	22	24	50	93	131	118	1	1	1	1	1	1	1	7	1	31	-2	-26	-43	-38	13	6	6	5	1	1	1	6	26	182
1927	356	398	419	424	424	437	449	466	461	456	449	434	29	17	0	5	10	17	32	1	2	6	4	3	2	1	19	13	12	17	-5	-5	-7	-15	6	6	6	5	5	4	3	35	665
1928	425	424	424	424	424	437	449	453	442	417	409	410	29	17	13	24	49	57	56	1	2	3	1	1	1	1	10	13	12	4	-11	-25	-8	1	6	6	6	3	1	4	6	32	320
1929	403	397	392	381	379	378	391	396	381	335	347	351	88	75	70	85	131	119	115	1	1	1	1	1	1	1	7	-1	13	5	-15	-46	12	4	5	6	6	3	1	6	6	33	231
1930	334	334	364	406	421	437	443	442	417	365	351	350	29	23	24	49	81	115	116	1	1	1	1	1	1	1	7	16	6	-1	-25	-32	-34	-1	6	6	5	1	1	1	5	25	175
1931	337	351	363	378	386	400	394	389	334	334	335	334	66	72	77	132	132	131	132	1	1	1	1	1	1	1	7	14	-6	-5	-55	0	1	-1	6	4	5	1	6	6	5	33	231
1932	334	334	380	402	424	424	432	450	435	392	368	372	42	34	16	31	74	98	94	1	1	2	1	1	1	1	8	0	8	18	-15	-43	-24	4	6	6	6	3	1	1	6	29	232
1933	345	334	355	366	369	382	344	371	338	334	352	347	84	122	95	128	132	114	119	1	1	1	1	1	1	1	7	13	-38	27	-33	-4	18	-5	6	1	6	1	5	6	5	30	210
1934	335	334	375	402	420	426	418	413	335	324	313	327	40	48	53	131	142	153	139	1	1	1	1	1	1	1	7	6	-8	-5	-78	-11	-11	14	6	4	5	1	3	3	6	28	196
1935	334	361	378	402	415	417	449	453	452	433	419	414	49	17	13	14	33	47	52	1	2	3	3	1	1	1	12	2	32	4	-1	-19	-14	-5	6	6	6	5	2	3	5	33	396
1936	410	406	404	424	424	437	449	461	455	448	441	434	29	17	5	11	18	25	32	1	2	4	3	2	1	1	14	13	12	12	-6	-7	-7	-7	6	6	6	4	4	4	4	34	476
1937	425	417	411	404	424	437	449	466	454	441	433	430	29	17	0	12	25	33	36	1	2	6	3	1	1	1	15	13	12	17	-12	-13	-8	-3	6	6	6	3	3	4	5	33	495
1938	422	419	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1939	426	420	415	409	402	409	415	418	390	334	334	335	57	51	48	76	132	132	131	1	1	1	1	1	1	1	7	7	6	3	-28	-56	0	1	6	6	6	1	1	6	6	32	224
1940	334	334	334	420	424	437	449	461	448	431	424	425	29	17	5	18	35	42	41	1	2	4	2	1	1	1	12	13	12	12	-13	-17	-7	1	6	6	6	3	2	4	6	33	396
1941	420	416	424	424	424	437	449	466	458	455	449	434	29	17	0	8	11	17	32	1	2	6	4	3	2	1	19	13	12	17	-8	-3	-6	-15	6	6	6	4	5	4	3	34	646
1942	426	422	424	424	424	430	449	466	466	463	449	434	38	17	0	0	3	17	32	1	2	6	6	5	2	1	23	6	19	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1943	425	424	423	422	422	434	449	459	451	447	442	434	32	17	7	15	19	24	32	1	2	4	2	2	1	1	13	12	15	10	-8	-4	-5	-8	6	6	6	4	5	5	4	36	468
1944	425	419	413	405	407	419	420	433	413	392	377	370	47	46	33	53	74	89	96	1	1	1	1	1	1	1	7	12	1	13	-20	-21	-15	-7	6	6	6	2	1	3	4	28	196
1945	383	392	412	424	424	437	449	466	455	444	438	434	29	17	0	11	22	28	32	1	2	6	3	1	1	1	15	13	12	17	-11	-11	-6	-4	6	6	6	3	3	4	5	33	495
1946	427	424	424	424	423	437	449	466	451	438	431	430	29	17	0	15	28	35	36	1	2	6	2	1	1	1	14	14	12	17	-15	-13	-7	-1	6	6	6	3	3	4	5	33	462
1947	421	422	421	412	414	431	440	443	416	385	357	360	35	26	23	50	81	109	106	1	1	1	1	1	1	1	7	17	9	3	-27	-31	-28	3	6	6	6	1	1	1	6	27	189
1948	377	389	395	415	411	407	442	463	459	453	448	434	59	24	3	7	13	18	32	1	1	5	4	3	2	1	17	-4	35	21	-4	-6	-5	-14	5	6	6	5	4	5	3	34	578
1949	425	419	416	406	400	422	443	459	442	426	417	416	44	23	7	24	40	49	50	1	1	4	1	1	1	1	10	22	21	16	-17	-16	-9	-1	6	6	6	2	2	4	5	31	310
1950	410	404	395	421	424	437	449	466	455	443	439	434	29	17	0	11	23	27	32	1	2	6	3	1	1	1	15	13	12	17	-11	-12	-4	-5	6	6	6	3	3	5	5	34	510
1951	428	393	388	388	388	426	449	466	450	436	430	431	40	17	0	16	30	36	35	1	2	6	2	1	1	1	14	38	23	17	-16	-14	-6	1	6	6	6	2	3	4	6	33	462
1952	425	424	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1953	428	423	424	424	424	430	446	458	464	463	449	434	36	20	8	2	3	17	32	1	1	4	5	5	2	1	19	6	16	12	6	-1	-14	-15	6	6	6	6	5	3	3	35	665
1954	425	423	421	422	424	437	449	452	441	422	417	420	29	17	14	25	44	49	46	1	2	3	1	1	1	1	10	13	12	3	-11	-19	-5	3	6	6	6	3	2	5	6	34	340
1955	414	408	411	417	418	413	424	434	417	394	379	376	53	42	32	49	72	87	90	1	1	1	1	1	1	1	7	-5	11	10	-17	-23	-15	-3	5	6	6	2	1	3	5	28	196
1956	361	364	420	402	406	425	441	466	466	463	449	434	41	25	0	0	3	17	32	1	1	6	6	5	2	1	22	19	16	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1957	428	422	417	412	424	437	433	459	448	436	429	428	29	33	7	18	30	37	38	1	1	4	2	1	1	1	11	13	-4	26	-11	-12	-7	-1	6	5	6	3	3	4	5	32	352
1958	421	416	417	422	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1959	425	419	412	417	424	425	433	433	411	388	376	385	41	33	33	55	78	90	81	1	1	1	1	1	1	1	7	1	8	0	-22	-23	-12	9	6	6	6	1	1	3	6	29	203
1960	385	380	378	387	424	437	448	446	427	404	393	398	29	18	20	39	62	73	68	1	2	1	1	1	1	1	8	13	11	-2	-19	-23	-11	5	6	6	5	2	1	3	6	29	232
1961	394	391	390	383	389	398	408	421	405	387	377	381	68	58	45	61	79	89	85	1	1	1	1	1	1	1	7	9	10	13	-16	-18	-10	4	6	6	6	2	2	4	6	32	224
1962	382	384	391	392	424	431	447	454	447	427	419	417	35	19	12	19	39	47	49	1	2	3	2	1	1	1	11	7	16	7	-7	-20	-8	-2	6	6	6	4	2	4	5	33	363
1963	441	424	424	424	419	430	449	466	459	454	449	434	36	17	0	7	12	17	32	1	2	6	4	3	2	1	19	11	19	17	-7	-5	-5	-15	6	6	6	4	5	5	3	35	665
1964	427	424	424	424	418	414	425	436	417	382	352	335	52	41	28	49	84	114	131	1	1	1	1	1	1	1	7	-4	11	13	-21	-35	-30	-17	5	6	6	1	1	1	2	22	154
1965	335	367	393	392	395	414	449	464	454	448	445	434	52	17	2	12	18	21	32	1	2	5	3	2	1	1	15	19	35	15	-10	-6	-3	-11	6	6	6	4	4	5	3	34	510
1966	426	424	424	424	422	430	448	447	427	404	393	394	38	18	19	39	62	73	72	1	2	2	1	1	1	1	9	8	18	-1	-20	-23	-11	1	6	6	5	2	1	3	6	29	261
1967	394	402	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1968	427	424	423	424	424	437	439	441	419	395	393	396	29	27	25	47	71	73	70	1	1	1	1	1	1	1	7	13	2	2	-22	-24	-2	3	6	6	6	1	1	5	6	31	217
1969	394	399	408	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1970	427	424	423	393	396	426	431	440	429	413	412	415	40	35	26	37	53	54	51	1	1	1	1	1	1	1	7	30	5	9	-11	-16	-1	3	6	6	6	3	2	5	6	34	238
1971	409	419	424	424	423	437	447	461	461	460	449	434	29	19	5	5	16	17	32	1	2	4	4	4	2	1	18	14	10	14	0	-1	-11	-15	6	6	6	6	5	3	3	35	630
1972	425	422	424	424	424	437	444	451	432	410	403	403	29	22	15	34	56	63	63	1	1	2	1	1	1	1	8	13	7	7	-19	-22	-7	0	6	6	6	2	1	4	6	31	248
1973	402	407	422	424	424	437	449	466	451	434	428	429	29	17	0	15	32	38	37	1	2	6	2	1	1	1	14	13	12	17	-15	-17	-6	1	6	6	6	3	2	4	6	33	462
1974	422	423	422	409	417	433	449	466	463	463	449	434	33	17	0	3	3	17	32	1	2	6	5	5	2	1	22	16	16	17	-3	0	-14	-15	6	6	6	5	6	3	3	35	770
1975	426	419	417	415	424	437	441	466	466	463	449	434	29	25	0	0	3	17	32	1	1	6	6	5	2	1	22	13	4	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1976	431	423	419	410	402	392	397	401	366	334	340	341	74	69	65	100	132	126	125	1	1	1	1	1	1	1	7	-10	6	4	-35	-32	6	1	4	6	6	1	1	6	6	30	210
1977	335	334	330	325	321	323	334	341	334	319	305	291	143	132	125	132	147	161	175	1	1	1	1	1	1	1	7	2	11	7	-7	-15	-14	-14	6	6	6	4	3	3	3	31	217
1978	286	304	358	424	424	437	449	466	459	453	444	434	29	17	0	7	13	22	32	1	2	6	4	3	1	1	18	13	12	17	-7	-6	-9	-10	6	6	6	4	4	4	4	34	612
1979	423	417	411	418	424	437	447	466	449	433	426	425	29	19	0	17	33	40	41	1	2	6	2	1	1	1	14	13	10	19	-17	-16	-7	-1	6	6	6	2	2	4	5	31	434
1980	421	419	420	405	399	430	449	464	453	453	449	434	36	17	2	13	13	17	32	1	2	5	3	3	2	1	17	31	19	15	-11	0	-4	-15	6	6	6	3	6	5	3	35	595
1981	425	419	415	413	412	422	433	435	411	390	384	385	44	33	31	55	76	82	81	1	1	1	1	1	1	1	7	10	11	2	-24	-21	-6	1	6	6	6	1	1	4	6	30	210
1982	395	420	392	396	388	424	449	466	466	463	449	434	42	17	0	0	3	17	32	1	2	6	6	5	2	1	23	36	25	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1983	438	415	417	418	418	433	449	466	466	463	449	434	33	17	0	0	3	17	32	1	2	6	6	5	2	1	23	15	18	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1984	435	392	388	388	392	424	441	464	453	440	435	434	42	25	2	13	26	31	32	1	1	5	3	1	1	1	13	32	17	23	-11	-13	-5	-1	6	6	6	3	3	5	5	34	442
1985	427	424	424	420	422	428	443	442	413	373	335	336	38	23	24	53	93	131	130	1	1	1	1	1	1	1	7	6	15	-1	-29	-40	-38	1	6	6	5	1	1	1	6	26	182
1986	335	366	396	424	396	424	449	464	457	452	448	434	42	17	2	9	14	18	32	1	2	5	4	3	2	1	18	28	25	15	-7	-5	-4	-14	6	6	6	4	5	5	3	35	630
1987	427	420	413	405	404	410	416	418	386	336	323	334	56	50	48	80	130	143	132	1	1	1	1	1	1	1	7	6	6	2	-32	-50	-13	11	6	6	6	1	1	3	6	29	203
1988	334	334	369	396	387	385	393	390	352	325	309	374	81	73	76	114	141	157	92	1	1	1	1	1	1	1	7	-2	8	-3	-38	-27	-16	65	5	6	5	1	1	2	6	26	182
1989	358	378	394	403	401	437	449	452	433	410	404	408	29	17	14	33	58	62	58	1	2	3	1	1	1	1	10	36	12	3	-19	-23	-6	4	6	6	6	2	1	4	6	31	310
1990	405	404	400	400	398	410	413	414	379	334	343	344	56	53	52	87	132	123	122	1	1	1	1	1	1	1	7	12	3	1	-35	-45	9	1	6	6	6	1	1	6	6	32	224
1991	334	334	335	332	332	383	407	425	420	415	411	409	83	59	41	46	61	55	57	1	1	1	1	1	1	1	7	51	24	18	-5	-5	-4	-2	6	6	6	5	5	5	5	38	266
1992	402	390	381	366	388	403	411	406	368	334	323	316	63	55	60	98	132	143	150	1	1	1	1	1	1	1	7	15	8	-5	-38	-34	-11	-7	6	6	5	1	1	3	4	26	182
1993	316	315	357	424	427	434	449	466	466	455	449	434	32	17	0	0	11	17	32	1	2	6	6	3	2	1	21	7	15	17	0	-11	-6	-15	6	6	6	6	3	4	3	34	714
1994	423	413	407	395	390	388	396	401	376	334	334	332	78	70	65	90	132	132	134	1	1	1	1	1	1	1	7	-2	8	5	-25	-42	0	-2	5	6	6	1	1	6	5	30	210

73 - year Average: 13

73 - year Average: 32
1929 - '34 Average: 212.5

Prepared by Kevin Long

Study 469 - Reservoirs Elevations Fish Habitat Analysis.xls - Folsom Lake

11/17/1997

A2-153

C-032493

C-032493

C-032494

A2-154

STUDY. 1995C[illegible]VRCB-469 DWRSIM: recirc818-f, 17 Jun 97
CP # 10, NEW MELONES RESERVOIR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-469/10/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 1088'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevatio[illegible]g Table:
If [DFMRE] <= 0', t[illegible]lse
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	940	943	948	954	968	978	973	990	1012	1004	991	981	120	110	115	98	76	84	97
1923	980	984	994	1002	1008	1007	1004	1008	1008	999	984	975	80	81	84	80	80	89	104
1924	975	977	980	984	988	988	979	967	954	942	930	926	100	100	109	121	134	146	158
1925	925	928	931	935	953	964	966	982	986	977	963	956	135	124	122	106	102	111	125
1926	955	956	959	961	971	975	975	965	951	936	922	912	117	113	113	123	137	152	166
1927	912	917	927	934	953	964	972	983	986	975	962	956	135	124	116	105	102	113	126
1928	957	963	968	972	980	1001	999	1001	993	978	964	956	108	87	89	87	95	110	124
1929	955	958	961	963	967	968	964	960	949	937	925	917	121	120	124	128	139	151	163
1930	918	920	923	926	932	940	940	935	931	916	895	882	156	148	148	153	157	172	193
1931	883	888	892	895	900	903	895	882	864	846	827	818	188	185	193	206	224	242	261
1932	817	820	831	840	863	874	874	910	929	922	904	892	225	214	214	178	159	166	184
1933	893	895	901	906	910	913	905	901	898	877	855	843	178	175	183	187	190	211	233
1934	844	848	854	860	869	879	870	856	836	817	790	772	219	209	218	232	252	271	298
1935	769	771	778	792	803	815	833	876	897	882	862	850	285	273	255	212	191	206	226
1936	850	854	859	876	913	927	939	962	970	959	946	939	175	161	149	126	118	129	142
1937	939	942	945	950	963	977	978	1002	1006	997	986	978	125	111	110	86	82	91	102
1938	979	982	994	1003	1022	1043	1052	1078	1088	1084	1075	1069	66	45	36	10	0'	4	13
1939	1050	1050	1050	1050	1050	1052	1050	1038	1025	1012	999	992	38	36	38	50	63	76	89
1940	988	989	992	1004	1018	1035	1044	1055	1046	1033	1021	1014	70	53	44	33	42	55	67
1941	1013	1015	1020	1027	1037	1047	1043	1058	1064	1058	1047	1040	51	41	45	30	24	30	41
1942	1038	1039	1045	1050	1050	1055	1055	1067	1081	1078	1067	1062	38	33	33	21	7	10	21
1943	1050	1050	1050	1050	1050	1055	1061	1068	1067	1059	1048	1041	38	33	27	20	21	29	40
1944	1039	1040	1042	1043	1046	1050	1045	1041	1034	1021	1008	1000	42	38	43	47	54	67	80
1945	998	1003	1007	1012	1026	1035	1035	1048	1054	1045	1033	1026	62	53	53	40	34	43	55
1946	1025	1030	1040	1048	1050	1054	1052	1060	1057	1046	1034	1027	38	34	36	28	31	42	54
1947	1026	1029	1031	1033	1037	1040	1028	1019	1010	999	988	981	51	48	60	69	78	89	100
1948	979	981	983	985	986	990	989	991	999	990	978	971	102	98	99	97	89	98	110
1949	969	972	975	978	982	988	981	985	979	966	953	946	106	100	107	103	109	122	135
1950	944	945	947	955	965	974	973	986	991	979	967	959	123	114	115	102	97	109	121
1951	958	994	1034	1046	1050	1055	1048	1041	1033	1020	1007	999	38	33	40	47	55	68	81
1952	998	1001	1008	1022	1033	1045	1048	1077	1088	1086	1076	1070	55	43	40	11	0	2	12
1953	1050	1050	1050	1050	1050	1054	1046	1036	1037	1028	1016	1008	38	34	42	52	51	60	72
1954	1005	1007	1010	1013	1015	1023	1025	1028	1018	1005	992	982	73	65	63	60	70	83	96
1955	979	982	988	992	993	993	985	979	975	962	948	940	95	95	103	109	113	126	140
1956	940	943	976	1006	1020	1029	1020	1037	1050	1043	1031	1024	68	59	68	51	38	45	57
1957	1022	1024	1027	1029	1034	1041	1029	1026	1024	1011	999	991	54	47	59	62	64	77	89
1958	985	988	991	998	1006	1021	1028	1058	1072	1068	1056	1049	82	67	60	30	16	22	32
1959	1048	1050	1050	1050	1050	1053	1046	1030	1018	1005	992	983	38	35	42	58	70	83	96
1960	979	981	984	987	994	999	996	991	980	966	953	943	94	89	92	97	108	122	135
1961	939	942	946	949	951	954	950	943	931	918	899	889	137	134	138	145	157	170	189
1962	889	892	898	899	916	924	926	934	937	927	909	896	172	164	162	154	151	161	179
1963	898	901	907	920	939	945	946	976	983	975	962	956	149	143	142	112	105	113	126
1964	956	961	965	971	974	976	969	961	953	940	927	916	114	112	119	127	135	148	161
1965	915	921	952	979	994	1002	1010	1011	1016	1008	997	990	94	86	78	77	72	80	91
1966	989	994	999	1004	1009	1015	1004	1002	991	977	964	954	79	73	84	86	97	111	124
1967	954	957	969	984	994	1005	1007	1030	1058	1062	1052	1046	94	83	81	58	30	26	36
1968	1044	1046	1048	1050	1050	1054	1042	1033	1022	1008	994	984	38	34	46	55	66	80	94
1969	982	987	990	1020	1041	1055	1066	1088	1088	1084	1074	1068	47	33	22	0	0	4	14
1970	1050	1050	1050	1050	1050	1055	1047	1041	1039	1025	1012	1005	38	33	41	47	49	63	76
1971	1003	1007	1015	1022	1029	1035	1026	1021	1021	1010	997	989	59	53	62	67	67	78	91
1972	985	989	996	1002	1002	1006	992	991	981	967	953	946	86	82	96	97	107	121	135
1973	946	949	955	971	990	1002	1004	1022	1026	1016	1005	1000	98	86	84	66	62	72	83
1974	1000	1006	1016	1029	1039	1052	1056	1067	1067	1058	1046	1039	49	36	32	21	21	30	42
1975	1038	1040	1043	1047	1050	1055	1050	1049	1061	1053	1042	1034	38	33	38	39	27	35	46
1976	1033	1036	1038	1040	1043	1045	1039	1030	1019	1009	1000	994	45	43	49	58	69	79	88
1977	994	995	997	997	997	997	988	977	968	955	943	937	91	91	100	111	120	133	145
1978	936	936	940	950	963	983	993	1010	1021	1019	1010	1006	125	105	95	78	67	69	78
1979	1006	1009	1013	1021	1034	1047	1048	1057	1052	1038	1024	1017	54	41	40	31	36	50	64
1980	1018	1021	1024	1050	1050	1055	1056	1063	1070	1068	1057	1051	38	33	32	25	18	20	31
1981	1050	1050	1050	1050	1050	1053	1045	1034	1019	1005	992	984	38	35	43	54	69	83	96
1982	982	991	1006	1027	1050	1055	1071	1086	1088	1084	1075	1071	38	33	17	2	0	4	13
1983	1050	1050	1050	1050	1050	1055	1056	1070	1088	1088	1082	1075	38	33	32	18	0	0	6
1984	1050	1050	1050	1050	1050	1055	1044	1037	1033	1022	1011	1006	38	33	44	51	55	66	77
1985	1005	1010	1015	1018	1023	1029	1026	1020	1010	1000	989	984	65	59	62	68	78	88	99
1986	983	986	991	1001	1049	1055	1056	1061	1065	1055	1045	1040	39	33	32	27	23	33	43
1987	1039	1041	1044	1044	1046	1049	1044	1034	1023	1014	1006	1002	42	39	44	54	65	74	82
1988	996	998	999	1000	1002	1004	998	988	978	968	959	953	86	84	90	100	110	120	129
1989	952	952	953	954	956	968	964	960	952	940	929	924	132	120	124	128	136	148	159
1990	927	930	934	937	940	944	937	926	911	891	875	866	148	144	151	162	177	197	213
1991	865	866	871	871	871	879	874	869	853	834	817	810	217	209	214	219	235	254	271
1992	811	813	819	822	833	842	834	818	792	762	727	715	255	246	254	270	296	326	381
1993	723	737	755	789	867	941	929	934	945	935	925	921	201	147	159	154	143	153	163
1994	920	921	925	925	927	932	928	925	912	893	876	868	161	156	160	163	176	195	212

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	1	1	1	1	1	7	10	-5	17	22	-8	-13	-10	6	5	6	6	4	3	4	34	238
1923	1	1	1	1	1	1	1	7	-1	-3	4	0	-9	-15	-9	5	5	6	6	4	3	4	33	231
1924	1	1	1	1	1	1	1	7	0	-9	-12	-13	-12	-12	-4	6	4	3	3	3	3	5	27	189
1925	1	1	1	1	1	1	1	7	11	2	16	4	-9	-14	-7	6	6	6	6	4	3	4	35	245
1926	1	1	1	1	1	1	1	7	4	0	-10	-14	-15	-14	-10	6	6	4	3	3	3	4	29	203
1927	1	1	1	1	1	1	1	7	11	8	11	3	-11	-13	-6	6	6	6	6	3	3	4	34	238
1928	1	1	1	1	1	1	1	7	21	-2	2	-8	-15	-14	-8	6	5	6	4	3	3	4	31	217
1929	1	1	1	1	1	1	1	7	1	-4	-4	-11	-12	-12	-8	6	5	5	3	3	3	4	29	203
1930	1	1	1	1	1	1	1	7	8	0	-5	-4	-15	-21	-13	6	6	5	5	3	1	3	29	203
1931	1	1	1	1	1	1	1	7	3	-8	-13	-18	-18	-19	-9	6	4	3	2	2	2	4	23	161
1932	1	1	1	1	1	1	1	7	11	0	36	19	-7	-18	-12	6	6	6	6	4	2	3	33	231
1933	1	1	1	1	1	1	1	7	3	-8	-4	-3	-21	-22	-12	6	4	5	5	1	1	3	25	175
1934	1	1	1	1	1	1	1	7	10	-9	-14	-20	-19	-27	-18	6	4	3	2	2	1	2	20	140
1935	1	1	1	1	1	1	1	7	12	18	43	21	-15	-20	-12	6	6	6	6	3	2	3	32	224
1936	1	1	1	1	1	1	1	7	14	12	23	8	-11	-13	-7	6	6	6	6	3	3	4	34	238
1937	1	1	1	1	1	1	1	7	14	1	24	4	-9	-11	-8	6	6	6	6	4	3	4	35	245
1938	1	1	1	3	6	5	3	20	21	9	26	10	-4	-9	-6	6	6	6	6	5	4	4	37	740
1939	1	1	1	1	1	1	1	7	2	-2	-12	-13	-13	-13	-7	6	5	3	3	3	3	4	27	189
1940	1	1	1	1	1	1	1	7	17	9	11	-9	-13	-12	-7	6	6	6	4	3	3	4	32	224
1941	1	1	1	1	1	1	1	7	10	-4	15	6	-6	-11	-7	6	5	6	6	4	3	4	34	238
1942	1	1	1	1	4	3	1	12	5	0	12	14	-3	-11	-5	6	6	6	6	5	3	5	37	444
1943	1	1	1	1	1	1	1	7	5	6	7	-1	-8	-11	-7	6	6	6	5	4	3	4	34	238
1944	1	1	1	1	1	1	1	7	4	-5	-4	-7	-13	-13	-8	6	5	5	4	3	3	4	30	210
1945	1	1	1	1	1	1	1	7	9	0	13	6	-9	-12	-7	6	6	6	6	4	3	4	35	245
1946	1	1	1	1	1	1	1	7	4	-2	8	-3	-11	-12	-7	6	5	6	5	3	3	4	32	224
1947	1	1	1	1	1	1	1	7	3	-12	-9	-9	-11	-11	-7	6	3	4	4	3	3	4	27	189
1948	1	1	1	1	1	1	1	7	4	-1	2	8	-9	-12	-7	6	5	6	6	4	3	4	34	238
1949	1	1	1	1	1	1	1	7	6	-7	4	-6	-13	-13	-7	6	4	6	4	3	3	4	30	210
1950	1	1	1	1	1	1	1	7	9	-1	13	5	-12	-12	-8	6	5	6	6	3	3	4	33	231
1951	1	1	1	1	1	1	1	7	5	-7	-7	-8	-13	-13	-8	6	4	4	4	3	3	4	28	196
1952	1	1	1	3	6	5	3	20	12	3	29	11	-2	-10	-6	6	6	6	6	5	4	4	37	740
1953	1	1	1	1	1	1	1	7	4	-8	-10	1	-9	-12	-8	6	4	4	6	4	3	4	31	217
1954	1	1	1	1	1	1	1	7	8	2	3	-10	-13	-13	-10	6	6	6	4	3	3	4	32	224
1955	1	1	1	1	1	1	1	7	0	-8	-6	-4	-13	-14	-8	6	4	4	5	3	3	4	29	203
1956	1	1	1	1	1	1	1	7	9	-9	17	13	-7	-12	-7	6	4	6	6	4	3	4	33	231
1957	1	1	1	1	1	1	1	7	7	-12	-3	-2	-13	-12	-8	6	3	5	5	3	3	4	29	203
1958	1	1	1	1	2	1	1	8	15	7	30	14	-6	-10	-7	6	6	6	6	4	4	4	36	288
1959	1	1	1	1	1	1	1	7	3	-7	-16	-12	-13	-13	-9	6	4	2	3	3	3	4	25	175
1960	1	1	1	1	1	1	1	7	5	-3	-5	-11	-14	-13	-10	6	5	5	3	3	3	4	29	203
1961	1	1	1	1	1	1	1	7	3	-4	-7	-12	-13	-19	-10	6	5	4	3	3	2	4	27	189
1962	1	1	1	1	1	1	1	7	8	2	8	3	-10	-18	-13	6	6	6	6	4	2	3	33	231
1963	1	1	1	1	1	1	1	7	6	1	30	7	-8	-13	-6	6	6	6	6	4	3	4	35	245
1964	1	1	1	1	1	1	1	7	2	-7	-8	-8	-13	-13	-11	6	4	4	4	3	3	3	27	189
1965	1	1	1	1	1	1	1	7	8	8	1	5	-8	-11	-7	6	6	6	6	4	3	4	35	245
1966	1	1	1	1	1	1	1	7	6	-11	-2	-11	-14	-13	-10	6	3	5	3	3	3	4	27	189
1967	1	1	1	1	1	1	1	7	11	2	23	28	4	-10	-6	6	6	6	6	6	4	4	38	266
1968	1	1	1	1	1	1	1	7	4	-12	-9	-11	-14	-14	-10	6	3	4	3	3	3	4	26	182
1969	1	1	1	6	6	5	3	23	14	11	22	0	-4	-10	-8	6	6	6	6	5	4	4	37	851
1970	1	1	1	1	1	1	1	7	5	-8	-6	-2	-14	-13	-7	6	4	4	5	3	3	4	29	203
1971	1	1	1	1	1	1	1	7	6	-9	-5	0	-11	-13	-8	6	4	5	6	3	3	4	31	217
1972	1	1	1	1	1	1	1	7	4	-14	-1	-10	-14	-14	-7	6	3	5	4	3	3	4	28	196
1973	1	1	1	1	1	1	1	7	12	2	18	4	-10	-11	-5	6	6	6	6	4	3	5	36	252
1974	1	1	1	1	1	1	1	7	13	4	11	0	-9	-12	-7	6	6	6	6	4	3	4	35	245
1975	1	1	1	1	1	1	1	7	5	-5	-1	12	-8	-11	-8	6	5	5	6	4	3	4	33	231
1976	1	1	1	1	1	1	1	7	2	-6	-9	-11	-10	-9	-6	6	4	4	3	4	4	4	29	203
1977	1	1	1	1	1	1	1	7	0	-9	-11	-9	-13	-12	-6	6	4	3	4	3	3	4	27	189
1978	1	1	1	1	1	1	1	7	20	10	17	11	-2	-9	-4	6	6	6	6	5	4	5	38	266
1979	1	1	1	1	1	1	1	7	13	1	9	-5	-14	-14	-7	6	6	6	5	3	3	4	33	231
1980	1	1	1	1	2	1	1	8	5	1	7	7	-2	-11	-8	6	6	6	6	5	3	4	36	288
1981	1	1	1	1	1	1	1	7	3	-8	-11	-15	-14	-13	-8	6	4	3	3	3	3	4	26	182
1982	1	1	2	5	6	5	3	23	5	16	15	2	-4	-9	-4	6	6	6	6	5	4	5	38	874
1983	1	1	1	2	6	6	4	21	5	1	14	18	0	-6	-7	6	6	6	6	6	4	4	38	798
1984	1	1	1	1	1	1	1	7	5	-11	-7	-4	-11	-11	-5	6	3	4	5	3	3	5	29	203
1985	1	1	1	1	1	1	1	7	6	-3	-6	-10	-10	-11	-5	6	5	4	4	4	3	5	31	217
1986	1	1	1	1	1	1	1	7	6	1	5	4	-10	-10	-5	6	6	6	6	4	4	5	37	259
1987	1	1	1	1	1	1	1	7	3	-5	-10	-11	-9	-8	-4	6	5	4	3	4	4	5	31	217
1988	1	1	1	1	1	1	1	7	2	-6	-10	-10	-10	-9	-6	6	4	4	4	4	4	4	30	210
1989	1	1	1	1	1	1	1	7	12	-4	-4	-8	-12	-11	-5	6	5	5	4	3	3	5	31	217
1990	1	1	1	1	1	1	1	7	4	-7	-11	-15	-20	-16	-9	6	4	3	3	2	2	4	24	168
1991	1	1	1	1	1	1	1	7	8	-5	-5	-16	-19	-17	-7	6	5	5	2	2	2	4	26	182
1992	1	1	1	1	1	1	1	7	9	-8	-16	-26	-30	-35	-12	6	4	2	1	1	1	3	18	126
1993	1	1	1	1	1	1	1	7	54	-12	5	11	-10	-10	-4	6	3	6	6	4	4	5	34	238
1994	1	1	1	1	1	1	1	7	5	-4	-3	-13	-19	-17	-8	6	5	5	3	2	2	4	27	189

73 - year Average: 8

73 - year Average: 31 258.5

1929 - '34 Average: 185.5

STUDY: 1[illegible]F-SWRCB-469 DWRSIM. reckc818-f, 17 Jun 97
CP # 81, DON PEDRO RESERVOIR, EOP SURFACE ELEVATION (FT)
Project. /1995C06F-SWRCB-469/81/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 832'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation S[illegible]ble:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table.
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	599	581	579	600	658	690	698	724	781	778	763	752	142	134	108	51	54	69	80	1	1	1	1	1	1	1	7	34	8	26	57	-3	-15	-11	6	6	6	6	5	3	3	35	245
1923	746	745	748	760	775	784	788	792	801	794	779	770	48	44	40	31	38	53	62	1	1	1	1	1	1	1	7	9	4	4	9	-7	-15	-9	6	6	6	6	4	3	4	35	245
1924	764	761	756	755	756	754	748	742	734	722	708	700	78	84	90	98	110	124	132	1	1	1	1	1	1	1	7	-2	-6	-6	-8	-12	-14	-8	5	4	4	4	3	3	4	27	189
1925	695	695	696	700	722	739	751	762	780	771	755	744	93	81	70	52	61	77	88	1	1	1	1	1	1	1	7	17	12	11	18	-9	-16	-11	6	6	6	6	4	2	3	33	231
1926	737	734	730	729	738	742	756	768	765	749	734	725	90	76	64	67	83	98	107	1	1	1	1	1	1	1	7	4	14	12	-3	-16	-15	-9	6	6	6	5	2	3	4	32	224
1927	717	717	721	729	758	773	783	782	800	793	778	768	59	49	50	32	39	54	64	1	1	1	1	1	1	1	7	15	10	-1	18	-7	-15	-10	6	6	5	6	4	3	4	34	238
1928	762	762	762	765	773	792	801	818	818	803	788	779	40	31	14	14	29	44	53	1	1	3	3	1	1	1	11	19	9	17	0	-15	-15	-9	6	6	6	6	3	3	4	34	374
1929	772	767	763	762	766	767	767	770	778	768	759	751	65	65	62	54	64	73	81	1	1	1	1	1	1	1	7	1	0	3	8	-10	-9	-8	6	6	6	6	4	4	4	36	252
1930	747	744	741	742	747	755	756	758	772	763	753	747	77	76	74	60	69	79	85	1	1	1	1	1	1	1	7	8	1	2	14	-9	-10	-6	6	6	6	6	4	4	4	36	252
1931	745	744	743	745	748	747	739	727	714	700	687	679	85	93	105	118	132	145	153	1	1	1	1	1	1	1	7	-1	-8	-12	-13	-14	-13	-8	5	4	3	3	3	3	4	25	175
1932	675	671	683	698	738	751	752	756	772	767	752	741	81	80	76	60	65	80	91	1	1	1	1	1	1	1	7	15	1	4	16	-5	-15	-11	6	6	6	6	5	3	3	35	245
1933	734	727	721	720	727	730	726	719	736	725	708	697	102	106	113	96	107	124	135	1	1	1	1	1	1	1	7	3	-4	-7	17	-11	-17	-11	6	5	4	6	3	2	3	29	203
1934	688	686	684	687	698	707	705	698	694	676	658	647	125	127	134	138	156	174	185	1	1	1	1	1	1	1	7	9	-2	-7	-4	-18	-18	-11	6	5	4	5	2	2	3	27	189
1935	640	639	641	655	682	697	723	734	764	751	734	721	135	109	98	68	81	98	111	1	1	1	1	1	1	1	7	15	26	11	30	-13	-17	-13	6	6	6	6	3	2	3	32	224
1936	713	711	705	711	753	770	779	796	814	804	789	778	62	53	36	18	28	43	54	1	1	1	2	1	1	1	8	17	9	17	18	-10	-15	-11	6	6	6	6	4	3	3	34	272
1937	772	767	762	765	793	800	802	815	832	819	805	795	32	30	17	0	13	27	37	1	1	2	6	3	1	1	15	7	2	13	17	-13	-14	-10	6	6	6	6	3	3	4	34	510
1938	789	784	800	800	800	800	800	804	831	832	819	808	32	32	28	1	0	13	24	1	1	1	5	6	3	1	18	0	0	4	27	1	-13	-11	6	6	6	6	6	3	3	36	648
1939	800	799	799	800	800	800	802	804	799	787	774	766	32	30	28	33	45	58	66	1	1	1	1	1	1	1	7	0	2	2	-5	-12	-13	-8	6	6	6	5	3	3	4	33	231
1940	764	763	761	773	800	800	802	816	829	814	799	789	32	30	16	3	18	33	43	1	1	2	5	2	1	1	13	0	2	14	13	-15	-15	-10	6	6	6	6	3	3	4	34	442
1941	783	781	783	798	800	800	800	812	832	831	817	808	32	32	20	0	1	15	24	1	1	1	6	5	2	1	17	0	0	12	20	-1	-14	-9	6	6	6	6	5	3	4	36	612
1942	800	798	800	800	800	800	802	807	831	832	818	808	32	30	25	1	0	14	24	1	1	1	5	6	3	1	18	0	2	5	24	1	-14	-10	6	6	6	6	6	3	4	37	666
1943	800	800	800	800	800	800	802	821	832	824	810	799	32	30	11	0	8	22	33	1	1	3	6	4	1	1	17	0	2	19	11	-8	-14	-11	6	6	6	6	4	3	3	34	578
1944	794	792	788	787	793	800	801	808	814	802	787	777	32	31	24	18	30	45	55	1	1	1	2	1	1	1	8	7	1	7	6	-12	-15	-10	6	6	6	6	3	3	4	34	272
1945	772	773	776	781	800	800	800	802	807	831	825	810	32	30	25	1	7	22	33	1	1	1	5	4	1	1	14	0	2	5	24	-6	-15	-11	6	6	6	6	4	3	3	34	476
1946	796	797	800	800	800	800	802	806	812	796	780	769	32	30	26	20	36	52	63	1	1	1	1	1	1	1	7	0	2	4	6	-16	-16	-11	6	6	6	6	2	2	3	31	217
1947	763	763	765	768	776	781	778	782	776	764	750	742	51	54	50	56	68	82	90	1	1	1	1	1	1	1	7	5	-3	4	-6	-12	-14	-8	6	5	6	4	3	3	4	31	217
1948	739	738	737	736	739	740	735	743	769	758	740	730	92	97	89	63	74	92	102	1	1	1	1	1	1	1	7	1	-5	8	26	-11	-18	-10	6	5	6	6	3	2	4	32	224
1949	723	717	711	710	717	728	735	744	752	734	714	702	104	97	88	80	98	118	130	1	1	1	1	1	1	1	7	11	7	9	8	-18	-20	-12	6	6	6	6	2	2	3	31	217
1950	693	687	681	686	706	718	727	737	754	738	720	707	114	105	95	78	94	112	125	1	1	1	1	1	1	1	7	12	9	10	17	-16	-18	-13	6	6	6	6	2	2	3	31	217
1951	700	749	797	800	800	800	798	794	798	783	769	759	32	34	38	34	49	63	73	1	1	1	1	1	1	1	7	0	-2	-4	4	-15	-14	-10	6	5	5	6	3	3	4	32	224
1952	752	750	757	782	800	800	800	800	820	832	819	808	32	32	12	0	0	13	24	1	1	3	6	6	3	1	21	0	0	20	12	0	-13	-11	6	6	6	6	6	3	3	36	756
1953	800	795	793	800	800	800	802	804	814	810	796	787	32	30	28	18	22	36	45	1	1	1	2	1	1	1	8	0	2	2	10	-4	-14	-9	6	6	6	6	5	3	4	36	288
1954	782	776	775	776	785	797	802	819	820	805	789	780	35	30	13	12	27	43	52	1	1	3	3	1	1	1	11	12	5	17	1	-15	-16	-9	6	6	6	6	3	2	4	33	363
1955	774	770	768	774	780	784	780	783	790	777	765	758	48	52	49	42	55	67	74	1	1	1	1	1	1	1	7	4	-4	3	7	-13	-12	-7	6	5	6	6	3	3	4	33	231
1956	752	748	797	800	800	800	802	818	832	832	818	808	32	30	14	0	0	14	24	1	1	3	6	6	3	1	21	0	2	16	14	0	-14	-10	6	6	6	6	6	3	4	37	777
1957	800	798	793	793	799	800	800	806	827	814	800	791	32	32	26	5	18	32	41	1	1	1	4	2	1	1	11	1	0	6	21	-13	-14	-9	6	6	6	6	3	3	4	34	374
1958	786	781	779	783	800	800	800	821	832	832	819	808	32	32	11	0	0	13	24	1	1	3	6	6	3	1	21	0	0	21	11	0	-13	-11	6	6	6	6	6	3	3	36	756
1959	800	794	789	793	800	800	802	800	794	782	770	763	32	30	32	38	50	62	69	1	1	1	1	1	1	1	7	0	2	-2	-6	-12	-12	-7	6	6	5	4	3	3	4	31	217
1960	760	758	755	755	763	768	770	775	778	768	758	752	64	62	57	54	64	74	80	1	1	1	1	1	1	1	7	5	2	5	3	-10	-10	-6	6	6	6	6	4	4	4	36	252
1961	748	746	746	747	750	749	742	733	726	713	700	694	83	90	99	106	119	132	138	1	1	1	1	1	1	1	7	-1	-7	-9	-7	-13	-13	-6	5	4	4	4	3	3	4	27	189
1962	691	688	686	687	712	732	742	742	768	760	746	736	100	90	90	64	72	86	96	1	1	1	1	1	1	1	7	20	10	0	26	-8	-14	-10	6	6	6	6	4	3	4	35	245
1963	729	724	720	725	751	762	770	781	806	801	788	778	70	62	51	26	31	44	54	1	1	1	1	1	1	1	7	11	8	11	25	-5	-13	-10	6	6	6	6	5	3	4	36	252
1964	773	774	775	779	786	788	784	780	783	771	760	753	44	48	52	49	61	72	79	1	1	1	1	1	1	1	7	2	-4	-4	3	-12	-11	-7	6	5	5	6	3	3	4	32	224
1965	749	749	783	800	800	800	802	807	827	827	816	807	32	30	25	5	5	18	25	1	1	1	4	4	2	1	14	0	2	5	20	0	-11	-9	6	6	6	6	6	3	4	37	518
1966	800	800	800	800	800	800	801	798	791	776	761	752	32	31	34	41	56	71	80	1	1	1	1	1	1	1	7	0	1	-3	-7	-15	-15	-9	6	6	5	4	3	3	4	31	217
1967	747	744	755	770	786	800	800	817	832	832	820	808	32	32	15	0	0	12	24	1	1	2	6	6	3	1	20	12	0	17	15	0	-12	-12	6	6	6	6	6	3	3	36	720
1968	800	795	791	792	800	800	802	805	803	791	779	771	32	30	27	29	41	53	61	1	1	1	1	1	1	1	7	0	2	3	-2	-12	-12	-8	6	6	6	5	3	3	4	33	231
1969	786	787	770	800	800	800	800	823	832	832	819	808	32	32	9	0	0	13	24	1	1	4	6	6	3	1	22	0	0	23	9	0	-13	-11	6	6	6	6	6	3	3	36	792
1970	800	799	800	800	800	800	799	799	807	795	780	771	32	33	33	25	37	52	61	1	1	1	1	1	1	1	7	0	-1	0	8	-12	-15	-9	6	5	6	6	3	3	4	33	231
1971	765	766	772	786	800	800	801	801	807	798	786	778	32	31	31	25	34	46	54	1	1	1	1	1	1	1	7	0	1	0	6	-9	-12	-8	6	6	6	6	4	3	4	35	245
1972	773	769	772	778	792	800	800	798	795	783	772	766	32	32	34	37	49	60	66	1	1	1	1	1	1	1	7	8	0	-2	-3	-12	-11	-6	6	6	5	5	3	3	4	32	224
1973	762	761	763	774	800	800	802	812	827	812	797	788	32	30	20	5	20	35	44	1	1	1	4	1	1	1	10	0	2	10	15	-15	-15	-9	6	6	6	6	3	3	4	34	340
1974	783	787	798	800	800	800	800	806	828	819	805	796	32	32	26	4	13	27	36	1	1	1	5	3	1	1	13	0	0	6	22	-9	-14	-9	6	6	6	6	4	3	4	35	455
1975	791	789	786	786	798	800	802	812	832	825	812	803	32	30	20	0	7	20	29	1	1	1	6	4	1	1	15	2	2	10	20	-7	-13	-9	6	6	6	6	4	3	4	35	525
1976	800	800	799	799	800	799	794	787	777	767	757	751	33	38	45	55	65	75	81	1	1	1	1	1	1	1	7	-1	-5	-7	-10	-10	-10	-6	5	5	4	4	4	4	4	30	210
1977	748	745	742	741	741	737	728	715	701	687	671	662	95	104	117	131	145	161	170	1	1	1	1	1	1	1	7	-4	-9	-13	-14	-14	-16	-9	5	4	3	3	3	2	4	24	168
1978	658	653	657	683	716	748	761	776	813	821	808	802	84	71	58	19	11	24	30	1	1	1	2	3	1	1	10	32	13	15	37	8	-13	-6	6	6	6	6	6	3	4	37	370
1979	797	793	790	800	800	800	802	822	832	818	803	794	32	30	10	0	14	29	38	1	1	3	6	3	1	1	16	0	2	20	10	-14	-15	-9	6	6	6	6	3	3	4	34	544
1980	789	788	787	800	800	800	800	817	832	832	819	808	32	32	15	0	0	13	24	1	1	2	6	6	3	1	20	0	0	17	15	0	-13	-11	6	6	6	6	6	3	3	36	720
1981	800	797	794	795	799	800	802	806	805	793	782	774	32	30	26	27	39	50	58	1	1	1	1	1	1	1	7	1	2	4	-1	-12	-11	-8	6	6	6	5	3	3	4	33	231
1982	770	776	795	800	800	800	800	820	832	832	820	808	32	32	12	0	0	12	24	1	1	3	6	6	3	1	21	0	0	20	12	0	-12	-12	6	6	6	6	6	3	3	36	756
1983	800	800	800	800	800	800	800	819	832	832	832	808	32	32	13	0	0	0	24	1	1	3	6	6	6	1	24	0	0	19	13	0	0	-24	6	6	6	6	6	6	6	1	37	888
1984	800	800	800	800	800	800	797	803	814	801	786	776	32	35	29	18	31	46	56	1	1	1	2	1	1	1	8	0	-3	6	11	-13	-15	-10	6	5	6	6	3	3	4	33	264
1985	773	773	779	786	794	800	801	799	795	784	772	766	32	31	33	37	48	60	66	1	1	1	1	1	1	1	7	6	1	-2	-4	-11	-12	-6	6	6	5	5	3	3	4	32	224
1986	763	764	767	774	800	800	802	827	832	825	811	802	32	30	5	0	7	21	30	1	1	4	6	4	1	1	18	0	2	25	5	-7	-14	-9	6	6	6	6	4	3	4	35	630
1987	796	791	780	784	786	788	786	783	779	769	759	752	44	46	49	53	63	73	80	1	1	1	1	1	1	1	7	2	-2	-3	-4	-10	-10	-7	6	5	5	5	4	4	4	33	231
1988	750	749	749	754	759	761	756	747	740	728	716	709	71	76	85	92	104	116	123	1	1	1	1	1	1	1	7	2	-5	-9	-7	-12	-12	-7	6	5	4	4	3	3	4	29	203
1989	705	702	702	705	708	722	733	747	754	743	732	727	110	99	85	78	89	100	105	1	1	1	1	1	1	1	7	14	11	14	7	-11	-11	-5	6	6	6	6	3	3	5	35	245
1990	725	725	725	727	730	733	730	726	724	709	695	688	99	102	106	108	123	137	144	1	1	1	1	1	1	1	7	3	-3	-4	-2	-15	-14	-7	6	5	5	5	3	3	4	31	217
1991	684	680	676	675	675	684	683	698	709	699	689	683	148	149	134	123	133	143	149	1	1	1	1	1	1	1	7	9	-1	15	11	-10	-10	-6	6	5	6	6	4	4	4	35	245
1992	681	682	681	684	693	698	700	707	706	692	677	666	134	132	125	126	140	155	166	1	1	1	1	1	1	1	7	5	2	7	-1	-14	-15	-11	6	6	6	5	3	3	3	32	224
1993	660	654	654	689	721	750	758	772	803	802	788	778	82	74	60	29	30	44	54	1	1	1	1	1	1	1	7	29	8	14	31	-1	-14	-10	6	6	6	6	5	3	4	36	252
1994	772	766	762	761	765	768	765	768	768	756	745	740	64	67	64	66	76	87	92	1	1	1	1	1	1	1	7	3	-3	3	-2	-10	-11	-5	6	5	6	5	4	3	5	34	238

73 - year Average: 10

73 - year Average: 33 350.6
1929 - '34 Average: 219.3

A2-155

C-032495

C-032495

STUDY: 199. SWRCB-469 DWRSIM: recirc818-f, 17 Jun 97
CP # 20, LAKE McCLURE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-469/20/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation 867'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Largemouth Bass Reservoir Habitat Index Product
1922	879	879	695	711	759	779	789	845	867	860	846	836	88	78	22	0	7	21	31	1	1	1	6	4	1	1	15	20	10	56	22	-7	-14	-10	6	6	6	6	4	3	4	35	525
1923	806	808	808	808	808	813	827	854	859	850	835	825	54	40	13	8	17	32	42	1	1	3	4	2	1	1	13	5	14	27	5	-9	-15	-10	6	6	6	6	4	3	4	35	455
1924	808	808	808	808	808	807	809	809	797	779	766	756	60	58	58	70	88	101	111	1	1	1	1	1	1	1	7	-1	2	0	-12	-18	-13	-10	5	6	6	3	2	3	4	29	203
1925	752	758	763	767	792	801	819	840	844	831	815	803	66	48	27	23	36	52	64	1	1	1	1	1	1	1	7	9	18	21	4	-13	-16	-12	6	6	6	6	3	2	3	32	224
1926	801	801	802	804	808	812	831	827	826	822	814	806	55	36	40	41	45	53	61	1	1	1	1	1	1	1	7	4	19	-4	-1	-4	-8	-8	6	6	5	5	5	4	4	35	245
1927	802	802	806	807	808	815	817	844	854	849	845	840	52	50	23	13	18	22	27	1	1	1	3	2	1	1	10	7	2	27	10	-5	-4	-5	6	6	6	6	5	5	5	39	390
1928	808	808	808	808	808	809	808	823	821	815	810	807	58	59	44	46	52	57	60	1	1	1	1	1	1	1	7	1	-1	15	-2	-6	-5	-3	6	5	6	5	4	5	5	36	252
1929	805	804	804	803	805	807	808	811	811	813	816	809	60	59	56	56	54	51	58	1	1	1	1	1	1	1	7	2	1	3	0	2	3	-7	6	6	6	6	6	6	4	40	280
1930	806	804	804	804	804	800	802	803	807	810	813	811	67	65	64	60	57	54	56	1	1	1	1	1	1	1	7	-4	2	1	4	3	3	-2	5	6	6	6	6	6	5	40	280
1931	808	808	808	808	808	808	808	806	794	776	762	752	59	59	61	73	91	105	115	1	1	1	1	1	1	1	7	0	0	-2	-12	-18	-14	-10	6	6	5	3	2	3	4	29	203
1932	750	751	770	782	808	817	826	847	864	854	839	829	50	41	20	3	13	28	38	1	1	1	5	3	1	1	13	9	9	21	17	-10	-15	-10	6	6	6	6	4	3	4	35	455
1933	808	807	806	808	808	811	813	816	830	817	802	794	56	54	51	37	50	65	73	1	1	1	1	1	1	1	7	3	2	3	14	-13	-15	-8	6	6	6	6	3	3	4	34	238
1934	789	788	792	797	805	813	819	810	801	784	770	761	54	48	57	66	83	97	106	1	1	1	1	1	1	1	7	8	6	-9	-9	-17	-14	-9	6	6	4	4	2	3	4	29	203
1935	757	761	766	784	796	806	840	859	867	854	839	828	61	27	8	0	13	28	39	1	1	4	6	3	1	1	17	10	34	19	8	-13	-15	-11	6	6	6	6	3	3	3	33	561
1936	808	808	808	808	808	820	840	855	861	849	834	823	47	27	12	6	18	33	44	1	1	3	4	2	1	1	13	12	20	15	6	-12	-15	-11	6	6	6	6	3	3	3	33	429
1937	808	808	808	808	808	820	834	859	867	853	838	827	47	33	8	0	14	29	40	1	1	4	6	3	1	1	17	12	14	25	8	-14	-15	-11	6	6	6	6	3	3	3	33	561
1938	808	808	808	808	808	820	840	859	867	867	855	840	47	27	8	0	0	12	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1939	808	808	808	808	808	816	831	832	821	803	787	776	51	36	35	46	64	80	91	1	1	1	1	1	1	1	7	8	15	1	-11	-18	-16	-11	6	6	6	3	2	2	3	28	196
1940	777	778	779	806	808	820	837	859	861	845	829	816	47	30	8	6	22	38	51	1	1	4	4	1	1	1	13	12	17	22	2	-16	-16	-13	6	6	6	6	2	2	3	31	403
1941	808	808	808	808	808	820	834	859	867	863	850	840	47	33	8	0	4	17	27	1	1	4	6	5	2	1	20	12	14	25	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1942	808	808	808	808	808	820	838	859	867	860	851	840	47	29	8	0	7	16	27	1	1	4	6	4	2	1	19	12	18	21	8	-7	-9	-11	6	6	6	6	4	4	3	35	665
1943	808	808	808	808	808	820	840	859	864	853	838	828	47	27	8	3	14	29	39	1	1	4	5	3	1	1	16	12	20	19	5	-11	-15	-10	6	6	6	6	3	3	4	34	544
1944	808	808	808	808	808	817	815	838	840	827	810	796	50	52	29	27	40	57	71	1	1	1	1	1	1	1	7	9	-2	23	2	-13	-17	-14	6	5	6	6	3	2	3	31	217
1945	794	800	806	808	808	820	833	856	867	856	842	831	47	34	11	0	11	25	36	1	1	3	6	3	1	1	16	12	13	23	11	-11	-14	-11	6	6	6	6	3	3	3	33	528
1946	808	808	808	808	808	818	837	859	857	842	826	813	49	30	8	10	25	41	54	1	1	4	3	3	1	1	12	10	19	22	-2	-15	-16	-13	6	6	6	5	3	2	3	31	372
1947	808	808	808	808	808	815	823	836	830	814	799	791	52	44	31	37	53	68	76	1	1	1	1	1	1	1	7	7	8	13	-6	-16	-15	-8	6	6	6	4	2	3	4	31	217
1948	789	790	791	793	794	794	798	820	837	823	804	791	73	69	47	30	44	63	76	1	1	1	1	1	1	1	7	0	4	22	17	-14	-19	-13	6	6	6	6	3	2	3	32	224
1949	785	786	787	788	792	800	810	830	829	809	790	774	67	57	37	38	58	77	93	1	1	1	1	1	1	1	7	8	10	20	-1	-20	-19	-16	6	6	6	5	2	2	2	29	203
1950	769	769	769	776	789	793	808	826	827	807	788	772	74	59	41	40	60	79	95	1	1	1	1	1	1	1	7	4	15	18	1	-20	-19	-16	6	6	6	6	2	2	2	30	210
1951	768	808	808	808	808	819	827	837	834	816	796	781	48	40	30	33	51	71	86	1	1	1	1	1	1	1	7	11	8	10	-3	-18	-20	-15	6	6	6	5	2	2	3	30	210
1952	777	778	791	808	808	820	840	859	867	864	852	840	47	27	8	0	3	15	27	1	1	4	6	5	2	1	20	12	20	19	8	-3	-12	-12	6	6	6	6	5	3	3	35	700
1953	808	808	808	808	808	809	815	816	823	809	790	775	58	52	51	44	58	77	92	1	1	1	1	1	1	1	7	1	6	1	7	-14	-19	-15	6	6	6	6	3	2	3	32	224
1954	772	771	772	775	785	798	815	833	826	805	785	770	69	52	34	41	62	82	97	1	1	1	1	1	1	1	7	13	17	18	-7	-21	-20	-15	6	6	6	4	1	2	3	28	196
1955	766	765	768	774	778	780	780	801	810	795	778	768	87	87	66	57	72	89	99	1	1	1	1	1	1	1	7	2	0	21	9	-15	-17	-10	6	6	6	6	3	2	4	33	231
1956	763	762	808	808	808	819	832	859	867	863	850	840	48	35	8	0	4	17	27	1	1	4	6	5	2	1	20	11	13	27	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1957	808	808	808	808	808	813	813	828	838	822	804	790	54	54	39	29	45	63	77	1	1	1	1	1	1	1	7	5	0	15	10	-16	-18	-14	6	6	6	6	2	2	3	31	217
1958	788	787	792	798	808	820	840	859	867	862	850	840	47	27	8	0	5	17	27	1	1	4	6	4	2	1	19	12	20	19	8	-5	-12	-10	6	6	6	6	5	3	4	36	684
1959	808	808	808	808	808	813	823	826	817	797	780	773	54	44	41	50	70	87	94	1	1	1	1	1	1	1	7	5	10	3	-9	-20	-17	-7	6	6	6	4	2	2	4	30	210
1960	772	770	770	771	783	791	805	818	815	800	786	776	76	62	49	52	67	81	91	1	1	1	1	1	1	1	7	8	14	13	-3	-15	-14	-10	6	6	6	5	3	3	4	33	231
1961	773	773	775	775	778	779	784	785	776	758	742	730	88	83	82	91	109	125	137	1	1	1	1	1	1	1	7	1	5	1	-9	-18	-16	-12	6	6	6	4	2	2	3	29	203
1962	729	729	731	734	776	785	809	818	832	818	800	786	82	58	49	35	49	67	81	1	1	1	1	1	1	1	7	9	24	9	14	-14	-18	-14	6	6	6	6	3	2	3	32	224
1963	781	781	782	791	808	810	819	841	854	845	830	818	57	48	26	13	22	37	49	1	1	1	3	1	1	1	9	2	9	22	13	-9	-15	-12	6	6	6	6	4	3	3	34	306
1964	808	808	808	808	807	806	807	814	811	795	778	769	61	60	53	56	72	89	98	1	1	1	1	1	1	1	7	-1	1	7	-3	-16	-17	-9	5	6	6	5	2	2	4	30	210
1965	763	767	808	808	808	815	831	854	867	861	850	840	52	36	13	0	6	17	27	1	1	3	6	4	2	1	18	7	16	23	13	-6	-11	-10	6	6	6	6	4	3	4	35	630
1966	808	808	808	808	808	814	828	838	826	804	784	771	53	39	29	41	63	83	96	1	1	1	1	1	1	1	7	8	14	10	-12	-22	-20	-13	6	6	6	3	1	2	3	27	189
1967	767	769	794	806	808	820	840	859	867	867	856	840	47	27	8	0	0	11	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1968	808	808	808	808	808	812	817	821	812	793	777	766	55	50	46	55	74	90	101	1	1	1	1	1	1	1	7	4	5	4	-9	-19	-16	-11	6	6	6	4	2	2	3	29	203
1969	762	766	774	808	808	820	840	859	867	867	854	840	47	27	8	0	0	13	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-13	-14	6	6	6	6	6	3	3	36	792
1970	808	808	808	808	808	820	821	837	837	821	802	789	47	46	30	30	46	65	78	1	1	1	1	1	1	1	7	12	1	16	0	-16	-19	-13	6	6	6	6	2	2	3	31	217
1971	786	788	798	807	808	812	814	826	836	822	804	790	55	53	41	31	45	63	77	1	1	1	1	1	1	1	7	4	2	12	10	-14	-18	-14	6	6	6	6	3	2	3	32	224
1972	787	787	794	799	805	816	818	831	831	816	801	795	51	49	36	36	51	66	72	1	1	1	1	1	1	1	7	11	2	13	0	-15	-15	-6	6	6	6	6	3	3	4	34	238
1973	793	794	800	808	808	820	828	859	867	852	838	828	47	39	8	0	15	29	39	1	1	4	6	2	1	1	16	12	8	31	8	-15	-14	-10	6	6	6	6	3	3	4	34	544
1974	808	808	808	808	808	820	833	859	867	854	839	829	47	34	8	0	13	28	38	1	1	4	6	3	1	1	17	12	13	26	8	-13	-15	-10	6	6	6	6	3	3	4	34	578
1975	808	808	808	808	808	820	823	855	867	856	842	832	47	44	12	0	11	25	35	1	1	3	6	3	1	1	16	12	3	32	12	-11	-14	-10	6	6	6	6	3	3	4	34	544
1976	808	808	808	808	808	809	808	809	798	781	768	759	58	59	58	69	86	99	108	1	1	1	1	1	1	1	7	1	-1	1	-11	-17	-13	-9	6	5	6	3	2	3	4	29	203
1977	758	756	754	754	754	749	740	727	715	686	656	632	118	127	140	152	181	211	235	1	1	1	1	1	1	1	7	-5	-9	-13	-12	-29	-30	-24	5	4	3	3	1	1	1	18	126
1978	626	626	642	693	741	782	815	859	867	867	856	840	85	52	8	0	0	11	27	1	1	4	6	6	3	1	22	41	33	44	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1979	808	808	808	808	808	820	828	859	863	849	834	823	47	39	8	4	18	33	44	1	1	4	5	2	1	1	15	12	8	31	4	-14	-15	-11	6	6	6	6	3	3	3	33	495
1980	808	808	808	808	808	820	835	859	867	867	855	840	47	32	8	0	0	12	27	1	1	4	6	6	3	1	22	12	15	24	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1981	808	807	807	808	808	813	823	835	831	816	802	794	54	44	32	36	51	65	73	1	1	1	1	1	1	1	7	5	10	12	-4	-15	-14	-8	6	6	6	5	3	3	4	33	231
1982	792	801	808	808	808	820	840	859	867	865	854	840	47	27	8	0	2	13	27	1	1	4	6	5	3	1	21	12	20	19	8	-2	-11	-14	6	6	6	6	5	3	3	35	735
1983	808	808	808	808	808	820	836	859	867	867	864	840	47	31	8	0	0	3	27	1	1	4	6	6	5	1	24	12	16	23	8	0	-3	-24	6	6	6	6	6	5	1	36	864
1984	808	808	808	808	808	820	827	850	848	832	814	801	47	40	17	19	35	53	66	1	1	2	2	1	1	1	9	12	7	23	-2	-16	-18	-13	6	6	6	5	2	2	3	30	270
1985	800	803	807	808	808	814	828	841	835	821	807	797	53	39	26	32	46	60	70	1	1	1	1	1	1	1	7	6	14	13	-6	-14	-14	-10	6	6	6	4	3	3	4	32	224
1986	797	799	806	808	808	820	839	859	867	855	841	830	47	28	8	0	12	26	37	1	1	4	6	3	1	1	17	12	19	20	8	-12	-14	-11	6	6	6	6	3	3	3	33	561
1987	808	807	807	807	808	810	818	821	811	795	782	773	57	49	46	56	72	85	94	1	1	1	1	1	1	1	7	2	8	3	-10	-16	-13	-9	6	6	6	4	2	3	4	31	217
1988	772	773	776	781	785	791	797	801	794	777	763	753	76	70	66	73	90	104	114	1	1	1	1	1	1	1	7	6	6	4	-7	-17	-14	-10	6	6	6	4	2	3	4	31	217
1989	751	750	753	753	759	775	796	805	802	786	772	763	92	71	62	65	81	95	104	1	1	1	1	1	1	1	7	16	21	9	-3	-16	-14	-9	6	6	6	5	2	3	4	32	224
1990	765	766	768	769	772	779	789	786	777	761	744	732	88	78	81	90	106	123	135	1	1	1	1	1	1	1	7	7	10	-3	-9	-16	-17	-12	6	6	5	4	2	2	3	28	196
1991	730	729	728	728	727	748	755	774	789	775	762	751	119	112	93	78	92	105	116	1	1	1	1	1	1	1	7	21	7	19	15	-14	-13	-11	6	6	6	6	3	3	3	33	231
1992	750	751	752	764	768	774	791	793	781	768	753	741	93	76	74	86	99	114	126	1	1	1	1	1	1	1	7	6	17	2	-12	-13	-15	-12	6	6	6	3	3	3	3	30	210
1993	740	741	747	792	808	820	837	859	867	861	848	837	47	30	8	0	6	19	30	1	1	4	6	4	2	1	19	12	17	22	8	-6	-13	-11	6	6	6	6	4	3	3	34	646
1994	808	807	808	808	808	810	814	820	812	796	782	773	57	53	47	55	71	85	94	1	1	1	1	1	1	1	7	2	4	6	-8	-16	-14	-9	6	6	6	4	2	3	4	31	217

73 - year Average: 11

73 - year Average: 33 379.7
1929 - '34 Average: 276.5

A2-156
C-032496
C—032496

STUDY. 1[illegible]F-SWRCB-469 DWRSIM recrc818-f, 17 Jun 97
CP # 18, MILLERTON LAKE, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-469/18/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 576'

Reservoir Elevation S[illegible]ble:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table.
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE]							Reservoir Elevation S[illegible]ble:								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Scoring Table.								Largemouth Bass Reservoir Habitat Index
													MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	491	505	527	547	549	566	559	576	576	562	518	491	10	17	0	0	14	58	85	3	2	6	6	3	1	1	22	17	-7	17	0	-14	-44	-27	6	4	6	6	3	1	1	27	594
1923	485	495	520	537	531	517	541	549	540	526	463	470	59	35	27	36	50	113	106	1	1	1	1	1	1	1	7	-14	24	8	-9	-14	-63	7	3	6	6	4	3	1	6	29	203
1924	483	494	508	522	516	503	506	511	505	478	464	468	73	70	65	71	98	112	108	1	1	1	1	1	1	1	7	-13	3	5	-6	-27	-14	4	3	6	6	4	1	3	6	29	203
1925	462	471	487	500	506	491	512	530	520	497	481	472	85	64	46	56	79	95	104	1	1	1	1	1	1	1	7	-15	21	18	-10	-23	-16	-9	3	6	6	4	1	2	4	26	182
1926	475	487	503	517	520	506	548	562	533	492	471	482	70	28	14	43	84	105	94	1	1	3	1	1	1	1	9	-14	42	14	-29	-41	-21	11	3	6	6	1	1	1	6	24	216
1927	488	504	525	543	560	561	560	569	576	543	492	482	15	16	7	0	33	84	94	2	2	4	6	1	1	1	17	1	-1	9	7	-33	-51	-10	6	5	6	6	1	1	4	29	493
1928	482	503	525	542	540	543	551	554	522	477	465	477	33	25	22	54	99	111	99	1	1	1	1	1	1	1	7	3	8	3	-32	-45	-12	12	6	6	6	1	1	3	6	29	203
1929	484	499	513	523	517	513	531	531	527	506	466	477	63	45	45	49	70	110	99	1	1	1	1	1	1	1	7	-4	18	0	-4	-21	-40	11	5	6	6	5	1	1	6	30	210
1930	478	494	506	517	514	509	524	534	518	488	465	482	67	52	42	58	88	111	94	1	1	1	1	1	1	1	7	-5	15	10	-16	-30	-23	17	5	6	6	2	1	1	6	27	189
1931	486	501	513	522	517	508	510	515	508	482	466	468	68	66	61	68	94	110	110	1	1	1	1	1	1	1	7	-9	2	5	-7	-26	-16	0	4	6	6	4	1	2	6	29	203
1932	487	476	503	520	543	531	524	532	552	518	492	477	45	52	44	24	58	84	99	1	1	1	1	1	1	1	7	-12	-7	8	20	-34	-26	-15	3	4	6	6	1	1	3	24	168
1933	477	489	501	516	512	501	520	537	526	509	466	487	75	58	39	50	67	110	109	1	1	1	1	1	1	1	7	-11	19	17	-11	-17	-43	1	3	6	6	3	2	1	6	27	189
1934	489	479	499	517	511	503	516	527	523	498	477	486	73	60	49	53	78	99	90	1	1	1	1	1	1	1	7	-8	13	11	-4	-25	-21	9	4	6	6	5	1	1	6	29	203
1935	490	500	515	535	532	509	542	563	574	538	489	479	67	34	13	2	38	107	97	1	1	3	5	1	1	1	13	-23	33	21	11	-36	-69	10	1	6	6	6	1	1	6	27	351
1936	486	502	518	533	560	558	564	578	563	521	472	478	18	12	0	13	55	104	98	2	3	6	3	1	1	1	17	-2	6	12	-13	-42	-49	6	5	6	6	3	1	1	6	28	476
1937	488	497	516	535	560	570	576	576	576	538	484	469	6	0	0	0	38	92	107	4	6	6	6	1	1	1	25	10	6	0	0	-38	-54	-15	6	6	6	6	1	1	3	29	725
1938	472	486	533	560	560	542	529	467	572	576	532	520	34	47	109	4	0	44	56	1	1	1	5	6	1	1	16	-18	-13	-62	105	4	-44	-12	2	3	1	6	6	1	3	22	352
1939	513	514	529	538	532	524	542	560	539	504	473	495	52	34	16	37	72	103	81	1	1	2	1	1	1	1	8	-8	18	18	-21	-35	-31	22	4	6	6	1	1	1	6	25	200
1940	494	503	517	549	550	551	548	561	553	512	485	470	25	28	15	23	64	111	106	1	1	2	1	1	1	1	8	1	-3	13	-8	-41	-47	5	6	5	6	4	1	1	6	29	232
1941	481	493	528	556	560	573	573	569	576	569	527	506	3	3	7	0	7	49	70	5	5	4	6	4	1	1	26	13	0	-4	7	-7	-42	-21	6	6	5	6	4	1	1	29	754
1942	497	507	532	552	549	553	554	562	576	555	509	477	23	22	14	0	21	67	99	1	1	3	6	1	1	1	14	4	1	8	14	-21	-46	-32	6	6	6	6	1	1	1	27	378
1943	477	494	518	557	556	576	574	576	562	526	491	476	0	2	0	14	50	85	100	6	5	6	3	1	1	1	23	20	-2	2	-14	-36	-35	-15	6	5	6	3	1	1	3	25	575
1944	479	491	508	521	524	507	516	517	501	494	490	480	69	60	59	75	82	86	96	1	1	1	1	1	1	1	7	-17	9	1	-16	-7	-4	-10	2	6	6	2	4	5	4	29	203
1945	481	503	523	533	560	588	565	571	576	554	511	491	8	11	5	0	22	65	85	4	3	4	6	1	1	1	20	8	-3	6	5	-22	-43	-20	6	5	6	6	1	1	2	27	540
1946	485	502	531	548	528	524	536	559	546	510	478	480	52	40	17	30	66	98	96	1	1	2	1	1	1	1	8	-4	12	23	-13	-36	-32	2	5	6	6	3	1	1	6	28	224
1947	481	500	526	543	541	530	545	556	535	497	473	481	46	31	20	41	79	103	95	1	1	1	1	1	1	1	7	-11	15	11	-21	-38	-24	8	3	6	6	1	1	1	6	24	168
1948	487	503	517	529	523	530	556	551	541	483	480	484	46	20	25	35	93	96	92	1	1	1	1	1	1	1	7	7	26	-5	-10	-58	-3	4	6	6	5	4	1	5	6	33	231
1949	490	500	513	528	524	511	522	538	521	482	477	489	65	54	38	55	94	99	87	1	1	1	1	1	1	1	7	-13	11	16	-17	-39	-5	12	3	6	6	2	1	5	6	29	203
1950	492	503	519	536	541	524	534	551	539	506	476	482	52	42	25	37	70	100	94	1	1	1	1	1	1	1	7	-17	10	17	-12	-33	-30	6	2	6	6	3	1	1	6	25	175
1951	490	532	560	560	554	546	552	546	514	463	463	481	30	24	30	62	113	113	95	1	1	1	1	1	1	1	7	-8	6	-6	-32	-51	0	18	4	6	4	1	1	6	6	28	196
1952	488	500	530	559	560	567	559	526	576	571	525	508	9	17	50	0	5	51	68	4	2	1	6	4	1	1	19	7	-8	-33	50	-5	-46	-17	6	4	1	6	5	1	2	25	475
1953	501	514	533	549	538	532	541	536	518	497	478	481	44	35	40	58	79	98	95	1	1	1	1	1	1	1	7	-6	9	-5	-18	-21	-19	3	4	6	5	2	1	2	6	26	182
1954	488	497	514	532	532	527	537	560	544	507	465	483	49	39	16	32	69	111	93	1	1	2	1	1	1	1	8	-5	10	23	-16	-37	-42	18	5	6	6	2	1	1	6	27	216
1955	489	502	522	540	537	519	534	545	537	504	481	487	57	42	31	39	72	95	89	1	1	1	1	1	1	1	7	-18	15	11	-8	-33	-23	6	2	6	6	4	1	1	6	26	182
1956	491	499	560	560	560	576	576	561	576	566	524	505	0	0	15	0	10	52	71	6	6	2	6	3	1	1	25	16	0	-15	15	-10	-42	-19	6	6	3	6	4	1	2	28	700
1957	496	504	517	527	525	529	546	561	562	526	471	481	47	30	15	14	50	105	95	1	1	2	3	1	1	1	10	4	17	15	1	-36	-55	10	6	6	6	6	1	1	6	32	320
1958	488	501	524	545	554	565	576	576	576	557	516	498	11	0	0	0	19	60	78	3	6	6	6	2	1	1	25	11	11	0	0	-19	-41	-18	6	6	6	6	2	1	2	29	725
1959	492	507	523	530	536	528	550	566	551	500	470	475	48	26	10	25	76	106	101	1	1	3	1	1	1	1	9	-8	22	16	-15	-51	-30	5	4	6	6	3	1	1	6	27	243
1960	473	475	480	490	503	498	515	525	509	496	483	481	78	61	51	67	80	93	95	1	1	1	1	1	1	1	7	-5	17	10	-16	-13	-13	-2	5	6	6	2	3	3	5	30	210
1961	481	491	505	511	510	511	526	539	527	486	467	467	65	50	37	49	90	109	109	1	1	1	1	1	1	1	7	1	15	13	-12	-41	-19	0	6	6	6	3	1	2	6	30	210
1962	468	471	484	492	538	529	527	555	569	540	489	476	47	49	21	7	36	87	100	1	1	1	4	1	1	1	10	-9	-2	28	14	-29	-51	-13	4	5	6	6	1	1	3	26	260
1963	479	491	501	518	558	558	576	576	576	564	520	503	18	0	0	0	12	56	73	2	6	6	6	3	1	1	25	0	18	0	0	-12	-44	-17	6	6	6	6	3	1	2	30	750
1964	490	517	542	551	547	544	553	561	551	508	476	484	32	23	15	25	68	100	92	1	1	2	1	1	1	1	8	-3	9	8	-10	-43	-32	8	5	6	6	4	1	1	6	29	232
1965	481	496	529	560	558	554	559	551	561	540	512	496	22	17	25	15	36	64	80	1	2	1	2	1	1	1	9	-2	5	-8	10	-21	-28	-16	5	6	4	6	1	1	2	25	225
1966	487	513	546	558	541	526	545	564	550	506	486	486	50	31	12	26	70	90	90	1	1	3	1	1	1	1	9	-15	19	19	-14	-44	-20	0	3	6	6	3	1	2	6	27	243
1967	490	501	539	559	560	571	565	514	570	576	539	522	5	11	62	6	0	37	54	4	3	1	4	6	1	1	20	11	-6	-51	56	6	-37	-17	6	4	1	6	6	1	2	26	520
1968	515	521	539	545	545	539	550	554	539	506	478	482	37	26	22	37	70	98	94	1	1	1	1	1	1	1	7	-6	11	4	-15	-33	-28	4	4	6	6	3	1	1	6	27	189
1969	479	495	513	560	524	521	467	469	576	576	538	513	55	109	107	0	0	38	63	1	1	1	6	6	1	1	17	-3	-54	2	107	0	-38	-25	5	1	6	6	6	1	1	26	442
1970	498	516	540	560	560	554	554	555	544	517	476	477	22	22	21	32	59	100	99	1	1	1	1	1	1	1	7	-6	0	1	-11	-27	-41	1	4	6	6	3	1	1	6	27	189
1971	482	502	534	551	548	533	541	544	520	498	491	478	43	35	32	56	78	85	98	1	1	1	1	1	1	1	7	-15	8	3	-24	-22	-7	-13	3	6	6	1	1	4	3	24	168
1972	478	491	519	536	532	524	537	543	540	497	481	481	52	39	33	36	79	95	95	1	1	1	1	1	1	1	7	-8	13	6	-3	-43	-16	0	4	6	6	5	1	2	6	30	210
1973	489	501	523	545	560	560	550	575	576	542	483	477	16	26	1	0	34	93	99	2	1	5	6	1	1	1	17	0	-10	25	1	-34	-59	-6	6	4	6	6	1	1	4	28	476
1974	487	510	545	560	544	550	559	570	573	537	490	473	26	17	6	3	39	86	103	1	2	4	5	1	1	1	15	6	9	11	3	-36	-47	-17	6	6	6	6	1	1	2	28	420
1975	476	494	515	528	535	526	533	536	567	525	476	482	50	43	40	9	51	100	94	1	1	1	4	1	1	1	10	-9	7	3	31	-42	-49	6	4	6	6	6	1	1	6	30	300
1976	489	511	531	541	539	544	547	542	519	492	479	494	32	29	34	57	84	97	82	1	1	1	1	1	1	1	7	5	3	-5	-23	-27	-13	15	6	6	5	1	1	3	6	28	196
1977	490	496	500	503	501	484	465	464	462	466	461	462	112	111	112	114	110	115	114	1	1	1	1	1	1	1	7	-37	1	-1	-2	4	-5	1	1	6	5	5	6	5	6	34	238
1978	462	482	484	532	560	552	510	498	576	576	548	539	24	68	78	0	0	28	37	1	1	1	6	6	1	1	17	-8	-42	-12	78	0	-28	-9	4	1	3	6	6	1	4	25	425
1979	528	535	549	560	555	562	560	571	563	521	477	482	14	16	5	13	55	99	94	3	2	4	3	1	1	1	15	7	-2	11	-8	-42	-44	5	6	5	6	4	1	1	6	29	435
1980	489	488	508	560	560	558	566	550	576	576	542	513	18	10	26	0	0	34	63	2	3	1	6	6	1	1	20	-2	8	-16	26	0	-34	-29	5	6	2	6	6	1	1	27	540
1981	503	512	520	528	531	533	547	553	543	510	477	488	43	29	23	33	66	99	88	1	1	1	1	1	1	1	7	2	14	6	-10	-33	-33	11	6	6	6	4	1	1	6	30	210
1982	491	504	536	560	560	576	546	561	576	576	546	541	0	30	15	0	0	30	35	6	1	2	6	6	1	1	23	16	-30	15	15	0	-30	-5	6	1	6	6	6	1	5	31	713
1983	531	556	560	560	513	484	467	467	483	564	572	576	92	109	109	93	12	4	0	1	1	1	1	3	5	6	18	-29	-17	0	16	81	8	4	1	2	6	6	6	6	6	33	594
1984	560	560	560	560	560	588	570	570	557	530	487	483	8	6	6	19	46	89	93	4	4	4	2	1	1	1	17	8	2	0	-13	-27	-43	-4	6	6	6	3	1	1	5	28	476
1985	482	492	511	536	533	526	551	583	539	501	483	483	50	25	13	37	75	93	93	1	1	3	1	1	1	1	9	-7	25	12	-24	-38	-18	0	4	6	6	1	1	2	6	26	234
1986	490	507	534	553	550	552	574	565	576	558	503	479	24	2	11	0	18	73	97	1	5	3	6	2	1	1	19	2	22	-9	11	-18	-55	-24	6	6	4	6	2	1	1	26	494
1987	480	489	492	495	495	511	530	551	539	503	473	480	65	46	25	37	73	103	96	1	1	1	1	1	1	1	7	15	19	21	-12	-36	-30	7	6	6	6	3	1	1	6	29	203
1988	482	495	507	526	516	527	539	547	527	498	483	486	49	37	29	49	78	93	90	1	1	1	1	1	1	1	7	11	12	8	-20	-29	-15	3	6	6	6	2	1	3	6	30	210
1989	486	497	505	515	512	516	537	552	540	502	478	484	60	39	24	36	74	98	92	1	1	1	1	1	1	1	7	4	21	15	-12	-38	-24	6	6	6	6	3	1	1	6	29	203
1990	489	495	502	510	510	517	532	544	525	508	479	483	59	44	32	51	68	97	93	1	1	1	1	1	1	1	7	7	15	12	-19	-17	-29	4	6	6	6	2	2	1	6	29	203
1991	480	488	492	499	493	489	501	508	512	506	480	486	87	75	58	64	70	96	90	1	1	1	1	1	1	1	7	-4	12	7	4	-6	-26	6	5	6	6	6	4	1	6	34	238
1992	486	490	494	498	499	490	493	494	480	470	465	486	86	83	82	96	106	111	110	1	1	1	1	1	1	1	7	-9	3	1	-14	-10	-5	1	4	6	6	3	4	5	6	34	238
1993	467	468	476	536	543	558	558	576	576	571	522	499	20	18	0	0	5	54	77	1	2	6	6	4	1	1	21	13	2	18	0	-5	-49	-23	6	6	6	6	5	1	1	31	651
1994	490	497	507	512	508	520	534	548	528	498	478	484	56	42	28	48	78	98	92	1	1	1	1	1	1	1	7	12	14	14	-20	-30	-20	6	6	6	6	2	1	2	6	29	203

73 - year Average: 12

73 - year Average: 28 329.2
1929 - '34 Average: 193.7

A2-157

C-032497

C—032497

STUDY: 1995C06F-SWRCB-469 DWRSIM: recirc818-f, 17 Jun 97
CP # 12, SWP SAN LUIS RESERVIOR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-469/12/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 544'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	419	441	476	520	539	544	543	539	524	475	430	440	0	1	5	20	69	114	104
1923	471	496	500	518	526	532	528	506	470	448	418	405	12	16	38	74	96	126	139
1924	424	436	465	511	532	532	523	499	466	428	392	388	12	21	45	78	116	152	156
1925	389	400	443	474	521	532	524	498	457	415	358	339	12	20	46	87	129	186	205
1926	381	379	397	456	500	511	508	486	453	446	393	384	33	36	58	91	98	151	160
1927	393	434	473	520	544	544	540	529	498	464	413	424	0	4	15	46	80	131	120
1928	457	488	499	514	526	532	526	505	458	437	416	402	12	18	39	86	107	128	142
1929	414	441	469	517	532	542	532	520	497	468	437	434	2	12	24	47	76	107	110
1930	434	440	485	533	542	544	526	497	467	459	444	422	0	18	47	77	85	100	122
1931	427	431	432	473	487	487	479	468	451	419	371	371	57	65	76	93	125	173	173
1932	384	383	446	504	533	533	525	506	487	457	415	399	11	19	38	57	87	129	145
1933	415	422	423	471	492	501	498	485	458	423	373	372	43	46	59	86	121	171	172
1934	389	389	439	494	509	509	496	473	449	425	392	386	35	48	71	95	119	152	158
1935	383	404	424	484	494	527	531	506	471	427	353	354	17	13	38	73	117	191	190
1936	394	410	424	480	524	541	541	525	492	457	416	410	3	3	19	52	87	128	134
1937	427	443	468	517	536	544	544	539	510	463	412	401	0	0	5	34	81	132	143
1938	431	465	499	515	530	541	544	544	537	504	470	486	3	0	0	7	40	74	58
1939	513	522	526	539	544	544	526	495	464	452	437	418	0	18	49	80	92	107	126
1940	423	420	414	479	519	526	524	501	460	434	352	350	18	20	43	84	110	192	194
1941	389	422	460	512	536	540	537	534	519	468	428	447	4	7	10	25	76	116	97
1942	479	492	498	513	525	529	526	517	509	461	420	438	15	18	27	35	83	124	106
1943	470	485	490	505	517	529	532	535	507	464	415	421	15	12	9	37	80	129	123
1944	454	485	501	516	530	537	519	488	455	441	424	413	7	25	56	89	103	120	131
1945	419	456	492	519	535	540	530	503	466	445	409	400	4	14	41	78	99	135	144
1946	437	470	495	510	521	528	516	489	448	428	411	399	16	28	55	96	116	133	145
1947	421	454	487	516	529	538	523	490	458	445	429	409	6	21	54	86	99	115	135
1948	413	422	422	474	490	512	511	491	457	418	349	359	32	33	53	87	126	195	185
1949	390	416	448	493	515	542	524	495	453	431	407	395	2	20	49	91	113	137	149
1950	407	420	431	484	522	530	518	490	455	433	415	405	14	26	54	89	111	129	139
1951	428	459	495	525	535	540	527	507	464	434	410	405	4	17	37	80	110	134	139
1952	431	460	490	519	532	537	541	544	536	510	492	499	7	3	0	8	34	52	45
1953	506	515	519	532	543	544	529	515	493	468	430	446	0	15	29	51	76	114	98
1954	478	494	500	515	527	533	526	508	460	436	415	403	11	18	36	84	108	129	141
1955	435	464	494	518	530	538	520	493	465	459	425	418	6	24	51	79	85	119	126
1956	431	453	494	528	542	544	538	528	507	475	434	444	0	6	16	37	69	110	100
1957	470	495	500	514	527	533	524	501	468	450	429	420	11	20	43	76	94	115	124
1958	452	482	506	522	534	537	538	538	530	494	474	488	7	6	6	14	50	70	56
1959	496	504	509	522	534	541	521	488	453	437	426	421	3	23	56	91	107	118	123
1960	432	446	457	504	539	544	525	493	460	439	384	360	0	19	51	84	105	160	184
1961	377	416	454	502	536	544	524	490	460	451	430	409	0	20	54	84	93	114	135
1962	414	419	457	490	526	534	516	484	433	402	326	336	10	28	60	111	142	218	208
1963	377	412	444	490	523	529	529	520	496	464	429	444	15	15	24	48	80	115	100
1964	473	502	514	529	540	544	519	482	438	415	395	397	0	25	62	106	129	149	147
1965	402	433	468	518	532	539	540	526	495	465	420	429	5	4	18	49	79	124	115
1966	460	489	498	513	523	530	512	482	435	413	397	387	14	32	62	109	131	147	157
1967	401	437	475	515	528	533	538	541	534	522	502	505	11	6	3	10	22	42	39
1968	512	523	527	540	544	544	529	496	458	440	423	417	0	15	48	86	104	121	127
1969	437	468	501	523	536	544	544	544	537	517	489	503	0	0	0	7	27	55	41
1970	517	526	530	544	544	544	534	511	470	449	414	409	0	10	33	74	95	130	135
1971	431	464	496	514	524	530	520	503	476	454	435	447	14	24	41	68	90	109	97
1972	475	502	513	528	540	544	526	494	455	437	423	409	0	18	50	89	107	121	135
1973	434	465	496	523	534	540	533	512	481	459	420	419	4	11	32	63	85	124	125
1974	451	480	502	518	530	535	533	521	492	462	438	450	9	11	23	52	82	106	94
1975	474	483	488	502	516	520	517	502	477	444	429	440	24	27	42	67	100	115	104
1976	487	485	491	506	520	532	515	489	472	469	447	430	12	29	55	72	75	97	114
1977	431	439	441	458	458	458	460	449	429	406	399	413	86	84	95	115	138	145	131
1978	418	434	484	532	544	544	544	544	526	469	413	433	0	0	0	18	75	131	111
1979	466	486	492	507	521	528	522	504	474	455	409	405	16	22	40	70	89	135	139
1980	441	475	502	519	534	544	544	544	527	492	452	468	0	0	0	17	52	92	76
1981	499	519	525	539	544	544	530	496	459	441	423	411	0	14	48	85	103	121	133
1982	423	458	492	523	536	543	544	544	531	494	462	472	1	0	0	13	50	82	72
1983	496	515	521	535	544	544	544	544	537	527	514	521	0	0	0	7	17	30	23
1984	536	544	544	544	544	544	536	514	478	458	412	413	0	8	30	66	86	132	131
1985	450	482	497	512	525	532	512	478	434	414	398	397	12	32	66	110	130	146	147
1986	402	406	446	499	529	543	544	544	532	490	458	467	1	0	0	12	54	86	77
1987	496	508	534	544	544	544	523	488	460	450	425	411	0	21	56	84	94	119	133
1988	420	416	455	505	518	518	507	493	482	463	425	422	26	37	51	62	81	119	122
1989	422	438	455	493	493	527	517	486	450	440	386	395	17	27	58	94	104	158	149
1990	410	427	456	499	519	524	508	480	463	456	400	384	20	36	64	81	88	144	160
1991	384	391	391	406	406	470	471	461	443	422	407	409	74	73	83	101	122	137	135
1992	412	426	440	486	517	540	531	513	495	461	418	410	4	13	31	49	83	128	134
1993	410	417	464	519	529	533	528	522	506	459	404	409	11	16	22	38	85	140	135
1994	445	476	488	502	516	526	505	473	449	446	445	432	18	39	71	95	98	99	112

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	5	4	1	1	1	1	19	5	-1	-4	-15	-49	-45	10	6	5	5	3	1	1	6	27	513
1923	3	2	1	1	1	1	1	10	6	-4	-22	-36	-22	-30	-13	6	5	1	1	1	1	3	18	180
1924	3	1	1	1	1	1	1	9	0	-9	-24	-33	-38	-36	-4	6	4	1	1	1	1	5	19	171
1925	3	1	1	1	1	1	1	9	11	-8	-26	-41	-42	-57	-19	6	4	1	1	1	1	2	16	144
1926	1	1	1	1	1	1	1	7	11	-3	-22	-33	-7	-53	-9	6	5	1	1	4	1	4	22	154
1927	6	5	2	1	1	1	1	17	0	-4	-11	-31	-34	-51	11	6	5	3	1	1	1	6	23	391
1928	3	2	1	1	1	1	1	10	6	-6	-21	-47	-21	-21	-14	6	4	1	1	1	1	3	17	170
1929	5	3	1	1	1	1	1	13	10	-10	-12	-23	-29	-31	-3	6	4	3	1	1	1	5	21	273
1930	6	2	1	1	1	1	1	13	2	-18	-29	-30	-8	-15	-22	6	2	1	1	4	3	1	18	234
1931	1	1	1	1	1	1	1	7	0	8	-11	-17	-32	-48	0	6	4	3	2	1	1	6	23	161
1932	3	2	1	1	1	1	1	10	0	-8	-19	-19	-30	-42	-16	6	4	2	2	1	1	2	18	180
1933	1	1	1	1	1	1	1	7	9	-3	-13	-27	-35	-50	-1	6	5	3	1	1	1	5	22	154
1934	1	1	1	1	1	1	1	7	0	-13	-23	-24	-24	-33	-6	6	3	1	1	1	1	4	17	119
1935	2	3	1	1	1	1	1	10	33	4	-25	-35	-44	-74	1	6	6	1	1	1	1	6	22	220
1936	5	5	2	1	1	1	1	16	17	0	-16	-33	-35	-41	-6	6	6	2	1	1	1	4	21	336
1937	6	6	4	1	1	1	1	20	8	0	-5	-29	-47	-51	-11	6	6	5	1	1	1	3	23	460
1938	5	6	6	4	1	1	1	24	11	3	0	-7	-33	-34	16	6	6	6	4	1	1	6	30	720
1939	6	2	1	1	1	1	1	13	0	-18	-31	-31	-12	-15	-19	6	2	1	1	3	3	2	18	234
1940	2	1	1	1	1	1	1	8	7	-2	-23	-41	-26	-82	-2	6	5	1	1	1	1	5	20	160
1941	5	4	3	1	1	1	1	16	4	-3	-3	-15	-51	-40	19	6	5	5	3	1	1	6	27	432
1942	2	2	1	1	1	1	1	9	4	-3	-9	-8	-48	-41	18	6	5	4	4	1	1	6	27	243
1943	2	3	4	1	1	1	1	13	12	3	3	-28	-43	-49	6	6	6	6	1	1	1	6	27	351
1944	4	1	1	1	1	1	1	10	7	-16	-31	-33	-14	-17	-11	6	2	1	1	3	2	3	18	180
1945	5	3	1	1	1	1	1	13	5	-10	-27	-37	-21	-36	-9	6	4	1	1	1	1	4	18	234
1946	2	1	1	1	1	1	1	8	7	-12	-27	-41	-20	-17	-12	6	3	1	1	2	2	3	18	144
1947	4	1	1	1	1	1	1	10	9	-15	-33	-32	-13	-16	-20	6	3	1	1	3	2	2	18	180
1948	1	1	1	1	1	1	1	7	22	-1	-20	-34	-39	-69	10	6	5	2	1	1	1	6	22	154
1949	5	1	1	1	1	1	1	11	27	-18	-29	-42	-22	-24	-12	6	2	1	1	1	1	3	15	165
1950	3	1	1	1	1	1	1	9	8	-12	-28	-35	-22	-18	-10	6	3	1	1	1	2	4	18	162
1951	5	2	1	1	1	1	1	12	5	-13	-20	-43	-30	-24	-5	6	3	2	1	1	1	5	19	228
1952	4	5	6	4	1	1	1	22	5	4	3	-8	-26	-18	7	6	6	6	4	1	2	6	31	682
1953	6	2	1	1	1	1	1	13	1	-15	-14	-22	-25	-38	16	6	3	3	1	1	1	6	21	273
1954	3	2	1	1	1	1	1	10	6	-7	-18	-48	-24	-21	-12	6	4	2	1	1	1	3	18	180
1955	4	1	1	1	1	1	1	10	8	-18	-27	-28	-6	-34	-7	6	[illegible]	1	1	4	1	4	19	190
1956	6	4	2	1	1	1	1	16	2	-6	-10	-21	-32	-41	10	6	4	4	1	1	1	6	23	368
1957	3	1	1	1	1	1	1	9	6	-9	-23	-33	-18	-21	-9	6	4	1	1	2	1	4	19	171
1958	4	4	4	3	1	1	1	18	3	1	0	-8	-36	-20	14	6	6	6	4	1	2	6	31	558
1959	5	1	1	1	1	1	1	11	7	-20	-33	-35	-16	-11	-5	6	2	1	1	2	3	5	20	220
1960	6	2	1	1	1	1	1	13	5	-19	-32	-33	-21	-55	-24	6	2	1	1	1	1	1	13	169
1961	6	1	1	1	1	1	1	12	8	-20	-34	-30	-9	-21	-21	6	2	1	1	4	1	1	16	192
1962	3	1	1	1	1	1	1	9	6	-18	-32	-51	-31	-76	10	6	2	1	1	1	1	6	18	162
1963	2	2	1	1	1	1	1	9	6	0	-9	-24	-32	-35	15	6	6	4	1	1	1	6	25	225
1964	6	1	1	1	1	1	1	12	4	-25	-37	-44	-23	-20	2	6	1	1	1	1	2	6	18	216
1965	4	5	2	1	1	1	1	15	7	1	-14	-31	-30	-45	9	6	6	3	1	1	1	6	24	360
1966	3	1	1	1	1	1	1	9	7	-18	-30	-47	-22	-16	-10	6	2	1	1	1	2	4	17	153
1967	3	4	5	3	1	1	1	18	5	5	3	-7	-12	-20	3	6	6	6	4	3	2	6	33	594
1968	6	2	1	1	1	1	1	13	0	-15	-33	-38	-18	-17	-6	6	3	1	1	2	2	4	19	247
1969	6	6	6	4	1	1	1	25	8	0	0	-7	-20	-28	14	6	6	6	4	2	1	6	31	775
1970	6	3	1	1	1	1	1	14	0	-10	-23	-41	-21	-35	-5	6	4	1	1	1	1	5	19	266
1971	3	1	1	1	1	1	1	9	6	-10	-17	-27	-22	-19	12	6	4	2	1	1	2	6	22	198
1972	6	2	1	1	1	1	1	13	4	-18	-32	-39	-18	-14	-14	6	2	1	1	2	3	3	18	234
1973	5	3	1	1	1	1	1	13	6	-7	-21	-31	-22	-39	-1	6	4	1	1	1	1	5	19	247
1974	4	3	1	1	1	1	1	12	5	-2	-12	-29	-30	-24	12	6	5	3	1	1	1	6	23	276
1975	1	1	1	1	1	1	1	7	4	-3	-15	-25	-33	-15	11	6	5	3	1	1	3	6	25	175
1976	3	1	1	1	1	1	1	9	12	-17	-26	-17	-3	-22	-17	6	2	1	2	5	1	2	19	171
1977	1	1	1	1	1	1	1	7	0	2	-11	-20	-23	-7	14	6	6	3	2	1	4	6	28	196
1978	6	6	6	2	1	1	1	23	0	0	0	-18	-57	-56	20	6	6	6	2	1	1	6	28	644
1979	2	1	1	1	1	1	1	8	7	-6	-18	-30	-19	-46	-4	6	4	2	1	2	1	5	21	168
1980	6	6	6	2	1	1	1	23	10	0	0	-17	-35	-40	16	6	6	6	2	1	1	6	28	644
1981	6	3	1	1	1	1	1	14	0	-14	-34	-37	-18	-18	-12	6	3	1	1	2	2	3	18	252
1982	5	6	6	3	1	1	1	23	7	1	0	-13	-37	-32	10	6	6	6	3	1	1	6	29	667
1983	6	6	6	4	2	1	1	26	0	0	0	-7	-10	-13	7	6	6	6	4	4	3	6	35	910
1984	6	4	1	1	1	1	1	15	0	-8	-22	-36	-20	-46	1	6	4	1	1	2	1	6	21	315
1985	3	1	1	1	1	1	1	9	7	-20	-34	-44	-20	-16	-1	6	2	1	1	2	2	5	19	171
1986	5	6	6	3	1	1	1	23	14	1	0	-12	-42	-32	9	6	6	6	3	1	1	6	29	667
1987	6	1	1	1	1	1	1	12	0	-21	-35	-28	-10	-25	-14	6	1	1	1	4	1	3	17	204
1988	1	1	1	1	1	1	1	7	0	-11	-14	-11	-19	-38	-3	6	3	3	3	2	1	5	23	161
1989	2	1	1	1	1	1	1	8	34	-10	-31	-36	-10	-54	9	6	4	1	1	4	1	6	23	184
1990	1	1	1	1	1	1	1	7	5	-16	-28	-17	-7	-58	-16	6	2	1	2	4	1	2	18	126
1991	1	1	1	1	1	1	1	7	64	1	-10	-18	-21	-15	2	6	6	4	2	1	3	6	28	196
1992	5	3	1	1	1	1	1	13	23	-9	-18	-18	-34	-43	-8	6	4	2	2	1	1	4	20	260
1993	3	2	1	1	1	1	1	10	4	-5	-6	-16	-47	-55	5	6	5	4	2	1	1	6	25	250
1994	2	1	1	1	1	1	1	8	10	-21	-32	-24	-3	-1	-13	6	1	1	1	5	5	3	22	176

73 - year Average: 12 (elevation score SUM)

73 - year Average: 22 (fluctuation score SUM) 286.8 (Product)

1929 - '34 Average: 186.8

STUDY 1995C06F-SWRCB-485 DWRSIM recirc818-f, 18 Jun 97
CP # 4, SHASTA LAKE, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-485/4/ELEVATION-EOP//1MON/OUTPUT/

73 year maximum March - September Reservoir Elevation = 1067'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	989	992	998	1,003	1,018	1,037	1,059	1,067	1,062	1,047	1,030	1,024	30	8	0	5	20	37	43
1923	1,022	1,017	1,019	1,023	1,023	1,023	1,035	1,030	1,015	996	977	976	44	32	37	52	71	90	91
1924	977	977	977	978	985	986	974	961	940	915	896	879	81	93	106	127	152	171	188
1925	883	899	908	918	993	1,007	1,039	1,050	1,038	1,016	1,002	997	60	28	17	29	51	65	70
1926	992	989	984	981	1,010	1,017	1,031	1,024	998	971	949	942	50	36	43	69	96	118	125
1927	944	973	998	1,023	1,026	1,052	1,067	1,067	1,061	1,045	1,025	1,020	15	0	0	6	22	42	47
1928	1,018	1,017	1,020	1,028	1,044	1,046	1,066	1,062	1,042	1,016	995	988	21	1	5	25	51	72	79
1929	985	986	987	989	996	1,003	1,004	997	988	968	950	943	64	63	70	79	99	117	124
1930	940	939	970	982	999	1,022	1,033	1,033	1,013	994	978	975	45	34	34	54	73	89	92
1931	972	971	970	973	977	986	977	967	954	933	917	904	81	90	100	113	134	150	163
1932	898	897	914	925	935	961	964	972	965	951	936	928	106	103	95	102	116	131	139
1933	926	921	922	925	928	964	973	978	973	952	938	930	103	94	89	94	115	129	137
1934	928	928	938	956	975	989	991	986	972	939	923	908	78	76	81	95	128	144	159
1935	902	913	917	940	959	983	1,027	1,035	1,027	1,004	990	985	84	40	32	40	63	77	82
1936	982	980	978	1,004	1,032	1,044	1,054	1,052	1,045	1,022	1,000	993	23	13	15	22	45	67	74
1937	989	985	980	975	978	1,006	1,035	1,044	1,040	1,021	1,002	995	61	32	23	27	46	65	72
1938	992	1,013	1,020	1,035	1,030	1,024	1,049	1,067	1,067	1,058	1,045	1,036	43	18	0	0	9	22	31
1939	1,023	1,017	1,020	1,022	1,024	1,039	1,031	1,024	998	975	944	940	28	36	43	69	92	123	127
1940	936	930	940	989	1,017	1,025	1,059	1,063	1,051	1,029	1,008	1,004	42	8	4	16	38	59	63
1941	1,004	1,004	1,019	1,020	1,024	1,045	1,064	1,067	1,067	1,058	1,047	1,036	22	3	0	0	9	20	31
1942	1,023	1,017	1,020	1,023	1,028	1,042	1,067	1,067	1,067	1,058	1,046	1,036	25	0	0	0	9	21	31
1943	1,023	1,017	1,022	1,030	1,042	1,051	1,067	1,067	1,059	1,046	1,031	1,025	16	0	0	8	21	36	42
1944	1,023	1,017	1,015	1,014	1,023	1,033	1,038	1,038	1,017	993	972	964	34	29	29	50	74	95	103
1945	966	979	994	1,001	1,036	1,049	1,062	1,067	1,058	1,037	1,018	1,011	18	5	0	9	30	49	56
1946	1,010	1,017	1,018	1,033	1,039	1,051	1,063	1,065	1,050	1,031	1,015	1,008	16	4	2	17	36	52	59
1947	1,002	1,003	1,003	1,000	1,007	1,026	1,034	1,023	1,008	987	965	950	41	33	44	59	80	102	117
1948	957	961	963	993	993	1,005	1,047	1,067	1,066	1,050	1,035	1,033	62	20	0	1	17	32	34
1949	1,023	1,017	1,016	1,012	1,016	1,050	1,063	1,064	1,043	1,020	999	993	17	4	3	24	47	68	74
1950	987	982	979	990	1,005	1,023	1,040	1,039	1,026	1,005	988	986	44	27	28	41	62	79	81
1951	999	1,017	1,020	1,033	1,040	1,058	1,065	1,067	1,051	1,029	1,011	1,008	9	2	0	16	38	56	59
1952	1,006	1,011	1,019	1,032	1,038	1,048	1,058	1,067	1,067	1,058	1,046	1,036	19	9	0	0	9	21	31
1953	1,023	1,017	1,021	1,022	1,033	1,051	1,065	1,067	1,067	1,057	1,042	1,036	16	2	0	0	10	25	31
1954	1,023	1,017	1,021	1,030	1,036	1,051	1,067	1,063	1,053	1,036	1,022	1,018	16	0	4	14	31	45	49
1955	1,015	1,017	1,022	1,024	1,027	1,023	1,037	1,045	1,024	1,000	983	983	44	30	22	43	67	84	84
1956	981	987	1,017	1,017	1,019	1,048	1,067	1,067	1,067	1,058	1,047	1,036	19	0	0	0	9	20	31
1957	1,023	1,017	1,016	1,017	1,035	1,052	1,058	1,067	1,060	1,042	1,028	1,027	15	9	0	7	25	39	40
1958	1,023	1,017	1,021	1,029	1,067	1,024	1,053	1,067	1,067	1,058	1,047	1,036	43	14	0	0	9	20	31
1959	1,023	1,017	1,017	1,034	1,039	1,052	1,057	1,056	1,036	1,011	995	997	15	10	11	31	56	72	70
1960	990	981	981	988	1,017	1,045	1,052	1,060	1,041	1,020	1,001	997	22	15	7	26	47	66	70
1961	990	993	1,010	1,017	1,044	1,057	1,062	1,067	1,048	1,024	1,003	1,000	10	5	0	19	43	64	67
1962	990	987	909	1,001	1,035	1,053	1,066	1,066	1,052	1,031	1,009	1,007	14	1	1	15	36	58	60
1963	1,023	1,017	1,021	1,025	1,045	1,055	1,052	1,067	1,063	1,049	1,034	1,032	12	15	0	4	18	33	35
1964	1,023	1,017	1,016	1,033	1,032	1,031	1,025	1,020	1,003	985	958	953	36	42	47	64	82	109	114
1965	952	962	1,017	1,022	1,041	1,053	1,065	1,064	1,055	1,040	1,030	1,028	14	2	3	12	27	37	39
1966	1,023	1,017	1,021	1,037	1,049	1,055	1,063	1,062	1,043	1,023	1,007	1,000	12	4	5	24	44	60	67
1967	991	1,006	1,021	1,030	1,044	1,048	1,064	1,067	1,067	1,058	1,047	1,036	19	3	0	0	9	20	31
1968	1,023	1,017	1,019	1,025	1,034	1,054	1,056	1,058	1,040	1,019	1,010	1,005	13	11	9	27	48	57	62
1969	1,000	1,001	1,013	1,022	1,027	1,048	1,063	1,067	1,067	1,058	1,047	1,036	19	4	0	0	9	20	31
1970	1,023	1,017	1,020	1,017	1,025	1,052	1,055	1,055	1,041	1,021	1,004	1,000	15	12	12	26	46	63	67
1971	998	1,017	1,020	1,028	1,041	1,043	1,064	1,067	1,067	1,058	1,047	1,036	24	3	0	0	9	20	31
1972	1,023	1,017	1,022	1,033	1,045	1,056	1,067	1,067	1,048	1,028	1,015	1,011	11	0	0	19	39	52	56
1973	1,012	1,017	1,021	1,030	1,034	1,053	1,065	1,067	1,059	1,042	1,026	1,023	14	2	0	8	25	41	44
1974	1,023	1,017	1,018	1,017	1,036	1,025	1,058	1,067	1,067	1,058	1,047	1,036	42	9	0	0	9	20	31
1975	1,023	1,017	1,021	1,024	1,045	1,039	1,061	1,067	1,067	1,057	1,046	1,036	28	6	0	0	10	21	31
1976	1,023	1,017	1,018	1,017	1,012	1,020	1,027	1,023	997	976	972	974	47	40	44	70	91	95	93
1977	976	977	977	978	968	967	948	942	917	895	875	872	100	119	125	150	172	192	195
1978	861	859	907	1,014	1,031	1,047	1,067	1,067	1,064	1,055	1,045	1,036	20	0	0	3	12	22	31
1979	1,023	1,017	1,013	1,015	1,026	1,044	1,052	1,060	1,042	1,023	1,011	1,007	23	15	7	25	44	56	60
1980	1,007	1,010	1,013	1,029	1,019	1,046	1,059	1,064	1,056	1,045	1,035	1,035	21	8	3	11	22	32	32
1981	1,023	1,016	1,019	1,028	1,042	1,056	1,064	1,062	1,040	1,016	999	993	11	3	5	27	51	68	74
1982	990	1,017	1,018	1,033	1,029	1,046	1,051	1,067	1,067	1,058	1,047	1,036	21	16	0	0	9	20	31
1983	1,023	1,017	1,020	1,022	1,017	1,045	1,050	1,067	1,067	1,058	1,047	1,036	22	17	0	0	9	20	31
1984	1,023	1,017	1,018	1,034	1,047	1,056	1,064	1,067	1,058	1,042	1,029	1,027	11	3	0	9	25	38	40
1985	1,023	1,017	1,022	1,023	1,027	1,034	1,042	1,035	1,009	989	973	972	33	25	32	58	78	94	95
1986	975	979	989	1,014	1,017	1,029	1,048	1,050	1,039	1,023	1,007	1,011	38	19	17	28	44	60	56
1987	1,011	1,010	1,009	1,010	1,020	1,047	1,047	1,041	1,008	985	953	947	20	20	26	59	82	114	120
1988	943	945	976	999	999	1,002	1,009	1,008	989	954	939	936	65	58	59	78	113	128	131
1989	936	949	956	963	970	1,034	1,055	1,051	1,032	1,012	999	1,000	33	12	16	35	55	68	67
1990	1,003	1,002	999	1,006	1,007	1,016	1,008	1,014	999	973	957	953	51	59	53	68	94	110	114
1991	948	946	945	946	942	968	979	979	969	958	942	934	99	88	88	98	111	125	133
1992	933	931	932	937	976	998	1,010	1,003	988	972	959	953	69	57	64	79	95	108	114
1993	949	948	960	998	1,027	1,031	1,059	1,067	1,067	1,051	1,042	1,040	36	8	0	0	16	25	27
1994	1,030	1,017	1,019	1,020	1,026	1,030	1,030	1,028	1,001	980	959	958	37	37	39	66	87	108	111

Reservoir El[...] Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	4	6	4	1	1	1	18	19	22	8	-5	-15	-17	-6	6	6	6	5	3	2	4	32	576
1923	1	1	1	1	1	1	1	7	0	12	-5	-15	-19	-19	-1	6	6	5	3	2	2	5	29	203
1924	1	1	1	1	1	1	1	7	1	-12	-13	-21	-25	-19	-17	6	3	3	1	1	2	2	18	126
1925	1	1	2	1	1	1	1	8	14	32	11	-12	-22	-14	-5	6	6	6	3	1	3	5	30	240
1926	1	1	1	1	1	1	1	7	7	14	-7	-26	-27	-22	-7	6	6	4	1	1	1	4	23	161
1927	2	6	6	4	1	1	1	21	26	15	0	-6	-16	-20	-5	6	6	6	4	2	2	5	31	651
1928	1	5	4	1	1	1	1	14	2	20	-4	-20	-26	-21	-7	6	6	5	2	1	1	4	25	350
1929	1	1	1	1	1	1	1	7	7	1	-7	-9	-20	-18	-7	6	6	4	4	2	2	4	28	196
1930	1	1	1	1	1	1	1	7	23	11	0	-20	-19	-16	-3	6	6	6	2	2	2	5	29	203
1931	1	1	1	1	1	1	1	7	9	-9	-10	-13	-21	-16	-13	6	4	4	3	1	2	3	23	161
1932	1	1	1	1	1	1	1	7	26	3	8	-7	-14	-15	-8	6	6	6	4	3	3	4	32	224
1933	1	1	1	1	1	1	1	7	36	9	5	-5	-21	-14	-8	6	6	6	5	1	3	4	31	217
1934	1	1	1	1	1	1	1	7	14	2	-5	-14	-33	-16	-15	6	6	5	3	1	2	3	26	182
1935	1	1	1	1	1	1	1	7	24	44	8	-8	-23	-14	-5	6	6	6	4	1	3	5	31	217
1936	1	3	2	1	1	1	1	10	12	10	-2	-7	-23	-22	-7	6	6	5	4	1	1	4	27	270
1937	1	1	1	1	1	1	1	7	28	29	9	4	-19	-19	7	6	6	6	5	2	2	4	31	217
1938	1	2	6	6	4	1	1	21	6	25	18	0	9	-13	-9	4	6	6	6	4	3	4	33	693
1939	1	1	1	1	1	1	1	7	15	-8	-7	-26	-23	-31	-4	6	4	4	1	1	1	5	22	154
1940	1	4	5	2	1	1	1	15	8	34	4	-12	-22	-21	-4	6	6	6	3	1	1	5	28	420
1941	1	5	6	6	4	1	1	24	21	19	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1942	1	6	6	6	4	1	1	25	14	25	0	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1943	2	6	6	4	1	1	1	21	9	16	0	-8	-13	-15	-6	6	6	6	4	3	3	4	32	672
1944	1	1	1	1	1	1	1	7	10	5	0	-21	-24	-21	-8	6	6	6	1	1	1	4	25	175
1945	2	4	6	4	1	1	1	19	13	13	5	-9	-21	-19	-7	6	6	6	4	1	2	4	29	551
1946	2	5	5	2	1	1	1	17	12	12	2	-15	-19	-16	-7	6	6	6	3	2	2	4	29	493
1947	1	1	1	1	1	1	1	7	19	8	-11	-15	-21	-22	-15	6	6	3	3	1	1	3	23	161
1948	1	1	6	5	2	1	1	17	12	42	20	-1	-16	-15	-2	6	6	6	5	2	3	5	33	561
1949	2	5	5	1	1	1	1	16	34	13	1	-21	-23	-21	-6	6	6	6	1	1	1	4	25	400
1950	1	1	1	1	1	1	1	7	18	17	-1	-13	-21	-17	-2	6	6	5	3	1	2	5	28	196
1951	4	5	6	2	1	1	1	20	18	7	2	-16	-22	-18	-3	6	6	6	2	1	2	5	28	560
1952	2	4	6	6	4	1	1	24	10	10	9	0	-9	-12	-10	6	6	6	6	4	3	4	35	840
1953	2	5	6	6	3	1	1	24	18	14	2	0	-10	-15	-6	6	6	6	6	4	3	4	35	840
1954	2	6	5	3	1	1	1	19	16	16	4	10	17	14	4	6	6	5	4	2	3	5	31	589
1955	1	1	1	1	1	1	1	7	-4	14	8	-21	-24	-17	0	5	6	6	1	1	2	6	27	189
1956	2	6	6	6	4	1	1	26	29	19	0	0	-9	-11	-11	6	6	6	6	4	3	3	34	884
1957	2	4	6	4	1	1	1	19	17	6	9	-7	-18	-14	-1	6	6	6	4	2	3	5	32	608
1958	1	3	6	6	4	1	1	22	-43	29	14	0	-9	-11	-11	1	6	6	6	4	3	3	29	638
1959	2	3	3	1	1	1	1	12	13	5	-1	-20	-25	-16	2	6	6	5	2	1	2	6	28	336
1960	1	2	4	1	1	1	1	11	28	7	8	-19	-21	-19	-4	6	6	6	2	1	2	5	28	308
1961	3	4	6	2	1	1	1	18	13	5	5	-19	-24	-21	-3	6	6	6	2	1	1	5	27	486
1962	3	5	5	2	1	1	1	18	18	13	0	-14	-21	-22	-2	6	6	6	3	1	1	5	28	504
1963	3	2	6	5	2	1	1	20	10	-3	15	-4	-14	-15	-2	6	5	6	5	3	3	5	33	660
1964	1	1	1	1	1	1	1	7	-1	-6	-5	-17	-18	-27	-5	5	4	5	2	2	1	5	24	168
1965	3	5	5	3	1	1	1	19	12	12	-1	-9	-15	-10	-2	6	6	5	4	3	4	5	33	627
1966	3	5	4	1	1	1	1	16	6	8	-1	-19	-20	-16	-7	6	6	5	2	2	2	4	27	432
1967	2	5	6	6	4	1	1	25	4	16	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1968	3	3	4	1	1	1	1	14	20	2	2	-18	-21	-9	-5	6	6	6	2	1	4	5	30	420
1969	2	5	6	6	4	1	1	25	21	15	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1970	2	3	3	1	1	1	1	12	27	3	0	-14	-20	-17	-4	6	6	6	3	2	2	5	30	360
1971	1	5	6	6	4	1	1	24	2	21	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1972	3	6	6	2	1	1	1	20	11	11	0	-19	-20	-13	-4	6	6	6	2	2	3	5	30	600
1973	3	5	6	4	1	1	1	21	19	12	2	-8	-17	-16	-3	6	6	6	4	2	2	5	31	651
1974	1	4	6	6	4	1	1	23	-11	33	9	0	-9	-11	-11	3	6	6	6	4	3	3	31	713
1975	1	4	6	6	3	1	1	22	-6	22	6	0	-10	-11	-10	4	6	6	6	4	3	4	33	726
1976	1	1	1	1	1	1	1	7	8	7	-4	-26	-21	-4	2	6	6	5	1	1	5	6	30	210
1977	1	1	1	1	1	1	1	7	-1	-19	-6	-25	-22	-20	-3	5	2	4	1	1	2	5	20	140
1978	1	6	6	5	3	1	1	23	16	20	0	-3	-9	-10	-9	6	6	6	5	4	4	4	35	805
1979	1	2	4	1	1	1	1	11	18	8	8	-18	-19	-12	-4	6	6	6	2	2	3	5	30	330
1980	1	4	5	3	1	1	1	16	27	13	5	-8	-11	-10	0	6	6	6	4	3	4	6	35	560
1981	3	5	4	1	1	1	1	16	14	8	-2	-22	-24	-17	-6	6	6	5	1	1	2	4	25	400
1982	1	2	6	6	4	1	1	21	17	5	16	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1983	1	2	6	6	4	1	1	21	28	5	17	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1984	3	5	6	4	1	1	1	21	9	8	3	-9	-16	-13	-2	6	6	6	4	2	3	5	32	672
1985	1	1	1	1	1	1	1	7	7	8	-7	-26	-20	-16	-1	6	6	4	1	2	2	5	26	182
1986	1	2	2	1	1	1	1	9	12	19	2	-11	-16	-16	4	6	6	6	3	2	2	6	31	279
1987	1	1	1	1	1	1	1	7	27	0	-6	-33	-23	-32	-6	6	6	4	1	1	1	4	23	161
1988	1	1	1	1	1	1	1	7	3	7	-1	-19	-35	-15	-3	6	6	5	2	1	3	5	28	196
1989	1	3	2	1	1	1	1	10	64	21	-4	-19	-20	-13	1	6	6	5	2	2	3	6	30	300
1990	1	1	1	1	1	1	1	7	9	-8	6	-15	-26	-16	-4	6	4	6	3	1	2	5	27	189
1991	1	1	1	1	1	1	1	7	26	11	0	-10	-13	-14	-8	6	6	6	4	3	3	4	32	224
1992	1	1	1	1	1	1	1	7	23	12	-7	-15	-16	-13	-6	6	6	4	3	2	3	4	28	196
1993	1	4	6	6	2	1	1	21	4	28	8	0	-16	9	-2	6	6	6	6	2	4	5	35	735
1994	1	1	1	1	1	1	1	7	4	0	-2	-27	-21	-21	-3	6	6	5	1	1	1	5	26	178

73 - year Average: 14

73 - year Average: 29 441.1
1929 - '34 Average: 197.2

C-032499

STUDY 1995C06F-SWRCB-485 DWRSIM: reckrc818-f, 18 Jun 97
CP # 6, LAKE OROVILLE, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-485/6/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 900'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	833	830	832	836	850	858	893	900	900	880	876	876
1923	874	874	858	862	858	871	894	900	881	842	812	814
1924	805	794	763	768	788	776	762	751	728	708	699	693
1925	843	897	704	791	788	816	836	843	825	795	783	782
1926	778	778	777	791	834	854	887	874	853	814	800	777
1927	774	805	806	830	849	863	890	900	899	863	851	848
1928	845	856	857	888	871	849	878	865	845	794	744	737
1929	724	719	717	723	737	753	758	760	753	737	728	721
1930	713	710	770	798	824	855	877	880	862	824	789	786
1931	776	768	760	773	786	799	786	771	749	728	718	711
1932	705	696	702	726	748	781	787	812	783	729	712	706
1933	696	684	683	695	704	710	718	732	725	711	700	693
1934	689	681	683	710	733	761	753	743	719	695	683	676
1935	671	675	682	710	733	764	852	862	848	824	814	796
1936	780	771	769	820	849	860	886	897	888	849	829	826
1937	814	793	778	769	776	801	832	845	825	788	767	761
1938	756	774	850	858	849	849	882	900	900	899	896	887
1939	874	864	854	845	837	833	822	813	778	713	656	650
1940	640	629	632	704	813	849	879	884	867	829	822	811
1941	802	798	839	849	849	858	886	900	900	890	886	887
1942	874	874	849	849	850	867	882	900	900	885	882	882
1943	874	869	861	849	856	859	887	897	895	863	853	853
1944	854	857	856	862	857	868	879	895	875	835	797	791
1945	786	793	809	823	862	865	880	896	878	838	813	808
1946	808	816	849	864	868	868	887	892	870	831	789	785
1947	776	782	791	797	823	845	855	850	833	779	725	718
1948	721	722	718	755	758	778	839	868	874	840	822	806
1949	798	796	796	801	809	832	852	856	833	780	746	741
1950	726	717	711	744	792	831	864	883	872	834	822	821
1951	825	849	854	853	868	870	886	900	889	848	820	820
1952	823	826	849	849	862	862	894	900	900	900	899	887
1953	874	874	858	850	867	867	883	900	900	870	868	870
1954	872	871	874	858	857	859	883	866	851	805	758	759
1955	760	762	770	783	790	803	812	825	798	735	712	709
1956	700	696	848	849	849	864	892	900	900	873	870	874
1957	869	874	874	871	853	863	863	881	866	827	790	795
1958	797	801	821	841	849	849	879	900	900	898	894	887
1959	874	874	874	862	852	867	871	874	853	808	758	761
1960	754	743	737	752	813	854	854	859	840	798	786	778
1961	767	770	779	790	820	838	843	849	828	771	713	709
1962	692	688	697	712	776	812	847	846	831	776	747	726
1963	800	812	839	859	867	858	876	900	893	857	846	847
1964	848	859	861	866	874	874	880	885	868	827	780	756
1965	743	744	849	849	863	870	887	884	886	853	847	848
1966	852	859	860	864	870	874	888	877	858	817	768	762
1967	749	759	797	848	860	853	879	900	900	900	896	887
1968	874	874	873	858	861	866	863	867	848	802	764	761
1969	763	768	791	849	849	865	895	900	900	895	893	874
1970	874	874	850	849	849	874	869	871	857	818	787	789
1971	792	818	846	864	874	874	893	900	900	871	853	855
1972	860	868	865	869	867	874	884	887	868	828	785	786
1973	782	797	823	849	849	860	882	900	872	833	819	815
1974	819	849	850	854	864	849	883	900	900	889	888	886
1975	874	874	874	874	865	852	881	900	900	877	876	877
1976	873	874	874	874	874	874	871	862	840	795	751	751
1977	740	728	712	708	692	688	667	656	627	605	596	593
1978	582	582	619	745	799	859	878	897	893	874	865	872
1979	874	874	874	871	853	863	878	896	867	829	820	818
1980	822	826	834	850	849	865	881	893	888	873	866	865
1981	864	865	873	860	868	865	875	872	851	806	762	763
1982	768	848	849	859	862	859	884	900	900	889	886	887
1983	873	862	858	853	849	849	877	900	900	900	899	887
1984	874	860	849	869	869	871	885	894	878	840	831	832
1985	836	850	860	866	874	871	886	872	850	806	757	744
1986	735	731	738	773	849	849	871	875	871	842	831	842
1987	844	850	848	849	860	867	857	847	819	759	710	705
1988	693	696	735	762	765	765	764	754	732	711	699	697
1989	668	707	717	724	724	840	865	856	838	790	776	771
1990	778	779	772	786	792	818	805	805	780	727	713	703
1991	687	679	665	662	650	703	726	740	723	701	696	695
1992	691	666	668	691	722	752	767	755	729	704	693	687
1993	678	673	691	759	811	861	894	900	900	881	874	873
1994	874	874	874	871	862	874	872	867	845	803	755	750

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	42	7	0	0	20	24	24
1923	29	6	0	19	58	88	86
1924	124	138	149	172	192	201	207
1925	84	64	57	75	105	117	118
1926	46	13	26	47	86	100	123
1927	37	10	0	1	37	49	52
1928	51	22	35	55	106	156	163
1929	147	142	140	147	163	172	179
1930	45	23	20	38	76	111	114
1931	101	114	129	151	172	182	189
1932	119	113	88	117	171	188	194
1933	190	182	168	175	189	200	207
1934	139	147	157	181	205	217	224
1935	136	48	38	52	76	86	104
1936	40	14	3	12	51	71	74
1937	99	68	55	75	112	133	139
1938	51	18	0	0	1	4	13
1939	67	78	87	122	187	244	250
1940	51	21	16	33	71	78	89
1941	42	14	0	0	10	14	13
1942	33	18	0	0	15	18	18
1943	41	13	3	5	37	47	47
1944	32	21	5	25	65	103	109
1945	35	20	4	22	62	87	92
1946	32	13	8	30	69	111	115
1947	55	45	50	67	121	175	182
1948	122	61	32	26	60	78	94
1949	68	48	44	67	120	154	159
1950	69	36	17	28	66	78	79
1951	30	14	0	11	52	80	80
1952	38	6	0	0	0	1	13
1953	33	17	0	0	30	32	30
1954	41	17	34	49	95	142	141
1955	97	88	75	102	165	188	191
1956	36	8	0	0	27	30	26
1957	37	37	19	34	73	110	105
1958	51	21	0	0	2	6	13
1959	33	29	26	47	92	142	139
1960	46	46	41	60	102	114	122
1961	62	57	51	72	129	187	191
1962	88	53	54	69	124	153	174
1963	42	24	0	7	43	54	53
1964	26	20	15	32	73	120	144
1965	30	13	16	14	47	53	52
1966	26	12	23	42	83	132	138
1967	47	21	0	0	0	4	13
1968	34	37	33	52	98	136	139
1969	35	5	0	0	5	7	26
1970	26	31	29	43	82	113	111
1971	26	7	0	0	29	47	45
1972	26	16	13	32	72	115	114
1973	40	18	0	28	67	81	85
1974	51	17	0	0	11	12	14
1975	48	19	0	0	23	24	23
1976	26	29	38	60	105	149	149
1977	212	233	244	273	295	304	307
1978	41	22	3	7	26	35	28
1979	37	22	4	33	71	80	82
1980	35	19	7	12	27	34	35
1981	35	25	28	49	94	138	137
1982	41	16	0	0	11	14	13
1983	51	23	0	0	0	1	13
1984	29	15	6	22	60	69	68
1985	29	14	28	50	94	143	156
1986	51	29	25	29	58	69	58
1987	33	43	53	81	141	190	195
1988	135	136	146	168	189	201	203
1989	60	35	44	62	110	124	129
1990	82	95	95	120	173	187	197
1991	197	174	160	177	199	204	205
1992	148	133	145	171	196	207	213
1993	39	6	0	0	19	26	27
1994	26	28	33	55	97	145	150

Reservoir Elevation Sco[illegible]ble:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	1	4	6	6	1	1	1	20
1923	1	4	6	2	1	1	1	16
1924	1	1	1	1	1	1	1	7
1925	1	1	1	1	1	1	1	7
1926	1	3	1	1	1	1	1	9
1927	1	3	6	5	1	1	1	18
1928	1	1	1	1	1	1	1	7
1929	1	1	1	1	1	1	1	7
1930	1	1	1	1	1	1	1	7
1931	1	1	1	1	1	1	1	7
1932	1	1	1	1	1	1	1	7
1933	1	1	1	1	1	1	1	7
1934	1	1	1	1	1	1	1	7
1935	1	1	1	1	1	1	1	7
1936	1	3	5	3	1	1	1	15
1937	1	1	1	1	1	1	1	7
1938	1	2	6	6	5	5	3	28
1939	1	1	1	1	1	1	1	7
1940	1	1	2	1	1	1	1	8
1941	1	3	6	6	3	3	3	25
1942	1	2	6	6	2	2	2	21
1943	1	3	5	4	1	1	1	16
1944	1	1	4	1	1	1	1	10
1945	1	1	5	1	1	1	1	11
1946	1	3	4	1	1	1	1	12
1947	1	1	1	1	1	1	1	7
1948	1	1	1	1	1	1	1	7
1949	1	1	1	1	1	1	1	7
1950	1	1	2	1	1	1	1	8
1951	1	3	6	3	1	1	1	16
1952	1	4	6	6	6	5	3	31
1953	1	2	6	6	1	1	1	18
1954	1	2	1	1	1	1	1	8
1955	1	1	1	1	1	1	1	7
1956	1	4	6	6	1	1	1	20
1957	1	1	2	1	1	1	1	8
1958	1	1	6	6	5	4	3	26
1959	1	1	1	1	1	1	1	7
1960	1	1	1	1	1	1	1	7
1961	1	1	1	1	1	1	1	7
1962	1	1	1	1	1	1	1	7
1963	1	1	6	4	1	1	1	15
1964	1	1	2	1	1	1	1	8
1965	1	3	2	3	1	1	1	12
1966	1	3	1	1	1	1	1	9
1967	1	1	6	6	6	5	3	28
1968	1	1	1	1	1	1	1	7
1969	1	4	6	6	4	4	1	26
1970	1	1	1	1	1	1	1	7
1971	1	4	6	6	1	1	1	20
1972	1	2	3	1	1	1	1	10
1973	1	2	6	1	1	1	1	13
1974	1	2	6	6	3	3	3	24
1975	1	2	6	6	1	1	1	18
1976	1	1	1	1	1	1	1	7
1977	1	1	1	1	1	1	1	7
1978	1	1	5	4	1	1	1	14
1979	1	1	5	1	1	1	1	11
1980	1	2	4	3	1	1	1	13
1981	1	1	1	1	1	1	1	7
1982	1	2	6	6	3	3	3	24
1983	1	1	6	6	6	5	3	28
1984	1	2	4	1	1	1	1	11
1985	1	3	1	1	1	1	1	9
1986	1	1	1	1	1	1	1	7
1987	1	1	1	1	1	1	1	7
1988	1	1	1	1	1	1	1	7
1989	1	1	1	1	1	1	1	7
1990	1	1	1	1	1	1	1	7
1991	1	1	1	1	1	1	1	7
1992	1	1	1	1	1	1	1	7
1993	1	4	6	6	2	1	1	21
1994	1	1	1	1	1	1	1	7

[illegible]ear Average: 12

Reservoir Change from Previous Month [fluctuation]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	8	35	7	0	-20	-4	0
1923	13	23	6	-19	-39	-30	2
1924	-10	-14	-11	-23	-20	-9	-6
1925	28	20	7	-18	-30	-12	-1
1926	20	33	-13	-21	-39	-14	-23
1927	14	27	10	-1	-36	-12	-3
1928	-22	29	-13	-20	-51	-50	-7
1929	16	5	2	-7	-16	-9	-7
1930	31	22	3	-18	-38	-35	-3
1931	13	-13	-15	-22	-21	-10	-7
1932	33	6	25	-29	-54	-17	-6
1933	6	8	14	-7	-14	-11	-7
1934	28	-8	-10	-24	-24	-12	-7
1935	31	88	10	-14	-24	-10	-18
1936	11	26	11	-9	-39	-20	-3
1937	25	31	13	-20	-37	-21	-6
1938	0	33	18	0	-1	-3	-9
1939	-4	-11	-9	-35	-65	-57	-6
1940	36	30	5	-17	-38	-7	-11
1941	9	28	14	0	-10	-4	1
1942	17	15	18	0	-15	-3	0
1943	3	28	10	-2	-32	-10	0
1944	11	11	16	-20	-40	-38	-6
1945	3	15	16	-18	-40	-25	-5
1946	0	19	5	-22	-39	-42	-4
1947	22	10	-5	-17	-54	-54	-7
1948	20	61	29	6	-34	-18	-16
1949	23	20	4	-23	-53	-34	-5
1950	39	33	19	-11	-38	-12	-1
1951	12	16	14	-11	-41	-28	0
1952	10	32	6	0	0	-1	-12
1953	0	16	17	0	-30	-2	2
1954	2	24	-17	-15	-46	-47	1
1955	13	9	13	-27	-63	-23	-3
1956	15	28	8	0	-27	-3	4
1957	10	0	18	-15	-39	-37	5
1958	0	30	21	0	-2	-4	-7
1959	15	4	3	-21	-45	-50	3
1960	41	0	5	-19	-42	-12	-8
1961	18	5	6	-21	-57	-58	-4
1962	36	35	-1	-15	-55	-29	-21
1963	-9	18	24	-7	-36	-11	1
1964	0	6	5	17	-41	-47	-24
1965	7	17	-3	2	-33	-6	1
1966	4	14	-11	-19	-41	-49	-6
1967	-7	26	21	0	0	-4	-9
1968	5	-3	4	-19	-46	-38	-3
1969	16	30	5	0	-5	-2	-19
1970	25	-5	2	-14	-39	-31	2
1971	0	19	7	0	-29	-18	2
1972	7	10	3	-19	-40	-43	1
1973	11	22	18	-28	-39	-14	-4
1974	-15	34	17	0	-11	-1	-2
1975	-3	29	19	0	-23	-1	1
1976	0	-3	-9	-22	-45	-44	0
1977	-4	-21	-11	-29	-22	-9	-3
1978	60	19	19	-4	-19	-9	7
1979	10	15	18	-29	-38	-9	-2
1980	16	16	12	-5	-15	-7	-1
1981	-3	10	-3	-21	-45	-44	1
1982	-3	25	16	0	-11	-3	1
1983	0	28	23	0	0	-1	-12
1984	2	14	9	-16	-38	-9	1
1985	-3	15	-14	-22	-44	-49	-13
1986	0	22	4	-4	-29	-11	11
1987	7	-10	-10	-28	-60	-49	-5
1988	0	-1	-10	-22	-21	-12	-2
1989	116	25	-9	-18	-48	-14	-5
1990	26	-13	0	-25	-53	-14	-10
1991	53	23	14	-17	-22	-5	-1
1992	30	15	-12	-26	-25	-11	-6
1993	50	33	6	0	-19	-7	-1
1994	12	-2	-5	-22	-42	-48	-5

Reservoir Fluctuation Scoring Table
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	6	6	6	2	5	6	37	740
1923	6	6	6	2	1	1	6	28	448
1924	4	3	3	1	2	4	4	21	147
1925	6	6	6	2	1	3	5	29	203
1926	6	6	3	1	1	3	1	21	189
1927	6	6	6	5	1	3	5	32	576
1928	1	6	3	2	1	1	4	18	126
1929	6	6	6	4	2	4	4	32	224
1930	6	6	6	2	1	1	5	27	189
1931	6	3	3	1	1	4	4	22	154
1932	6	6	6	1	1	2	4	26	182
1933	6	6	6	4	3	3	4	32	224
1934	6	4	4	1	1	3	4	23	161
1935	6	6	6	3	1	4	2	28	196
1936	6	6	6	4	1	2	5	30	450
1937	6	6	6	2	1	1	4	26	182
1938	6	6	6	6	5	5	4	38	1064
1939	5	3	4	1	1	1	4	19	133
1940	6	6	6	2	1	4	3	28	224
1941	6	6	6	6	4	5	6	39	975
1942	6	6	6	6	3	5	6	38	798
1943	6	6	6	5	1	4	6	34	544
1944	6	6	6	2	1	1	4	26	260
1945	6	6	6	2	1	1	5	27	297
1946	6	6	6	1	1	1	5	26	312
1947	6	6	5	2	1	1	4	25	175
1948	6	6	6	6	1	2	2	29	203
1949	6	6	6	1	1	1	5	26	182
1950	6	6	6	3	1	3	5	30	240
1951	6	6	6	3	1	1	6	29	464
1952	6	6	6	6	6	5	3	38	1178
1953	6	6	6	6	1	5	6	36	648
1954	6	6	2	3	1	1	6	25	200
1955	6	6	6	1	1	1	5	26	182
1956	6	6	6	6	1	5	6	36	720
1957	6	6	6	3	1	1	6	29	232
1958	6	6	6	6	5	5	4	38	988
1959	6	6	6	1	1	1	6	27	189
1960	6	6	6	2	1	3	4	28	196
1961	6	6	6	1	1	1	5	26	182
1962	6	6	5	3	1	1	1	23	161
1963	4	6	6	4	1	3	6	30	450
1964	6	6	6	2	1	1	1	23	184
1965	6	6	5	6	1	4	6	34	408
1966	6	6	3	2	1	1	4	23	207
1967	4	6	6	6	6	5	4	37	1036
1968	6	5	6	2	1	1	5	26	182
1969	6	6	6	6	5	5	2	36	936
1970	6	5	6	3	1	1	6	28	196
1971	6	6	6	6	1	2	6	33	660
1972	6	6	6	2	1	1	6	28	280
1973	6	6	6	1	1	3	5	28	364
1974	3	6	6	6	3	5	5	34	816
1975	5	6	6	6	1	5	6	35	630
1976	6	5	4	1	1	1	6	24	168
1977	5	1	3	1	1	4	5	20	140
1978	6	6	6	5	2	4	6	35	490
1979	6	6	6	1	1	4	5	29	319
1980	6	6	6	5	3	4	5	35	455
1981	5	6	5	1	1	1	6	25	175
1982	5	6	6	6	3	5	6	37	888
1983	6	6	6	6	6	5	3	38	1064
1984	6	6	6	2	1	4	6	31	341
1985	5	6	3	1	1	1	3	20	180
1986	6	6	6	5	1	3	6	33	231
1987	6	4	4	1	1	1	5	22	154
1988	6	5	4	1	1	3	5	25	175
1989	6	6	4	2	1	3	5	27	189
1990	6	3	6	1	1	3	4	24	168
1991	6	6	6	2	1	5	5	31	217
1992	6	6	3	1	1	3	4	24	168
1993	6	6	6	6	2	4	5	35	735
1994	6	5	5	1	1	1	5	24	168

73 - year Average: 29 382.4
1929 - '34 Average: 189

C-032500

C-032500

STUDY 1995C06F-SWRCB-485 DWRSIM. recirc816-f, 18 Jun 97
CP # 8. FOLSOM LAKE, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-485/8/ELEVATION-EOP//1MON/OUTPUT/

73 year maximum March - September Reservoir Elevation = 466'

Reservoir Elevation Sco ___ ole:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE] MAR	APR	MAY	JUN	JUL	AUG	SEP	Reservoir Elevation Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Reservoir Change from Previous Month [fluctuation] MAR	APR	MAY	JUN	JUL	AUG	SEP	Reservoir Fluctuation Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Largemouth Bass Reservoir Habitat Index Product
1922	414	405	410	410	424	428	443	468	466	463	449	434	38	23	0	0	3	17	32	1	1	6	6	5	2	1	22	4	15	23	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1923	425	423	424	424	423	423	449	466	448	426	404	387	43	17	0	18	40	62	79	1	2	6	2	1	1	1	14	0	26	17	-18	-22	-22	-17	6	6	6	2	1	1	2	24	336
1924	394	396	394	395	401	387	388	366	334	334	337	334	79	78	100	132	132	129	132	1	1	1	1	1	1	1	7	-14	1	-22	-32	0	3	-3	6	6	1	1	6	6	5	28	196
1925	349	383	380	390	424	434	449	466	445	422	410	402	32	17	0	21	44	56	64	1	2	6	1	1	1	1	13	10	15	17	-21	-23	-12	-8	6	6	6	1	1	3	4	27	351
1926	383	388	338	322	377	389	427	425	390	334	334	348	77	39	41	78	132	132	118	1	1	1	1	1	1	1	7	12	38	-2	-35	-56	0	14	6	6	5	1	1	6	6	31	217
1927	338	390	412	424	424	437	449	466	461	450	433	427	29	17	0	5	16	33	39	1	2	6	4	2	1	1	17	13	12	17	-5	-11	-17	-6	6	6	6	5	3	2	4	32	544
1928	423	424	424	424	424	437	449	453	434	409	403	396	29	17	13	32	57	63	70	1	2	3	1	1	1	1	10	13	12	4	-19	-25	-6	-7	6	6	6	2	1	4	4	29	290
1929	357	338	325	276	307	339	365	377	367	334	347	351	127	101	89	99	132	119	115	1	1	1	1	1	1	1	7	32	26	12	-10	-33	13	4	6	6	6	4	1	6	6	35	245
1930	334	334	384	406	421	437	443	442	413	378	334	335	29	23	24	53	88	132	131	1	1	1	1	1	1	1	7	16	6	-1	-29	-35	-44	1	6	6	5	1	1	1	6	26	182
1931	334	343	353	369	379	392	387	382	334	334	335	334	74	79	84	132	132	131	132	1	1	1	1	1	1	1	7	13	-5	-5	-48	0	1	-1	6	5	5	1	6	6	5	34	238
1932	334	334	380	402	424	436	441	457	428	380	366	370	30	25	9	38	66	100	96	1	1	4	1	1	1	1	10	12	5	16	-29	-48	-14	4	6	6	6	1	1	3	6	29	290
1933	343	334	355	386	369	382	335	358	334	334	349	344	84	131	108	132	132	117	122	1	1	1	1	1	1	1	7	13	-47	23	-24	0	15	-5	6	1	6	1	6	6	5	31	217
1934	335	335	375	402	420	424	414	406	334	323	313	326	42	52	60	132	143	153	140	1	1	1	1	1	1	1	7	4	-10	-8	-72	-11	-10	13	6	4	4	1	3	4	6	28	196
1935	334	361	378	402	418	421	449	453	452	418	395	373	45	17	13	14	48	71	93	1	2	3	3	1	1	1	12	3	28	4	-1	-34	-23	-22	6	6	6	5	1	1	1	26	312
1936	378	390	399	424	424	437	449	461	456	444	427	418	29	17	5	10	22	39	48	1	2	4	3	1	1	1	13	13	12	12	-5	-12	-17	-9	6	6	6	5	3	2	4	32	416
1937	405	383	372	381	402	430	449	466	454	444	439	429	36	17	0	12	22	27	37	1	2	6	3	1	1	1	15	28	19	17	-12	-10	-5	-10	6	6	6	3	4	5	4	34	510
1938	422	419	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1939	426	420	415	409	402	409	415	418	387	334	334	335	57	51	48	79	132	132	131	1	1	1	1	1	1	1	7	7	6	3	-31	-53	0	1	6	6	6	1	1	6	6	32	224
1940	334	334	334	420	424	437	449	459	445	425	409	408	29	17	7	21	41	57	58	1	2	4	1	1	1	1	11	13	12	10	-14	-20	-16	-1	6	6	6	3	2	2	5	30	330
1941	403	402	424	424	424	437	449	466	458	455	449	434	29	17	0	8	11	17	32	1	2	6	4	3	2	1	19	13	12	17	-8	-3	-6	-15	6	6	6	4	5	4	3	34	646
1942	426	422	424	424	424	430	449	466	466	463	449	434	36	17	0	0	3	17	32	1	2	6	6	5	2	1	23	6	19	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1943	425	424	423	422	422	434	449	459	451	448	444	433	32	17	7	15	18	22	33	1	2	4	2	2	1	1	13	12	15	10	-8	-3	-4	-11	6	6	6	4	5	5	3	35	455
1944	425	418	412	405	406	418	419	433	410	387	370	356	48	47	33	58	79	96	110	1	1	1	1	1	1	1	7	12	1	14	-23	-23	-17	-14	6	6	6	1	1	2	3	25	175
1945	348	383	405	413	424	437	449	466	451	440	432	426	29	17	0	15	26	34	40	1	2	6	2	1	1	1	14	13	12	17	-15	-11	-8	-6	6	6	6	3	3	4	4	32	448
1946	423	424	424	424	424	437	449	466	446	431	425	418	29	17	0	20	35	41	48	1	2	6	1	1	1	1	13	13	12	17	-20	-15	-6	-7	6	6	6	2	3	4	4	31	403
1947	408	409	408	400	407	426	436	439	407	365	335	334	40	30	27	59	101	131	132	1	1	1	1	1	1	1	7	19	10	3	-32	-42	-30	-1	6	6	6	1	1	1	5	26	182
1948	344	365	366	395	388	380	422	449	440	435	431		86	44	17	17	26	31	35	1	1	2	2	1	1	1	9	-6	42	27	0	-9	-5	-4	4	6	6	6	4	5	5	36	324
1949	422	418	413	403	398	419	441	457	438	420	404	395	47	25	9	28	46	62	71	1	1	4	1	1	1	1	10	23	22	16	-19	-18	-16	-9	6	6	6	2	2	2	4	28	280
1950	366	334	335	398	424	437	449	466	454	443	434	434	29	17	0	12	23	32	32	1	2	6	3	1	1	1	15	13	12	17	-12	-11	-9	0	6	6	6	3	3	4	6	34	510
1951	428	393	388	388	388	426	449	466	450	434	429	425	40	17	0	18	32	37	41	1	2	6	2	1	1	1	14	38	23	17	-16	-16	-5	-4	6	6	6	2	2	5	5	32	448
1952	423	424	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1953	428	423	424	424	424	430	446	458	464	462	445	434	36	20	8	2	4	21	32	1	1	4	5	5	1	1	18	6	16	12	6	-2	-17	-11	6	6	6	6	5	2	3	34	612
1954	425	423	421	422	424	437	449	450	435	415	413	411	29	17	16	31	51	53	55	1	2	2	1	1	1	1	9	13	12	1	-15	-20	-2	-2	6	6	6	3	2	5	5	33	297
1955	403	401	408	416	416	410	420	438	417	392	361	335	58	46	28	49	74	105	131	1	1	1	1	1	1	1	7	-6	10	18	-21	-25	-31	-26	4	6	6	1	1	1	1	20	140
1956	338	359	420	402	406	425	441	466	466	463	449	434	41	25	0	0	3	17	32	1	1	6	6	5	2	1	22	19	16	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1957	428	422	417	412	424	437	433	459	447	435	429	423	29	33	7	19	31	37	43	1	1	4	2	1	1	1	11	13	-4	26	-12	-12	-6	-6	6	5	6	3	3	4	4	31	341
1958	419	414	415	422	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1959	425	419	412	417	424	428	435	436	411	389	377	364	38	31	30	55	77	89	82	1	1	1	1	1	1	1	7	4	7	1	-25	-22	-12	7	6	6	6	1	1	3	6	29	203
1960	365	334	343	359	409	437	447	446	424	401	387	387	29	19	20	42	65	79	79	1	2	1	1	1	1	1	8	28	10	-1	-22	-23	-14	0	6	6	5	1	1	3	6	28	224
1961	368	378	385	387	397	408	415	423	407	388	378	378	58	51	43	59	78	88	88	1	1	1	1	1	1	1	7	11	7	8	-16	-19	-10	0	6	6	6	2	2	4	6	32	224
1962	359	343	357	359	416	427	449	456	446	426	410	408	39	17	10	20	40	56	58	1	2	3	1	1	1	1	10	9	22	7	-10	-20	-16	-2	6	6	6	4	2	2	5	31	310
1963	439	424	424	424	419	430	449	466	459	449	442	434	36	17	0	7	17	24	32	1	2	6	4	2	1	1	17	11	19	17	-7	-10	-7	-8	6	6	6	4	4	4	4	34	578
1964	427	424	424	424	416	408	419	433	407	347	334	334	58	47	33	59	119	132	132	1	1	1	1	1	1	1	7	-8	11	14	-26	-60	-13	0	4	6	6	1	1	3	6	27	189
1965	335	367	393	392	395	414	449	461	452	446	443	434	52	17	5	14	20	23	32	1	2	4	3	1	1	1	13	19	35	12	-9	-6	-3	-9	6	6	6	4	4	5	4	35	455
1966	426	424	424	424	422	430	445	444	419	395	388	382	36	21	22	47	71	78	84	1	1	1	1	1	1	1	7	8	15	-1	-25	-24	-7	-6	6	6	5	1	1	4	4	27	189
1967	369	388	419	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1968	427	424	423	424	424	437	439	441	417	393	390	387	29	27	25	49	73	76	79	1	1	1	1	1	1	1	7	13	2	2	-24	-24	-3	-3	6	6	6	1	1	5	5	30	210
1969	386	399	418	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1970	427	424	423	393	396	426	431	440	427	411	403	401	40	35	26	39	55	63	65	1	1	1	1	1	1	1	7	30	5	9	-13	-16	-6	-2	6	6	6	3	2	4	5	32	224
1971	389	406	424	424	422	437	447	461	460	459	449	434	29	19	5	6	7	17	32	1	2	4	4	4	2	1	18	15	10	14	-1	-1	-10	-15	6	6	6	5	5	4	3	35	630
1972	425	422	424	424	424	437	444	451	430	409	403	397	29	22	15	36	57	63	69	1	1	2	1	1	1	1	8	13	7	7	-21	-21	-6	-6	6	6	6	1	1	4	4	28	224
1973	396	403	417	424	424	437	449	466	451	435	423	425	29	17	0	15	31	43	41	1	2	6	2	1	1	1	14	13	12	17	-15	-16	-12	2	6	6	6	3	2	3	6	32	448
1974	422	423	422	409	417	433	449	466	463	463	449	434	33	17	0	3	3	17	32	1	2	6	5	5	2	1	22	16	16	17	-3	0	-14	-15	6	6	6	5	6	3	3	35	770
1975	426	419	417	415	424	437	441	466	466	462	447	434	29	25	0	0	4	19	32	1	1	6	6	5	2	1	22	13	4	25	0	-4	-15	-13	6	6	6	6	5	3	3	35	770
1976	431	423	419	410	402	396	401	404	370	334	337	338	70	65	62	96	132	129	128	1	1	1	1	1	1	1	7	-6	5	3	-34	-36	3	1	4	6	6	1	1	6	6	30	210
1977	335	334	330	325	321	323	333	335	333	318	304	288	143	133	131	133	148	162	178	1	1	1	1	1	1	1	7	2	10	2	-2	-15	-14	-16	6	6	6	5	3	3	2	31	217
1978	284	301	358	424	424	437	449	466	459	453	445	434	29	17	0	7	13	21	32	1	2	6	4	3	1	1	18	13	12	17	-7	-6	-8	-11	6	6	6	4	4	3	3	33	594
1979	423	417	407	414	424	437	447	466	444	426	418	413	29	19	0	22	40	48	53	1	2	6	1	1	1	1	13	13	10	19	-22	-18	-8	-5	6	6	6	1	2	4	5	30	390
1980	410	411	415	405	399	430	449	464	453	453	449	434	36	17	2	13	13	17	32	1	2	5	3	3	2	1	17	31	19	15	-11	0	-4	-15	6	6	6	3	6	5	3	35	595
1981	425	418	413	412	410	421	431	434	408	387	379	372	45	35	32	58	79	87	94	1	1	1	1	1	1	1	7	11	10	3	-26	-21	-8	-7	6	6	6	1	1	4	4	28	196
1982	371	420	392	396	388	424	449	466	466	463	449	434	42	17	0	0	3	17	32	1	2	6	6	5	2	1	23	36	25	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1983	438	416	417	418	418	433	449	466	463	449	434		33	17	0	0	3	17	32	1	2	6	6	5	2	1	23	15	16	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1984	435	392	388	388	392	424	441	464	452	439	425	425	42	25	2	14	27	41	41	1	1	5	3	1	1	1	13	32	17	23	-12	-13	-14	0	6	6	6	3	3	3	6	33	429
1985	422	424	424	422	424	426	447	444	411	372	336	334	40	19	22	55	94	130	132	1	2	1	1	1	1	1	8	2	21	-3	-33	-39	-36	-2	6	6	5	1	1	1	5	25	200
1986	335	366	396	424	396	424	449	464	458	453	449	434	42	17	2	8	13	17	32	1	2	5	4	3	2	1	18	28	25	15	-6	-5	-4	-15	6	6	6	4	5	5	3	35	630
1987	427	420	413	405	404	410	416	417	386	337	325	334	56	50	49	80	129	141	132	1	1	1	1	1	1	1	7	6	6	1	-31	-49	-12	9	6	6	6	1	1	3	6	29	203
1988	334	334	369	396	365	383	391	388	350	320	303	372	83	75	78	116	146	163	94	1	1	1	1	1	1	1	7	-2	8	-3	-38	-30	-17	69	5	6	5	1	1	2	6	26	182
1989	358	377	393	403	395	437	449	452	429	405	394	404	29	17	14	37	61	72	62	1	2	3	1	1	1	1	10	42	12	3	-23	-24	-11	10	6	6	6	1	1	3	6	29	290
1990	405	403	400	402	403	417	420	418	384	334	335	335	49	46	48	82	132	131	131	1	1	1	1	1	1	1	7	14	3	-2	-34	-50	1	0	6	6	5	1	1	6	6	31	217
1991	334	334	335	332	332	383	407	425	420	415	410	409	83	59	41	46	51	56	57	1	1	1	1	1	1	1	7	51	24	18	-5	-5	-5	-1	6	6	6	5	5	5	3	38	266
1992	402	390	381	366	367	403	410	406	365	334	323	316	63	56	60	101	132	143	150	1	1	1	1	1	1	1	7	16	7	-4	-41	-31	-11	-7	6	6	5	1	1	3	4	26	182
1993	316	315	357	424	427	434	449	466	466	451	447	432	32	17	0	0	15	19	34	1	2	6	6	2	2	1	20	7	15	17	0	-15	-4	-15	6	6	6	6	5	3	3	35	700
1994	421	411	405	393	388	388	396	401	377	334	334	332	78	70	65	89	132	132	134	1	1	1	1	1	1	1	7	0	8	5	-24	-43	0	-2	6	6	6	1	1	6	5	31	217
																				73 - year Average:							13								73 - year Average:							31	406.9
																																													1929 - '34 Average: 228.0

C-032502

STUDY 1995C NRCB-485 DWRSIM: recirc818, 14 Apr 97
CP # 10. NEW MELONES RESERVOIR, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-485/10/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 1088'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevatic ... g Table:
If [DFMRE] <= 0', ... else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index = Product

	EOP Surface Elevation (FT)												Difference from Maximum Reservoir Elevation [DFMRE]						
YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	940	943	949	954	968	978	977	1005	1026	1018	1005	998	120	110	111	83	62	70	83
1923	997	1000	1008	1015	1022	1026	1028	1044	1044	1034	1021	1014	66	62	60	44	44	54	67
1924	1014	1015	1018	1021	1024	1024	1019	1012	1003	995	985	981	64	64	69	76	85	93	103
1925	980	983	986	990	1004	1013	1014	1027	1027	1017	1004	997	84	75	74	61	61	71	84
1926	996	997	999	1001	1009	1014	1016	1014	1004	994	983	975	79	74	72	74	84	94	105
1927	975	979	987	994	1008	1016	1023	1036	1041	1029	1017	1010	80	72	65	52	47	59	71
1928	1010	1015	1019	1022	1028	1045	1046	1054	1044	1030	1017	1009	60	43	42	34	44	58	71
1929	1009	1011	1013	1015	1018	1019	1015	1014	1006	999	989	983	70	69	73	74	82	89	99
1930	983	985	987	991	996	1002	1002	999	996	987	975	967	92	86	86	89	92	101	113
1931	968	971	973	975	978	981	976	968	958	948	937	931	110	107	112	120	130	140	151
1932	931	932	940	945	960	967	967	990	1002	997	986	978	128	121	121	98	86	91	102
1933	978	980	984	987	989	991	986	984	983	972	959	951	99	97	102	104	105	116	129
1934	952	954	958	962	968	974	969	961	949	939	927	920	120	114	119	127	139	149	161
1935	919	920	923	928	933	939	950	978	990	981	968	960	155	149	138	110	98	107	120
1936	960	962	966	977	998	1006	1015	1031	1034	1023	1010	1002	90	82	73	57	54	65	78
1937	1002	1004	1007	1010	1020	1030	1030	1049	1049	1037	1025	1017	68	58	58	39	39	51	63
1938	1017	1019	1029	1038	1050	1055	1063	1088	1088	1084	1075	1069	38	33	25	0	0	4	13
1939	1050	1050	1050	1050	1050	1052	1050	1042	1031	1018	1006	998	38	36	38	46	57	70	82
1940	998	999	1001	1012	1027	1043	1050	1064	1063	1052	1041	1033	61	45	38	24	25	36	47
1941	1032	1034	1039	1048	1050	1055	1052	1066	1072	1065	1055	1049	38	33	36	22	16	23	33
1942	1047	1048	1050	1050	1050	1055	1055	1068	1082	1078	1068	1063	38	33	33	20	6	10	20
1943	1050	1050	1050	1050	1050	1055	1061	1068	1071	1062	1053	1045	38	33	27	20	17	26	35
1944	1044	1045	1046	1048	1050	1053	1048	1048	1041	1028	1015	1007	38	35	40	40	47	60	73
1945	1007	1011	1015	1021	1034	1043	1042	1054	1060	1052	1040	1033	54	45	46	34	28	36	48
1946	1032	1036	1046	1050	1050	1054	1055	1064	1062	1051	1039	1032	38	34	33	24	26	37	49
1947	1031	1034	1036	1039	1042	1047	1042	1037	1026	1014	1001	994	46	41	46	51	62	74	87
1948	994	995	997	999	1001	1004	1005	1011	1021	1013	1003	998	87	84	83	77	67	75	85
1949	998	1000	1003	1005	1008	1012	1012	1018	1014	1005	995	988	80	76	76	70	74	83	93
1950	988	988	991	997	1005	1011	1013	1026	1027	1016	1003	996	83	77	75	62	61	72	85
1951	996	1024	1050	1050	1050	1055	1058	1064	1059	1048	1035	1027	38	33	30	24	29	40	53
1952	1027	1029	1036	1050	1050	1055	1058	1087	1088	1086	1076	1070	38	33	30	1	0	2	12
1953	1050	1050	1050	1050	1050	1054	1053	1052	1057	1050	1038	1030	38	34	35	36	31	38	50
1954	1030	1032	1034	1038	1042	1049	1052	1061	1054	1042	1029	1022	46	39	36	27	34	46	59
1955	1021	1023	1027	1031	1035	1038	1035	1033	1031	1022	1012	1005	53	50	53	55	57	66	76
1956	1006	1008	1033	1050	1050	1055	1055	1069	1079	1073	1063	1058	38	33	33	19	9	15	25
1957	1050	1050	1050	1050	1050	1055	1052	1056	1059	1048	1035	1027	38	33	36	32	29	40	53
1958	1024	1026	1028	1035	1044	1055	1062	1088	1088	1082	1072	1065	44	33	26	0	0	6	16
1959	1050	1050	1050	1050	1050	1053	1049	1040	1030	1018	1006	999	38	35	39	48	58	70	82
1960	998	1000	1002	1004	1009	1015	1013	1009	1001	991	978	969	79	73	75	79	87	97	110
1961	965	969	973	975	978	981	977	972	961	951	940	933	110	107	111	116	127	137	148
1962	933	935	938	940	951	957	959	968	971	962	950	941	137	131	129	120	117	126	138
1963	941	944	949	957	975	983	984	1010	1019	1012	1003	998	113	105	104	78	69	76	85
1964	998	1002	1005	1010	1013	1017	1014	1011	1006	997	987	978	75	71	74	77	82	91	101
1965	977	981	1008	1029	1041	1048	1051	1060	1067	1061	1051	1044	47	40	37	28	21	27	37
1966	1042	1046	1050	1050	1050	1053	1051	1053	1041	1028	1014	1006	38	35	37	35	47	60	74
1967	1005	1007	1017	1028	1036	1048	1049	1069	1088	1088	1078	1073	52	40	39	19	0	0	10
1968	1050	1050	1050	1050	1050	1054	1050	1047	1037	1024	1011	1003	38	34	38	41	51	64	77
1969	1003	1006	1009	1039	1050	1055	1066	1088	1088	1084	1074	1066	38	33	22	0	0	4	14
1970	1050	1050	1050	1050	1050	1055	1054	1060	1061	1049	1036	1029	38	33	34	28	27	39	52
1971	1028	1032	1040	1048	1050	1055	1052	1056	1060	1052	1039	1032	38	33	36	32	28	36	49
1972	1030	1033	1039	1044	1048	1054	1049	1052	1044	1032	1019	1012	40	34	39	36	44	56	69
1973	1012	1014	1019	1031	1048	1055	1051	1063	1063	1052	1039	1032	42	33	37	25	25	36	49
1974	1031	1037	1045	1050	1050	1055	1059	1073	1077	1068	1057	1051	38	33	29	15	11	20	31
1975	1050	1050	1050	1050	1050	1055	1050	1056	1068	1060	1050	1042	38	33	38	32	20	28	38
1976	1041	1044	1047	1048	1050	1052	1047	1041	1031	1023	1014	1009	38	36	41	47	57	65	74
1977	1008	1010	1011	1011	1012	1012	1006	1001	995	986	975	969	76	76	82	87	93	102	113
1978	967	967	971	982	994	1009	1015	1030	1038	1033	1021	1016	94	79	73	58	50	55	67
1979	1015	1018	1021	1030	1042	1055	1054	1067	1064	1052	1039	1032	46	33	34	21	24	36	49
1980	1032	1035	1037	1050	1050	1055	1056	1063	1070	1068	1057	1051	38	33	32	25	18	20	31
1981	1050	1050	1050	1050	1050	1053	1050	1044	1031	1018	1006	1000	38	35	38	44	57	70	82
1982	1000	1007	1022	1042	1050	1055	1071	1086	1088	1084	1075	1071	38	33	17	2	0	4	13
1983	1050	1050	1050	1050	1050	1055	1056	1070	1088	1088	1082	1075	38	33	32	18	0	0	6
1984	1050	1050	1050	1050	1050	1055	1053	1059	1058	1049	1038	1033	38	33	35	29	30	39	50
1985	1033	1036	1043	1046	1050	1054	1052	1050	1038	1025	1014	1007	38	34	36	38	50	63	74
1986	1008	1011	1014	1023	1050	1055	1056	1061	1065	1055	1045	1040	38	33	32	27	23	33	43
1987	1039	1041	1044	1044	1048	1049	1044	1036	1026	1019	1012	1008	42	39	44	52	62	69	76
1988	1007	1006	1007	1008	1010	1012	1007	1002	995	988	980	974	78	76	81	86	93	100	108
1989	973	972	974	976	977	989	987	984	977	968	958	953	111	99	101	104	111	120	130
1990	956	959	963	966	969	973	967	957	946	937	928	922	119	115	121	131	142	151	160
1991	921	922	925	925	925	930	927	925	912	897	881	873	163	158	161	163	176	191	207
1992	875	877	883	886	897	906	898	883	865	848	831	821	191	182	190	205	223	240	257
1993	824	829	836	855	941	987	996	1008	1017	1009	1001	997	147	101	92	80	71	79	87
1994	996	997	1000	1001	1002	1006	1003	1001	993	982	971	966	86	82	85	87	95	106	117

	Reservoir Elevation Scoring								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Scoring								Largemouth Bass Reservoir Habitat Index =
YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	1	1	1	1	1	7	10	-1	28	21	-8	-13	-7	6	5	6	6	4	3	4	34	238
1923	1	1	1	1	1	1	1	7	4	2	16	0	-10	-13	-7	6	6	6	6	4	3	4	35	245
1924	1	1	1	1	1	1	1	7	0	-5	-7	-9	-8	-10	-4	6	5	4	4	4	4	5	32	224
1925	1	1	1	1	1	1	1	7	9	1	13	0	-10	-13	-7	6	6	6	6	4	3	4	35	245
1926	1	1	1	1	1	1	1	7	5	2	-2	-10	-10	-11	-8	6	6	5	4	4	3	4	32	224
1927	1	1	1	1	1	1	1	7	8	7	13	5	-12	-12	-7	6	6	6	6	3	3	4	34	238
1928	1	1	1	1	1	1	1	7	17	1	8	-10	-14	-13	-8	6	6	6	4	3	3	4	32	224
1929	1	1	1	1	1	1	1	7	1	-4	-1	-8	-7	-10	-6	6	5	5	4	4	4	4	32	224
1930	1	1	1	1	1	1	1	7	6	0	-3	-3	-9	-12	-8	6	6	5	5	4	3	4	33	231
1931	1	1	1	1	1	1	1	7	3	-5	-8	-10	-10	-11	-6	6	5	4	4	4	3	4	30	210
1932	1	1	1	1	1	1	1	7	7	0	23	12	-5	-11	-8	6	6	6	6	5	3	4	36	252
1933	1	1	1	1	1	1	1	7	2	-5	-2	-1	-11	-13	-8	6	5	5	5	3	3	4	31	217
1934	1	1	1	1	1	1	1	7	6	-5	-8	-12	-10	-12	-7	6	5	4	3	4	3	4	29	203
1935	1	1	1	1	1	1	1	7	6	11	28	12	-9	-13	-8	6	6	6	6	4	3	4	35	245
1936	1	1	1	1	1	1	1	7	8	9	16	3	-11	-13	-8	6	6	6	6	3	3	4	34	238
1937	1	1	1	1	1	1	1	7	10	0	19	0	-12	-12	-8	6	6	6	6	3	3	4	34	238
1938	1	1	1	6	6	5	3	23	5	8	25	0	-4	-9	-6	6	6	6	6	5	4	4	37	851
1939	1	1	1	1	1	1	1	7	2	-2	-8	-11	-13	-12	-8	6	5	4	3	3	3	4	28	196
1940	1	1	1	1	1	1	1	7	16	7	14	-1	-11	-11	-8	6	6	6	5	3	3	4	33	231
1941	1	1	1	1	2	1	1	8	5	-3	14	6	-7	-10	-6	6	5	6	6	4	4	4	35	280
1942	1	1	1	1	4	3	1	12	5	0	13	14	-4	-10	-5	6	6	6	6	5	4	5	38	456
1943	1	1	1	1	2	1	1	8	5	6	7	3	-9	-9	-8	6	6	6	6	4	4	4	36	288
1944	1	1	1	1	1	1	1	7	3	-5	0	-7	-13	-13	-8	6	5	6	4	3	3	4	31	217
1945	1	1	1	1	1	1	1	7	9	-1	12	6	-8	-12	-7	6	5	6	6	4	3	4	34	238
1946	1	1	1	1	1	1	1	7	4	1	9	-2	-11	-12	-7	6	6	6	5	3	3	4	33	231
1947	1	1	1	1	1	1	1	7	5	-5	-5	-11	-12	-13	-7	6	5	5	3	3	3	4	29	203
1948	1	1	1	1	1	1	1	7	3	1	6	10	-8	-10	-5	6	6	6	6	4	4	5	37	259
1949	1	1	1	1	1	1	1	7	4	0	6	-4	-9	-10	-7	6	6	6	5	4	4	4	35	245
1950	1	1	1	1	1	1	1	7	6	2	13	1	-11	-13	-7	6	6	6	6	3	3	4	34	238
1951	1	1	1	1	1	1	1	7	5	3	6	-5	-11	-13	-8	6	6	6	5	3	3	4	33	231
1952	1	1	1	5	6	5	3	22	5	3	29	1	-2	-10	-6	6	6	6	6	5	4	4	37	814
1953	1	1	1	1	1	1	1	7	4	-1	-1	5	-7	-12	-8	6	5	5	6	4	3	4	33	231
1954	1	1	1	1	1	1	1	7	7	3	9	-7	-12	-13	-7	6	6	6	4	3	3	4	32	224
1955	1	1	1	1	1	1	1	7	3	-3	-2	-2	-9	-10	-7	6	5	5	5	4	4	4	33	231
1956	1	1	1	2	4	2	1	12	5	0	14	10	-6	-10	-5	6	6	6	6	4	4	5	37	444
1957	1	1	1	1	1	1	1	7	5	-3	4	3	-11	-13	-8	6	5	6	6	3	3	4	33	231
1958	1	1	1	6	6	4	2	21	11	7	26	0	-6	-10	-7	6	6	6	6	4	4	4	36	756
1959	1	1	1	1	1	1	1	7	3	-4	-9	-10	-12	-12	-7	6	5	4	4	3	3	4	29	203
1960	1	1	1	1	1	1	1	7	6	-2	-4	-8	-10	-13	-9	6	5	5	4	4	3	4	31	217
1961	1	1	1	1	1	1	1	7	3	-4	-5	-11	-10	-11	-7	6	5	5	3	4	3	4	30	210
1962	1	1	1	1	1	1	1	7	6	2	9	3	-9	-12	-9	6	6	6	6	4	3	4	35	245
1963	1	1	1	1	1	1	1	7	8	1	26	9	-7	-9	-5	6	6	6	6	4	4	5	37	259
1964	1	1	1	1	1	1	1	7	4	-3	-3	-5	-9	-10	-9	6	5	5	5	4	4	4	33	231
1965	1	1	1	1	1	1	1	7	7	3	9	7	-6	-10	-7	6	6	6	6	4	4	4	36	252
1966	1	1	1	1	1	1	1	7	3	-2	2	-12	-13	-14	-8	6	5	6	3	3	3	4	30	210
1967	1	1	1	2	6	6	3	20	12	1	20	19	0	-10	-5	6	6	6	6	6	4	5	39	780
1968	1	1	1	1	1	1	1	7	4	-4	-3	-10	-13	-13	-8	6	5	5	4	3	3	4	30	210
1969	1	1	1	6	6	5	3	23	5	11	22	0	-4	-10	-8	6	6	6	6	5	4	4	37	851
1970	1	1	1	1	1	1	1	7	5	-1	6	1	-12	-13	-7	6	5	6	6	3	3	4	33	231
1971	1	1	1	1	1	1	1	7	5	-3	4	4	-8	-13	-7	6	5	6	6	4	3	4	34	238
1972	1	1	1	1	1	1	1	7	6	-5	3	-8	-12	-13	-7	6	5	6	4	3	3	4	31	217
1973	1	1	1	1	1	1	1	7	9	-4	12	0	-11	-13	-7	6	5	6	6	3	3	4	33	231
1974	1	1	1	2	3	1	1	10	5	4	14	4	-9	-11	-6	6	6	6	6	4	3	4	35	350
1975	1	1	1	1	1	1	1	7	5	-5	6	12	-8	-10	-8	6	5	6	6	4	4	4	35	245
1976	1	1	1	1	1	1	1	7	2	-5	-6	-10	-8	-9	-5	6	5	4	4	4	4	5	32	224
1977	1	1	1	1	1	1	1	7	0	-6	-5	-6	-9	-11	-6	6	4	5	4	4	3	4	30	210
1978	1	1	1	1	1	1	1	7	15	6	15	8	-5	-12	-5	6	6	6	6	5	3	5	37	259
1979	1	1	1	1	1	1	1	7	13	-1	13	-3	-12	-13	-7	6	5	6	5	3	3	4	32	224
1980	1	1	1	1	2	1	1	8	5	1	7	7	-2	-11	-6	6	6	6	6	5	3	4	36	288
1981	1	1	1	1	1	1	1	7	3	-3	-6	-13	-13	-12	-6	6	5	4	3	3	3	4	28	196
1982	1	1	2	5	6	5	3	23	5	16	15	2	-4	-9	-4	6	6	6	6	5	4	5	38	874
1983	1	1	1	2	6	6	4	21	5	1	14	18	0	-6	-7	6	6	6	6	6	4	4	38	798
1984	1	1	1	1	1	1	1	7	5	-2	6	-1	-9	-11	-5	6	5	6	5	4	3	5	34	238
1985	1	1	1	1	1	1	1	7	4	-2	-2	-12	-13	-11	-7	6	5	5	3	3	3	4	29	203
1986	1	1	1	1	1	1	1	7	5	1	5	4	-10	-10	-5	6	6	6	6	4	4	5	37	259
1987	1	1	1	1	1	1	1	7	3	-5	-8	-10	-7	-7	-4	6	5	4	4	4	4	5	32	224
1988	1	1	1	1	1	1	1	7	2	-5	-5	-7	-7	-8	-6	6	5	5	4	4	4	4	32	224
1989	1	1	1	1	1	1	1	7	12	-2	-3	-7	-9	-10	-5	6	5	5	4	4	4	5	33	231
1990	1	1	1	1	1	1	1	7	4	-6	-10	-11	-9	-9	-6	6	4	4	3	4	4	4	29	203
1991	1	1	1	1	1	1	1	7	5	-3	-2	-13	-15	-16	-8	6	5	5	3	3	2	4	28	196
1992	1	1	1	1	1	1	1	7	9	-8	-15	-18	-17	-17	-10	6	4	3	2	2	2	4	23	161
1993	1	1	1	1	1	1	1	7	46	9	12	9	-8	-8	-4	6	6	6	6	4	4	5	37	259
1994	1	1	1	1	1	1	1	7	4	-3	-2	-8	-11	-11	-5	6	5	5	4	3	3	5	31	217

73 - year Average: 9

73 - year Average: 33 294.0
1929 - '34 Average 222.8

A2-162

C-032502

STUDY 1[illegible]-SWRCB-485 DWRSIM. recirc818, 14 Apr 97
CP # 81, DON PEDRO RESERVOIR, EOP SURFACE ELEVATION (FT)
Project /1995C00F-SWRCB-485/81/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 832'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	599	582	578	601	658	690	699	724	782	779	763	752
1923	746	745	748	761	776	784	789	792	801	795	780	770
1924	764	762	757	755	756	754	749	744	735	723	709	701
1925	698	698	699	703	725	741	754	767	785	776	760	749
1926	743	741	736	735	744	749	763	776	774	759	744	735
1927	730	729	733	740	768	783	794	795	814	806	792	782
1928	776	776	776	779	787	800	802	819	819	805	790	780
1929	774	769	765	764	768	769	769	773	780	771	762	754
1930	752	749	746	746	752	759	761	764	777	769	760	753
1931	751	750	749	751	754	753	746	737	726	712	699	692
1932	689	685	695	710	745	760	761	768	786	781	768	756
1933	749	742	737	736	742	745	743	740	757	746	732	722
1934	715	713	711	714	725	732	731	727	724	708	693	685
1935	681	680	681	693	713	728	749	759	786	774	759	747
1936	740	738	733	738	778	792	801	819	832	823	808	798
1937	792	786	782	785	800	800	802	815	832	819	805	795
1938	789	784	800	800	800	800	800	804	831	832	819	808
1939	800	799	799	800	800	800	802	804	799	787	774	766
1940	764	763	761	774	800	800	802	816	829	814	799	789
1941	783	781	783	798	800	800	800	812	832	831	817	808
1942	800	798	800	800	800	800	802	807	831	832	818	808
1943	800	800	800	800	800	800	802	821	832	824	810	799
1944	794	792	788	787	793	800	801	808	814	802	787	777
1945	772	773	778	781	800	800	802	807	831	825	810	799
1946	796	797	800	800	800	800	802	806	812	796	780	769
1947	763	763	765	768	776	781	778	782	776	764	750	742
1948	739	738	737	739	740	740	736	745	770	760	742	732
1949	726	720	714	713	720	731	738	748	756	738	719	706
1950	700	693	687	693	712	725	733	746	762	747	729	717
1951	711	759	800	800	800	800	798	794	798	783	769	759
1952	752	750	757	782	800	800	800	820	832	832	819	808
1953	800	795	793	800	800	800	802	804	814	810	796	787
1954	782	778	775	776	785	797	802	819	820	805	789	780
1955	774	770	768	774	781	784	781	785	791	779	767	760
1956	755	751	800	800	800	800	802	818	832	832	818	808
1957	800	798	793	793	799	800	800	806	827	814	800	791
1958	786	781	779	784	800	800	800	821	832	832	819	808
1959	800	794	789	793	800	800	802	800	794	782	770	763
1960	761	758	756	756	763	769	770	776	779	768	759	753
1961	750	748	748	749	752	751	745	737	730	717	705	698
1962	695	692	691	692	718	736	746	751	776	768	755	744
1963	739	734	731	735	761	773	781	794	819	815	801	792
1964	787	788	789	793	800	800	797	795	797	786	775	768
1965	766	767	798	800	800	800	802	807	827	827	816	807
1966	800	800	800	800	800	800	801	798	791	776	761	752
1967	747	745	755	771	789	800	800	817	832	832	820	808
1968	800	795	791	792	800	800	802	805	803	791	779	771
1969	766	767	770	800	800	800	800	823	832	832	819	808
1970	800	799	800	800	800	800	799	799	807	795	780	771
1971	765	766	772	786	800	800	801	801	807	798	786	778
1972	773	769	772	778	792	800	800	799	796	784	773	767
1973	764	762	765	776	800	800	802	812	827	812	797	788
1974	783	787	798	800	800	800	800	806	828	819	805	796
1975	791	789	786	786	798	800	802	812	832	825	812	803
1976	800	800	799	799	800	799	794	787	777	767	757	751
1977	748	745	742	741	741	737	728	715	702	687	672	663
1978	659	655	658	684	717	749	762	777	814	822	808	803
1979	798	794	791	800	800	800	802	822	832	818	803	794
1980	789	788	787	800	800	800	800	817	832	832	819	808
1981	800	797	794	795	799	800	802	806	805	793	782	774
1982	770	776	795	800	800	800	800	820	832	832	820	808
1983	800	800	800	800	800	800	800	819	832	832	832	808
1984	800	800	800	800	800	800	797	803	814	801	786	776
1985	773	773	779	786	794	800	801	799	795	784	772	766
1986	763	764	767	774	800	800	802	827	832	825	811	802
1987	796	791	786	784	786	788	786	783	779	769	759	752
1988	750	749	749	754	759	761	756	747	740	728	716	709
1989	705	702	702	705	709	722	734	748	756	744	734	728
1990	727	726	726	728	732	734	732	730	728	714	700	692
1991	689	688	682	681	681	688	687	703	714	704	694	688
1992	687	687	687	689	698	703	706	714	713	699	685	675
1993	669	683	663	696	727	756	763	777	808	806	792	783
1994	777	771	767	768	789	772	770	773	772	762	752	746

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	142	133	108	50	53	69	80
1923	48	43	40	31	37	52	62
1924	78	83	88	97	109	123	131
1925	91	78	65	47	58	72	83
1926	83	69	56	58	73	88	97
1927	49	38	37	18	26	40	50
1928	32	30	13	13	27	42	52
1929	63	63	59	52	61	70	78
1930	73	71	68	55	63	72	79
1931	79	86	95	106	120	133	140
1932	72	71	64	46	51	66	76
1933	87	89	92	75	86	100	110
1934	100	101	105	108	124	139	147
1935	104	83	73	46	58	73	85
1936	40	31	13	0	9	24	34
1937	32	30	17	0	13	27	37
1938	32	32	28	1	0	13	24
1939	32	30	28	33	45	58	66
1940	32	30	16	3	18	33	43
1941	32	32	20	0	1	15	24
1942	32	30	25	1	0	14	24
1943	32	30	11	0	8	22	33
1944	32	31	24	18	30	45	55
1945	32	30	25	1	7	22	33
1946	32	30	26	20	36	52	63
1947	51	54	50	56	68	82	90
1948	92	96	87	62	72	90	100
1949	101	94	84	76	94	113	126
1950	107	99	86	70	85	103	115
1951	32	34	38	34	49	63	73
1952	32	32	12	0	0	13	24
1953	32	30	28	18	22	36	45
1954	35	30	13	12	27	43	52
1955	48	51	47	41	53	65	72
1956	32	30	14	0	0	14	24
1957	32	32	26	5	18	32	41
1958	32	32	11	0	0	13	24
1959	32	30	32	38	50	62	69
1960	63	62	56	53	64	73	79
1961	81	87	95	102	115	127	134
1962	96	86	81	56	64	77	88
1963	59	51	38	13	17	31	40
1964	32	35	37	35	46	57	64
1965	32	30	25	5	5	16	25
1966	32	31	34	41	56	71	80
1967	32	32	15	0	0	12	24
1968	32	30	27	29	41	53	61
1969	32	32	9	0	0	13	24
1970	32	33	33	25	37	52	61
1971	32	31	31	25	34	46	54
1972	32	32	33	36	48	59	65
1973	32	30	20	5	20	35	44
1974	32	32	26	4	13	27	36
1975	32	30	20	0	7	20	29
1976	33	38	45	55	65	75	81
1977	95	104	117	130	145	160	169
1978	83	70	55	18	10	24	29
1979	32	30	10	0	14	29	38
1980	32	32	15	0	0	13	24
1981	32	30	26	27	39	50	58
1982	32	32	12	0	0	12	24
1983	32	32	13	0	0	0	24
1984	32	35	29	18	31	46	56
1985	32	31	33	37	48	60	66
1986	32	30	5	0	7	21	30
1987	44	46	49	53	63	73	80
1988	71	76	85	92	104	116	123
1989	110	98	84	76	88	98	104
1990	98	100	102	104	118	132	140
1991	144	145	129	118	128	138	144
1992	129	126	118	119	133	147	157
1993	76	69	55	24	26	40	49
1994	60	62	59	60	70	80	86

Reservoir Elevat[illegible] Table:
If [DFMRE] <= 0', th[illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	1	1	1	1	1	1	1	7
1923	1	1	1	1	1	1	1	7
1924	1	1	1	1	1	1	1	7
1925	1	1	1	1	1	1	1	7
1926	1	1	1	1	1	1	1	7
1927	1	1	1	2	1	1	1	8
1928	1	1	3	3	1	1	1	11
1929	1	1	1	1	1	1	1	7
1930	1	1	1	1	1	1	1	7
1931	1	1	1	1	1	1	1	7
1932	1	1	1	1	1	1	1	7
1933	1	1	1	1	1	1	1	7
1934	1	1	1	1	1	1	1	7
1935	1	1	1	1	1	1	1	7
1936	1	1	3	6	4	1	1	17
1937	1	1	2	6	3	1	1	15
1938	1	1	1	5	6	3	1	18
1939	1	1	1	1	1	1	1	7
1940	1	1	2	5	2	1	1	13
1941	1	1	1	6	5	2	1	17
1942	1	1	1	5	6	3	1	18
1943	1	1	3	6	4	1	1	17
1944	1	1	1	2	1	1	1	8
1945	1	1	1	5	4	1	1	14
1946	1	1	1	1	1	1	1	7
1947	1	1	1	1	1	1	1	7
1948	1	1	1	1	1	1	1	7
1949	1	1	1	1	1	1	1	7
1950	1	1	1	1	1	1	1	7
1951	1	1	1	1	1	1	1	7
1952	1	1	3	6	6	3	1	21
1953	1	1	1	2	1	1	1	8
1954	1	1	3	3	1	1	1	11
1955	1	1	1	1	1	1	1	7
1956	1	1	3	6	6	3	1	21
1957	1	1	1	4	2	1	1	11
1958	1	1	3	6	6	3	1	21
1959	1	1	1	1	1	1	1	7
1960	1	1	1	1	1	1	1	7
1961	1	1	1	1	1	1	1	7
1962	1	1	1	1	1	1	1	7
1963	1	1	1	3	2	1	1	10
1964	1	1	1	1	1	1	1	7
1965	1	1	1	4	4	2	1	14
1966	1	1	1	1	1	1	1	7
1967	1	1	2	6	6	3	1	20
1968	1	1	1	1	1	1	1	7
1969	1	1	4	6	6	3	1	22
1970	1	1	1	1	1	1	1	7
1971	1	1	1	1	1	1	1	7
1972	1	1	1	1	1	1	1	7
1973	1	1	1	4	1	1	1	10
1974	1	1	1	5	3	1	1	13
1975	1	1	1	6	4	1	1	15
1976	1	1	1	1	1	1	1	7
1977	1	1	1	1	1	1	1	7
1978	1	1	1	2	3	1	1	10
1979	1	1	3	6	3	1	1	16
1980	1	1	2	6	6	3	1	20
1981	1	1	1	1	1	1	1	7
1982	1	1	3	6	6	3	1	21
1983	1	1	3	6	6	6	1	24
1984	1	1	1	2	1	1	1	8
1985	1	1	1	1	1	1	1	7
1986	1	1	4	6	4	1	1	18
1987	1	1	1	1	1	1	1	7
1988	1	1	1	1	1	1	1	7
1989	1	1	1	1	1	1	1	7
1990	1	1	1	1	1	1	1	7
1991	1	1	1	1	1	1	1	7
1992	1	1	1	1	1	1	1	7
1993	1	1	1	1	1	1	1	7
1994	1	1	1	1	1	1	1	7

73 - year Average: 10

Reservoir Change from Previous Month [fluctuation]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	34	9	25	58	-3	-16	-11
1923	8	5	3	9	-6	-15	-10
1924	-2	-5	-5	-9	-12	-14	-8
1925	16	13	13	18	-9	-18	-11
1926	5	14	13	-2	-15	-15	-9
1927	15	11	1	19	-8	-14	-10
1928	13	2	17	0	-14	-15	-10
1929	1	0	4	7	-9	-9	-8
1930	7	2	3	13	-8	-9	-7
1931	-1	-7	-9	-11	-14	-13	-7
1932	15	1	7	18	-5	-15	-10
1933	3	-2	-3	17	-11	-14	-10
1934	7	-1	-4	-3	-16	-15	-8
1935	15	21	10	27	-12	-15	-12
1936	16	9	18	13	-9	-15	-10
1937	0	2	13	17	-13	-14	-10
1938	0	0	4	27	1	-13	-11
1939	0	2	2	-5	-12	-13	-8
1940	0	2	14	13	-15	-15	-10
1941	0	0	12	20	-1	-14	-9
1942	0	2	5	24	1	-14	-10
1943	0	2	19	11	-8	-14	-11
1944	7	1	7	6	-12	-15	-10
1945	0	2	5	24	-6	-15	-11
1946	0	2	4	6	-16	-16	-11
1947	5	-3	4	-6	-12	-14	-8
1948	0	-4	9	25	-10	-18	-10
1949	11	7	10	8	-18	-19	-13
1950	13	8	13	16	-15	-18	-12
1951	0	-2	-4	4	-15	-14	-10
1952	0	0	20	12	0	-13	-11
1953	0	2	2	10	-4	-14	-9
1954	12	5	17	1	-15	-16	-9
1955	3	-3	4	6	-12	-12	-7
1956	0	2	16	14	0	-14	-10
1957	1	0	6	21	-13	-14	-9
1958	0	0	21	11	0	-13	-11
1959	0	2	-2	-6	-12	-12	-7
1960	6	1	6	3	-11	-9	-6
1961	-1	-6	-8	-7	-13	-12	-7
1962	20	10	5	25	-8	-13	-11
1963	12	8	13	25	-4	-14	-9
1964	0	-3	-2	2	-11	-11	-7
1965	0	2	5	20	0	-11	-9
1966	0	1	-3	-7	-15	-15	-9
1967	11	0	17	15	0	-12	-12
1968	0	2	3	-2	-12	-12	-8
1969	0	0	23	9	0	-13	-11
1970	0	-1	0	8	-12	-15	-9
1971	0	1	0	6	-9	-12	-8
1972	8	0	-1	-3	-12	-11	-6
1973	0	2	10	15	-15	-15	-9
1974	0	0	6	22	-9	-14	-9
1975	2	2	10	20	-7	-13	-9
1976	-1	-5	-7	-10	-10	-10	-6
1977	-4	-9	-13	-13	-15	-15	-9
1978	32	13	15	37	8	-14	-5
1979	0	2	20	10	-14	-15	-9
1980	0	0	17	15	0	-13	-11
1981	1	2	4	-1	-12	-11	-8
1982	0	0	20	12	0	-12	-12
1983	0	0	19	13	0	0	-24
1984	0	-3	6	11	-13	-15	-10
1985	6	1	-2	-4	-11	-12	-6
1986	0	2	25	5	-7	-14	-9
1987	2	-2	-3	-4	-10	-10	-7
1988	2	-5	-9	-7	-12	-12	-7
1989	13	12	14	8	-12	-10	-6
1990	2	-2	-2	-2	-14	-14	-8
1991	7	-1	16	11	-10	-10	-8
1992	5	3	8	-1	-14	-14	-10
1993	29	7	14	31	-2	-14	-9
1994	3	-2	3	-1	-10	-10	-6

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Largemouth Bass Reservoir Habitat Index Product
1922	6	6	6	6	5	2	3	34	238
1923	6	6	6	6	4	3	4	35	245
1924	5	5	5	4	3	3	4	29	203
1925	6	6	6	6	4	2	3	33	231
1926	6	6	6	5	3	3	4	33	231
1927	6	6	6	6	4	3	4	35	280
1928	6	6	6	6	3	3	4	34	374
1929	6	6	6	6	4	4	4	36	252
1930	6	6	6	6	4	4	4	36	252
1931	5	4	4	3	3	3	4	26	182
1932	6	6	6	6	5	3	4	36	252
1933	6	5	5	6	3	3	4	32	224
1934	6	5	5	5	2	3	4	30	210
1935	6	6	6	6	3	3	3	33	231
1936	6	6	6	6	4	3	4	35	595
1937	6	6	6	6	3	3	4	34	510
1938	6	6	6	6	6	3	3	36	648
1939	6	6	6	5	3	3	4	33	231
1940	6	6	6	6	3	3	4	34	442
1941	6	6	6	6	5	3	4	36	612
1942	6	6	6	6	6	3	4	37	666
1943	6	6	6	6	4	3	3	34	578
1944	6	6	6	6	3	3	4	34	272
1945	6	6	6	6	4	3	3	34	476
1946	6	6	6	6	2	2	3	31	217
1947	6	5	6	4	3	3	4	31	217
1948	6	5	6	6	4	2	4	33	231
1949	6	6	6	6	2	2	3	31	217
1950	6	6	6	6	3	2	3	32	224
1951	6	5	5	6	3	3	4	32	224
1952	6	6	6	6	6	3	3	36	756
1953	6	6	6	6	5	3	4	36	288
1954	6	6	6	6	3	2	4	33	363
1955	6	5	6	6	3	3	4	33	231
1956	6	6	6	6	6	3	4	37	777
1957	6	6	6	6	3	3	4	34	374
1958	6	6	6	6	6	3	3	36	756
1959	6	6	5	4	3	3	4	31	217
1960	6	6	6	6	3	4	4	35	245
1961	5	4	4	4	3	3	4	27	189
1962	6	6	6	6	4	3	3	34	238
1963	6	6	6	6	5	3	4	36	360
1964	6	5	5	6	3	3	4	32	224
1965	6	6	6	6	6	3	4	37	518
1966	6	6	5	4	3	3	4	31	217
1967	6	6	6	6	6	3	3	36	720
1968	6	6	6	5	3	3	4	33	231
1969	6	6	6	6	6	3	3	36	792
1970	6	5	6	6	3	3	4	33	231
1971	6	6	6	6	4	3	4	35	245
1972	6	6	5	5	3	3	4	32	224
1973	6	6	6	6	3	3	4	34	340
1974	6	6	6	6	4	3	4	35	455
1975	6	6	6	6	4	3	4	35	525
1976	5	5	4	4	4	4	4	30	210
1977	5	4	3	3	3	3	4	25	175
1978	6	6	6	6	6	3	5	38	380
1979	6	6	6	6	3	3	4	34	544
1980	6	6	6	6	6	3	3	36	720
1981	6	6	6	5	3	3	4	33	231
1982	6	6	6	6	6	3	3	36	756
1983	6	6	6	6	6	6	1	37	888
1984	6	5	6	6	3	3	4	33	264
1985	6	6	5	5	3	3	4	32	224
1986	6	6	6	6	4	3	4	35	630
1987	6	5	5	5	4	4	4	33	231
1988	6	5	4	4	3	3	4	29	203
1989	6	6	6	6	3	4	4	35	245
1990	6	5	5	5	3	3	4	31	217
1991	6	5	6	6	4	4	4	35	245
1992	6	6	6	5	3	3	4	33	231
1993	6	6	6	6	5	3	4	36	252
1994	6	5	6	5	4	4	4	34	238

73 - year Average: 34 358.4
1929 - '34 Average: 228.7

Prepared by Kevin Long

Study 485 - Reservoirs Elevations Fish Habitat Analysis.xls - Don Pedro

11/17/1997

A2-163

C-032503

C-032503

STUDY 19 -SWRCB-485 DWRSIM recirc818, 14 Apr 97
CP # 20, LAKE McCLURE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-485/20/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation 867'

Reservoir Elevation Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE]							Reservoir Elevation Table								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Scoring Table								Largemouth Bass Reservoir Habitat Index
													MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	680	680	696	712	759	779	789	845	867	860	846	836	88	78	22	0	7	21	31	1	1	1	6	4	1	1	15	20	10	56	22	-7	-14	-10	6	6	6	6	4	3	4	35	525
1923	808	808	808	808	808	813	827	854	859	850	835	825	54	40	13	8	17	32	42	1	1	3	4	2	1	1	13	5	14	27	5	-9	-15	-10	6	6	6	6	4	3	4	35	455
1924	808	808	808	808	808	807	809	811	799	781	768	758	60	58	58	68	86	99	109	1	1	1	1	1	1	1	7	-1	2	2	-12	-18	-13	-10	5	6	6	3	2	3	4	29	203
1925	758	763	768	772	796	805	824	847	851	839	824	812	62	43	20	16	28	43	55	1	1	1	2	1	1	1	8	9	19	23	4	-12	-15	-12	6	6	6	6	3	3	3	33	264
1926	808	808	808	808	808	814	834	832	831	827	820	812	53	33	35	36	40	47	55	1	1	1	1	1	1	1	7	6	20	-2	-1	-4	-7	-8	6	6	5	5	5	4	4	35	245
1927	808	808	808	808	808	815	818	849	860	856	852	840	52	49	18	7	11	15	27	1	1	2	4	3	2	1	14	7	3	31	11	-4	-4	-12	6	6	6	6	5	5	3	37	518
1928	808	808	808	808	808	809	808	824	822	815	811	807	58	59	43	45	52	56	60	1	1	1	1	1	1	1	7	1	-1	16	-2	-7	-4	-4	6	5	6	5	4	5	5	36	252
1929	807	808	806	806	807	809	810	814	814	816	819	813	58	57	53	53	51	48	54	1	1	1	1	1	1	1	7	2	1	4	0	2	3	-6	6	6	6	6	6	6	4	40	280
1930	808	807	807	807	806	802	806	808	812	815	819	816	65	61	59	55	52	48	51	1	1	1	1	1	1	1	7	-4	4	2	4	3	4	-3	5	6	6	6	6	6	5	40	280
1931	808	808	808	808	808	808	810	813	801	784	770	761	59	57	54	66	83	97	106	1	1	1	1	1	1	1	7	0	2	3	-12	-17	-14	-9	6	6	6	3	2	3	4	30	210
1932	760	760	778	789	808	817	826	852	867	857	843	832	50	41	15	0	10	24	35	1	1	2	6	3	1	1	15	9	9	26	15	-10	-14	-11	6	6	6	6	4	3	3	34	510
1933	808	807	806	808	808	811	816	825	839	827	813	805	56	51	42	28	40	54	62	1	1	1	1	1	1	1	7	3	5	9	14	-12	-14	-8	6	6	6	6	3	3	4	34	238
1934	803	802	805	808	808	816	823	818	809	793	780	770	51	44	49	58	74	87	97	1	1	1	1	1	1	1	7	8	7	-5	-9	-16	-13	-10	6	6	5	4	2	3	4	30	210
1935	769	773	778	796	808	816	840	859	867	854	839	828	51	27	8	0	13	28	39	1	1	4	6	3	1	1	17	10	24	19	8	-13	-15	-11	6	6	6	6	3	3	3	33	561
1936	808	808	808	808	808	820	840	859	865	853	838	827	47	27	8	2	14	29	40	1	1	4	5	3	1	1	16	12	20	19	6	-12	-15	-11	6	6	6	6	3	3	3	33	528
1937	808	808	808	808	808	820	834	859	867	853	838	827	47	33	8	0	14	29	40	1	1	4	6	3	1	1	17	12	14	25	8	-14	-15	-11	6	6	6	6	3	3	3	33	561
1938	808	808	808	808	808	820	840	859	867	867	855	840	47	27	8	0	0	12	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1939	808	808	808	808	808	816	831	832	821	803	787	776	51	36	35	46	64	80	91	1	1	1	1	1	1	1	7	8	15	1	-11	-18	-16	-11	6	6	6	3	2	2	3	28	196
1940	778	779	780	806	808	820	837	859	861	845	829	816	47	30	8	6	22	38	51	1	1	4	4	1	1	1	13	12	17	22	2	-16	-16	-13	6	6	6	6	2	2	3	31	403
1941	808	808	808	808	808	820	834	859	867	863	850	840	47	33	8	0	4	17	27	1	1	4	6	5	2	1	20	12	14	25	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1942	808	808	808	808	808	820	838	859	867	860	851	840	47	29	8	0	7	16	27	1	1	4	6	4	2	1	19	12	18	21	8	-7	-9	-11	6	6	6	6	4	4	3	35	665
1943	808	808	808	808	808	820	840	859	864	853	838	828	47	27	8	3	14	29	39	1	1	4	5	3	1	1	16	12	20	19	5	-11	-15	-10	6	6	6	6	3	3	4	34	544
1944	808	808	808	808	808	817	815	838	840	827	810	798	50	52	29	27	40	57	71	1	1	1	1	1	1	1	7	9	-2	23	2	-13	-17	-14	6	5	6	6	3	2	3	31	217
1945	794	800	806	808	808	820	833	856	867	856	842	831	47	34	11	0	11	25	36	1	1	3	6	3	1	1	16	12	13	23	11	-11	-14	-11	6	6	6	6	3	3	3	33	528
1946	808	808	808	808	808	818	837	859	857	842	826	813	49	30	8	10	25	41	54	1	1	4	3	1	1	1	12	10	19	22	-2	-15	-16	-13	6	6	6	5	3	2	3	31	372
1947	808	808	808	808	808	815	823	836	830	814	799	791	52	44	31	37	53	68	76	1	1	1	1	1	1	1	7	7	8	13	-6	-16	-15	-8	6	6	6	4	2	3	4	31	217
1948	790	791	792	794	795	795	799	823	839	825	807	794	72	68	44	28	42	60	73	1	1	1	1	1	1	1	7	0	4	24	16	-14	-18	-13	6	6	6	6	3	2	3	32	224
1949	791	791	792	793	796	804	815	836	835	816	797	782	63	52	31	32	51	70	85	1	1	1	1	1	1	1	7	8	11	21	-1	-19	-19	-15	6	6	6	6	2	2	3	30	210
1950	779	779	779	786	798	801	818	838	839	822	803	789	66	49	29	28	45	64	78	1	1	1	1	1	1	1	7	3	17	20	1	-17	-19	-14	6	6	6	6	2	2	3	31	217
1951	786	808	808	808	808	808	819	827	837	834	816	796	48	40	30	33	51	71	86	1	1	1	1	1	1	1	7	11	8	10	-3	-18	-20	-15	6	6	6	5	2	2	3	30	210
1952	777	778	791	808	808	820	840	859	867	864	852	840	47	27	8	0	3	15	27	1	1	4	6	5	2	1	20	12	20	19	8	-3	-12	-12	6	6	6	6	5	3	3	35	700
1953	808	808	808	808	808	809	815	816	823	809	790	775	58	52	51	44	58	77	92	1	1	1	1	1	1	1	7	1	6	1	7	-14	-19	-15	6	6	6	6	3	2	3	32	224
1954	772	771	772	776	785	798	815	833	826	805	785	770	69	52	34	41	62	82	97	1	1	1	1	1	1	1	7	13	17	18	-7	-21	-20	-15	6	6	6	4	1	2	3	28	196
1955	767	766	768	775	780	782	782	804	814	798	782	772	85	85	63	53	69	85	95	1	1	1	1	1	1	1	7	2	0	22	10	-16	-16	-10	6	6	6	6	2	2	4	32	224
1956	769	769	808	808	808	819	832	859	867	863	850	840	48	35	8	0	4	17	27	1	1	4	6	5	2	1	20	11	13	27	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1957	808	808	808	808	808	813	813	828	838	822	804	790	54	54	39	29	45	63	77	1	1	1	1	1	1	1	7	5	0	15	10	-16	-18	-14	6	6	6	6	2	2	3	31	217
1958	787	787	792	798	808	820	840	859	867	862	850	840	47	27	8	0	5	17	27	1	1	4	6	4	2	1	19	12	20	19	8	-5	-12	-10	6	6	6	6	5	3	4	36	684
1959	808	808	808	808	808	813	823	826	817	797	780	773	54	44	41	50	70	87	94	1	1	1	1	1	1	1	7	5	10	3	-9	-20	-17	-7	6	6	6	4	2	2	4	30	210
1960	772	771	771	772	784	792	806	819	816	801	787	777	75	61	48	51	66	80	90	1	1	1	1	1	1	1	7	8	14	13	-3	-15	-14	-10	6	6	6	5	3	3	4	33	231
1961	776	776	779	779	782	783	789	793	784	766	752	740	84	78	74	83	101	115	127	1	1	1	1	1	1	1	7	1	6	4	-9	-18	-14	-12	6	6	6	4	2	3	3	30	210
1962	739	739	741	744	784	793	816	831	845	832	815	802	74	51	36	22	35	52	65	1	1	1	1	1	1	1	7	9	23	15	14	-13	-17	-13	6	6	6	6	3	2	3	32	224
1963	800	800	801	808	808	814	823	848	861	852	837	826	53	44	19	6	15	30	41	1	1	2	4	2	1	1	12	6	9	25	13	-9	-15	-11	6	6	6	6	4	3	3	34	408
1964	808	808	808	808	808	808	811	821	819	803	787	777	59	56	46	48	64	80	90	1	1	1	1	1	1	1	7	0	3	10	-2	-16	-16	-10	6	6	6	5	2	2	4	31	217
1965	775	778	808	808	808	815	831	854	867	861	850	840	52	36	13	0	6	17	27	1	1	3	6	4	2	1	18	7	16	23	13	-6	-11	-10	6	6	6	6	4	3	4	35	630
1966	808	808	808	808	808	814	828	838	826	804	784	771	53	39	29	41	63	83	96	1	1	1	1	1	1	1	7	6	14	10	-12	-22	-20	-13	6	6	6	3	1	2	3	27	189
1967	768	770	795	807	808	820	840	859	867	867	856	840	47	27	8	0	0	11	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1968	808	808	808	808	808	812	817	821	812	793	777	766	55	50	46	55	74	90	101	1	1	1	1	1	1	1	7	4	5	4	-9	-19	-16	-11	6	6	6	4	2	2	3	29	203
1969	763	767	775	808	808	820	840	859	867	867	854	840	47	27	8	0	0	13	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-13	-14	6	6	6	6	6	3	3	36	792
1970	808	808	808	808	808	820	821	837	837	821	802	789	47	46	30	30	46	65	78	1	1	1	1	1	1	1	7	12	1	16	0	-16	-19	-13	6	6	6	6	2	2	3	31	217
1971	786	788	798	807	808	812	814	826	836	822	804	790	55	53	41	31	45	63	77	1	1	1	1	1	1	1	7	4	2	12	10	-14	-18	-14	6	6	6	6	3	2	3	32	224
1972	787	787	795	799	808	816	819	832	833	818	804	797	51	48	35	34	49	63	70	1	1	1	1	1	1	1	7	10	3	13	1	-15	-14	-7	6	6	6	6	3	3	4	34	238
1973	797	798	804	808	808	820	828	859	867	852	838	828	47	39	8	0	15	29	39	1	1	4	6	2	1	1	16	12	8	31	8	-15	-14	-10	6	6	6	6	3	3	4	34	544
1974	808	808	808	808	808	820	833	859	867	854	839	829	47	34	8	0	13	28	38	1	1	4	6	3	1	1	17	12	13	26	8	-13	-15	-10	6	6	6	6	3	3	4	34	578
1975	808	808	808	808	808	820	823	855	867	856	842	832	47	44	12	0	11	25	35	1	1	3	6	3	1	1	16	12	3	32	12	-11	-14	-10	6	6	6	6	3	3	4	34	544
1976	808	808	808	808	808	809	808	809	798	781	768	759	58	59	58	69	86	99	108	1	1	1	1	1	1	1	7	1	-1	1	-11	-17	-13	-9	6	5	6	3	2	3	4	29	203
1977	758	756	754	754	754	749	740	728	717	688	659	635	118	127	139	150	179	208	232	1	1	1	1	1	1	1	7	-5	-9	-12	-11	-29	-29	-24	5	4	3	3	1	1	1	18	126
1978	629	626	642	693	741	782	815	859	867	867	856	840	85	52	8	0	0	11	27	1	1	4	6	6	3	1	22	41	33	44	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1979	808	808	808	808	808	820	828	859	863	849	834	823	47	39	8	4	18	33	44	1	1	4	5	2	1	1	15	12	8	31	4	-14	-15	-11	6	6	6	6	3	3	3	33	495
1980	808	808	808	808	808	820	835	859	867	867	855	840	47	32	8	0	0	12	27	1	1	4	6	6	3	1	22	12	15	24	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1981	808	807	807	808	808	813	823	835	831	816	802	794	54	44	32	36	51	65	73	1	1	1	1	1	1	1	7	5	10	12	-4	-15	-14	-8	6	6	6	5	3	3	4	33	231
1982	793	801	808	808	808	820	840	859	867	865	854	840	47	27	8	0	2	13	27	1	1	4	6	5	3	1	21	12	20	19	8	-2	-11	-14	6	6	6	6	5	3	3	35	735
1983	808	808	808	808	808	820	836	859	867	867	864	840	47	31	8	0	0	3	27	1	1	4	6	6	5	1	24	12	16	23	8	0	-3	-24	6	6	6	6	6	5	1	36	864
1984	808	808	808	808	808	820	827	850	848	832	814	801	47	40	17	19	35	53	66	1	1	2	2	1	1	1	9	12	7	23	-2	-16	-18	-13	6	6	6	5	2	2	3	30	270
1985	800	803	807	808	808	814	828	841	835	821	807	797	53	39	26	32	46	60	70	1	1	1	1	1	1	1	7	6	14	13	-6	-14	-14	-10	6	6	6	4	3	3	4	32	224
1986	798	800	806	808	808	820	839	859	867	855	841	830	47	28	8	0	12	26	37	1	1	4	6	3	1	1	17	12	19	20	8	-12	-14	-11	6	6	6	6	3	3	3	33	561
1987	808	807	807	807	808	810	818	821	811	795	782	773	57	49	46	56	72	85	94	1	1	1	1	1	1	1	7	2	8	3	-10	-16	-13	-9	6	6	6	4	2	3	4	31	217
1988	772	773	775	781	785	791	797	801	794	777	763	753	76	70	66	73	90	104	114	1	1	1	1	1	1	1	7	6	6	4	-7	-17	-14	-10	6	6	6	4	2	3	4	31	217
1989	751	750	753	754	759	775	797	808	804	789	775	766	92	70	59	63	78	92	101	1	1	1	1	1	1	1	7	16	22	11	-4	-15	-14	-9	6	6	6	5	3	3	4	33	231
1990	768	768	769	771	775	782	793	794	785	769	754	742	85	74	73	82	98	113	125	1	1	1	1	1	1	1	7	7	11	1	-9	-16	-15	-12	6	6	6	4	2	3	3	30	210
1991	740	739	738	738	737	758	763	784	797	784	770	761	109	104	83	70	83	97	106	1	1	1	1	1	1	1	7	21	5	21	13	-13	-14	-9	6	6	6	6	3	3	4	34	238
1992	760	761	762	764	777	782	798	803	793	779	766	756	85	69	64	74	88	101	111	1	1	1	1	1	1	1	7	5	16	5	-10	-14	-13	-10	6	6	6	4	3	3	4	32	224
1993	755	755	760	802	808	820	837	859	867	861	848	837	47	30	8	0	6	19	30	1	1	4	6	4	2	1	19	12	17	22	8	-6	-13	-11	6	6	6	6	4	3	3	34	646
1994	808	807	808	808	808	810	815	821	813	798	784	775	57	52	46	54	69	83	92	1	1	1	1	1	1	1	7	2	5	6	-8	-15	-14	-9	6	6	6	4	3	3	4	32	224
													73 - year Average:						12																73 - year Average:							33	386.7
																																			1929 - '34 Average:								288.0

A2-164
C-032504
C—032504

STUDY: 19 -SWRCB-485 DWRSIM: recirc818, 14 Apr 97
CP # 18, MILLERTON LAKE, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-485/18/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation 576'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	491	505	527	547	549	566	559	576	576	562	518	491
1923	485	495	520	537	531	517	541	549	540	526	463	470
1924	483	494	508	522	516	503	506	511	505	478	464	468
1925	485	474	490	503	508	493	514	532	522	499	483	475
1926	477	490	505	519	522	508	549	563	535	494	473	485
1927	491	506	528	545	560	561	560	569	576	543	492	482
1928	482	503	525	542	540	543	551	554	522	477	465	477
1929	486	499	513	523	517	513	531	531	527	506	466	477
1930	480	495	507	518	514	510	525	534	518	489	466	482
1931	487	501	513	522	517	508	510	516	508	482	466	466
1932	487	476	503	520	543	531	524	532	552	518	492	477
1933	477	489	501	516	512	501	520	537	526	509	466	467
1934	470	480	500	517	511	503	516	527	523	498	477	486
1935	490	500	515	535	532	509	542	563	574	538	469	479
1936	486	502	518	533	560	558	564	576	563	521	472	478
1937	488	497	516	535	560	570	576	578	576	538	484	469
1938	472	486	533	560	560	542	529	467	572	576	532	520
1939	513	514	529	538	532	524	542	560	539	504	473	495
1940	495	504	517	550	550	552	548	561	553	512	466	471
1941	481	494	528	556	560	573	573	569	576	569	527	506
1942	497	507	532	552	549	553	554	562	576	555	509	477
1943	477	494	518	557	556	576	574	576	562	526	491	476
1944	479	491	508	521	524	507	516	517	501	494	490	480
1945	481	503	523	533	560	568	565	571	576	554	511	491
1946	485	502	531	548	528	524	536	559	546	510	478	480
1947	481	500	526	543	541	530	545	556	535	497	473	481
1948	488	503	518	529	523	530	558	551	541	483	480	484
1949	490	500	513	526	524	511	522	538	521	482	477	489
1950	492	503	519	536	541	524	534	551	539	506	476	482
1951	490	533	560	560	554	546	552	546	514	463	463	481
1952	488	500	530	559	560	567	559	526	576	571	525	508
1953	501	514	533	549	538	532	541	536	518	497	478	481
1954	488	497	514	532	532	527	537	560	544	507	465	483
1955	489	502	522	540	537	520	534	545	537	504	481	487
1956	491	499	560	560	560	576	576	561	576	566	524	505
1957	496	504	517	527	525	529	546	561	562	526	471	481
1958	488	501	525	545	554	565	576	576	576	557	516	498
1959	492	507	523	530	536	528	550	566	551	500	470	475
1960	474	475	480	490	503	498	515	525	509	496	483	481
1961	481	491	505	511	510	511	526	539	527	486	467	467
1962	468	471	484	492	538	529	527	555	569	540	489	476
1963	479	491	501	518	558	558	576	576	576	564	520	503
1964	490	517	542	551	547	544	553	561	551	508	476	484
1965	481	496	529	560	556	554	559	551	561	540	512	496
1966	487	513	546	558	541	526	545	564	550	506	486	486
1967	490	502	539	559	560	571	565	514	570	576	539	522
1968	515	521	539	545	545	539	550	554	539	506	478	482
1969	480	496	513	560	524	521	467	469	576	576	538	513
1970	498	516	540	560	560	554	554	555	544	517	476	477
1971	482	502	534	551	548	533	541	544	520	498	491	478
1972	479	491	519	536	532	524	537	543	540	497	481	481
1973	489	501	523	545	560	560	550	575	576	542	483	477
1974	487	510	545	560	544	550	559	570	573	537	490	473
1975	476	494	515	528	535	526	533	536	567	525	476	482
1976	489	511	531	541	539	544	547	542	519	492	479	494
1977	490	496	500	503	501	464	465	464	462	466	461	462
1978	482	482	484	532	560	552	510	498	576	576	548	539
1979	528	535	549	560	555	562	560	571	563	521	477	482
1980	489	488	508	560	560	558	566	550	576	576	542	513
1981	503	512	520	528	531	533	547	553	543	510	477	488
1982	491	504	536	560	560	576	546	561	576	576	546	541
1983	531	556	560	560	513	484	467	467	483	564	572	576
1984	560	560	560	560	560	568	570	570	557	530	487	483
1985	482	492	511	536	533	526	551	563	539	501	483	483
1986	490	508	534	554	550	552	574	565	576	558	503	479
1987	480	489	492	495	496	511	530	551	539	503	473	480
1988	482	495	507	526	516	527	539	547	527	498	483	486
1989	486	497	505	515	512	516	537	552	540	502	478	484
1990	489	495	502	510	510	517	532	544	525	508	479	483
1991	480	486	492	499	493	489	501	508	512	506	480	486
1992	485	490	494	498	499	490	493	494	480	470	465	466
1993	467	466	476	536	543	556	558	576	576	571	522	499
1994	490	497	507	512	508	520	534	548	528	498	478	484

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	10	17	0	0	14	58	85
1923	59	35	27	36	50	113	106
1924	73	70	65	71	98	112	106
1925	83	62	44	54	77	93	101
1926	68	27	13	41	82	103	91
1927	15	16	7	0	33	84	94
1928	33	25	22	54	99	111	99
1929	63	45	45	49	70	110	99
1930	66	51	42	58	87	110	94
1931	68	66	60	68	94	110	110
1932	45	52	44	24	58	84	99
1933	75	56	39	50	67	110	109
1934	73	60	49	53	78	99	90
1935	67	34	13	2	38	107	97
1936	18	12	0	13	55	104	98
1937	6	0	0	0	38	92	107
1938	34	47	109	4	0	44	56
1939	52	34	16	37	72	103	81
1940	24	28	15	23	64	110	105
1941	3	3	7	0	7	49	70
1942	23	22	14	0	21	67	99
1943	0	2	0	14	50	85	100
1944	69	60	59	75	82	86	96
1945	8	11	5	0	22	65	85
1946	52	40	17	30	66	98	96
1947	46	31	20	41	79	103	95
1948	46	20	25	35	93	96	92
1949	65	54	38	55	94	99	87
1950	52	42	25	37	70	100	94
1951	30	24	30	62	113	113	95
1952	9	17	50	0	5	51	68
1953	44	35	40	58	79	98	95
1954	49	39	16	32	69	111	93
1955	56	42	31	39	72	95	89
1956	0	0	15	0	10	52	71
1957	47	30	15	14	50	105	95
1958	11	0	0	0	19	60	78
1959	48	26	10	25	76	106	101
1960	78	61	51	67	80	93	95
1961	65	50	37	49	90	109	109
1962	47	49	21	7	36	87	100
1963	18	0	0	0	12	56	73
1964	32	23	15	25	68	100	92
1965	22	17	25	15	36	64	80
1966	50	31	12	26	70	90	90
1967	5	11	62	6	0	37	54
1968	37	26	22	37	70	98	94
1969	55	109	107	0	0	38	63
1970	22	22	21	32	59	100	99
1971	43	35	32	56	78	85	98
1972	52	39	33	36	79	95	95
1973	16	26	1	0	34	93	99
1974	26	17	6	3	39	86	103
1975	50	43	40	9	51	100	94
1976	32	29	34	57	84	97	82
1977	112	111	112	114	110	115	114
1978	24	66	78	0	0	28	37
1979	14	16	5	13	55	99	94
1980	18	10	26	0	0	34	63
1981	43	29	23	33	66	99	88
1982	0	30	15	0	0	30	35
1983	92	109	109	93	12	4	0
1984	8	6	6	19	46	89	93
1985	50	25	13	37	75	93	93
1986	24	2	11	0	18	73	97
1987	65	46	25	37	73	103	96
1988	49	37	29	49	78	93	90
1989	60	39	24	36	74	98	92
1990	59	44	32	51	68	97	93
1991	87	75	68	64	70	96	90
1992	86	83	82	96	106	111	110
1993	20	18	0	0	5	54	77
1994	56	42	28	48	78	98	92

Reservoir Elev[illegible] Table:
If [DFMRE] <= 0', th[illegible]e
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	3	2	6	6	3	1	1	22
1923	1	1	1	1	1	1	1	7
1924	1	1	1	1	1	1	1	7
1925	1	1	1	1	1	1	1	7
1926	1	1	3	1	1	1	1	9
1927	2	2	4	6	1	1	1	17
1928	1	1	1	1	1	1	1	7
1929	1	1	1	1	1	1	1	7
1930	1	1	1	1	1	1	1	7
1931	1	1	1	1	1	1	1	7
1932	1	1	1	1	1	1	1	7
1933	1	1	1	1	1	1	1	7
1934	1	1	1	1	1	1	1	7
1935	1	1	3	5	1	1	1	13
1936	2	3	6	3	1	1	1	17
1937	4	6	6	6	1	1	1	25
1938	1	1	1	5	6	1	1	16
1939	1	1	2	1	1	1	1	8
1940	1	1	2	1	1	1	1	8
1941	5	5	4	6	4	1	1	26
1942	1	1	3	6	1	1	1	14
1943	6	5	6	3	1	1	1	23
1944	1	1	1	1	1	1	1	7
1945	4	3	4	6	1	1	1	20
1946	1	1	2	1	1	1	1	8
1947	1	1	1	1	1	1	1	7
1948	1	1	1	1	1	1	1	7
1949	1	1	1	1	1	1	1	7
1950	1	1	1	1	1	1	1	7
1951	1	1	1	1	1	1	1	7
1952	4	2	1	6	4	1	1	19
1953	1	1	1	1	1	1	1	7
1954	1	1	2	1	1	1	1	8
1955	1	1	1	1	1	1	1	7
1956	6	6	2	6	3	1	1	25
1957	1	1	2	3	1	1	1	10
1958	3	6	6	6	2	1	1	25
1959	1	1	3	1	1	1	1	9
1960	1	1	1	1	1	1	1	7
1961	1	1	1	1	1	1	1	7
1962	1	1	1	4	1	1	1	10
1963	2	6	6	6	3	1	1	25
1964	1	1	2	1	1	1	1	8
1965	1	2	1	2	1	1	1	9
1966	1	1	3	1	1	1	1	9
1967	4	3	1	4	6	1	1	20
1968	1	1	1	1	1	1	1	7
1969	1	1	1	6	6	1	1	17
1970	1	1	1	1	1	1	1	7
1971	1	1	1	1	1	1	1	7
1972	1	1	1	1	1	1	1	7
1973	2	1	5	6	1	1	1	17
1974	1	2	4	5	1	1	1	15
1975	1	1	1	4	1	1	1	10
1976	1	1	1	1	1	1	1	7
1977	1	1	1	1	1	1	1	7
1978	1	1	1	6	6	1	1	17
1979	3	2	4	3	1	1	1	15
1980	2	3	1	6	6	1	1	20
1981	1	1	1	1	1	1	1	7
1982	6	1	2	6	6	1	1	23
1983	1	1	1	1	3	5	6	18
1984	4	4	4	2	1	1	1	17
1985	1	1	3	1	1	1	1	9
1986	1	5	3	6	2	1	1	19
1987	1	1	1	1	1	1	1	7
1988	1	1	1	1	1	1	1	7
1989	1	1	1	1	1	1	1	7
1990	1	1	1	1	1	1	1	7
1991	1	1	1	1	1	1	1	7
1992	1	1	1	1	1	1	1	7
1993	1	2	6	6	4	1	1	21
1994	1	1	1	1	1	1	1	7

73 - year Average: 12

Reservoir Change from Previous Month [fluctuation]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	17	-7	17	0	-14	-44	-27
1923	-14	24	8	-9	-14	-63	7
1924	-13	3	5	-6	-27	-14	4
1925	-15	21	18	-10	-23	-16	-8
1926	-14	41	14	-28	-41	-21	12
1927	1	-1	9	7	-33	-51	-10
1928	3	8	3	-32	-45	-12	12
1929	-4	18	0	-4	-21	-40	11
1930	-4	15	9	-16	-29	-23	16
1931	-9	2	6	-8	-26	-16	0
1932	-12	-7	8	20	-34	-26	-15
1933	-11	19	17	-11	-17	-43	1
1934	-8	13	11	-4	-25	-21	9
1935	-23	33	21	11	-36	-69	10
1936	-2	6	12	-13	-42	-49	6
1937	10	6	0	0	-38	-54	-15
1938	-18	-13	-62	105	4	-44	-12
1939	-8	18	18	-21	-35	-31	22
1940	2	-4	13	-8	-41	-46	5
1941	13	0	-4	7	-7	-42	-21
1942	4	1	8	14	-21	-46	-32
1943	20	-2	2	-14	-36	-35	-15
1944	-17	9	1	-16	-7	-4	-10
1945	8	-3	6	5	-22	-43	-20
1946	-4	12	23	-13	-36	-32	2
1947	-11	15	11	-21	-38	-24	8
1948	7	26	-5	-10	-58	-3	4
1949	-13	11	16	-17	-39	-5	12
1950	-17	10	17	-12	-33	-30	6
1951	-8	6	-6	-32	-51	0	18
1952	7	-8	-33	50	-5	-46	-17
1953	-6	9	-5	-18	-21	-19	3
1954	-5	10	23	-16	-37	-42	18
1955	-17	14	11	-8	-33	-23	6
1956	16	0	-15	15	-10	-42	-19
1957	4	17	15	1	-36	-55	10
1958	11	11	0	0	-19	-41	-18
1959	-8	22	16	-15	-51	-30	5
1960	-5	17	10	-16	-13	-13	-2
1961	1	15	13	-12	-41	-19	0
1962	-9	-2	28	14	-29	-51	-13
1963	0	18	0	0	-12	-44	-17
1964	-3	9	8	-10	-43	-32	8
1965	-2	5	-8	10	-21	-28	-16
1966	-15	19	19	-14	-44	-20	0
1967	11	-6	-51	56	6	-37	-17
1968	-6	11	4	-15	-33	-28	4
1969	-3	-54	2	107	0	-38	-25
1970	-6	0	1	-11	-27	-41	1
1971	-15	8	3	-24	-22	-7	-13
1972	-8	13	6	-3	-43	-16	0
1973	0	-10	25	1	-34	-59	-6
1974	6	9	11	3	-36	-47	-17
1975	-9	7	3	31	-42	-49	6
1976	5	3	-5	-23	-27	-13	15
1977	-37	1	-1	-2	4	-5	1
1978	-8	-42	-12	78	0	-28	-9
1979	7	-2	11	-8	-42	-44	5
1980	-2	8	-16	26	0	-34	-29
1981	2	14	6	-10	-33	-33	11
1982	16	-30	15	15	0	-30	-5
1983	-29	-17	0	16	81	8	4
1984	8	2	0	-13	-27	-43	-4
1985	-7	25	12	-24	-38	-18	0
1986	2	22	-9	11	-18	-55	-24
1987	15	19	21	-12	-36	-30	7
1988	11	12	8	-20	-29	-15	3
1989	4	21	15	-12	-38	-24	6
1990	7	15	12	-19	-17	-29	4
1991	-4	12	7	4	-6	-26	6
1992	-9	3	1	-14	-10	-5	1
1993	13	2	18	0	-5	-49	-23
1994	12	14	14	-20	-30	-20	6

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	4	6	6	3	1	1	27	594
1923	3	6	6	4	3	1	6	29	203
1924	3	6	6	4	1	3	6	29	203
1925	3	6	6	4	1	2	4	26	182
1926	3	6	6	1	1	1	6	24	216
1927	6	5	6	6	1	1	4	29	493
1928	6	6	6	1	1	3	6	29	203
1929	5	6	6	5	1	1	6	30	210
1930	5	6	6	2	1	1	6	27	189
1931	4	6	6	4	1	2	6	29	203
1932	3	4	6	6	1	1	3	24	168
1933	3	6	6	3	2	1	6	27	189
1934	4	6	6	5	1	1	6	29	203
1935	1	6	6	6	1	1	6	27	351
1936	5	6	6	3	1	1	6	28	476
1937	6	6	6	6	1	1	3	29	725
1938	2	3	1	6	6	1	3	22	352
1939	4	6	6	1	1	1	6	25	200
1940	6	5	6	4	1	1	6	29	232
1941	6	6	5	6	4	1	1	29	754
1942	6	6	6	6	1	1	1	27	378
1943	6	5	6	3	1	1	3	25	575
1944	2	6	6	2	4	5	4	29	203
1945	6	5	6	6	1	1	2	27	540
1946	5	6	6	3	1	1	6	28	224
1947	3	6	6	1	1	1	6	24	168
1948	6	6	5	4	1	5	6	33	231
1949	3	6	6	2	1	5	6	29	203
1950	2	6	6	3	1	1	6	25	175
1951	4	6	4	1	1	6	6	28	196
1952	6	4	1	6	5	1	2	25	475
1953	4	6	5	2	1	2	6	26	182
1954	5	6	6	2	1	1	6	27	216
1955	2	6	6	4	1	1	6	26	182
1956	6	6	3	6	4	1	2	28	700
1957	6	6	6	6	1	1	6	32	320
1958	6	6	6	6	2	1	2	29	725
1959	4	6	6	3	1	1	6	27	243
1960	5	6	6	2	3	3	5	30	210
1961	6	6	6	3	1	2	6	30	210
1962	4	5	6	6	1	1	3	26	260
1963	6	6	6	6	3	1	2	30	750
1964	5	6	6	4	1	1	6	29	232
1965	5	6	4	6	1	1	2	25	225
1966	3	6	6	3	1	2	6	27	243
1967	6	4	1	6	6	1	2	26	520
1968	4	6	6	3	1	1	6	27	189
1969	5	1	6	6	6	1	1	26	442
1970	4	6	6	3	1	1	6	27	189
1971	3	6	6	1	1	4	3	24	168
1972	4	6	6	5	1	2	6	30	210
1973	6	4	6	6	1	1	4	28	476
1974	6	6	6	6	1	1	2	28	420
1975	4	6	6	6	1	1	6	30	300
1976	6	6	5	1	1	3	6	28	196
1977	1	6	5	5	6	5	6	34	238
1978	4	1	3	6	6	1	4	25	425
1979	6	5	6	4	1	1	6	29	435
1980	5	6	2	6	6	1	1	27	540
1981	6	6	6	4	1	1	6	30	210
1982	6	1	6	6	6	1	5	31	713
1983	1	2	6	6	6	6	6	33	594
1984	6	6	6	3	1	1	5	28	476
1985	4	6	6	1	1	2	6	26	234
1986	6	6	4	6	2	1	1	26	484
1987	6	6	6	3	1	1	6	29	203
1988	6	6	6	2	1	3	6	30	210
1989	6	6	6	3	1	1	6	29	203
1990	6	6	6	2	2	1	6	29	203
1991	5	6	6	6	4	1	6	34	238
1992	4	6	6	3	4	5	6	34	238
1993	6	6	6	6	5	1	1	31	651
1994	6	6	6	2	1	2	6	29	203

73 - year Average: 28 329.2
1929 - '34 Average: 193.7

Prepared by Kevin Long

Study 485 - Reservoirs Elevations Fish Habitat Analysis.xls - Millerton Lake

11/17/1997

A2-165

C-032505

C-032505

C-032506

STUDY: 1995C06F-SWRCB-485 DWRSIM: recirc818-f, 18 Jun 97
CP # 12, SWP SAN LUIS RESERVIOR, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-485/12/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 544'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	419	450	484	527	544	544	540	528	513	464	416	427	0	4	16	31	80	128	117
1923	459	486	505	542	544	544	535	501	462	436	412	408	0	9	43	82	108	132	136
1924	418	420	445	488	512	512	501	483	457	417	379	375	32	43	61	87	127	165	169
1925	372	383	431	484	512	526	517	485	451	424	362	359	18	27	59	93	120	182	185
1926	399	423	448	490	517	522	517	491	466	453	385	384	22	27	53	78	91	159	160
1927	391	434	474	521	544	544	536	513	467	439	407	411	0	8	31	77	105	137	133
1928	446	476	499	532	544	544	538	508	466	440	414	409	0	6	36	78	104	130	135
1929	436	461	484	527	544	544	536	521	497	465	433	430	0	8	23	47	79	111	114
1930	430	436	481	531	543	544	526	494	466	456	445	423	0	18	50	78	88	99	121
1931	430	434	435	476	488	491	481	465	450	418	371	370	53	63	79	94	126	173	174
1932	383	383	447	505	535	528	521	498	484	482	445	431	16	23	46	60	62	99	113
1933	447	455	456	500	520	528	523	509	480	444	401	401	16	21	35	64	100	143	143
1934	412	409	456	509	520	520	508	483	462	440	379	367	24	36	61	82	104	165	177
1935	373	376	401	466	474	510	518	489	445	416	341	352	34	26	55	99	128	203	192
1936	390	390	390	453	501	521	521	499	461	437	410	409	23	23	45	83	107	134	135
1937	438	467	496	533	544	544	544	541	512	462	414	412	0	0	3	32	82	130	132
1938	443	475	505	544	544	544	544	544	537	504	471	486	0	0	0	7	40	73	58
1939	513	529	538	544	544	544	526	491	460	447	437	418	0	18	53	84	97	107	126
1940	420	417	411	477	517	537	532	504	449	414	344	346	7	12	40	95	130	200	198
1941	384	416	449	501	533	544	543	540	526	477	437	456	0	1	4	18	67	107	88
1942	487	503	529	544	544	544	540	531	523	477	438	455	0	4	13	21	67	106	89
1943	485	500	523	544	544	544	544	544	512	466	417	426	0	0	0	32	78	127	118
1944	458	489	504	539	544	544	525	491	458	441	422	413	0	19	53	86	103	122	131
1945	417	454	488	523	544	544	533	504	469	446	412	411	0	11	40	75	98	132	133
1946	444	475	503	542	544	544	525	493	447	413	409	410	0	19	51	97	131	135	134
1947	437	466	494	523	544	544	520	479	440	418	408	408	0	24	65	104	126	136	136
1948	411	416	418	468	485	509	508	480	442	413	338	348	35	36	64	102	131	206	196
1949	383	412	445	492	514	542	520	487	451	429	410	408	2	24	57	93	115	134	136
1950	435	463	470	519	544	544	529	495	464	446	415	405	0	15	49	80	98	129	139
1951	426	459	496	532	544	544	520	485	432	404	398	400	0	24	59	112	140	146	144
1952	422	452	480	518	544	544	544	544	536	511	492	499	0	0	0	8	33	52	45
1953	518	532	538	544	544	544	524	501	473	450	422	439	0	20	43	71	94	122	105
1954	470	488	510	541	544	544	534	508	457	426	402	403	0	10	36	87	118	142	141
1955	428	457	485	521	533	539	518	487	460	452	418	418	5	26	57	84	92	126	126
1956	419	431	475	513	544	544	531	521	500	468	426	436	0	13	23	44	76	118	108
1957	463	488	498	529	544	544	526	493	451	426	418	421	0	18	51	93	118	126	123
1958	461	480	503	536	544	544	544	544	536	500	481	495	0	0	0	8	44	63	49
1959	508	529	538	544	544	544	519	479	440	419	409	408	0	25	65	104	125	135	136
1960	439	469	471	515	544	544	524	488	455	432	370	358	0	20	56	89	112	174	186
1961	395	424	460	503	529	540	516	476	444	428	417	402	4	28	68	100	116	127	142
1962	433	460	493	523	544	544	520	480	427	386	331	339	0	24	64	117	158	213	205
1963	375	408	437	483	518	535	531	513	477	449	411	419	9	13	31	67	95	133	125
1964	451	479	493	525	536	543	516	474	433	409	389	394	1	28	70	111	135	155	150
1965	397	428	465	516	542	544	544	526	492	465	422	429	0	0	18	52	79	122	115
1966	469	488	506	544	544	544	520	480	433	402	399	404	0	24	64	111	142	145	140
1967	432	462	496	530	544	544	544	544	537	525	506	509	0	0	0	7	19	38	35
1968	523	533	538	544	544	544	523	484	445	424	410	417	0	21	60	99	120	134	127
1969	445	473	506	543	544	544	544	544	537	517	489	503	0	0	0	7	27	55	41
1970	517	530	538	544	544	544	528	494	451	429	411	416	0	16	50	93	115	133	128
1971	444	476	507	535	544	544	525	499	461	431	416	428	0	19	45	83	113	128	116
1972	456	483	496	528	544	544	517	475	433	408	403	404	0	27	69	111	136	141	140
1973	426	458	489	522	544	544	537	514	476	446	411	414	0	7	30	68	98	133	130
1974	445	473	496	536	544	544	542	528	496	467	442	454	0	2	16	48	77	102	90
1975	476	494	514	544	544	544	539	517	491	459	429	439	0	5	27	53	85	115	105
1976	486	486	502	533	544	544	525	495	473	467	448	429	0	19	49	71	77	96	115
1977	430	436	438	456	456	456	457	446	429	408	402	418	88	87	98	115	136	142	126
1978	424	442	491	538	544	544	544	544	526	469	413	433	0	0	0	18	75	131	111
1979	466	488	506	544	544	544	537	512	479	459	409	413	0	7	32	65	85	135	131
1980	448	480	503	544	544	544	544	544	527	493	454	471	0	0	0	17	51	90	73
1981	502	524	538	544	544	544	526	487	449	428	411	411	0	18	57	95	116	133	133
1982	436	469	502	537	544	544	544	544	531	494	462	471	0	0	0	13	50	82	73
1983	496	515	536	544	544	544	544	544	537	527	514	521	0	0	0	7	17	30	23
1984	535	544	544	544	544	544	527	493	453	434	410	415	0	17	51	91	110	134	129
1985	451	482	502	534	544	544	519	478	432	403	376	378	0	25	66	112	141	168	166
1986	379	385	424	479	516	531	543	544	533	493	463	473	13	1	0	11	51	81	71
1987	502	514	538	544	544	544	523	485	455	441	427	412	0	21	59	89	103	117	132
1988	418	414	453	503	517	517	505	488	476	460	426	424	27	39	56	68	84	118	120
1989	420	437	458	496	496	527	515	482	449	436	385	391	17	29	62	95	108	159	153
1990	406	424	440	486	508	513	497	466	450	447	393	383	31	47	78	94	97	151	161
1991	383	389	389	405	405	470	471	460	443	420	404	406	74	73	84	101	124	140	138
1992	409	423	438	484	517	540	531	510	494	461	420	413	4	13	34	50	83	124	131
1993	415	420	467	521	531	544	526	512	496	460	407	415	0	18	32	48	84	137	129
1994	450	480	495	529	544	544	521	485	454	441	432	416	0	23	59	90	103	112	128

Reservoir El[illegible] Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table.
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Elev. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	5	2	1	1	1	1	17	0	-4	-12	-15	-49	-48	11	6	5	3	3	1	1	6	25	425
1923	6	4	1	1	1	1	1	15	0	-9	-34	-39	-26	-24	-4	6	4	1	1	1	1	5	19	285
1924	1	1	1	1	1	1	1	7	0	-11	-18	-26	-40	-38	-4	6	3	2	1	1	1	5	19	133
1925	2	1	1	1	1	1	1	8	14	-9	-32	-34	-27	-62	-3	6	4	1	1	1	1	5	19	152
1926	1	1	1	1	1	1	1	7	5	-5	-26	-25	-13	-68	-1	6	5	1	1	3	1	5	22	154
1927	6	4	1	1	1	1	1	15	0	-8	-23	-46	-28	-32	4	6	4	1	1	1	1	6	20	300
1928	6	4	1	1	1	1	1	15	0	-6	-30	-42	-26	-26	-5	6	4	1	1	1	1	5	19	285
1929	6	4	1	1	1	1	1	15	0	-8	-15	-24	-32	-32	-3	6	4	3	1	1	1	5	21	315
1930	6	2	1	1	1	1	1	13	1	-18	-32	-28	-10	-11	-22	6	2	1	1	4	3	1	18	234
1931	1	1	1	1	1	1	1	7	3	-10	-16	-15	-32	-47	-1	6	4	2	3	1	1	5	22	154
1932	2	1	1	1	1	1	1	8	-7	-7	-23	-14	-2	-37	-14	4	4	1	3	5	1	3	21	168
1933	2	1	1	1	1	1	1	8	8	-5	-14	-29	-36	-43	0	6	5	3	1	1	1	6	23	184
1934	1	1	1	1	1	1	1	7	0	-12	-25	-21	-22	-61	-12	6	3	1	1	1	1	3	16	112
1935	1	1	1	1	1	1	1	7	36	8	-29	-44	-29	-75	11	6	6	1	1	1	1	6	22	154
1936	1	1	1	1	1	1	1	7	20	0	-22	-38	-24	-27	-1	6	6	1	1	1	1	5	21	147
1937	6	6	5	1	1	1	1	21	0	0	-3	-29	-50	-48	-2	6	6	5	1	1	1	5	25	525
1938	6	6	6	4	1	1	1	25	0	0	0	-7	-33	-33	15	6	6	6	4	1	1	6	30	750
1939	6	2	1	1	1	1	1	13	0	-18	-35	-31	-13	-10	-19	6	2	1	1	3	4	2	19	247
1940	4	3	1	1	1	1	1	12	20	-5	-28	-55	-35	-70	2	6	5	1	1	1	1	6	21	252
1941	6	5	5	2	1	1	1	21	11	-1	-3	-14	-49	-40	19	6	5	5	3	1	1	6	27	567
1942	6	5	3	1	1	1	1	18	0	-4	-9	-8	-46	-39	17	6	5	4	4	1	1	6	27	486
1943	6	6	6	1	1	1	1	22	0	0	0	-32	-46	-49	9	6	6	6	1	1	1	6	27	594
1944	6	2	1	1	1	1	1	13	0	-19	-34	-33	-17	-19	-9	6	2	1	1	2	2	4	18	234
1945	6	3	1	1	1	1	1	14	0	-11	-29	-35	-23	-34	-1	6	3	1	1	1	1	5	18	252
1946	6	2	1	1	1	1	1	13	0	-19	-32	-46	-34	-4	1	6	2	1	1	1	5	6	22	286
1947	6	1	1	1	1	1	1	12	0	-24	-41	-39	-22	-10	0	6	1	1	1	1	4	6	20	240
1948	1	1	1	1	1	1	1	7	24	-1	-28	-38	-29	-75	10	6	5	1	1	1	1	6	21	147
1949	5	1	1	1	1	1	1	11	28	-22	-33	-36	-22	-19	-2	6	1	1	1	1	2	5	17	187
1950	6	2	1	1	1	1	1	13	0	-15	-34	-31	-18	-31	-10	6	3	1	1	2	1	4	18	234
1951	6	1	1	1	1	1	1	12	0	-24	-35	-53	-28	-6	2	6	1	1	1	1	4	6	20	240
1952	6	6	6	4	1	1	1	25	0	0	0	-8	-25	-19	7	6	6	6	4	1	2	6	31	775
1953	6	1	1	1	1	1	1	12	0	-20	-23	-28	-23	-28	17	6	2	1	1	1	1	6	18	216
1954	6	3	1	1	1	1	1	14	0	-10	-26	-51	-31	-24	1	6	4	1	1	1	1	6	20	280
1955	4	1	1	1	1	1	1	10	6	-21	-31	-27	-8	-34	0	6	1	1	1	4	1	6	20	200
1956	6	3	1	1	1	1	1	14	0	-13	-10	-21	-32	-42	10	6	3	4	1	1	1	6	22	308
1957	6	2	1	1	1	1	1	13	0	-18	-33	-42	-25	-8	3	6	2	1	1	1	4	6	21	273
1958	6	6	6	4	1	1	1	25	0	0	0	-8	-36	-19	14	6	6	6	4	1	2	6	31	775
1959	6	1	1	1	1	1	1	12	0	-25	-40	-39	-21	-10	-1	6	1	1	1	1	4	5	19	228
1960	6	1	1	1	1	1	1	12	0	-20	-36	-33	-23	-62	-12	6	2	1	1	1	1	3	15	180
1961	5	1	1	1	1	1	1	11	11	-24	-40	-32	-16	-11	-15	6	1	1	1	2	3	3	17	187
1962	6	1	1	1	1	1	1	12	0	-24	-40	-53	-41	-55	8	6	1	1	1	1	1	6	17	204
1963	4	3	1	1	1	1	1	12	17	-4	-18	-36	-28	-38	8	6	5	2	1	1	1	6	22	264
1964	5	1	1	1	1	1	1	11	7	-27	-42	-41	-24	-20	5	6	1	1	1	1	2	6	18	198
1965	6	6	2	1	1	1	1	18	2	0	-18	-34	-27	-43	7	6	6	2	1	1	1	6	23	414
1966	6	1	1	1	1	1	1	12	0	-24	-40	-47	-31	-3	5	6	1	1	1	1	5	6	21	252
1967	6	6	6	4	2	1	1	26	0	0	0	-7	-12	-19	3	6	6	6	4	3	2	6	33	858
1968	6	1	1	1	1	1	1	12	0	-21	-39	-39	-21	-14	7	6	1	1	1	1	3	6	19	228
1969	6	6	6	4	1	1	1	25	0	0	0	-7	-20	-28	14	6	6	6	4	2	1	6	31	775
1970	6	2	1	1	1	1	1	13	0	-16	-34	-43	-22	-18	5	6	2	1	1	1	2	6	19	247
1971	6	2	1	1	1	1	1	13	0	-19	-26	-38	-30	-15	12	6	2	1	1	1	3	6	20	260
1972	6	1	1	1	1	1	1	12	0	-27	-42	-42	-25	-5	1	6	1	1	1	1	5	6	21	252
1973	6	4	1	1	1	1	1	15	0	-7	-23	-38	-30	-35	3	6	4	1	1	1	1	6	20	300
1974	6	5	2	1	1	1	1	17	0	-2	-14	-32	-29	-25	12	6	5	3	1	1	1	6	23	391
1975	6	4	1	1	1	1	1	15	0	-5	-22	-26	-32	-30	10	6	5	1	1	1	1	6	21	315
1976	6	2	1	1	1	1	1	13	0	-19	-30	-22	-6	-19	-19	6	2	1	1	4	2	2	18	234
1977	1	1	1	1	1	1	1	7	0	1	-11	-17	-21	-6	16	6	6	3	2	1	4	6	28	196
1978	6	6	6	2	1	1	1	23	0	0	0	-18	-57	-56	20	6	6	6	2	1	1	6	28	644
1979	6	4	1	1	1	1	1	15	0	-7	-25	-33	-20	-50	4	6	4	1	1	2	1	6	21	315
1980	6	6	6	2	1	1	1	23	0	0	0	-17	-34	-39	17	6	6	6	2	1	1	6	28	644
1981	6	2	1	1	1	1	1	13	0	-18	-39	-38	-21	-17	0	6	2	1	1	1	2	6	19	247
1982	6	6	6	3	1	1	1	24	0	0	0	-13	-37	-32	9	6	6	6	3	1	1	6	29	696
1983	6	6	6	4	2	1	1	26	0	0	0	-7	-10	-13	7	6	6	6	4	4	3	6	35	910
1984	6	2	1	1	1	1	1	13	0	-17	-34	-40	-19	-24	5	6	2	1	1	2	1	6	19	247
1985	6	1	1	1	1	1	1	12	0	-25	-41	-46	-29	-27	2	6	1	1	1	1	1	6	17	204
1986	3	5	6	3	1	1	1	20	15	12	1	-11	-40	-30	10	6	6	6	3	1	1	6	29	580
1987	6	1	1	1	1	1	1	12	0	-21	-38	-30	-14	-14	-15	6	1	1	1	3	3	3	18	216
1988	1	1	1	1	1	1	1	7	0	-12	-17	-12	-16	-34	-2	6	3	2	3	2	1	5	22	154
1989	2	1	1	1	1	1	1	8	31	-12	-33	-33	-13	-51	6	6	3	1	1	3	1	6	21	168
1990	1	1	1	1	1	1	1	7	5	-16	-31	-16	-3	-54	-10	6	2	1	2	5	1	4	21	147
1991	1	1	1	1	1	1	1	7	65	1	-11	-17	-23	-16	2	6	6	3	2	1	2	6	26	182
1992	5	3	1	1	1	1	1	13	23	-9	-21	-16	-33	-41	-7	6	4	1	2	1	1	4	19	247
1993	6	2	1	1	1	1	1	13	13	-18	-14	-16	-36	-53	8	6	2	3	2	1	1	6	21	273
1994	6	1	1	1	1	1	1	12	0	-23	-36	-31	-13	-9	-16	6	1	1	1	3	4	2	18	216

73 - year Average: 14

73 - year Average: 22 319.8
1929 - '34 Average: 194.5

A2-166

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STUDY: 1995C6F-SWRCB-492 DWRSIM: recirc818-I, 17 Jun 97
CP # 4, CVP SHASTA LAKE, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-492/4/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 1067'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	989	991	998	1,002	1,018	1,037	1,059	1,067	1,062	1,048	1,031	1,025	30	8	0	5	19	36	42
1923	1,023	1,017	1,019	1,023	1,024	1,026	1,038	1,034	1,023	1,003	986	978	41	29	33	44	64	81	89
1924	979	979	979	980	987	986	975	961	939	917	899	879	81	92	106	128	150	168	188
1925	883	899	908	918	993	1,008	1,040	1,051	1,042	1,018	1,003	996	59	27	16	25	49	64	71
1926	995	994	989	988	1,016	1,024	1,039	1,032	1,015	990	971	961	43	28	35	52	77	96	106
1927	960	987	1,010	1,035	1,026	1,052	1,067	1,067	1,062	1,044	1,027	1,022	15	0	0	5	23	40	45
1928	1,020	1,017	1,020	1,028	1,044	1,046	1,066	1,062	1,049	1,022	1,000	993	21	1	5	18	45	67	74
1929	988	988	989	989	995	1,001	1,002	995	986	965	947	937	66	65	72	81	102	120	130
1930	938	936	967	980	998	1,020	1,031	1,031	1,020	997	985	976	47	36	36	47	70	82	91
1931	974	974	972	978	980	988	980	970	959	941	927	912	79	87	97	108	126	140	155
1932	906	907	922	934	943	967	970	979	971	957	943	931	100	97	88	96	110	124	136
1933	929	924	925	927	930	966	974	979	975	955	941	929	101	93	88	92	112	126	138
1934	928	928	939	956	976	990	991	986	972	941	927	911	77	76	81	95	126	140	156
1935	905	916	921	942	962	985	1,029	1,037	1,029	1,006	992	985	82	38	30	38	61	75	82
1936	982	979	977	1,004	1,032	1,044	1,054	1,052	1,048	1,024	1,004	996	23	13	15	19	43	63	71
1937	992	987	983	977	978	1,005	1,035	1,043	1,040	1,018	999	991	62	32	24	27	49	68	76
1938	988	1,010	1,020	1,035	1,030	1,024	1,049	1,067	1,067	1,058	1,045	1,036	43	18	0	0	9	22	31
1939	1,023	1,017	1,020	1,022	1,024	1,039	1,031	1,023	1,003	978	951	943	28	36	44	64	89	116	124
1940	940	934	943	992	1,017	1,025	1,059	1,064	1,057	1,035	1,018	1,012	42	8	3	10	32	49	55
1941	1,010	1,010	1,019	1,020	1,024	1,045	1,064	1,067	1,067	1,058	1,047	1,036	22	3	0	0	9	20	31
1942	1,023	1,017	1,020	1,023	1,028	1,042	1,067	1,067	1,067	1,058	1,046	1,036	25	0	0	0	9	21	31
1943	1,023	1,017	1,022	1,030	1,042	1,051	1,067	1,067	1,063	1,050	1,036	1,029	16	0	0	4	17	31	38
1944	1,023	1,017	1,015	1,014	1,023	1,033	1,038	1,038	1,024	999	979	970	34	29	29	43	68	88	97
1945	971	983	996	1,003	1,037	1,050	1,062	1,067	1,061	1,039	1,019	1,011	17	5	0	6	28	48	56
1946	1,010	1,017	1,018	1,033	1,031	1,043	1,055	1,057	1,047	1,028	1,013	1,005	24	12	10	20	39	54	62
1947	1,000	1,001	1,002	999	1,007	1,027	1,035	1,024	1,016	990	967	958	40	32	43	51	77	100	109
1948	965	969	972	1,000	999	1,016	1,056	1,067	1,067	1,052	1,036	1,031	51	11	0	0	15	31	36
1949	1,023	1,017	1,016	1,012	1,018	1,050	1,063	1,064	1,049	1,023	1,005	997	17	4	3	18	44	62	70
1950	993	991	988	997	1,013	1,031	1,047	1,046	1,036	1,014	997	990	36	20	21	31	53	70	77
1951	1,003	1,017	1,020	1,033	1,040	1,057	1,064	1,067	1,056	1,035	1,011	1,006	10	3	0	11	32	56	61
1952	1,004	1,009	1,019	1,032	1,038	1,048	1,058	1,067	1,067	1,058	1,046	1,036	19	9	0	0	9	21	31
1953	1,023	1,017	1,021	1,022	1,033	1,051	1,065	1,067	1,067	1,057	1,045	1,036	16	2	0	0	10	22	31
1954	1,023	1,017	1,021	1,030	1,035	1,051	1,067	1,063	1,061	1,043	1,031	1,025	16	0	4	6	24	36	42
1955	1,022	1,017	1,022	1,024	1,027	1,032	1,044	1,052	1,039	1,011	993	987	35	23	15	28	56	74	80
1956	984	988	1,017	1,017	1,019	1,048	1,067	1,067	1,067	1,058	1,047	1,036	19	0	0	0	9	20	31
1957	1,023	1,017	1,016	1,017	1,035	1,052	1,058	1,067	1,063	1,044	1,031	1,028	15	9	0	4	23	36	39
1958	1,023	1,017	1,021	1,029	1,067	1,024	1,053	1,067	1,067	1,058	1,047	1,036	43	14	0	0	9	20	31
1959	1,023	1,017	1,017	1,034	1,039	1,052	1,056	1,056	1,043	1,019	1,000	998	15	11	11	24	48	67	69
1960	991	987	987	993	1,021	1,048	1,055	1,063	1,052	1,029	1,010	1,005	19	12	4	15	38	57	62
1961	1,000	1,003	1,019	1,024	1,044	1,057	1,062	1,066	1,054	1,028	1,006	1,001	10	5	1	13	39	61	66
1962	997	999	1,011	1,007	1,035	1,053	1,066	1,067	1,058	1,036	1,015	1,009	14	1	0	9	31	52	58
1963	1,023	1,017	1,021	1,025	1,045	1,055	1,052	1,067	1,064	1,052	1,040	1,036	12	15	0	3	15	27	31
1964	1,023	1,017	1,018	1,033	1,037	1,041	1,036	1,031	1,022	998	980	971	26	31	36	45	69	87	96
1965	970	978	1,017	1,022	1,040	1,052	1,065	1,066	1,060	1,046	1,037	1,033	15	2	1	7	21	30	34
1966	1,023	1,017	1,021	1,037	1,049	1,055	1,067	1,064	1,053	1,034	1,012	1,005	12	0	3	14	33	55	62
1967	987	1,011	1,021	1,030	1,044	1,048	1,064	1,067	1,067	1,058	1,047	1,036	19	3	0	0	9	20	31
1968	1,023	1,017	1,019	1,025	1,034	1,054	1,056	1,058	1,048	1,029	1,019	1,015	13	11	9	19	38	48	52
1969	1,011	1,012	1,021	1,022	1,027	1,048	1,063	1,067	1,067	1,058	1,047	1,036	19	4	0	0	9	20	31
1970	1,023	1,017	1,020	1,017	1,025	1,052	1,055	1,054	1,048	1,030	1,015	1,009	15	12	13	19	37	52	58
1971	1,007	1,017	1,020	1,028	1,041	1,043	1,063	1,067	1,067	1,058	1,047	1,036	24	4	0	0	9	20	31
1972	1,023	1,017	1,022	1,033	1,045	1,056	1,067	1,067	1,056	1,036	1,019	1,015	11	0	0	11	31	48	52
1973	1,016	1,017	1,021	1,030	1,034	1,053	1,065	1,067	1,059	1,039	1,023	1,018	14	2	0	8	28	44	49
1974	1,021	1,017	1,018	1,017	1,036	1,025	1,058	1,067	1,067	1,058	1,047	1,036	42	9	0	0	9	20	31
1975	1,023	1,017	1,021	1,024	1,045	1,039	1,061	1,067	1,067	1,057	1,046	1,036	28	6	0	0	10	21	31
1976	1,023	1,017	1,018	1,017	1,012	1,020	1,027	1,023	1,005	985	980	975	47	40	44	62	82	87	92
1977	977	978	978	979	967	967	949	943	921	903	884	874	100	118	124	146	164	183	193
1978	863	862	909	1,015	1,031	1,047	1,067	1,067	1,066	1,054	1,043	1,036	20	0	0	1	13	24	31
1979	1,023	1,017	1,015	1,018	1,029	1,046	1,053	1,062	1,048	1,027	1,015	1,008	21	14	5	19	40	52	59
1980	1,008	1,011	1,014	1,029	1,019	1,046	1,059	1,064	1,058	1,047	1,037	1,034	21	8	3	9	20	30	33
1981	1,023	1,017	1,020	1,029	1,042	1,056	1,064	1,062	1,047	1,024	1,006	1,000	11	3	5	20	43	61	67
1982	996	1,017	1,018	1,033	1,029	1,046	1,051	1,067	1,067	1,058	1,047	1,036	21	16	0	0	9	20	31
1983	1,023	1,017	1,020	1,022	1,017	1,045	1,050	1,067	1,067	1,058	1,047	1,036	22	17	0	0	9	20	31
1984	1,023	1,017	1,018	1,034	1,047	1,056	1,064	1,067	1,063	1,047	1,035	1,032	11	3	0	4	20	32	35
1985	1,023	1,017	1,022	1,023	1,027	1,034	1,042	1,035	1,016	995	977	971	33	25	32	51	72	90	96
1986	973	977	988	1,014	1,017	1,029	1,048	1,050	1,039	1,020	1,005	1,002	38	19	17	28	47	62	65
1987	1,003	1,003	1,003	1,005	1,015	1,043	1,044	1,038	1,012	982	954	948	24	23	29	55	85	113	119
1988	944	945	976	998	1,005	1,008	1,015	1,015	998	967	949	942	59	52	52	69	100	118	125
1989	942	955	962	969	976	1,039	1,058	1,054	1,045	1,022	1,010	1,005	28	9	13	22	45	57	62
1990	1,008	1,008	1,003	1,009	1,009	1,017	1,009	1,015	1,007	981	965	956	50	58	52	60	86	102	111
1991	952	951	981	952	947	973	984	984	974	961	946	936	94	83	83	93	106	121	131
1992	934	933	934	938	977	999	1,010	1,003	987	968	955	946	68	57	64	80	99	112	121
1993	942	939	954	990	1,022	1,031	1,059	1,067	1,067	1,054	1,046	1,043	36	8	0	0	13	21	24
1994	1,042	1,017	1,019	1,020	1,026	1,030	1,030	1,029	1,009	988	968	958	37	37	38	58	79	99	109

Reservoir Elev. Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	Elev. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Change MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	4	6	4	2	1	1	19	19	22	8	-5	-14	-17	-8	6	6	6	5	3	2	4	32	608
1923	1	1	1	1	1	1	1	7	2	12	-4	-11	-20	-17	-8	6	6	5	3	2	2	4	28	196
1924	1	1	1	1	1	1	1	7	-1	-11	-14	-22	-22	-18	-20	5	3	3	1	1	2	2	17	119
1925	1	1	2	1	1	1	1	8	15	32	11	-9	-24	-15	-7	6	6	6	4	1	3	4	30	240
1926	1	1	1	1	1	1	1	7	8	15	-7	-17	-25	-19	-10	6	6	4	2	1	2	4	25	175
1927	2	6	6	4	1	1	1	21	26	15	0	-5	-18	-17	-5	6	6	6	5	2	2	5	32	672
1928	1	5	4	2	1	1	1	15	2	20	-4	-13	-27	-22	-7	6	6	5	3	1	1	4	26	390
1929	1	1	1	1	1	1	1	7	6	1	-7	-9	-21	-18	-10	6	6	4	4	1	2	4	27	189
1930	1	1	1	1	1	1	1	7	22	11	0	-11	-23	-12	-9	6	6	6	3	1	3	4	29	203
1931	1	1	1	1	1	1	1	7	8	-8	-10	-11	-18	-14	-15	6	4	4	3	2	3	3	25	175
1932	1	1	1	1	1	1	1	7	24	3	9	-8	-14	-14	-12	6	6	6	4	3	3	3	31	217
1933	1	1	1	1	1	1	1	7	36	8	5	-4	-20	-14	-12	6	6	6	5	2	3	3	31	217
1934	1	1	1	1	1	1	1	7	14	1	-5	-14	-31	-14	-16	6	6	5	3	1	3	2	26	182
1935	1	1	1	1	1	1	1	7	23	44	8	-8	-23	-14	-7	6	6	6	4	1	3	4	30	210
1936	1	3	2	2	1	1	1	11	12	10	-2	-4	-24	-20	-8	6	6	5	5	1	2	4	29	319
1937	1	1	1	1	1	1	1	7	27	30	8	-3	-22	-19	-8	6	6	6	5	1	2	4	30	210
1938	1	2	6	6	4	1	1	21	-6	25	18	0	-9	-13	-9	4	6	6	6	4	3	4	33	693
1939	1	1	1	1	1	1	1	7	15	-8	-8	-20	-25	-27	-8	6	4	4	2	1	1	4	22	154
1940	1	4	5	3	1	1	1	16	8	34	5	-7	-22	-17	-6	6	6	6	4	1	2	4	29	464
1941	1	5	6	6	4	1	1	24	21	19	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1942	1	6	6	6	4	1	1	25	14	25	0	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1943	2	6	6	5	2	1	1	23	9	16	0	-4	-13	-14	-7	6	6	6	5	3	3	4	33	759
1944	1	1	1	1	1	1	1	7	10	5	0	-14	-25	-20	-9	6	6	6	3	1	2	4	28	196
1945	2	4	6	4	1	1	1	19	13	12	5	-6	-22	-20	-8	6	6	6	4	1	2	4	29	551
1946	1	3	3	1	1	1	1	11	12	12	2	-10	-19	-15	-8	6	6	6	4	2	3	4	31	341
1947	1	1	1	1	1	1	1	7	20	8	-11	-8	-26	-23	-9	6	6	3	4	1	1	4	25	175
1948	1	3	6	6	2	1	1	20	17	40	11	0	-15	-16	-5	6	6	6	6	3	2	5	34	680
1949	2	5	5	2	1	1	1	17	34	13	1	-15	-26	-18	-8	6	6	6	3	1	2	4	28	476
1950	1	1	1	1	1	1	1	7	18	16	-1	-10	-22	-17	-7	6	6	5	4	1	2	4	28	196
1951	3	5	6	3	1	1	1	20	17	7	3	-11	-21	-24	-5	6	6	6	3	1	1	5	28	560
1952	2	4	6	6	4	1	1	24	10	10	9	0	-9	-12	-10	6	6	6	6	4	3	4	35	840
1953	2	5	6	6	3	1	1	24	18	14	2	0	-10	-12	-9	6	6	6	6	4	3	4	35	840
1954	2	6	5	4	1	1	1	20	16	16	-4	-2	-18	-12	-6	6	6	5	5	2	3	4	31	620
1955	1	1	2	1	1	1	1	8	5	12	8	-13	-28	-18	-6	6	6	6	3	1	2	4	28	224
1956	2	6	6	6	4	1	1	26	29	19	0	0	-9	-11	-11	6	6	6	6	4	3	3	34	884
1957	2	4	6	5	1	1	1	20	17	6	9	-4	-19	-13	-3	6	6	6	5	2	3	5	33	660
1958	1	3	6	6	4	1	1	22	-43	29	14	0	-9	-11	-11	1	6	6	6	4	3	3	29	638
1959	2	3	3	1	1	1	1	12	13	4	0	-13	-24	-19	-2	6	6	6	3	1	2	5	29	348
1960	2	3	5	2	1	1	1	15	27	7	8	-11	-23	-19	-5	6	6	6	3	1	2	5	29	435
1961	3	4	5	3	1	1	1	18	13	5	4	-12	-26	-22	-5	6	6	6	3	1	1	5	28	504
1962	3	5	6	4	1	1	1	21	18	13	1	-9	-22	-21	-6	6	6	6	4	1	1	4	28	588
1963	3	2	6	5	2	1	1	20	10	-3	15	-3	-12	-12	-4	6	5	6	5	3	3	5	33	660
1964	1	1	1	1	1	1	1	7	4	-5	-5	-9	-24	-18	-9	6	5	5	4	1	2	4	27	189
1965	2	5	5	4	1	1	1	19	12	13	1	-6	-14	-9	-4	6	6	6	4	3	4	5	34	646
1966	3	6	5	3	1	1	1	20	6	12	-3	-11	-19	-22	-7	6	6	5	3	2	1	4	27	540
1967	2	5	6	6	4	1	1	25	4	16	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1968	3	3	4	2	1	1	1	15	20	2	2	-10	-19	-10	-4	6	6	6	4	2	4	5	33	495
1969	2	5	6	6	4	1	1	25	21	15	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1970	2	3	3	2	1	1	1	13	27	3	-1	-6	-18	-15	-6	6	6	5	4	2	3	4	30	390
1971	1	5	6	6	4	1	1	24	2	20	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1972	3	6	6	3	1	1	1	21	11	11	0	-11	-20	-17	-4	6	6	6	3	2	2	5	30	630
1973	3	5	6	4	1	1	1	21	19	12	2	-8	-20	-16	-5	6	6	6	4	2	2	5	31	651
1974	1	4	6	6	4	1	1	23	-11	33	9	0	-9	-11	-11	3	6	6	6	4	3	3	31	713
1975	1	4	6	6	3	1	1	22	-6	22	8	0	-10	-11	-10	4	6	6	6	4	3	4	33	726
1976	1	1	1	1	1	1	1	7	8	7	-4	-18	-20	-5	-5	6	6	5	2	2	5	5	31	217
1977	1	1	1	1	1	1	1	7	0	-18	-6	-22	-18	-19	-10	6	2	4	1	2	2	4	21	147
1978	1	6	6	5	3	1	1	23	16	20	0	-1	-12	-11	-7	6	6	6	5	3	3	4	33	759
1979	1	3	4	2	1	1	1	13	17	7	9	-14	-21	-12	-7	6	6	6	3	1	3	4	29	377
1980	1	4	5	4	1	1	1	17	27	13	5	-6	-11	-10	-3	6	6	6	4	3	4	5	34	578
1981	3	5	4	1	1	1	1	16	14	8	-2	-15	-23	-18	-6	6	6	5	3	1	2	4	27	432
1982	1	2	6	6	4	1	1	21	17	5	16	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1983	1	2	6	6	4	1	1	21	28	5	17	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1984	3	5	6	5	1	1	1	22	9	8	3	-4	-16	-12	-3	6	6	6	5	2	3	5	33	726
1985	1	1	1	1	1	1	1	7	7	8	-7	-19	-21	-18	-6	6	6	4	2	1	2	4	25	175
1986	1	2	2	1	1	1	1	9	12	19	2	-11	-19	-15	-3	6	6	6	3	2	3	5	31	279
1987	1	1	1	1	1	1	1	7	28	1	-6	-26	-30	-28	-6	6	6	4	1	1	1	4	23	161
1988	1	1	1	1	1	1	1	7	3	7	0	-17	-31	-18	-7	6	6	6	2	1	2	4	27	189
1989	1	4	3	1	1	1	1	12	63	19	-4	-9	-23	-12	-5	6	6	5	4	1	3	5	30	360
1990	1	1	1	1	1	1	1	7	8	-8	6	-8	-28	-16	-9	6	4	6	4	1	2	4	27	189
1991	1	1	1	1	1	1	1	7	26	11	0	-10	-13	-15	-10	6	6	6	4	3	3	4	32	224
1992	1	1	1	1	1	1	1	7	22	11	-7	-16	-19	-13	-9	6	6	4	2	2	3	4	27	189
1993	1	4	6	6	3	1	1	22	9	28	8	0	-13	-8	-3	6	6	6	6	3	4	5	36	792
1994	1	1	1	1	1	1	1	7	4	0	-1	-20	-21	-20	-10	6	6	5	2	1	2	4	26	182
73 - year Average:								15															30	457.5
1929 - '34 Average:																								197.2

C-032507

C-032507

STUDY: 1995C6F-SWRCB-492 DWRSIM: recirc818-f, 17 Jun 97
CP # 6, SWP LAKE OROVILLE & PALERMO DIV, EOP SURFACE ELEVATION (FT)
Project. /1995C6F-SWRCB-492/6/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation 900'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index = Product

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP	Elev. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	829	829	831	840	850	858	893	900	900	883	879	880	42	7	0	0	17	21	20	1	4	6	6	2	1	1	21	8	35	7	0	-17	-4	1	6	6	6	6	2	5	6	37	777
1923	874	874	858	862	869	874	895	900	881	827	786	789	26	5	0	19	73	114	111	1	4	6	2	1	1	1	16	5	21	5	-19	-54	-41	3	6	6	6	2	1	1	6	28	448
1924	776	764	750	755	774	761	748	733	712	693	684	680	139	152	167	188	207	216	220	1	1	1	1	1	1	1	7	-13	-13	-15	-21	-19	-9	-4	3	3	3	1	2	4	5	21	147
1925	681	685	692	708	777	805	829	836	820	787	775	775	95	71	64	80	113	125	125	1	1	1	1	1	1	1	7	28	24	7	-16	-33	-12	0	6	6	6	2	1	3	6	30	210
1926	770	768	769	783	829	849	887	873	852	824	810	793	51	13	27	48	76	90	107	1	3	1	1	1	1	1	9	20	38	-14	-21	-28	-14	-17	6	6	3	1	1	3	2	22	198
1927	784	815	816	837	849	863	890	900	900	850	837	834	37	10	0	0	50	63	66	1	3	6	6	1	1	1	19	14	27	10	0	-50	-13	-3	6	6	6	6	1	3	5	33	627
1928	831	842	843	855	869	849	878	862	842	774	754	748	51	22	38	58	126	146	152	1	1	1	1	1	1	1	7	-20	29	-16	-20	-68	-20	-6	2	6	2	2	1	2	4	19	133
1929	732	727	725	730	744	759	764	766	759	742	732	728	141	136	134	141	158	168	172	1	1	1	1	1	1	1	7	15	5	2	-7	-17	-10	-4	6	6	6	4	2	4	5	33	231
1930	717	713	773	801	825	857	879	882	864	827	813	811	43	21	18	36	73	87	89	1	1	2	1	1	1	1	8	32	22	3	-18	-37	-14	-2	6	6	6	2	1	3	5	29	232
1931	800	792	750	763	774	788	775	761	740	720	709	704	112	125	139	160	180	191	196	1	1	1	1	1	1	1	7	14	-13	-14	-21	-20	-11	-5	6	3	3	1	2	3	5	23	161
1932	698	689	695	719	741	775	781	805	785	765	756	752	125	119	95	115	135	144	148	1	1	1	1	1	1	1	7	34	6	24	-20	-20	-9	-4	6	6	6	2	2	4	5	31	217
1933	743	731	729	741	751	755	758	772	762	745	735	730	145	142	128	138	155	165	170	1	1	1	1	1	1	1	7	4	3	14	-10	-17	-10	-5	6	6	6	4	2	4	5	33	231
1934	726	718	719	746	766	783	775	763	737	712	699	690	117	125	137	163	188	201	210	1	1	1	1	1	1	1	7	17	-8	-12	-26	-25	-13	-9	6	4	3	1	1	3	4	22	154
1935	684	689	695	723	747	775	860	860	844	807	795	767	125	40	40	56	93	105	133	1	1	1	1	1	1	1	7	28	85	0	-16	-37	-12	-28	6	6	6	2	1	3	1	25	175
1936	756	746	725	781	846	860	886	897	888	843	833	823	40	14	3	12	57	67	77	1	3	5	3	1	1	1	15	14	26	11	-9	-45	-10	-10	6	6	6	4	1	4	4	31	465
1937	603	783	768	761	768	794	827	849	837	808	778	772	106	73	51	63	92	122	128	1	1	1	1	1	1	1	7	26	33	22	-12	-29	-30	-6	6	6	6	3	1	1	4	27	189
1938	767	785	854	858	849	849	882	900	900	894	891	887	51	18	0	0	6	9	13	1	2	6	6	4	4	3	26	0	33	18	0	-6	-3	-4	6	6	6	6	4	5	5	38	988
1939	874	884	854	845	837	833	822	814	778	712	695	694	67	78	86	122	188	205	206	1	1	1	1	1	1	1	7	-4	-11	-8	-36	-66	-17	-1	5	3	4	1	1	2	5	21	147
1940	682	689	688	729	829	849	879	879	861	821	784	775	51	21	21	39	79	116	125	1	1	1	1	1	1	1	7	20	30	0	-18	-40	-37	-9	6	6	6	2	1	1	4	26	182
1941	768	770	821	849	849	858	886	900	900	877	873	875	42	14	0	0	23	27	25	1	3	6	6	1	1	1	19	9	28	14	0	-23	-4	2	6	6	6	6	1	5	6	36	684
1942	874	874	849	849	850	867	882	900	900	882	878	879	33	18	0	0	18	22	21	1	2	6	6	2	1	1	19	17	15	18	0	-18	-4	1	6	6	6	6	2	5	6	37	703
1943	874	869	861	849	856	859	887	893	894	859	849	849	41	13	7	6	41	51	51	1	3	4	4	1	1	1	15	3	28	6	1	-35	-10	0	6	6	6	6	1	4	6	35	525
1944	851	853	852	859	857	868	876	892	872	815	773	767	32	24	8	28	85	127	133	1	1	4	1	1	1	1	10	11	8	16	-20	-57	-42	-6	6	6	6	2	1	1	4	26	260
1945	755	762	778	794	844	863	878	895	875	824	795	788	37	22	5	25	76	105	112	1	1	4	1	1	1	1	10	19	15	17	-20	-51	-29	-7	6	6	6	2	1	1	4	26	260
1946	788	798	848	854	865	868	887	892	869	813	770	767	32	13	8	31	87	130	133	1	3	4	1	1	1	1	12	3	19	5	-23	-56	-43	-3	6	6	6	1	1	1	5	26	312
1947	754	760	768	775	803	830	840	835	816	760	734	727	70	60	65	84	140	166	173	1	1	1	1	1	1	1	7	27	10	-5	-19	-56	-26	-7	6	6	5	2	1	1	4	25	175
1948	730	731	727	762	783	783	843	872	878	840	822	817	117	57	28	22	60	78	83	1	1	1	1	1	1	1	7	20	60	29	6	-38	-18	-5	6	6	6	6	1	2	5	32	224
1949	810	807	808	813	820	840	859	863	840	797	773	769	60	41	37	60	103	127	131	1	1	1	1	1	1	1	7	20	19	4	-23	-43	-24	-4	6	6	6	1	1	1	5	26	182
1950	755	748	742	772	819	849	882	900	890	849	834	834	51	18	0	10	51	66	66	1	2	6	3	1	1	1	15	30	33	18	-10	-41	-15	0	6	6	6	4	1	3	6	32	480
1951	837	849	854	853	858	870	886	900	896	839	820	820	30	14	0	4	61	80	80	1	3	6	5	1	1	1	18	12	16	14	-4	-57	-19	0	6	6	6	5	1	2	6	32	576
1952	824	827	849	849	852	862	894	900	900	900	899	887	38	6	0	0	0	1	13	1	4	6	6	6	5	3	31	10	32	6	0	0	-1	-12	6	6	6	6	6	5	3	38	1178
1953	874	874	858	850	867	867	883	900	900	854	852	853	33	17	0	0	46	48	47	1	2	6	6	1	1	1	18	0	16	17	0	-46	-2	1	6	6	6	6	1	5	6	36	648
1954	856	864	873	858	857	859	883	862	847	777	760	760	41	17	38	53	123	140	140	1	2	1	1	1	1	1	8	2	24	-21	-15	-70	-17	0	6	6	1	3	1	2	6	25	200
1955	761	763	771	784	793	805	815	827	800	764	750	746	95	85	73	100	136	150	154	1	1	1	1	1	1	1	7	12	10	12	-27	-36	-14	-4	6	6	6	1	1	3	5	28	196
1956	737	734	849	849	849	864	892	900	900	872	869	873	36	8	0	0	28	31	27	1	4	6	6	1	1	1	20	15	28	8	0	-28	-3	4	6	6	6	6	1	5	6	36	720
1957	869	874	874	871	853	863	862	881	865	818	808	813	37	38	19	35	82	92	87	1	1	2	1	1	1	1	8	10	-1	19	-16	-47	-10	5	6	5	6	2	1	4	6	30	240
1958	815	819	833	853	849	849	879	900	900	898	894	887	51	21	0	0	2	6	13	1	1	6	6	5	4	3	26	0	30	21	0	-2	-4	-7	6	6	6	6	5	5	4	38	988
1959	874	874	874	862	852	861	865	868	846	775	731	735	39	35	32	54	125	169	165	1	1	1	1	1	1	1	7	9	4	3	-22	-71	-44	4	6	6	6	1	1	1	6	27	189
1960	719	706	692	707	775	828	828	834	813	766	754	748	72	72	66	87	134	146	152	1	1	1	1	1	1	1	7	53	0	6	-21	-47	-12	-6	6	6	6	1	1	3	4	27	189
1961	736	739	750	761	791	818	824	829	804	750	723	719	82	76	71	96	150	177	181	1	1	1	1	1	1	1	7	27	6	5	-25	-54	-27	-4	6	6	6	1	1	1	5	26	182
1962	703	701	711	725	788	822	855	853	840	779	759	745	78	45	47	60	121	141	155	1	1	1	1	1	1	1	7	34	33	-2	-13	-61	-20	-14	6	6	5	3	1	2	3	26	182
1963	815	824	849	859	867	858	876	900	895	849	843	844	42	24	0	5	51	57	56	1	1	6	4	1	1	1	15	-9	18	24	-5	-46	-6	1	4	6	6	5	1	4	6	32	480
1964	845	856	858	866	874	874	880	885	869	810	754	752	26	20	15	31	90	146	148	1	1	2	1	1	1	1	8	0	6	5	-16	-59	-56	-2	6	6	6	2	1	1	5	27	216
1965	737	737	849	849	863	870	887	881	884	860	858	859	30	13	19	16	40	42	41	1	3	2	2	1	1	1	11	7	17	-6	3	-24	-2	1	6	6	4	6	1	5	6	34	374
1966	863	859	860	864	870	874	894	882	861	799	744	737	26	6	18	39	101	156	163	1	4	2	1	1	1	1	11	4	20	-12	-21	-62	-55	-7	6	6	3	1	1	1	4	22	242
1967	711	724	766	827	857	853	879	900	900	900	896	887	47	21	0	0	0	4	13	1	1	6	6	6	5	3	28	-4	26	21	0	0	-4	-9	5	6	6	6	6	5	4	38	1064
1968	874	874	873	858	861	866	863	867	847	778	757	754	34	37	33	53	122	143	146	1	1	1	1	1	1	1	7	5	-3	4	-20	-69	-21	-3	6	5	6	2	1	1	5	26	182
1969	755	761	783	849	849	865	895	900	900	894	892	874	35	5	0	0	6	8	26	1	4	6	6	4	4	1	26	16	30	5	0	-6	-2	-18	6	6	6	6	4	5	2	35	910
1970	874	874	850	849	849	874	868	870	858	798	765	766	26	32	30	42	102	135	134	1	1	1	1	1	1	1	7	25	-6	2	-12	-60	-33	1	6	4	6	3	1	1	6	27	189
1971	769	796	831	856	868	874	893	900	900	857	852	854	26	7	0	0	43	48	46	1	4	6	6	1	1	1	20	8	19	7	0	-43	-5	2	6	6	6	6	1	5	6	36	720
1972	859	865	865	869	867	874	884	887	867	807	791	791	26	16	13	33	93	109	109	1	2	3	1	1	1	1	10	7	10	3	-20	-60	-16	0	6	6	6	2	1	2	6	29	290
1973	787	803	826	849	849	860	882	900	868	819	804	800	40	18	0	32	81	96	100	1	2	6	1	1	1	1	13	11	22	18	-32	-49	-15	-4	6	6	6	1	1	3	5	28	364
1974	804	849	850	854	864	849	883	900	900	886	885	886	51	17	0	0	14	15	14	1	2	6	6	3	2	3	23	-15	34	17	0	-14	-1	1	3	6	6	6	3	5	6	35	805
1975	874	874	874	874	855	852	881	900	900	876	875	877	48	19	0	0	24	25	23	1	2	6	6	1	1	1	18	-3	29	19	0	-24	-1	2	5	6	6	6	1	5	6	35	630
1976	873	874	874	874	874	874	871	862	840	782	769	769	26	29	38	60	118	131	131	1	1	1	1	1	1	1	7	0	-3	-9	-22	-58	-13	0	6	5	4	1	1	3	6	26	182
1977	756	747	731	727	709	703	680	668	632	609	600	608	197	220	232	268	291	300	292	1	1	1	1	1	1	1	7	-6	-23	-12	-36	-23	-9	8	4	1	3	1	1	4	6	20	140
1978	597	597	633	754	807	859	878	897	894	865	848	856	41	22	3	6	35	52	44	1	1	5	4	1	1	1	14	52	19	19	-3	-29	-17	8	6	6	6	5	1	2	6	32	448
1979	858	862	856	870	853	863	878	896	862	820	805	802	37	22	4	38	80	95	98	1	1	5	1	1	1	1	11	10	15	18	-34	-42	-15	-3	6	6	6	1	1	3	5	28	308
1980	809	814	824	850	849	865	881	893	888	866	859	858	35	19	7	12	34	41	42	1	2	4	3	1	1	1	13	16	16	12	-5	-22	-7	-1	6	6	6	5	1	4	5	33	429
1981	857	858	866	880	868	865	875	872	850	783	761	761	35	25	28	50	117	139	139	1	1	1	1	1	1	1	7	-3	10	-3	-22	-67	-22	0	5	6	5	1	1	1	6	25	175
1982	767	847	849	859	862	859	884	900	900	895	891	887	41	16	0	0	5	9	13	1	2	6	6	4	4	3	26	-3	25	16	0	-5	-4	-4	5	6	6	6	5	5	5	38	988
1983	873	862	858	853	849	849	877	900	900	900	899	887	51	23	0	0	0	1	13	1	1	6	6	6	5	3	28	0	28	23	0	0	-1	-12	6	6	6	6	6	5	3	38	1064
1984	874	860	849	869	869	871	884	893	877	824	798	801	29	16	7	23	76	102	99	1	2	4	1	1	1	1	11	2	13	9	-16	-53	-26	3	6	6	6	2	1	1	6	28	308
1985	807	824	835	841	853	869	884	870	847	777	720	724	31	16	30	53	123	180	176	1	2	1	1	1	1	1	8	16	15	-14	-23	-70	-57	4	6	6	3	1	1	1	6	24	192
1986	705	700	707	746	851	849	871	875	871	849	837	847	51	29	25	29	51	63	53	1	1	1	1	1	1	1	7	-2	22	4	-4	-22	-12	10	5	6	6	5	1	3	6	32	224
1987	850	852	848	849	859	867	854	844	815	755	734	729	33	46	56	85	145	166	171	1	1	1	1	1	1	1	7	8	-13	-10	-29	-60	-21	-5	6	3	4	1	1	1	5	21	147
1988	715	718	757	782	781	777	775	765	735	713	701	698	123	125	135	165	187	199	202	1	1	1	1	1	1	1	7	-4	-2	-10	-30	-22	-12	-3	5	5	4	1	1	3	5	24	168
1989	687	705	715	723	722	839	865	855	837	787	771	776	61	35	45	63	113	129	124	1	1	1	1	1	1	1	7	117	26	-10	-18	-50	-16	5	6	6	4	2	1	2	6	27	189
1990	787	788	771	784	792	818	805	805	780	735	721	718	82	95	95	120	165	179	181	1	1	1	1	1	1	1	7	26	-13	0	-25	-45	-14	-2	6	3	6	1	1	3	5	25	175
1991	698	690	680	678	665	713	736	750	739	719	714	718	187	164	150	161	181	186	182	1	1	1	1	1	1	1	7	48	23	14	-11	-20	-5	4	6	6	6	3	2	5	6	34	238
1992	712	708	709	713	744	770	785	771	742	710	698	694	130	115	129	158	190	202	206	1	1	1	1	1	1	1	7	26	15	-14	-29	-32	-12	-4	6	6	3	1	1	3	5	25	175
1993	681	672	690	758	810	861	894	900	900	867	858	857	39	6	0	0	33	42	43	1	4	6	6	1	1	1	20	51	33	6	0	-33	-9	-1	6	6	6	6	1	4	5	34	680
1994	862	858	874	871	882	871	869	863	841	774	720	714	29	31	37	59	126	180	186	1	1	1	1	1	1	1	7	9	-2	-6	-22	-67	-54	-6	6	5	4	1	1	1	4	22	154

73 - year Average: 12

73 - year Average: 29 | 384.3

1929 - '34 Average: 204.3

A2-168

STUDY: 1995C6F-SWRCB-492 DWRSIM: recirc818-f, 17 Jun 97
CP # 8, CVP FOLSOM L&SAN JUAN&RSVLLE DV, EOP SURFACE ELEVATION (FT)
Project: /1995C6F-SWRCB-492/8/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 466'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	414	403	406	407	424	428	442	466	466	463	449	434	38	24	0	0	3	17	32
1923	425	422	424	424	424	428	449	466	457	440	423	418	38	17	0	9	26	43	48
1924	412	403	392	378	374	360	367	368	364	362	361	363	106	99	98	102	104	105	103
1925	370	380	393	401	424	436	449	466	448	426	413	410	30	17	0	18	40	53	56
1926	404	401	386	377	401	406	439	436	418	382	367	376	60	27	30	48	84	99	90
1927	381	411	424	424	424	437	449	466	464	454	447	433	29	17	0	2	12	19	33
1928	425	424	424	423	423	437	449	453	442	417	409	406	29	17	13	24	49	57	60
1929	385	376	369	350	346	356	377	388	376	366	370	379	110	89	78	90	100	96	87
1930	372	367	396	410	421	437	443	440	425	393	371	376	29	23	26	41	73	95	90
1931	367	371	378	388	395	404	401	399	368	365	366	366	62	65	67	100	101	100	100
1932	365	366	396	414	424	425	431	449	433	389	379	388	41	35	17	33	77	87	78
1933	369	365	371	372	373	384	366	384	367	363	374	381	82	100	82	99	103	92	85
1934	374	371	391	409	423	427	418	414	365	351	340	345	39	48	52	101	115	126	121
1935	353	372	386	407	420	422	449	454	452	425	410	409	44	17	12	14	41	56	57
1936	404	402	399	424	424	437	449	461	459	445	438	434	29	17	5	7	21	28	32
1937	424	408	401	391	416	437	449	466	454	440	431	424	29	17	0	12	26	35	42
1938	415	412	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32
1939	425	419	413	405	398	406	415	417	403	365	360	369	60	51	49	63	101	106	97
1940	365	365	366	424	424	437	449	460	450	432	423	424	29	17	6	16	34	43	42
1941	417	411	424	424	424	437	449	466	457	452	447	434	29	17	0	9	14	19	32
1942	425	420	424	424	424	430	449	466	466	463	449	434	36	17	0	0	3	17	32
1943	425	424	423	422	422	434	449	458	453	449	443	433	32	17	8	13	17	23	33
1944	424	416	410	402	403	414	422	427	414	397	373	370	52	44	39	52	69	93	96
1945	367	394	413	420	424	437	449	465	454	441	430	424	29	17	1	12	25	36	42
1946	421	424	424	424	417	434	449	466	450	436	428	421	32	17	0	16	30	38	45
1947	411	411	410	402	408	427	436	438	418	384	366	376	39	30	28	48	82	100	90
1948	386	398	398	417	412	412	445	465	461	453	447	434	54	21	1	5	13	19	32
1949	424	417	414	404	397	419	440	455	444	419	411	409	47	26	11	22	47	55	57
1950	396	390	381	413	424	437	449	466	458	447	441	434	29	17	0	8	19	25	32
1951	428	393	388	388	388	426	449	466	455	440	423	425	40	17	0	11	26	43	41
1952	420	422	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32
1953	427	421	424	424	424	429	445	456	461	462	449	434	37	21	10	5	4	17	32
1954	424	422	418	419	424	437	449	451	441	422	415	415	29	17	15	25	44	51	51
1955	408	401	404	410	409	412	422	430	420	398	390	393	54	44	36	46	68	76	73
1956	367	367	420	402	406	425	440	466	466	463	449	434	41	26	0	0	3	17	32
1957	427	420	416	410	424	437	434	459	454	440	433	430	29	32	7	12	26	33	36
1958	422	416	417	421	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32
1959	424	417	410	414	422	424	432	433	416	397	382	390	42	34	33	50	69	84	76
1960	382	372	369	376	416	437	448	446	433	408	398	403	29	18	20	33	58	68	63
1961	394	391	389	382	387	395	405	416	407	389	380	385	71	61	50	59	77	86	81
1962	386	385	391	387	424	433	449	455	452	430	417	418	33	17	11	14	36	49	48
1963	441	424	424	424	419	430	449	466	460	451	445	434	36	17	0	6	15	21	32
1964	426	424	423	424	421	418	428	433	423	400	367	366	48	38	33	43	66	99	100
1965	367	387	393	392	395	414	449	463	457	450	446	434	52	17	3	9	16	20	32
1966	425	424	423	424	422	429	446	446	429	407	392	394	37	20	20	37	59	74	72
1967	389	397	423	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32
1968	427	424	422	424	424	437	440	440	424	403	394	400	29	26	26	42	63	72	66
1969	394	398	407	424	424	436	449	466	466	463	449	434	30	17	0	0	3	17	32
1970	427	422	423	393	398	425	430	439	434	419	411	410	41	36	27	32	47	55	56
1971	400	413	424	424	424	437	447	460	459	456	449	434	29	19	6	7	10	17	32
1972	425	421	424	423	424	437	443	449	437	416	407	407	29	23	17	29	50	59	59
1973	402	406	420	424	424	437	449	466	450	431	420	423	29	17	0	16	35	46	43
1974	419	423	422	409	417	433	449	466	462	462	449	434	33	17	0	4	4	17	32
1975	425	417	415	412	424	437	440	468	466	462	447	434	29	26	0	0	4	19	32
1976	430	423	418	409	400	394	399	403	388	368	371	373	72	67	63	78	98	95	93
1977	366	366	363	361	355	355	359	363	358	346	335	328	111	107	103	108	120	131	138
1978	324	328	369	424	424	437	449	466	460	453	442	434	29	17	0	6	13	24	32
1979	422	415	409	415	424	437	447	466	449	429	421	419	29	19	0	17	37	45	47
1980	415	412	412	405	399	430	449	463	454	453	448	434	36	17	3	12	13	18	32
1981	425	418	413	411	409	419	429	430	416	398	387	392	47	37	36	50	68	79	74
1982	392	420	392	396	388	424	449	466	466	463	449	434	42	17	0	0	3	17	32
1983	437	415	417	418	418	433	449	466	466	463	449	434	33	17	0	0	3	17	32
1984	434	392	388	388	392	424	441	463	455	442	430	429	42	25	3	11	24	36	37
1985	422	424	424	420	421	426	447	442	423	394	366	368	40	19	24	43	72	100	98
1986	367	385	408	424	396	424	448	462	456	445	439	434	42	18	4	10	21	27	32
1987	426	419	411	403	401	407	413	413	394	366	353	361	59	53	53	72	100	113	105
1988	360	384	386	407	408	404	406	400	378	351	320	393	62	60	66	88	115	146	73
1989	377	382	387	389	384	437	449	452	441	417	410	412	29	17	14	25	49	56	54
1990	408	407	403	402	399	410	415	416	400	366	369	378	56	51	50	66	100	97	88
1991	368	361	358	344	330	382	405	422	421	415	409	406	84	61	44	45	51	57	60
1992	398	385	374	354	370	394	406	403	375	363	352	343	72	60	63	91	103	114	123
1993	341	339	369	424	427	434	449	466	466	454	448	434	32	17	0	0	12	18	32
1994	422	411	405	392	386	386	394	398	391	374	365	361	80	72	68	75	92	101	105

Reservoir Elevation Sc[illegible]ble:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	Elev. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	6	6	5	2	1	22	4	14	24	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1923	1	2	6	4	1	1	1	16	4	21	17	-9	-17	-17	-5	6	6	6	4	2	2	5	31	496
1924	1	1	1	1	1	1	1	7	-14	7	1	-4	-2	-1	2	3	6	6	5	5	5	6	36	252
1925	1	2	6	2	1	1	1	14	12	13	17	-18	-22	-13	-3	6	6	6	2	1	3	5	29	406
1926	1	1	1	1	1	1	1	7	5	33	-3	-18	-36	-15	9	6	6	5	2	1	3	6	29	203
1927	1	2	6	5	3	2	1	20	13	12	17	-2	-10	-7	-14	6	6	6	5	4	4	3	34	680
1928	1	2	3	1	1	1	1	10	14	12	4	-11	-25	-8	-3	6	6	6	3	1	4	5	31	310
1929	1	1	1	1	1	1	1	7	10	21	11	-12	-10	4	9	6	6	6	3	4	6	6	37	259
1930	1	1	1	1	1	1	1	7	16	6	-3	-15	-32	-22	5	6	6	5	3	1	1	6	28	196
1931	1	1	1	1	1	1	1	7	9	-3	-2	-33	-1	1	0	6	5	5	1	5	6	6	34	238
1932	1	1	2	1	1	1	1	8	1	6	18	-16	-44	-10	9	6	6	6	2	1	4	6	31	248
1933	1	1	1	1	1	1	1	7	11	-18	18	-17	-4	11	7	6	2	6	2	5	6	6	33	231
1934	1	1	1	1	1	1	1	7	4	-9	-4	-49	-14	-11	5	6	4	5	1	3	3	6	28	196
1935	1	2	3	3	1	1	1	12	2	27	5	-2	-27	-15	-1	6	6	6	5	1	3	5	32	384
1936	1	2	4	4	1	1	1	14	13	12	12	-2	-14	-7	-4	6	6	6	5	3	4	5	35	490
1937	1	2	6	3	1	1	1	15	21	12	17	-12	-14	-9	-7	6	6	6	3	3	4	4	32	480
1938	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1939	1	1	1	1	1	1	1	7	8	9	2	-14	-38	-5	9	6	6	6	3	1	5	6	33	231
1940	1	2	4	2	1	1	1	12	13	12	11	-10	-18	-9	1	6	6	6	4	2	4	6	34	408
1941	1	2	6	4	3	2	1	19	13	12	17	-9	-5	-5	-13	6	6	6	4	5	5	3	35	665
1942	1	2	6	6	5	2	1	23	6	19	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1943	1	2	4	3	2	1	1	14	12	15	9	-5	-4	-6	-10	6	6	6	5	5	4	4	36	504
1944	1	1	1	1	1	1	1	7	11	8	5	-13	-17	-24	-3	6	6	6	3	2	1	5	29	203
1945	1	2	5	3	1	1	1	14	13	12	16	-11	-13	-11	-6	6	6	6	3	3	3	4	31	434
1946	1	2	6	2	1	1	1	14	17	15	17	-16	-14	-8	-7	6	6	6	2	3	4	4	31	434
1947	1	1	1	1	1	1	1	7	19	9	2	-20	-34	-18	10	6	6	6	2	1	2	6	29	203
1948	1	1	5	4	3	2	1	17	0	33	20	-4	-8	-6	-13	6	6	6	5	4	4	3	34	578
1949	1	1	3	1	1	1	1	9	22	21	15	-11	-25	-8	-2	6	6	6	3	1	4	5	31	279
1950	1	2	6	4	2	1	1	17	13	12	17	-8	-11	-6	-7	6	6	6	4	3	4	4	33	561
1951	1	2	6	3	1	1	1	15	38	23	17	-11	-15	-17	2	6	6	6	3	3	2	6	32	480
1952	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1953	1	1	3	4	5	2	1	17	5	16	11	5	1	-13	-15	6	6	6	6	6	3	3	36	612
1954	1	2	2	1	1	1	1	9	13	12	2	-10	-19	-7	0	6	6	6	4	2	4	6	34	306
1955	1	1	1	1	1	1	1	7	3	10	8	-10	-22	-8	3	6	6	6	4	1	4	6	33	231
1956	1	1	6	6	5	2	1	22	19	15	26	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1957	1	1	4	3	1	1	1	12	13	-3	25	-5	-14	-7	-3	6	5	6	5	3	4	5	34	408
1958	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1959	1	1	1	1	1	1	1	7	2	8	1	-17	-19	-15	8	6	6	6	2	2	3	6	31	217
1960	1	2	1	1	1	1	1	8	21	11	-2	-13	-25	-10	5	6	6	5	3	1	4	6	31	248
1961	1	1	1	1	1	1	1	7	8	10	11	-9	-18	-9	5	6	6	6	4	2	4	6	34	238
1962	1	2	3	3	1	1	1	12	9	16	6	-3	-22	-13	1	6	6	6	5	1	3	6	33	396
1963	1	2	6	4	2	1	1	17	11	19	17	-6	-9	-6	-11	6	6	6	4	4	4	3	33	561
1964	1	1	1	1	1	1	1	7	-3	10	5	-10	-23	-33	-1	5	6	6	4	1	1	5	28	196
1965	1	2	5	4	2	1	1	16	19	35	14	-6	-7	-4	-12	6	6	6	4	4	5	3	34	544
1966	1	1	1	1	1	1	1	7	7	17	0	-17	-22	-15	2	6	6	6	2	1	3	6	30	210
1967	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1968	1	1	1	1	1	1	1	7	13	3	0	-16	-21	-9	6	6	6	6	2	1	4	6	31	217
1969	1	2	6	6	5	2	1	23	12	13	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1970	1	1	1	1	1	1	1	7	29	5	9	-5	-15	-8	-1	6	6	6	5	3	4	5	35	245
1971	1	2	4	4	3	2	1	17	13	10	13	-1	-3	-7	-15	6	6	6	5	5	4	3	35	595
1972	1	1	2	1	1	1	1	8	13	6	6	-12	-21	-9	0	6	6	6	3	1	4	6	32	256
1973	1	2	6	2	1	1	1	14	13	12	17	-16	-19	-11	3	6	6	6	2	2	3	6	31	434
1974	1	2	6	5	5	2	1	22	16	16	17	-4	0	-13	-15	6	6	6	5	6	3	3	35	770
1975	1	1	6	6	5	2	1	22	13	3	26	0	-4	-15	-13	6	6	6	6	5	3	3	35	770
1976	1	1	1	1	1	1	1	7	-6	5	4	-15	-20	3	2	4	6	6	3	2	6	6	33	231
1977	1	1	1	1	1	1	1	7	0	4	4	-5	-12	-11	-7	6	6	6	5	3	3	4	33	231
1978	1	2	6	4	3	1	1	18	13	12	17	-6	-7	-11	-8	6	6	6	4	4	3	4	33	594
1979	1	2	6	2	1	1	1	14	13	10	19	-17	-20	-8	-2	6	6	6	2	2	4	5	31	434
1980	1	2	5	3	3	2	1	17	31	19	14	-9	-1	-5	-14	6	6	6	4	5	5	3	35	595
1981	1	1	1	1	1	1	1	7	10	10	1	-14	-18	-11	5	6	6	6	3	2	3	6	32	224
1982	1	2	6	6	5	2	1	23	36	25	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1983	1	2	6	6	5	2	1	23	15	16	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1984	1	1	5	3	1	1	1	13	32	17	22	-8	-13	-12	-1	6	6	6	4	3	3	5	33	429
1985	1	2	1	1	1	1	1	8	5	21	-5	-19	-29	-28	2	6	6	5	2	1	1	6	27	216
1986	1	2	5	3	1	1	1	14	28	24	14	-6	-11	-6	-5	6	6	6	4	3	4	5	34	476
1987	1	1	1	1	1	1	1	7	6	6	0	-19	-28	-13	8	6	6	6	2	1	3	6	30	210
1988	1	1	1	1	1	1	1	7	-4	2	-6	-22	-27	-31	73	5	6	4	1	1	1	6	24	168
1989	1	2	3	1	1	1	1	10	53	12	3	-11	-24	-7	2	6	6	6	3	1	4	6	32	320
1990	1	1	1	1	1	1	1	7	11	5	1	-16	-34	3	9	6	6	6	2	1	6	6	33	231
1991	1	1	1	1	1	1	1	7	52	23	17	-1	-6	-6	-3	6	6	6	5	4	4	5	36	252
1992	1	1	1	1	1	1	1	7	15	12	-3	-28	-12	-11	-9	6	6	5	1	3	3	4	28	196
1993	1	2	6	6	3	2	1	21	7	15	17	0	-12	-6	-14	6	6	6	6	3	4	3	34	714
1994	1	1	1	1	1	1	1	7	0	8	4	-7	-17	-9	-4	6	6	6	4	2	4	5	33	231
73 - year Average:								13								73 - year Average:							33	427.9
																						1929 - '34 Average:		228.0

C-032510

STUDY: 1995C6 .CB-492 DWRSIM, recirc818-f, 17 JUN 97
CP # 10, NEW MELONES RESERVOIR & CVP DIV, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-492/10/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 1088'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevatic[illegible]g Table:
If [DFMRE] <= 0', [illegible] else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index = Product

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	940	943	948	954	968	978	973	990	1013	1004	992	981	120	110	115	98	75	84	96
1923	980	984	994	1002	1008	1008	1006	1013	1013	1004	991	982	80	80	82	75	75	84	97
1924	981	983	987	991	994	994	986	974	961	949	937	933	94	94	102	114	127	139	151
1925	932	934	936	941	960	971	973	989	993	984	971	963	128	117	115	99	95	104	117
1926	962	963	966	968	979	982	983	973	960	945	931	923	109	106	105	115	128	143	157
1927	923	927	935	942	961	972	981	993	995	986	973	966	127	116	107	95	93	102	115
1928	967	973	978	982	990	1009	1007	1011	1003	992	977	970	98	79	81	77	85	96	111
1929	968	971	974	976	980	981	977	973	962	950	938	931	108	107	111	115	126	138	150
1930	931	933	935	939	945	953	952	947	943	930	914	901	143	135	136	141	145	158	174
1931	902	907	911	915	919	922	915	901	883	865	846	837	169	166	173	187	205	223	242
1932	836	839	850	859	882	893	893	926	941	934	922	911	206	195	195	162	147	154	166
1933	911	914	920	923	925	927	922	919	916	895	873	861	163	161	166	169	172	193	215
1934	862	866	872	878	887	897	888	874	854	835	815	802	201	191	200	214	234	253	273
1935	798	801	808	816	823	833	851	894	914	899	880	868	265	255	237	194	174	189	208
1936	867	871	877	894	927	938	950	973	980	970	957	949	161	150	138	115	108	118	131
1937	950	952	956	960	973	987	989	1011	1014	1005	995	989	115	101	99	77	74	83	93
1938	989	992	1002	1011	1030	1051	1059	1085	1088	1084	1075	1069	58	37	29	3	0	4	13
1939	1050	1050	1050	1050	1050	1052	1050	1038	1025	1012	999	992	38	36	38	50	63	76	89
1940	989	990	992	1004	1019	1035	1044	1055	1054	1041	1029	1022	69	53	44	33	34	47	59
1941	1021	1023	1029	1035	1045	1055	1051	1065	1071	1064	1055	1048	43	33	37	23	17	24	33
1942	1046	1047	1050	1050	1050	1055	1055	1067	1081	1078	1068	1062	38	33	33	21	7	10	20
1943	1050	1050	1050	1050	1050	1055	1061	1068	1071	1062	1053	1045	38	33	27	20	17	26	35
1944	1044	1045	1046	1048	1050	1053	1048	1045	1038	1025	1012	1004	38	35	40	43	50	63	76
1945	1003	1007	1011	1017	1030	1039	1039	1051	1057	1049	1036	1029	58	49	49	37	31	39	52
1946	1029	1033	1043	1050	1050	1054	1052	1061	1058	1046	1034	1028	38	34	36	27	30	42	54
1947	1026	1029	1032	1034	1037	1040	1034	1025	1016	1006	995	989	51	48	54	63	72	82	93
1948	988	989	992	993	994	997	997	999	1007	998	988	981	94	91	91	89	81	90	100
1949	979	982	985	988	991	996	992	995	990	977	964	957	97	92	96	93	98	111	124
1950	955	956	958	966	976	985	984	996	1000	991	978	970	112	103	104	92	88	97	110
1951	969	1003	1043	1050	1050	1055	1048	1041	1033	1020	1007	1000	38	33	40	47	55	68	81
1952	999	1001	1008	1022	1033	1046	1049	1078	1088	1086	1076	1070	55	42	39	10	0	2	12
1953	1050	1050	1050	1050	1050	1054	1046	1036	1038	1029	1016	1009	38	34	42	52	50	59	72
1954	1006	1008	1011	1014	1016	1024	1026	1029	1020	1007	994	984	72	64	62	59	68	81	94
1955	982	985	989	994	996	999	993	988	984	970	957	949	92	89	95	100	104	118	131
1956	949	951	984	1012	1026	1035	1026	1043	1054	1048	1036	1030	62	53	62	45	34	40	52
1957	1027	1029	1031	1034	1039	1046	1034	1031	1032	1019	1007	999	49	42	54	57	56	69	81
1958	994	997	999	1005	1014	1029	1036	1065	1079	1073	1063	1056	74	59	52	23	9	15	25
1959	1050	1050	1050	1050	1050	1053	1046	1030	1018	1005	992	983	38	35	42	58	70	83	96
1960	980	982	984	987	994	1000	997	992	981	967	954	944	94	88	91	96	107	121	134
1961	940	944	947	950	952	956	951	944	932	920	901	891	136	132	137	144	156	168	187
1962	891	894	898	901	918	925	927	936	939	928	912	898	170	163	161	152	149	160	176
1963	898	903	910	922	940	947	948	978	986	977	965	959	148	141	140	110	102	111	123
1964	959	964	968	974	979	983	977	969	961	947	934	926	109	105	111	119	127	141	154
1965	925	929	960	987	1000	1008	1016	1017	1022	1014	1003	996	88	80	72	71	66	74	85
1966	995	1000	1005	1010	1015	1020	1011	1010	1000	988	975	966	73	68	77	78	88	100	113
1967	965	968	980	994	1002	1014	1015	1038	1065	1069	1060	1054	86	74	73	50	23	19	28
1968	1050	1050	1050	1050	1050	1054	1042	1033	1022	1008	995	984	38	34	46	55	66	80	93
1969	983	988	991	1021	1041	1055	1066	1088	1088	1084	1074	1066	47	33	22	0	0	4	14
1970	1050	1050	1050	1050	1050	1055	1047	1041	1039	1025	1012	1005	38	33	41	47	49	63	76
1971	1004	1008	1016	1023	1029	1036	1027	1024	1024	1013	1000	993	59	52	61	64	64	75	88
1972	990	993	1000	1005	1007	1010	998	998	989	976	962	955	81	78	90	90	99	112	126
1973	955	958	963	979	997	1009	1010	1029	1032	1022	1012	1007	91	79	78	59	56	66	76
1974	1007	1013	1023	1036	1045	1055	1059	1070	1070	1061	1050	1042	43	33	29	18	18	27	38
1975	1041	1044	1047	1050	1050	1055	1050	1049	1062	1053	1042	1035	38	33	38	39	26	35	46
1976	1033	1036	1039	1041	1043	1046	1040	1031	1020	1010	1001	995	45	42	48	57	68	78	87
1977	995	996	997	998	998	998	990	980	971	958	946	940	90	90	98	108	117	130	142
1978	939	939	942	953	965	986	995	1012	1023	1021	1012	1009	123	102	93	76	65	67	76
1979	1009	1011	1015	1023	1036	1049	1049	1058	1053	1040	1026	1019	52	39	39	30	35	48	62
1980	1020	1022	1028	1050	1050	1055	1056	1063	1070	1068	1057	1051	38	33	32	25	18	20	31
1981	1050	1050	1050	1050	1050	1053	1045	1034	1019	1005	992	984	38	35	43	54	69	83	96
1982	983	992	1006	1027	1050	1055	1071	1086	1088	1084	1075	1071	38	33	17	2	0	4	13
1983	1050	1050	1050	1050	1050	1055	1056	1070	1088	1088	1082	1075	38	33	32	18	0	0	6
1984	1050	1050	1050	1050	1050	1055	1044	1037	1033	1022	1012	1006	38	33	44	51	55	66	76
1985	1006	1010	1016	1019	1024	1030	1027	1022	1012	1002	992	986	64	58	61	66	76	86	96
1986	986	989	993	1003	1050	1055	1056	1061	1065	1055	1045	1040	38	33	32	27	23	33	43
1987	1039	1041	1044	1044	1046	1049	1044	1034	1023	1014	1006	1002	42	39	44	54	65	74	82
1988	999	999	999	1000	1002	1004	998	990	980	970	961	955	86	84	90	98	108	118	127
1989	954	954	955	956	958	970	967	962	954	943	931	927	130	118	121	126	134	145	157
1990	930	932	937	939	942	947	940	929	914	895	879	870	146	141	148	159	174	193	209
1991	869	870	875	875	875	883	878	873	857	838	821	813	213	205	210	215	231	250	267
1992	816	817	823	826	837	846	838	821	799	768	731	715	251	242	250	267	289	320	357
1993	723	737	755	789	885	940	928	933	944	934	924	920	203	148	160	155	144	154	164
1994	919	920	924	924	926	931	928	924	911	892	875	867	162	157	160	164	177	196	213

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	1	1	1	1	1	7	10	-5	17	23	-9	-12	-11	6	5	6	6	4	3	3	33	231
1923	1	1	1	1	1	1	1	7	0	-2	7	0	-9	-13	-9	6	5	6	6	4	3	4	34	238
1924	1	1	1	1	1	1	1	7	0	-8	-12	-13	-12	-12	-4	6	4	3	3	3	3	5	27	189
1925	1	1	1	1	1	1	1	7	11	2	16	4	-9	-13	-8	6	6	6	6	4	3	4	35	245
1926	1	1	1	1	1	1	1	7	3	1	-10	-13	-15	-14	-8	6	6	4	3	3	3	4	29	203
1927	1	1	1	1	1	1	1	7	11	9	12	2	-9	-13	-7	6	6	6	6	4	3	4	35	245
1928	1	1	1	1	1	1	1	7	19	-2	4	-8	-11	-15	-7	6	5	6	4	3	3	4	31	217
1929	1	1	1	1	1	1	1	7	1	-4	-4	-11	-12	-12	-7	6	5	5	3	3	3	4	29	203
1930	1	1	1	1	1	1	1	7	8	-1	-5	-4	-13	-16	-13	6	5	5	5	3	2	3	29	203
1931	1	1	1	1	1	1	1	7	3	-7	-14	-18	-18	-19	-9	6	4	3	2	2	2	4	23	161
1932	1	1	1	1	1	1	1	7	11	0	33	15	-7	-12	-11	6	6	6	6	4	3	3	34	238
1933	1	1	1	1	1	1	1	7	2	-5	-3	-3	-21	-22	-12	6	5	5	5	1	1	3	26	182
1934	1	1	1	1	1	1	1	7	10	-9	-14	-20	-19	-20	-13	6	4	3	2	2	2	3	22	154
1935	1	1	1	1	1	1	1	7	10	18	43	20	-15	-19	-12	6	6	6	6	3	2	3	32	224
1936	1	1	1	1	1	1	1	7	11	12	23	7	-10	-13	-8	6	6	6	6	4	3	4	35	245
1937	1	1	1	1	1	1	1	7	14	2	22	3	-9	-10	-6	6	6	6	6	4	4	4	36	252
1938	1	1	1	5	6	5	3	22	21	8	26	3	-4	-9	-6	6	6	6	6	5	4	4	37	814
1939	1	1	1	1	1	1	1	7	2	-2	-12	-13	-13	-13	-7	6	5	3	3	3	3	4	27	189
1940	1	1	1	1	1	1	1	7	16	9	11	-1	-13	-12	-7	6	6	6	5	3	3	4	33	231
1941	1	1	1	1	2	1	1	8	10	-4	14	6	-7	-9	-7	6	5	6	6	4	4	4	35	280
1942	1	1	1	1	4	3	1	12	5	0	12	14	-3	-10	-6	6	6	6	6	5	4	4	37	444
1943	1	1	1	1	2	1	1	8	5	6	7	3	-9	-9	-8	6	6	6	6	4	4	4	36	288
1944	1	1	1	1	1	1	1	7	3	-5	-3	-7	-13	-13	-8	6	5	5	4	3	3	4	30	210
1945	1	1	1	1	1	1	1	7	9	0	12	6	-8	-13	-7	6	6	6	6	4	3	4	35	245
1946	1	1	1	1	1	1	1	7	4	-2	9	-3	-12	-12	-6	6	5	6	5	3	3	4	32	224
1947	1	1	1	1	1	1	1	7	3	-6	-9	-9	-10	-11	-6	6	4	4	4	4	3	4	29	203
1948	1	1	1	1	1	1	1	7	3	0	2	8	-9	-10	-7	6	6	6	6	4	4	4	36	252
1949	1	1	1	1	1	1	1	7	5	-4	3	-5	-13	-13	-7	6	5	6	5	3	3	4	32	224
1950	1	1	1	1	1	1	1	7	9	-1	12	4	-9	-13	-8	6	5	6	6	4	3	4	34	238
1951	1	1	1	1	1	1	1	7	5	-7	-7	-8	-13	-13	-7	6	4	4	4	3	3	4	28	196
1952	1	1	1	3	6	5	3	20	13	3	29	10	-2	-10	-6	6	6	6	6	5	4	4	37	740
1953	1	1	1	1	1	1	1	7	4	-8	-10	2	-9	-13	-7	6	4	4	6	4	3	4	31	217
1954	1	1	1	1	1	1	1	7	8	2	3	-9	-13	-13	-10	6	6	6	4	3	3	4	32	224
1955	1	1	1	1	1	1	1	7	3	-6	-5	-4	-14	-13	-8	6	4	5	5	3	3	4	30	210
1956	1	1	1	1	1	1	1	7	9	-9	17	11	-6	-12	-6	6	4	6	6	4	3	4	33	231
1957	1	1	1	1	1	1	1	7	7	-12	-3	1	-13	-12	-8	6	3	5	6	3	3	4	30	210
1958	1	1	1	1	4	2	1	11	15	7	29	14	-6	-10	-7	6	6	6	6	4	4	4	36	396
1959	1	1	1	1	1	1	1	7	3	-7	-16	-12	-13	-13	-9	6	4	2	3	3	3	4	25	175
1960	1	1	1	1	1	1	1	7	6	-3	-5	-11	-14	-13	-10	6	5	5	3	3	3	4	29	203
1961	1	1	1	1	1	1	1	7	4	-5	-7	-12	-12	-19	-10	6	5	4	3	3	2	4	27	189
1962	1	1	1	1	1	1	1	7	7	2	9	3	-11	-16	-14	6	6	6	6	3	2	3	32	224
1963	1	1	1	1	1	1	1	7	7	1	30	8	-9	-12	-6	6	6	6	6	4	3	4	35	245
1964	1	1	1	1	1	1	1	7	4	-6	-8	-8	-14	-13	-8	6	4	4	4	3	3	4	28	196
1965	1	1	1	1	1	1	1	7	8	8	1	5	-8	-11	-7	6	6	6	6	4	3	4	35	245
1966	1	1	1	1	1	1	1	7	5	-9	-1	-10	-12	-13	-9	6	4	5	4	3	3	4	29	203
1967	1	1	1	1	1	2	1	8	12	1	23	27	4	-9	-6	6	6	6	6	6	4	4	38	304
1968	1	1	1	1	1	1	1	7	4	-12	-9	-11	-14	-13	-11	6	3	4	3	3	3	3	25	175
1969	1	1	1	6	6	5	3	23	14	11	22	0	-4	-10	-8	6	6	6	6	5	4	4	37	851
1970	1	1	1	1	1	1	1	7	5	-8	-6	-2	-14	-13	-7	6	4	4	5	3	3	4	29	203
1971	1	1	1	1	1	1	1	7	7	-9	-3	0	-11	-13	-7	6	4	5	6	3	3	4	31	217
1972	1	1	1	1	1	1	1	7	3	-12	0	-9	-13	-14	-7	6	3	6	4	3	3	4	29	203
1973	1	1	1	1	1	1	1	7	12	1	19	3	-10	-10	-5	6	6	6	6	4	4	5	37	259
1974	1	1	1	2	2	1	1	9	10	4	11	0	-9	-11	-8	6	6	6	6	4	3	4	35	315
1975	1	1	1	1	1	1	1	7	5	-5	-1	13	-9	-11	-7	6	5	5	6	4	3	4	33	231
1976	1	1	1	1	1	1	1	7	3	-6	-9	-11	-10	-9	-6	6	4	4	3	4	4	4	29	203
1977	1	1	1	1	1	1	1	7	0	-8	-10	-9	-13	-12	-6	6	4	4	4	3	3	4	28	196
1978	1	1	1	1	1	1	1	7	21	9	17	11	-2	-9	-3	6	6	6	6	5	4	5	38	266
1979	1	1	1	1	1	1	1	7	13	0	9	-5	-13	-14	-7	6	6	6	5	3	3	4	33	231
1980	1	1	1	1	2	1	1	8	5	1	7	7	-2	-11	-6	6	6	6	6	5	3	4	36	288
1981	1	1	1	1	1	1	1	7	3	-8	-11	-15	-14	-13	-8	6	4	3	3	3	3	4	26	182
1982	1	1	2	5	6	5	3	23	5	16	15	2	-4	-9	-4	6	6	6	6	5	4	5	38	874
1983	1	1	1	2	6	6	4	21	5	1	14	18	0	-6	-7	6	6	6	6	6	4	4	38	798
1984	1	1	1	1	1	1	1	7	5	-11	-7	-4	-11	-10	-6	6	3	4	5	3	4	4	29	203
1985	1	1	1	1	1	1	1	7	6	-3	-5	-10	-10	-10	-6	6	5	5	4	4	4	4	32	224
1986	1	1	1	1	1	1	1	7	5	1	5	4	-10	-10	-5	6	6	6	6	4	4	5	37	259
1987	1	1	1	1	1	1	1	7	3	-5	-10	-11	-9	-8	-4	6	5	4	3	4	4	5	31	217
1988	1	1	1	1	1	1	1	7	2	-6	-8	-10	-10	-9	-6	6	4	4	4	4	4	4	30	210
1989	1	1	1	1	1	1	1	7	12	-3	-5	-8	-11	-12	-4	6	5	5	4	3	3	5	31	217
1990	1	1	1	1	1	1	1	7	5	-7	-11	-15	-19	-16	-9	6	4	3	3	2	2	4	24	168
1991	1	1	1	1	1	1	1	7	8	-5	-5	-16	-19	-17	-8	6	5	5	2	2	2	4	26	182
1992	1	1	1	1	1	1	1	7	9	-8	-17	-22	-31	-37	-16	6	4	2	1	1	1	2	17	119
1993	1	1	1	1	1	1	1	7	55	-12	5	11	-10	-10	-4	6	3	6	6	4	4	5	34	238
1994	1	1	1	1	1	1	1	7	5	-3	-4	-13	-19	-17	-8	6	5	5	3	2	2	4	27	189
73 - year Average:								8														73 - year Average:	31	265.7
1929 - '34 Average:																								190.2

C—032510

STUDY. 1995 SWRCB-492 DWRSIM recirc818-f, 17 Jun 97
CP # 81, NEW DON PEDRO RESERVOIR, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-492/81/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 832'

Reservoir Elevation S[illegible]able:
If [DFMRE] <= 0', then [illegible]e
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1923	699	681	679	690	756	759	758	724	761	778	763	762	142	114	106	51	54	69	69	1	1	1	1	1	1	1	7	34	8	26	57	-3	-15	-11	35	245
1924	746	745	748	760	775	784	787	789	799	792	777	767	48	45	43	33	40	55	65	1	1	1	1	1	1	1	7	9	3	2	10	-7	-15	-10	35	245
1924	701	759	754	752	753	751	746	740	731	718	704	696	81	86	92	101	114	128	136	1	1	1	1	1	1	1	7	-2	-5	-6	-9	-13	-14	-8	28	196
1925	691	692	693	696	718	736	748	759	777	768	752	741	96	84	73	55	64	80	91	1	1	1	1	1	1	1	7	18	12	11	18	-9	-16	-11	33	231
1926	734	732	727	726	735	739	753	765	762	746	731	721	93	79	67	70	86	101	111	1	1	1	1	1	1	1	7	4	14	12	-3	-16	-15	-10	32	224
1927	713	713	717	726	755	770	781	779	797	789	774	764	62	51	53	35	43	58	68	1	1	1	1	1	1	1	7	15	11	-2	18	-8	-15	-10	34	238
1928	758	758	759	762	770	789	797	814	814	799	784	774	43	35	18	18	33	48	58	1	1	2	2	1	1	1	9	19	8	17	0	-15	-15	-10	36	306
1929	767	762	758	757	761	763	763	765	773	764	754	746	89	69	67	59	68	78	86	1	1	1	1	1	1	1	7	2	0	2	8	-9	-10	-8	36	252
1930	742	739	736	737	743	750	751	754	768	759	749	742	82	81	78	64	73	83	90	1	1	1	1	1	1	1	7	7	1	3	14	-9	-10	-7	36	252
1931	740	739	739	741	743	742	734	722	709	695	682	673	90	98	110	123	137	150	159	1	1	1	1	1	1	1	7	-1	-8	-12	-13	-14	-13	-9	25	175
1932	669	664	670	693	732	747	748	752	769	764	748	737	85	84	80	83	68	84	95	1	1	1	1	1	1	1	7	15	1	4	17	-5	-16	-11	34	238
1933	730	723	716	715	722	726	721	714	732	720	703	692	106	111	118	100	112	129	140	1	1	1	1	1	1	1	7	4	-5	-7	18	-12	-17	-11	29	203
1934	683	681	678	682	693	702	701	693	689	670	652	642	130	131	139	143	162	180	190	1	1	1	1	1	1	1	7	9	-1	-8	-4	-19	-18	-10	28	196
1935	634	633	635	649	678	693	718	730	760	747	730	717	139	114	102	72	85	102	115	1	1	1	1	1	1	1	7	17	25	12	30	-13	-17	-13	32	224
1936	709	707	701	706	749	767	776	793	811	801	786	775	65	56	39	21	31	46	57	1	1	1	1	1	1	1	7	18	9	17	18	-10	-15	-11	34	238
1937	769	764	760	762	790	800	802	815	832	819	805	795	32	30	17	0	13	27	37	1	1	2	6	3	1	1	15	10	2	13	17	-13	-14	-10	34	510
1938	789	784	800	800	800	800	800	804	831	832	819	808	32	32	28	1	0	13	24	1	1	1	5	6	3	1	18	0	0	4	27	1	-13	-11	36	648
1939	800	799	799	800	800	800	802	804	799	787	774	766	32	30	28	33	45	58	66	1	1	1	1	1	1	1	7	0	2	2	-5	-12	-13	-8	33	231
1940	763	763	761	773	800	800	802	816	829	814	799	789	32	30	16	3	18	33	43	1	1	2	5	2	1	1	13	0	2	14	13	-15	-15	-10	34	442
1941	783	781	783	798	800	800	800	812	832	831	817	808	32	32	20	0	1	15	24	1	1	1	6	5	2	1	17	0	0	12	20	-1	-14	-9	36	612
1942	800	798	800	800	800	800	802	807	831	832	818	808	32	30	25	1	0	14	24	1	1	1	5	6	3	1	18	0	2	5	24	1	-14	-10	37	666
1943	800	800	800	800	800	800	807	821	832	824	810	799	32	30	11	0	8	22	33	1	1	3	6	4	1	1	17	0	2	19	11	-8	-14	-11	34	578
1944	794	792	788	787	793	800	801	808	814	802	787	777	32	31	24	18	30	45	55	1	1	1	2	1	1	1	8	7	1	7	6	-12	-15	-10	34	272
1945	772	772	776	781	800	800	802	807	831	825	810	799	32	30	25	1	7	22	33	1	1	1	5	4	1	1	14	0	2	5	24	-6	-15	-11	34	476
1946	796	797	800	800	800	800	802	806	812	796	780	769	32	30	26	20	36	52	63	1	1	1	1	1	1	1	7	0	2	4	6	-16	-16	-11	31	217
1947	763	763	765	768	776	781	777	782	776	763	749	742	51	55	50	56	69	83	90	1	1	1	1	1	1	1	7	5	-4	5	-6	-13	-14	-7	31	217
1948	738	737	736	738	739	739	734	742	767	756	739	728	93	98	90	65	76	93	104	1	1	1	1	1	1	1	7	0	-5	8	25	-11	-17	-11	31	217
1949	721	715	710	709	716	727	733	742	750	732	712	699	105	99	90	82	100	120	133	1	1	1	1	1	1	1	7	11	6	9	8	-18	-20	-13	31	217
1950	691	685	678	684	704	717	725	735	752	736	717	704	115	107	97	80	96	115	128	1	1	1	1	1	1	1	7	13	8	10	17	-16	-19	-13	31	217
1951	698	747	706	800	800	800	798	794	798	783	769	759	32	34	38	34	49	63	73	1	1	1	1	1	1	1	7	0	-2	-4	4	-15	-14	-10	32	224
1952	752	750	757	782	800	800	800	820	832	832	819	808	32	32	12	0	0	13	24	1	1	3	6	6	3	1	21	0	0	20	12	0	-13	-11	36	756
1953	800	795	793	800	800	800	802	804	813	810	796	787	32	30	28	19	22	36	45	1	1	1	2	1	1	1	8	0	2	2	9	-3	-14	-9	36	288
1954	782	778	774	776	785	796	802	818	819	804	789	779	36	30	14	13	28	43	53	1	1	3	3	1	1	1	11	11	6	16	1	-15	-15	-10	34	374
1955	773	769	767	773	779	783	779	782	788	776	764	756	49	53	50	44	56	68	76	1	1	1	1	1	1	1	7	4	-4	3	6	-12	-12	-8	33	231
1956	750	747	796	800	800	800	802	818	832	832	818	808	32	30	14	0	0	14	24	1	1	3	6	6	3	1	21	0	2	16	14	0	-14	-10	37	777
1957	800	798	793	793	799	800	800	805	826	814	800	791	32	32	27	6	18	32	41	1	1	1	4	2	1	1	11	1	0	5	21	-12	-14	-9	34	374
1958	785	781	778	783	800	800	800	821	832	832	819	808	32	32	11	0	0	13	24	1	1	3	6	6	3	1	21	0	0	21	11	0	-13	-11	36	756
1959	800	794	789	793	800	800	802	800	794	782	769	763	32	30	32	38	50	63	69	1	1	1	1	1	1	1	7	0	2	-2	-6	-12	-13	-8	31	217
1960	760	757	754	755	763	768	769	775	778	767	757	751	64	63	57	54	65	75	81	1	1	1	1	1	1	1	7	5	1	6	3	-11	-10	-8	35	245
1961	748	745	745	747	749	749	742	732	725	712	700	693	83	90	100	107	120	132	139	1	1	1	1	1	1	1	7	0	-7	-10	-7	-13	-12	-7	28	196
1962	690	687	685	686	711	732	741	744	770	762	748	738	100	91	88	62	70	84	94	1	1	1	1	1	1	1	7	21	9	3	26	-8	-14	-10	35	245
1963	731	726	723	727	753	764	772	783	808	803	789	780	68	60	49	24	29	43	52	1	1	1	1	1	1	1	7	11	8	11	25	-5	-14	-9	36	252
1964	774	775	776	781	788	791	787	783	785	774	762	756	41	45	49	47	58	70	78	1	1	1	1	1	1	1	7	3	-4	-4	2	-11	-12	-6	32	224
1965	751	752	785	800	800	800	802	807	827	827	816	807	32	30	25	5	5	16	25	1	1	1	4	4	2	1	14	0	2	5	20	0	-11	-9	37	518
1966	800	800	800	800	800	800	801	797	790	775	760	750	32	31	35	42	57	72	82	1	1	1	1	1	1	1	7	0	1	-4	-7	-15	-15	-10	31	217
1967	745	742	753	769	787	800	800	817	832	832	820	808	32	32	15	0	0	12	24	1	1	2	6	6	3	1	20	13	0	17	15	0	-12	-12	36	720
1968	800	795	791	792	800	800	802	805	803	791	779	771	32	30	27	29	41	53	61	1	1	1	1	1	1	1	7	0	2	3	-2	-12	-12	-8	33	231
1969	766	766	770	800	800	800	800	823	832	832	819	808	32	32	9	0	0	13	24	1	1	4	6	6	3	1	22	0	0	23	9	0	-13	-11	36	792
1970	800	799	800	800	800	800	799	799	807	794	780	771	32	33	33	25	38	52	61	1	1	1	1	1	1	1	7	0	-1	0	8	-13	-14	-9	33	231
1971	765	765	772	788	800	800	801	800	806	797	785	777	32	31	32	26	35	47	55	1	1	1	1	1	1	1	7	0	1	-1	6	-9	-12	-8	34	238
1972	771	767	770	777	790	799	799	796	793	781	770	764	33	33	36	39	51	62	68	1	1	1	1	1	1	1	7	9	0	-3	-3	-12	-11	-6	32	224
1973	759	758	761	772	798	800	802	812	827	812	797	788	32	30	20	5	20	35	44	1	1	1	4	1	1	1	10	2	2	10	15	-15	-15	-9	34	340
1974	783	787	798	800	800	800	800	806	828	819	805	796	32	32	26	4	13	27	36	1	1	1	6	3	1	1	13	0	0	6	22	-9	-14	-9	35	455
1975	791	789	786	786	798	800	802	812	832	825	812	803	32	30	20	0	7	20	29	1	1	1	6	4	1	1	15	2	2	10	20	-7	-13	-9	35	525
1976	800	800	799	799	800	799	794	786	777	766	757	751	33	38	46	55	66	75	81	1	1	1	1	1	1	1	7	-1	-5	-8	-9	-11	-9	-8	29	203
1977	748	745	742	741	741	737	727	714	700	686	670	661	95	105	118	132	148	162	171	1	1	1	1	1	1	1	7	-4	-10	-13	-14	-14	-16	-9	24	168
1978	657	652	655	681	715	747	760	775	812	820	807	801	85	72	57	20	12	25	31	1	1	1	1	3	1	1	9	32	13	15	37	8	-13	-8	37	333
1979	797	793	790	799	800	800	802	822	832	818	803	794	32	30	10	0	14	29	38	1	1	3	6	3	1	1	18	0	2	20	10	-14	-15	-9	34	544
1980	789	788	787	800	800	800	800	817	832	832	819	808	32	32	15	0	0	13	24	1	1	2	6	6	3	1	20	0	0	17	15	0	-13	-11	36	720
1981	800	797	794	795	799	800	802	806	805	793	782	774	32	30	26	27	39	50	58	1	1	1	1	1	1	1	7	1	2	4	-1	-12	-11	-8	33	231
1982	770	775	795	800	800	800	800	820	832	832	820	808	32	32	12	0	0	12	24	1	1	3	6	6	3	1	21	0	0	20	12	0	-12	-12	36	756
1983	800	800	800	800	800	800	800	819	832	832	832	808	32	32	13	0	0	0	24	1	1	3	6	6	6	1	24	0	0	19	13	0	0	-24	37	888
1984	800	800	800	800	800	800	797	802	814	801	786	775	32	35	30	18	31	46	57	1	1	1	2	1	1	1	8	0	-3	5	12	-13	-15	-11	32	256
1985	772	773	779	786	794	800	801	799	795	783	772	766	32	31	33	37	49	60	66	1	1	1	1	1	1	1	7	6	1	-2	-4	-12	-11	-8	32	224
1986	762	763	768	773	800	800	802	827	832	825	811	802	32	30	5	0	7	21	30	1	1	4	6	4	1	1	18	0	2	25	5	-7	-14	-9	35	630
1987	796	791	786	784	786	788	786	783	779	769	759	752	44	46	49	53	63	73	80	1	1	1	1	1	1	1	7	2	-2	-3	-4	-10	-10	-7	33	231
1988	750	748	748	754	759	761	755	746	739	727	715	707	71	77	86	93	105	117	125	1	1	1	1	1	1	1	7	2	-6	-9	-7	-12	-12	-8	28	196
1989	704	701	701	703	707	721	732	745	753	742	731	726	111	100	87	79	90	101	106	1	1	1	1	1	1	1	7	14	11	13	8	-11	-11	-5	35	245
1990	724	724	723	725	729	732	729	725	722	708	694	686	100	103	107	110	124	138	146	1	1	1	1	1	1	1	7	3	-3	-4	-3	-14	-14	-8	31	217
1991	683	679	675	673	673	682	681	697	708	698	688	681	150	151	135	124	134	144	151	1	1	1	1	1	1	1	7	9	-1	16	11	-10	-10	-7	35	245
1992	680	680	680	682	692	697	699	705	705	691	675	664	135	133	127	127	141	157	168	1	1	1	1	1	1	1	7	5	2	6	0	-14	-16	-11	32	224
1993	659	653	652	688	720	749	757	771	802	801	787	777	83	75	61	30	31	45	55	1	1	1	1	1	1	1	7	29	8	14	31	-1	-14	-10	36	252
1994	771	766	761	761	764	767	764	767	766	755	745	739	65	68	65	66	77	87	93	1	1	1	1	1	1	1	7	3	-3	3	-1	-11	-10	-8	33	231
																										73 - year Average:	10							73 - year Average:	33	348.3
																																		1929 - '34 Average:		219.3

Largemouth Bass Reservoir Habitat Index =

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Change from Previous Month [fluctuation]

Prepared by Kevin Long

Study 492 - Reservoirs Elevations Fish Habitat Analysis.xls - Don Pedro

11/17/1997

A2-171

C-032511

C-032511

STUDY 1995C06. :B-492 DWRSIM recirc818-f, 17 Jun 97
CP # 20, LAKE McCLURE, EOP SURFACE ELEVATION (FT)
Project. /1995C06F-SWRCB-492/20/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 867'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation S[illegible]able:
If [DFMRE] <= 0', then
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table.
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	679	679	695	711	759	779	789	845	867	860	846	836	88	78	22	0	7	21	31	1	1	1	6	4	1	1	15	20	10	56	22	-7	-14	-10	6	6	6	6	4	3	4	35	525
1923	808	808	808	808	806	812	825	851	856	846	832	821	55	42	16	11	21	35	46	1	1	2	3	1	1	1	10	4	13	26	5	-10	-14	-11	6	6	6	6	4	3	3	34	340
1924	808	808	806	808	808	807	808	809	796	779	765	755	60	59	58	71	88	102	112	1	1	1	1	1	1	1	7	-1	1	1	-13	-17	-14	-10	5	6	6	3	2	3	4	29	203
1925	751	757	762	767	791	800	818	839	844	831	814	802	67	49	28	23	36	53	65	1	1	1	1	1	1	1	7	9	18	21	5	-13	-17	-12	6	6	6	6	3	2	3	32	224
1926	801	800	801	803	808	812	831	826	825	821	813	805	55	36	41	42	46	54	62	1	1	1	1	1	1	1	7	4	19	-5	-1	-4	-8	-8	6	6	5	5	5	4	4	35	245
1927	801	801	805	806	808	815	817	843	853	848	844	840	52	50	24	14	19	23	27	1	1	1	3	2	1	1	10	7	2	26	10	-5	-4	-4	6	6	6	6	5	5	5	39	390
1928	808	808	808	808	808	809	808	821	819	812	808	805	58	59	46	48	55	59	62	1	1	1	1	1	1	1	7	1	-1	13	-2	-7	-4	-3	6	5	6	5	4	5	5	36	252
1929	803	802	801	801	803	805	806	809	809	811	814	807	62	61	58	58	56	53	60	1	1	1	1	1	1	1	7	2	1	3	0	2	3	-7	6	6	6	6	6	6	4	40	280
1930	804	803	803	803	802	798	801	801	806	809	812	810	69	66	66	61	58	55	57	1	1	1	1	1	1	1	7	-4	3	0	5	3	3	-2	5	6	6	6	6	6	5	40	280
1931	808	808	808	808	808	808	808	806	794	776	762	752	59	59	61	73	91	105	115	1	1	1	1	1	1	1	7	0	0	-2	-12	-18	-14	-10	6	6	5	3	2	3	4	29	203
1932	751	751	770	782	808	817	826	846	864	854	839	829	50	41	21	3	13	28	38	1	1	1	5	3	1	1	13	9	9	20	18	-10	-15	-10	6	6	6	6	4	3	4	35	455
1933	808	807	806	808	808	811	813	816	830	817	802	794	56	54	51	37	50	65	73	1	1	1	1	1	1	1	7	3	2	3	14	-13	-15	-8	6	6	6	6	3	3	4	34	238
1934	789	788	792	798	805	813	819	811	801	784	771	761	54	48	56	66	83	96	106	1	1	1	1	1	1	1	7	8	6	-8	-10	-17	-13	-10	6	6	4	4	2	3	4	29	203
1935	757	762	766	764	796	806	840	859	867	854	839	828	61	27	8	0	13	28	39	1	1	4	6	3	1	1	17	10	34	19	8	-13	-15	-11	6	6	6	6	3	3	3	33	561
1936	808	808	808	808	808	820	840	856	861	849	834	823	47	27	11	6	18	33	44	1	1	3	4	2	1	1	13	12	20	16	5	-12	-15	-11	6	6	6	6	3	3	3	33	429
1937	808	808	808	808	808	820	834	859	867	853	838	827	47	33	8	0	14	29	40	1	1	4	6	3	1	1	17	12	14	25	8	-14	-15	-11	6	6	6	6	3	3	3	33	561
1938	808	808	808	808	808	820	840	859	867	867	855	840	47	27	8	0	0	12	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1939	808	808	808	808	808	816	831	832	821	803	787	776	51	36	35	46	64	80	91	1	1	1	1	1	1	1	7	8	15	1	-11	-18	-16	-11	6	6	6	3	2	2	3	28	196
1940	777	778	779	805	808	820	837	859	861	845	829	816	47	30	8	6	22	38	51	1	1	4	4	1	1	1	13	12	17	22	2	-16	-16	-13	6	6	6	6	2	2	3	31	403
1941	808	808	808	808	808	820	834	859	867	863	850	840	47	33	8	0	4	17	27	1	1	4	6	5	2	1	20	12	14	25	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1942	808	808	808	808	808	820	838	859	867	860	851	840	47	29	8	0	7	16	27	1	1	4	6	4	2	1	19	12	18	21	8	-7	-9	-11	6	6	6	6	4	4	3	35	665
1943	808	808	808	808	808	820	840	859	864	853	838	828	47	27	8	3	14	29	39	1	1	4	5	3	1	1	16	12	20	19	5	-11	-15	-10	6	6	6	6	3	3	4	34	544
1944	808	808	808	808	808	817	815	838	840	827	810	796	50	52	29	27	40	57	71	1	1	1	1	1	1	1	7	9	-2	23	2	-13	-17	-14	6	5	6	6	3	2	3	31	217
1945	794	800	806	808	808	820	833	856	867	856	842	831	47	34	11	0	11	25	36	1	1	3	6	3	1	1	16	12	13	23	11	-11	-14	-11	6	6	6	6	3	3	3	33	528
1946	808	808	808	808	808	818	837	859	857	842	826	813	49	30	8	10	25	41	54	1	1	4	3	1	1	1	12	10	19	22	-2	-15	-16	-13	6	6	6	5	3	2	3	31	372
1947	808	808	808	808	808	815	823	836	829	813	798	790	52	44	31	38	54	69	77	1	1	1	1	1	1	1	7	7	8	13	-7	-16	-15	-8	6	6	6	4	2	3	4	31	217
1948	788	789	790	792	793	792	796	818	835	820	802	788	75	71	49	32	47	65	79	1	1	1	1	1	1	1	7	-1	4	22	17	-15	-18	-14	5	6	6	6	3	2	3	31	217
1949	784	783	784	785	789	798	807	828	826	806	786	771	69	60	39	41	61	81	96	1	1	1	1	1	1	1	7	9	9	21	-2	-20	-20	-15	6	6	6	5	2	2	3	30	210
1950	766	765	765	773	786	789	805	823	824	804	784	768	78	62	44	43	63	83	99	1	1	1	1	1	1	1	7	3	16	18	1	-20	-20	-16	6	6	6	6	2	2	2	30	210
1951	764	808	808	808	808	819	827	837	834	816	796	781	48	40	30	33	51	71	86	1	1	1	1	1	1	1	7	11	8	10	-3	-18	-20	-15	6	6	6	5	2	2	3	30	210
1952	777	778	791	808	808	820	840	859	867	864	852	840	47	27	8	0	3	15	27	1	1	4	6	5	2	1	20	12	20	19	8	-3	-12	-12	6	6	6	6	5	3	3	35	700
1953	808	808	808	808	808	809	815	816	823	809	790	774	58	52	51	44	58	77	93	1	1	1	1	1	1	1	7	1	6	1	7	-14	-19	-16	6	6	6	6	3	2	2	31	217
1954	771	771	771	774	784	797	814	831	824	803	783	767	70	53	36	43	64	84	100	1	1	1	1	1	1	1	7	13	17	17	-7	-21	-20	-16	6	6	6	4	1	2	2	27	189
1955	763	762	765	771	775	777	776	798	807	791	774	764	90	91	69	60	76	93	103	1	1	1	1	1	1	1	7	2	-1	22	9	-16	-17	-10	6	5	6	6	2	2	4	31	217
1956	759	759	808	808	808	819	832	859	867	863	850	840	48	35	8	0	4	17	27	1	1	4	6	5	2	1	20	11	13	27	8	-4	-13	-10	6	6	6	6	5	3	4	36	720
1957	808	808	808	808	808	813	813	828	837	821	803	789	54	54	39	30	46	64	78	1	1	1	1	1	1	1	7	5	0	15	9	-16	-18	-14	6	6	6	6	2	2	3	31	217
1958	785	786	790	797	808	820	840	859	867	862	850	840	47	27	8	0	5	17	27	1	1	4	6	4	2	1	19	12	20	19	8	-5	-12	-10	6	6	6	6	5	3	4	36	684
1959	808	808	808	808	808	813	823	825	816	797	780	773	54	44	42	51	70	87	94	1	1	1	1	1	1	1	7	5	10	2	-9	-19	-17	-7	6	6	6	4	2	2	4	30	210
1960	771	770	769	770	782	790	804	817	814	799	785	775	77	63	50	53	68	82	92	1	1	1	1	1	1	1	7	8	14	13	-3	-15	-14	-10	6	6	6	5	3	3	4	33	231
1961	771	772	774	774	777	778	783	783	775	757	740	728	89	84	84	92	110	127	139	1	1	1	1	1	1	1	7	1	5	0	-8	-18	-17	-12	6	6	6	4	2	2	3	29	203
1962	727	727	729	732	774	784	808	822	835	822	804	790	83	59	45	32	45	63	77	1	1	1	1	1	1	1	7	10	24	14	13	-13	-18	-14	6	6	6	6	3	2	3	32	224
1963	786	786	786	795	808	810	819	841	854	844	829	817	57	48	26	13	23	38	50	1	1	1	3	1	1	1	9	2	9	22	13	-10	-15	-12	6	6	6	6	4	3	3	34	306
1964	808	808	808	808	808	808	809	810	813	797	780	771	59	58	51	54	70	87	96	1	1	1	1	1	1	1	7	0	1	7	-3	-16	-17	-9	6	6	6	5	2	2	4	31	217
1965	765	769	808	808	808	815	831	854	867	861	850	840	52	36	13	0	6	17	27	1	1	3	6	4	2	1	18	7	16	23	13	-6	-11	-10	6	6	6	6	4	3	4	35	630
1966	808	808	808	808	808	814	827	836	824	801	780	768	53	40	31	43	66	87	99	1	1	1	1	1	1	1	7	6	13	9	-12	-23	-21	-12	6	6	6	3	1	1	3	26	182
1967	763	766	791	803	808	820	840	859	867	867	856	840	47	27	8	0	0	11	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1968	808	808	808	808	808	812	817	821	811	793	776	766	55	50	46	56	74	91	101	1	1	1	1	1	1	1	7	4	5	4	-10	-18	-17	-10	6	6	6	4	2	2	4	30	210
1969	761	766	774	808	808	820	840	859	867	867	854	840	47	27	8	0	0	13	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-13	-14	6	6	6	6	6	3	3	36	792
1970	808	808	808	808	808	820	821	837	837	820	802	788	47	46	30	30	47	65	79	1	1	1	1	1	1	1	7	12	1	16	0	-17	-18	-14	6	6	6	6	2	2	3	31	217
1971	785	788	798	806	808	812	813	824	834	819	801	788	55	54	43	33	48	66	79	1	1	1	1	1	1	1	7	4	1	11	10	-15	-18	-13	6	6	6	6	3	2	3	32	224
1972	783	784	791	796	802	811	812	824	825	808	794	786	56	55	43	42	59	73	81	1	1	1	1	1	1	1	7	9	1	12	1	-17	-14	-8	6	6	6	6	2	3	4	33	231
1973	784	786	792	805	808	820	828	858	867	852	838	828	47	39	9	0	15	29	39	1	1	4	6	2	1	1	16	12	8	30	9	-15	-14	-10	6	6	6	6	3	3	4	34	544
1974	808	808	808	808	808	820	833	859	867	854	839	829	47	34	8	0	13	28	38	1	1	4	6	3	1	1	17	12	13	26	8	-13	-15	-10	6	6	6	6	3	3	4	34	578
1975	808	808	808	808	808	820	823	855	867	856	842	832	47	44	12	0	11	25	35	1	1	3	6	3	1	1	16	12	3	32	12	-11	-14	-10	6	6	6	6	3	3	4	34	544
1976	808	808	808	808	808	809	808	809	798	781	767	759	58	59	58	69	86	100	108	1	1	1	1	1	1	1	7	1	-1	1	-11	-17	-14	-8	6	5	6	3	2	3	4	29	203
1977	757	756	754	754	754	749	739	724	713	683	652	628	118	128	143	154	184	215	239	1	1	1	1	1	1	1	7	-5	-10	-15	-11	-30	-31	-24	5	4	3	3	1	1	1	18	126
1978	626	626	642	693	741	782	815	859	867	867	856	840	85	52	8	0	0	11	27	1	1	4	6	6	3	1	22	41	33	44	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1979	808	808	808	808	808	820	828	859	863	849	834	823	47	39	8	4	18	33	44	1	1	4	5	2	1	1	15	12	8	31	4	-14	-15	-11	6	6	6	6	3	3	3	33	495
1980	808	808	808	808	808	820	835	859	867	867	855	840	47	32	8	0	0	12	27	1	1	4	6	6	3	1	22	12	15	24	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1981	808	807	807	808	808	813	823	835	831	816	802	794	54	44	32	36	51	65	73	1	1	1	1	1	1	1	7	5	10	12	-4	-15	-14	-8	6	6	6	5	3	3	4	33	231
1982	792	800	808	808	808	820	840	859	867	865	854	840	47	27	8	0	2	13	27	1	1	4	6	5	3	1	21	12	20	19	8	-2	-11	-14	6	6	6	6	5	3	3	35	735
1983	808	808	808	808	808	820	836	859	867	867	864	840	47	31	8	0	0	3	27	1	1	4	6	6	5	1	24	12	16	23	8	0	-3	-24	6	6	6	6	6	5	1	36	864
1984	808	808	808	808	808	820	827	850	848	832	813	800	47	40	17	19	35	54	67	1	1	2	2	1	1	1	9	12	7	23	-2	-16	-19	-13	6	6	6	5	2	2	3	30	270
1985	799	802	806	808	808	814	828	840	834	820	806	797	53	39	27	33	47	61	70	1	1	1	1	1	1	1	7	6	14	12	-6	-14	-14	-9	6	6	6	4	3	3	4	32	224
1986	796	798	804	808	808	820	839	859	867	855	841	830	47	28	8	0	12	26	37	1	1	4	6	3	1	1	17	12	19	20	8	-12	-14	-11	6	6	6	6	3	3	3	33	561
1987	808	807	807	807	808	810	818	821	811	795	782	773	57	49	46	56	72	85	94	1	1	1	1	1	1	1	7	2	8	3	-10	-16	-13	-9	6	6	6	4	2	3	4	31	217
1988	771	773	775	780	784	790	796	799	792	775	761	751	77	71	68	75	92	106	116	1	1	1	1	1	1	1	7	6	6	3	-7	-17	-14	-10	6	6	6	4	2	3	4	31	217
1989	748	748	750	751	756	773	794	803	800	784	770	761	94	73	64	67	83	97	106	1	1	1	1	1	1	1	7	17	21	9	-3	-16	-14	-9	6	6	6	5	2	3	4	32	224
1990	763	763	764	766	770	777	787	784	775	759	741	729	90	80	83	92	108	126	138	1	1	1	1	1	1	1	7	7	10	-3	-9	-16	-18	-12	6	6	5	4	2	2	3	28	196
1991	727	726	726	725	725	746	752	772	787	773	760	748	121	115	95	80	94	107	119	1	1	1	1	1	1	1	7	21	6	20	15	-14	-13	-12	6	6	6	6	3	3	3	33	231
1992	747	748	750	752	768	772	789	791	779	766	751	739	95	78	76	88	101	116	128	1	1	1	1	1	1	1	7	6	17	2	-12	-13	-15	-12	6	6	6	3	3	3	3	30	210
1993	737	738	744	790	808	820	837	859	867	861	848	837	47	30	8	0	6	19	30	1	1	4	6	4	2	1	19	12	17	22	8	-6	-13	-11	6	6	6	6	4	3	3	34	646
1994	808	807	808	808	808	810	814	820	812	796	783	773	57	53	47	55	71	84	94	1	1	1	1	1	1	1	7	2	4	6	-8	-16	-13	-10	6	6	6	4	2	3	4	31	217

73 - year Average: 11

73 - year Average: 32 377.8

1929 - '34 Average

C-032512

C-032512

STUDY: 19__ -SWRCB-492 DWRSIM: recirc818-f, 17 Jun 97
CP # 18, CVP MILLERTON LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-492/18/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 576'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	491	505	527	547	549	568	559	576	576	562	518	491
1923	485	495	520	537	531	517	541	549	540	526	483	470
1924	483	494	508	522	516	503	506	511	505	478	464	468
1925	485	474	490	503	508	493	514	532	522	499	483	475
1926	477	490	505	519	522	508	549	563	535	494	473	485
1927	491	506	528	545	560	561	560	569	576	543	492	482
1928	482	503	528	542	540	543	551	554	522	477	465	477
1929	485	499	513	523	517	513	531	531	527	506	466	477
1930	480	495	507	518	514	510	525	534	518	489	466	482
1931	487	501	513	522	517	508	510	516	508	482	466	466
1932	487	476	503	520	543	531	524	532	552	518	492	477
1933	477	489	501	516	512	501	520	537	526	509	466	467
1934	470	480	500	517	511	503	516	527	523	498	477	486
1935	490	500	515	535	532	509	542	563	574	538	469	479
1936	486	502	518	533	560	558	564	576	563	521	472	478
1937	488	497	516	535	560	570	576	576	576	538	484	469
1938	472	486	533	560	560	542	529	467	572	576	532	520
1939	513	514	529	538	532	524	542	560	539	504	473	495
1940	495	504	517	550	550	552	548	561	553	512	466	471
1941	481	494	528	556	560	573	573	569	576	569	527	506
1942	497	507	532	552	549	553	554	562	576	555	509	477
1943	477	494	518	557	556	576	574	576	562	526	491	476
1944	479	491	508	521	524	507	516	517	501	494	490	480
1945	481	503	523	533	560	568	565	571	576	554	511	491
1946	485	502	531	548	528	524	536	559	546	510	478	480
1947	481	500	526	543	541	530	545	556	535	497	473	481
1948	488	503	518	529	523	530	556	551	541	483	480	484
1949	490	500	513	526	524	511	522	538	521	482	477	489
1950	492	503	519	536	541	524	534	551	539	506	476	482
1951	490	533	560	560	554	546	552	546	514	483	463	481
1952	488	500	530	559	560	567	559	526	576	571	525	508
1953	501	514	533	549	538	532	541	536	518	497	478	481
1954	488	497	514	532	532	527	537	560	544	507	465	483
1955	489	502	522	540	537	520	534	545	537	504	481	487
1956	491	499	560	560	560	576	576	561	576	566	524	505
1957	496	504	517	527	525	529	546	561	562	526	471	481
1958	488	501	525	545	554	565	576	576	576	557	518	498
1959	492	507	523	530	536	528	550	566	551	500	470	475
1960	474	475	480	490	503	498	515	525	509	496	483	481
1961	481	491	505	511	510	511	526	539	527	486	467	467
1962	468	471	484	492	538	529	527	555	569	540	489	476
1963	479	491	501	518	558	558	576	576	576	564	520	503
1964	490	517	542	551	547	544	553	561	551	508	476	484
1965	481	496	529	560	558	554	559	551	561	540	512	496
1966	487	513	548	558	541	526	545	564	550	506	486	486
1967	490	502	539	559	560	571	565	514	570	576	539	522
1968	515	521	539	545	545	539	550	554	539	506	478	482
1969	480	496	513	560	524	521	467	469	576	576	538	513
1970	498	516	540	560	560	554	554	555	544	517	476	477
1971	482	502	534	551	548	533	541	544	520	498	491	478
1972	479	491	519	536	532	524	537	543	540	497	481	481
1973	489	501	523	545	560	560	550	575	576	542	483	477
1974	487	510	545	560	544	550	559	570	573	537	490	473
1975	476	494	515	528	535	526	533	536	567	525	476	482
1976	489	511	531	541	539	544	547	542	519	492	479	494
1977	490	496	500	503	501	464	465	464	462	466	461	462
1978	462	462	484	532	560	552	510	498	576	576	548	539
1979	528	535	549	560	555	562	560	571	563	521	477	482
1980	489	488	508	560	560	558	566	550	576	576	542	513
1981	503	512	520	528	531	533	547	553	543	510	477	488
1982	491	504	536	560	560	576	546	561	576	576	546	541
1983	531	556	560	560	513	484	467	467	483	564	572	576
1984	560	560	560	560	560	568	570	570	557	530	487	483
1985	482	492	511	536	533	526	551	563	539	501	483	483
1986	490	506	534	554	550	552	574	565	576	558	503	479
1987	480	489	492	495	496	511	530	551	539	503	473	480
1988	482	495	507	526	516	527	539	547	527	498	483	486
1989	486	497	505	515	512	516	537	552	540	502	478	484
1990	489	495	502	510	510	517	532	544	525	508	479	483
1991	480	486	492	499	493	489	501	508	512	506	480	486
1992	485	490	494	496	490	490	493	494	480	470	465	466
1993	487	486	476	536	543	556	558	576	576	571	522	499
1994	490	497	507	512	508	520	534	548	528	498	478	484

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation S[illegible]able:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP	Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	10	17	0	0	14	58	85	3	2	6	6	3	1	1	22
1923	59	35	27	36	50	113	106	1	1	1	1	1	1	1	7
1924	73	70	65	71	98	112	108	1	1	1	1	1	1	1	7
1925	83	62	44	54	77	93	101	1	1	1	1	1	1	1	7
1926	68	27	13	41	82	103	91	1	1	3	1	1	1	1	9
1927	15	16	7	0	33	84	94	2	2	4	6	1	1	1	17
1928	33	25	22	54	99	111	99	1	1	1	1	1	1	1	7
1929	63	45	45	49	70	110	99	1	1	1	1	1	1	1	7
1930	66	51	42	58	87	110	94	1	1	1	1	1	1	1	7
1931	68	66	60	68	94	110	110	1	1	1	1	1	1	1	7
1932	45	52	44	24	58	84	99	1	1	1	1	1	1	1	7
1933	75	56	39	50	67	110	109	1	1	1	1	1	1	1	7
1934	73	60	49	53	78	99	90	1	1	1	1	1	1	1	7
1935	67	34	13	2	38	107	97	1	1	3	5	1	1	1	13
1936	18	12	0	13	55	104	98	2	3	6	3	1	1	1	17
1937	6	0	0	0	38	92	107	4	6	6	6	1	1	1	25
1938	34	47	109	4	0	44	56	1	1	1	5	6	1	1	16
1939	52	34	16	37	72	103	81	1	1	2	1	1	1	1	8
1940	24	28	15	23	64	110	105	1	1	2	1	1	1	1	8
1941	3	3	7	0	7	49	70	5	5	4	6	4	1	1	26
1942	23	22	14	0	21	67	99	1	1	3	6	1	1	1	14
1943	0	2	0	14	50	85	100	6	5	6	3	1	1	1	23
1944	69	60	59	75	82	86	96	1	1	1	1	1	1	1	7
1945	8	11	5	0	22	65	85	4	3	4	6	1	1	1	20
1946	52	40	17	30	66	98	96	1	1	2	1	1	1	1	8
1947	46	31	20	41	79	103	95	1	1	1	1	1	1	1	7
1948	46	20	25	35	93	96	92	1	1	1	1	1	1	1	7
1949	65	54	38	55	94	99	87	1	1	1	1	1	1	1	7
1950	52	42	25	37	70	100	94	1	1	1	1	1	1	1	7
1951	30	24	30	62	113	113	95	1	1	1	1	1	1	1	7
1952	9	17	50	0	5	51	68	4	2	1	6	4	1	1	19
1953	44	35	40	58	79	98	95	1	1	1	1	1	1	1	7
1954	49	39	16	32	69	111	93	1	1	2	1	1	1	1	8
1955	56	42	31	39	72	95	89	1	1	1	1	1	1	1	7
1956	0	0	15	0	10	52	71	6	6	2	6	3	1	1	25
1957	47	30	15	14	50	105	95	1	1	2	3	1	1	1	10
1958	11	0	0	0	19	60	78	3	6	6	6	2	1	1	25
1959	48	26	10	25	76	106	101	1	1	3	1	1	1	1	9
1960	78	61	51	67	80	93	95	1	1	1	1	1	1	1	7
1961	65	50	37	49	90	109	109	1	1	1	1	1	1	1	7
1962	47	49	21	7	36	87	100	1	1	1	4	1	1	1	10
1963	18	0	0	0	12	56	73	2	6	6	6	3	1	1	25
1964	32	23	15	25	68	100	92	1	1	2	1	1	1	1	8
1965	22	17	25	15	36	64	80	1	2	1	2	1	1	1	9
1966	50	31	12	26	70	90	90	1	1	3	1	1	1	1	9
1967	5	11	62	6	0	37	54	4	3	1	4	6	1	1	20
1968	37	26	22	37	70	98	94	1	1	1	1	1	1	1	7
1969	55	109	107	0	0	38	63	1	1	1	6	6	1	1	17
1970	22	22	21	32	59	100	99	1	1	1	1	1	1	1	7
1971	43	35	32	56	78	85	98	1	1	1	1	1	1	1	7
1972	52	39	33	36	79	95	95	1	1	1	1	1	1	1	7
1973	16	26	1	0	34	93	99	2	1	5	6	1	1	1	17
1974	26	17	6	3	39	86	103	1	2	4	5	1	1	1	15
1975	50	43	40	9	51	100	94	1	1	1	4	1	1	1	10
1976	32	29	34	57	84	97	82	1	1	1	1	1	1	1	7
1977	112	111	112	114	110	115	114	1	1	1	1	1	1	1	7
1978	24	66	78	0	0	28	37	1	1	1	6	6	1	1	17
1979	14	16	5	13	55	99	94	3	2	4	3	1	1	1	15
1980	18	10	26	0	0	34	63	2	3	1	6	6	1	1	20
1981	43	29	23	33	66	99	88	1	1	1	1	1	1	1	7
1982	0	30	15	0	0	30	35	6	1	2	6	6	1	1	23
1983	92	109	109	93	12	4	0	1	1	1	1	3	5	6	18
1984	8	6	6	19	46	89	93	4	4	4	2	1	1	1	17
1985	50	25	13	37	75	93	93	1	1	3	1	1	1	1	9
1986	24	2	11	0	18	73	97	1	5	3	6	2	1	1	19
1987	65	46	25	37	73	103	96	1	1	1	1	1	1	1	7
1988	49	37	29	49	78	93	90	1	1	1	1	1	1	1	7
1989	60	39	24	36	74	98	92	1	1	1	1	1	1	1	7
1990	59	44	32	51	68	97	93	1	1	1	1	1	1	1	7
1991	87	75	68	64	70	96	90	1	1	1	1	1	1	1	7
1992	86	83	82	96	106	111	110	1	1	1	1	1	1	1	7
1993	20	18	0	0	5	54	77	1	2	6	6	4	1	1	21
1994	56	42	28	48	78	98	92	1	1	1	1	1	1	1	7
								73 - year Average:							12

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	Fluct. MAR	APR	MAY	JUN	JUL	AUG	SEP	Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	17	-7	17	0	-14	-44	-27	6	4	6	6	3	1	1	27	594
1923	-14	24	8	-9	-14	-63	7	3	6	6	4	3	1	6	29	203
1924	-13	3	5	-6	-27	-14	4	3	6	6	4	1	3	6	29	203
1925	-15	21	18	-10	-23	-16	-8	3	6	6	4	1	2	4	26	182
1926	-14	41	14	-28	-41	-21	12	3	6	6	1	1	1	6	24	216
1927	1	-1	9	7	-33	-51	-10	6	5	6	6	1	1	4	29	493
1928	3	8	3	-32	-45	-12	12	6	6	6	1	1	3	6	29	203
1929	-4	18	0	-4	-21	-40	11	5	6	6	5	1	1	6	30	210
1930	-4	15	9	-16	-29	-23	16	5	6	6	2	1	1	6	27	189
1931	-9	2	6	-8	-26	-16	0	4	6	6	4	1	2	6	29	203
1932	-12	-7	8	20	-34	-26	-15	3	4	6	6	1	1	3	24	168
1933	-11	19	17	-11	-17	-43	1	3	6	6	3	2	1	6	27	189
1934	-8	13	11	-4	-25	-21	9	4	6	6	5	1	1	6	29	203
1935	-23	33	21	11	-36	-69	10	1	6	6	6	1	1	6	27	351
1936	-2	6	12	-13	-42	-49	6	5	6	6	3	1	1	6	28	476
1937	10	6	0	0	-38	-54	-15	6	6	6	6	1	1	3	29	725
1938	-18	-13	-62	105	4	-44	-12	2	3	1	6	6	1	3	22	352
1939	-8	18	18	-21	-35	-31	22	4	6	6	1	1	1	6	25	200
1940	2	-4	13	-8	-41	-46	5	6	5	6	4	1	1	6	29	232
1941	13	0	-4	7	-7	-42	-21	6	6	5	6	4	1	1	29	754
1942	4	1	8	14	-21	-46	-32	6	6	6	6	1	1	1	27	378
1943	20	-2	2	-14	-36	-35	-15	6	5	6	3	1	1	3	25	575
1944	-17	9	1	-16	-7	-4	-10	2	6	6	2	4	5	4	29	203
1945	8	-3	6	5	-22	-43	-20	6	5	6	6	1	1	2	27	540
1946	-4	12	23	-13	-36	-32	2	5	6	6	3	1	1	6	28	224
1947	-11	15	11	-21	-38	-24	8	3	6	6	1	1	1	6	24	168
1948	7	26	-5	-10	-58	-3	4	6	6	5	4	1	5	6	33	231
1949	-13	11	16	-17	-39	-5	12	3	6	6	2	1	5	6	29	203
1950	-17	10	17	-12	-33	-30	6	2	6	6	3	1	1	6	25	175
1951	-8	6	-6	-32	-51	0	18	4	6	4	1	1	6	6	28	196
1952	7	-8	-33	50	-5	-46	-17	6	4	1	6	5	1	2	25	475
1953	-6	9	-5	-18	-21	-19	3	4	6	5	2	1	2	6	26	182
1954	-5	10	23	-16	-37	-42	18	5	6	6	2	1	1	6	27	216
1955	-17	14	11	-8	-33	-23	6	2	6	6	4	1	1	6	26	182
1956	16	0	-15	15	-10	-42	-19	6	6	3	6	4	1	2	28	700
1957	4	17	15	1	-36	-55	10	6	6	6	6	1	1	6	32	320
1958	11	11	0	0	-19	-41	-18	6	6	6	6	2	1	2	29	725
1959	-8	22	16	-15	-51	-30	5	4	6	6	3	1	1	6	27	243
1960	-5	17	10	-16	-13	-13	-2	5	6	6	2	3	3	5	30	210
1961	1	15	13	-12	-41	-19	0	6	6	6	3	1	2	6	30	210
1962	-9	-2	28	14	-29	-51	-13	4	5	6	6	1	1	3	26	260
1963	0	18	0	0	-12	-44	-17	6	6	6	6	3	1	2	30	750
1964	-3	9	8	-10	-43	-32	8	5	6	6	4	1	1	6	29	232
1965	-2	5	-8	10	-21	-28	-16	5	6	4	6	1	1	2	25	225
1966	-15	19	19	-14	-44	-20	0	3	6	6	3	1	2	6	27	243
1967	11	-6	-51	56	6	-37	-17	6	4	1	6	6	1	2	26	520
1968	-6	11	4	-15	-33	-28	4	4	6	6	3	1	1	6	27	189
1969	-3	-54	2	107	0	-38	-25	5	1	6	6	6	1	1	26	442
1970	-6	0	1	-11	-27	-41	1	4	6	6	3	1	1	6	27	189
1971	-15	8	3	-24	-22	-7	-13	3	6	6	1	1	4	3	24	168
1972	-8	13	6	-3	-43	-16	0	4	6	6	5	1	2	6	30	210
1973	0	-10	25	1	-34	-59	-6	6	4	6	6	1	1	4	28	476
1974	6	9	11	3	-36	-47	-17	6	6	6	6	1	1	2	28	420
1975	-9	7	3	31	-42	-49	6	4	6	6	6	1	1	6	30	300
1976	5	3	-5	-23	-27	-13	15	6	6	5	1	1	3	6	28	196
1977	-37	1	-1	-2	4	-5	1	1	6	5	5	6	5	6	34	238
1978	-8	-42	-12	78	0	-28	-9	4	1	3	6	6	1	4	25	425
1979	7	-2	11	-8	-42	-44	5	6	5	6	4	1	1	6	29	435
1980	-2	8	-16	26	0	-34	-29	5	6	2	6	6	1	1	27	540
1981	2	14	6	-10	-33	-33	11	6	6	6	4	1	1	6	30	210
1982	16	-30	15	15	0	-30	-5	6	1	6	6	6	1	5	31	713
1983	-29	-17	0	16	81	8	4	1	2	6	6	6	6	6	33	594
1984	8	2	0	-13	-27	-43	-4	6	6	6	3	1	1	5	28	476
1985	-7	25	12	-24	-38	-18	0	4	6	6	1	1	2	6	26	234
1986	2	22	-9	11	-18	-55	-24	6	6	4	6	2	1	1	26	494
1987	15	19	21	-12	-36	-30	7	6	6	6	3	1	1	6	29	203
1988	11	12	8	-20	-29	-15	3	6	6	6	2	1	3	6	30	210
1989	4	21	15	-12	-38	-24	6	6	6	6	3	1	1	6	29	203
1990	7	15	12	-19	-17	-29	4	6	6	6	2	2	1	6	29	203
1991	-4	12	7	4	-6	-26	6	5	6	6	6	4	1	6	34	238
1992	-9	3	1	-14	-10	-5	1	4	6	6	3	4	5	6	34	238
1993	13	2	18	0	-5	-49	-23	6	6	6	6	5	1	1	31	651
1994	12	14	14	-20	-30	-20	6	6	6	6	2	1	2	6	29	203
								73 - year Average:							28	329.2
												1929 - '34 Average:				193.7

A2-173

C-032513
C-032513

STUDY: 1995C06F-SWRCB-492   DWRSIM: recirc818-f, 17 Jun 97
CP # 12, SWP SAN LUIS RESERVIOR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-492/12/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 544'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

	Elevation												DFMRE							Elevation Score								Fluctuation							Fluctuation Score								
YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	413	432	471	523	544	544	532	529	523	458	394	386	0	12	15	21	86	150	158	6	3	2	1	1	1	1	15	0	-12	-3	-6	-65	-64	-8	6	3	5	4	1	1	4	24	360
1923	423	463	487	527	538	536	522	493	443	435	402	392	8	22	51	101	109	142	152	4	1	1	1	1	1	1	10	-2	-14	-29	-50	-8	-33	-10	5	3	1	1	4	1	4	19	190
1924	404	409	416	467	500	500	493	472	446	411	383	388	44	51	72	98	133	161	156	1	1	1	1	1	1	1	7	0	-7	-21	-26	-35	-28	5	6	4	1	1	1	1	6	20	140
1925	396	410	456	486	538	544	535	511	471	446	390	391	0	9	33	73	98	154	153	6	4	1	1	1	1	1	15	6	-9	-24	-40	-25	-56	1	6	4	1	1	1	1	6	20	300
1926	402	413	438	500	542	544	537	517	485	464	395	390	0	7	27	59	80	149	154	6	4	1	1	1	1	1	15	2	-7	-20	-32	-21	-69	-5	6	4	2	1	1	1	5	20	300
1927	403	462	504	540	544	544	536	516	469	455	395	385	0	8	28	75	89	149	159	6	4	1	1	1	1	1	15	0	-8	-20	-47	-14	-60	-10	6	4	2	1	3	1	4	21	315
1928	411	456	487	524	544	544	535	513	466	459	402	393	0	9	31	78	85	142	151	6	4	1	1	1	1	1	15	0	-9	-22	-47	-7	-57	-9	6	4	1	1	4	1	4	21	315
1929	423	447	469	516	544	544	533	518	494	459	426	421	0	11	26	50	85	118	123	6	3	1	1	1	1	1	14	0	-11	-15	-24	-35	-33	-5	6	3	3	1	1	1	5	20	280
1930	417	424	471	535	544	544	524	496	464	464	425	412	0	20	48	80	80	119	132	6	1	1	1	1	1	1	12	0	-20	-28	-32	0	-39	-13	6	2	1	1	6	1	3	20	240
1931	417	423	457	494	504	504	493	480	458	424	374	372	40	51	64	86	120	170	172	1	1	1	1	1	1	1	7	0	-11	-13	-22	-34	-50	-2	6	3	3	1	1	1	5	20	140
1932	383	381	454	521	535	535	526	511	489	461	416	407	9	18	33	55	83	128	137	4	2	1	1	1	1	1	11	0	-9	-15	-22	-28	-45	-9	6	4	3	1	1	1	4	20	220
1933	421	429	433	480	500	506	501	486	460	424	372	370	38	43	58	84	120	172	174	1	1	1	1	1	1	1	7	6	-5	-15	-26	-36	-52	-2	6	5	3	1	1	1	5	22	154
1934	385	381	434	497	510	510	495	473	458	434	370	359	34	49	71	88	110	174	185	1	1	1	1	1	1	1	7	0	-15	-22	-17	-22	-64	-11	6	3	1	2	1	1	3	17	119
1935	370	374	397	477	483	514	523	498	455	429	340	347	30	21	46	89	115	204	197	1	1	1	1	1	1	1	7	31	9	-25	-43	-26	-89	7	6	6	1	1	1	1	6	22	154
1936	367	380	392	463	518	539	527	501	450	427	333	341	5	17	43	94	117	211	203	4	2	1	1	1	1	1	11	21	-12	-26	-51	-23	-94	8	6	3	1	1	1	1	6	19	209
1937	366	391	412	482	534	543	544	527	482	431	381	374	1	0	17	62	113	163	170	5	6	2	1	1	1	1	17	9	1	-17	-45	-51	-50	-7	6	6	2	1	1	1	4	21	357
1938	405	460	506	542	544	544	544	544	534	494	447	467	0	0	0	10	50	97	77	6	6	6	3	1	1	1	24	0	0	0	-10	-40	-47	20	6	6	6	4	1	1	6	30	720
1939	504	512	515	544	544	544	524	495	464	464	425	408	0	20	49	80	80	119	136	6	1	1	1	1	1	1	12	0	-20	-29	-31	0	-39	-17	6	2	1	1	6	1	2	19	228
1940	415	417	411	488	530	544	536	509	454	423	372	359	0	8	35	90	121	172	185	6	4	1	1	1	1	1	15	14	-8	-27	-55	-31	-51	-13	6	4	1	1	1	1	3	17	255
1941	377	399	443	500	529	544	543	539	518	470	410	427	0	1	5	26	74	134	117	6	5	4	1	1	1	1	19	15	-1	-4	-21	-48	-60	17	6	5	5	1	1	1	6	25	475
1942	488	491	513	544	544	544	540	532	521	470	416	424	0	4	12	23	74	128	120	6	5	3	1	1	1	1	18	0	-4	-8	-11	-51	-54	8	6	5	4	3	1	1	6	26	468
1943	466	493	513	544	544	544	544	544	506	462	400	404	0	0	0	38	82	144	140	6	6	6	1	1	1	1	22	0	0	0	-38	-44	-62	4	6	6	6	1	1	1	6	27	594
1944	440	470	492	527	544	544	516	478	432	431	404	381	0	28	66	112	113	140	163	6	1	1	1	1	1	1	12	0	-28	-38	-46	-1	-27	-23	6	1	1	1	5	1	1	16	192
1945	384	420	457	497	539	544	522	485	439	428	382	369	0	22	59	105	116	162	175	6	1	1	1	1	1	1	12	5	-22	-37	-46	-11	-46	-13	6	1	1	1	3	1	3	16	192
1946	395	439	480	517	544	544	518	480	425	414	396	388	0	26	64	119	130	148	156	6	1	1	1	1	1	1	12	0	-26	-38	-55	-11	-18	-8	6	1	1	1	3	2	4	18	216
1947	409	435	472	513	531	541	520	488	451	440	400	381	3	24	56	93	104	144	163	5	1	1	1	1	1	1	11	10	-21	-32	-37	-11	-40	-19	6	1	1	1	3	1	2	15	165
1948	385	394	394	451	468	485	484	467	439	413	352	362	59	60	77	105	131	192	182	1	1	1	1	1	1	1	7	17	-1	-17	-28	-26	-61	10	6	5	2	1	1	1	6	22	154
1949	398	428	459	501	520	544	523	492	450	437	385	384	0	21	52	94	107	159	160	6	1	1	1	1	1	1	12	24	-21	-31	-42	-13	-52	-1	6	1	1	1	3	1	5	18	216
1950	406	420	432	500	541	544	525	496	456	434	387	391	0	19	48	88	110	157	153	6	2	1	1	1	1	1	13	3	-19	-29	-40	-22	-47	4	6	2	1	1	1	1	6	18	234
1951	413	465	504	544	544	544	522	496	437	424	400	394	0	22	48	107	120	144	150	6	1	1	1	1	1	1	12	0	-22	-26	-59	-13	-24	-6	6	1	1	1	3	1	4	17	204
1952	413	448	488	523	544	544	544	544	534	493	459	482	0	0	0	10	51	85	62	6	6	6	3	1	1	1	24	0	0	0	-10	-41	-34	23	6	6	6	4	1	1	6	30	720
1953	501	509	514	544	544	544	521	501	475	465	415	433	0	23	43	69	79	129	111	6	1	1	1	1	1	1	12	0	-23	-20	-26	-10	-50	18	6	1	2	1	4	1	6	21	252
1954	469	493	504	544	544	544	537	517	464	457	399	396	0	7	27	80	87	145	148	6	4	1	1	1	1	1	15	0	-7	-20	-53	-7	-58	-3	6	4	2	1	4	1	5	23	345
1955	421	469	505	544	544	543	522	495	463	441	389	394	1	22	49	81	103	155	150	5	1	1	1	1	1	1	11	-1	-21	-27	-32	-22	-52	5	5	1	1	1	1	1	6	16	176
1956	422	441	496	536	544	544	530	525	502	467	419	438	0	14	19	42	77	125	106	6	3	2	1	1	1	1	15	0	-14	-5	-23	-35	-48	19	6	3	5	1	1	1	6	23	345
1957	476	487	498	532	544	544	528	504	466	459	405	410	0	16	40	78	85	139	134	6	2	1	1	1	1	1	13	0	-16	-24	-38	-7	-54	5	6	2	1	1	4	1	6	21	273
1958	483	493	514	544	544	544	543	542	532	483	457	478	0	1	2	12	61	87	66	6	5	5	3	1	1	1	22	0	-1	-1	-10	-49	-26	21	6	5	5	4	1	1	6	28	616
1959	498	507	513	544	544	544	514	475	427	426	400	400	0	30	69	117	118	144	144	6	1	1	1	1	1	1	12	0	-30	-39	-48	-1	-26	0	6	1	1	1	5	1	6	21	252
1960	428	443	449	495	544	544	523	492	455	442	390	382	0	21	52	89	102	154	162	6	1	1	1	1	1	1	12	0	-21	-31	-37	-13	-52	-8	6	1	1	1	3	1	4	17	204
1961	404	438	483	526	544	544	521	487	455	446	408	401	0	23	57	89	98	136	143	6	1	1	1	1	1	1	12	0	-23	-34	-32	-9	-38	-7	6	1	1	1	4	1	4	18	216
1962	405	418	460	507	544	544	515	476	417	405	333	341	0	29	68	127	139	211	203	6	1	1	1	1	1	1	12	0	-29	-39	-59	-12	-72	8	6	1	1	1	3	1	6	19	228
1963	405	452	490	526	544	544	540	526	488	463	399	399	0	4	18	56	81	145	145	6	5	2	1	1	1	1	17	0	-4	-14	-38	-25	-64	0	6	5	3	1	1	1	6	23	391
1964	442	482	490	530	536	531	500	463	412	414	405	392	13	44	81	132	130	139	152	3	1	1	1	1	1	1	9	-5	-31	-37	-51	2	-9	-13	5	1	1	1	6	4	3	21	189
1965	398	429	478	521	544	544	544	530	498	460	400	415	0	0	14	46	84	144	129	6	6	3	1	1	1	1	19	0	0	-14	-32	-38	-60	15	6	6	3	1	1	1	6	24	456
1966	456	492	514	544	544	544	516	478	417	408	400	390	0	28	66	127	136	144	154	6	1	1	1	1	1	1	12	0	-28	-38	-61	-9	-8	-10	6	1	1	1	4	4	4	21	252
1967	414	445	491	534	544	544	544	544	534	520	485	500	0	0	0	10	24	59	44	6	6	6	3	1	1	1	24	0	0	0	-10	-14	-35	15	6	6	6	4	3	1	6	32	768
1968	507	517	519	544	544	544	523	487	440	441	409	400	0	21	57	104	103	135	144	6	1	1	1	1	1	1	12	0	-21	-36	-47	1	-32	-9	6	1	1	1	6	1	4	20	240
1969	427	456	501	544	544	544	544	544	535	499	454	477	0	0	0	9	45	90	67	6	6	6	4	1	1	1	25	0	0	0	-9	-36	-45	23	6	6	6	4	1	1	6	30	750
1970	509	517	519	544	544	544	526	497	442	436	401	399	0	18	47	102	108	143	145	6	2	1	1	1	1	1	13	0	-18	-29	-55	-6	-35	-2	6	2	1	1	4	1	5	20	260
1971	422	470	510	544	544	544	524	505	473	465	411	431	0	20	39	71	79	133	113	6	1	1	1	1	1	1	12	0	-20	-19	-32	-8	-54	20	6	2	2	1	4	1	6	22	264
1972	465	490	514	544	544	544	522	489	443	447	404	399	0	22	55	101	97	140	145	6	1	1	1	1	1	1	12	0	-22	-33	-46	4	-43	-5	6	1	1	1	6	1	5	21	252
1973	425	477	510	544	544	544	527	498	460	446	397	391	0	17	46	84	98	147	153	6	2	1	1	1	1	1	13	0	-17	-29	-38	-14	-49	-6	6	2	1	1	3	1	4	18	234
1974	421	468	494	534	544	544	541	526	494	462	428	453	0	3	18	50	82	116	91	6	5	2	1	1	1	1	17	0	-3	-15	-32	-32	-34	25	6	5	3	1	1	1	6	23	391
1975	480	502	514	544	544	544	534	518	490	457	418	437	0	10	26	54	87	126	107	6	3	1	1	1	1	1	14	0	-10	-16	-28	-33	-39	19	6	4	2	1	1	1	6	21	294
1976	475	499	514	542	544	544	522	496	470	479	431	425	0	22	48	74	65	113	119	6	1	1	1	1	1	1	12	0	-22	-26	-26	9	-48	-6	6	1	1	1	6	1	4	20	240
1977	425	433	437	453	453	453	455	448	434	412	406	422	91	89	96	110	132	138	122	1	1	1	1	1	1	1	7	0	2	-7	-14	-22	-6	16	6	6	4	3	1	4	6	30	210
1978	426	443	492	541	544	544	544	544	509	450	388	393	0	0	0	35	94	156	151	6	6	6	1	1	1	1	22	0	0	0	-35	-59	-62	5	6	6	6	1	1	1	6	27	594
1979	427	444	456	499	535	544	529	503	468	454	397	401	0	15	41	76	90	147	143	6	2	1	1	1	1	1	13	9	-15	-26	-35	-14	-57	4	6	3	1	1	3	1	6	21	273
1980	429	464	502	544	544	544	544	541	517	484	434	451	0	0	3	27	60	110	93	6	6	5	1	1	1	1	21	0	0	-3	-24	-33	-50	17	6	6	5	1	1	1	6	26	546
1981	492	511	524	544	544	544	525	488	443	445	407	396	0	19	56	101	99	137	148	6	2	1	1	1	1	1	13	0	-19	-37	-45	2	-38	-11	6	2	1	1	6	1	3	20	260
1982	420	472	515	544	544	544	544	544	531	482	443	466	0	0	0	13	62	101	78	6	6	6	3	1	1	1	24	0	0	0	-13	-49	-39	23	6	6	6	3	1	1	6	29	696
1983	495	507	513	544	544	544	544	544	535	522	507	514	0	0	0	9	22	37	30	6	6	6	4	1	1	1	25	0	0	0	-9	-13	-15	7	6	6	6	4	3	3	6	34	850
1984	529	540	544	544	544	544	524	492	437	425	400	392	0	20	52	107	119	144	152	6	1	1	1	1	1	1	12	0	-20	-32	-55	-12	-25	-8	6	2	1	1	3	1	4	18	216
1985	429	474	497	529	544	544	513	474	416	413	398	377	0	31	70	128	131	146	167	6	1	1	1	1	1	1	12	0	-31	-39	-58	-3	-15	-21	6	1	1	1	5	3	1	18	216
1986	381	384	422	493	535	544	544	543	528	464	432	439	0	0	1	16	80	112	105	6	6	5	2	1	1	1	22	9	0	-1	-15	-64	-32	7	6	6	5	3	1	1	6	28	616
1987	466	479	501	541	544	544	521	487	455	453	412	397	0	23	57	89	91	132	147	6	1	1	1	1	1	1	12	0	-23	-34	-32	-2	-41	-15	6	1	1	1	5	1	3	18	216
1988	407	405	450	515	515	515	500	482	469	453	419	414	29	44	62	75	91	125	130	1	1	1	1	1	1	1	7	0	-15	-18	-13	-16	-34	-5	6	3	2	3	2	1	5	22	154
1989	414	435	459	498	498	538	521	490	448	444	387	397	6	23	54	96	100	157	147	4	1	1	1	1	1	1	10	40	-17	-31	-42	-4	-57	10	6	2	1	1	5	1	6	22	220
1990	410	427	452	511	526	529	512	486	464	459	406	396	15	32	58	80	85	138	148	2	1	1	1	1	1	1	8	1	-17	-26	-22	-5	-53	-10	6	2	1	1	5	1	4	20	160
1991	396	400	402	417	417	480	478	467	443	419	402	407	64	66	77	101	125	142	137	1	1	1	1	1	1	1	7	63	-2	-11	-24	-24	-17	5	6	5	3	1	1	2	6	24	168
1992	410	423	438	482	524	544	530	509	491	459	411	404	0	14	35	53	85	133	140	6	3	1	1	1	1	1	14	20	-14	-21	-18	-32	-48	-7	6	3	1	2	1	1	4	18	252
1993	404	411	456	521	536	544	537	523	503	482	396	389	0	7	21	41	82	148	155	6	4	1	1	1	1	1	15	8	-7	-14	-20	-41	-66	-7	6	4	3	2	1	1	4	21	315
1994	406	452	475	503	537	535	504	463	420	427	414	408	9	40	81	124	117	130	136	4	1	1	1	1	1	1	10	-2	-31	-41	-43	7	-13	-8	5	1	1	1	6	3	4	21	210
																									73 - year Average:		14														73 - year Average:	22	313.5
																																										1929 - '34 Average:	192.2

A2-174

STUDY: 1995C06F-SWRCB-506 DWRSIM: recirc818-f, 17 Jun 97
CP # 4, SHASTA LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-506/4/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 1067'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	989	993	999	1,003	1,019	1,038	1,060	1,067	1,062	1,048	1,031	1,025	29	7	0	5	19	36	42
1923	1,023	1,017	1,019	1,023	1,020	1,021	1,033	1,029	1,015	997	979	977	46	34	38	52	70	88	90
1924	979	979	979	979	987	987	976	962	947	925	907	893	80	91	105	120	142	160	174
1925	898	909	918	928	999	1,014	1,045	1,055	1,050	1,033	1,019	1,016	53	22	12	17	34	48	51
1926	1,013	1,011	1,008	1,004	1,031	1,032	1,044	1,039	1,019	995	978	971	35	23	28	48	72	89	96
1927	970	994	1,017	1,035	1,026	1,052	1,067	1,067	1,058	1,045	1,029	1,023	15	0	0	9	22	38	44
1928	1,021	1,017	1,020	1,028	1,044	1,046	1,066	1,062	1,048	1,023	1,002	996	21	1	5	19	44	65	71
1929	994	994	994	994	1,000	1,002	1,004	998	991	975	957	950	65	63	69	76	92	110	117
1930	949	947	978	989	1,006	1,028	1,039	1,039	1,023	1,004	990	988	39	28	28	44	63	77	79
1931	985	983	980	982	984	990	982	972	964	946	934	921	77	85	95	103	121	133	146
1932	916	915	931	941	950	974	977	985	978	964	950	944	93	90	82	89	103	117	123
1933	942	938	939	941	943	977	985	988	984	967	952	946	90	82	79	83	100	115	121
1934	945	943	951	969	987	998	998	993	985	955	932	917	69	69	74	82	112	135	150
1935	912	923	928	948	967	990	1,034	1,040	1,033	1,014	1,001	996	77	33	27	34	53	66	71
1936	992	989	986	1,010	1,032	1,043	1,052	1,050	1,042	1,022	1,002	997	24	15	17	25	45	65	70
1937	993	989	985	979	980	1,007	1,036	1,044	1,040	1,022	1,003	996	60	31	23	27	45	64	71
1938	993	1,015	1,020	1,035	1,030	1,024	1,049	1,067	1,067	1,058	1,045	1,036	43	18	0	0	9	22	31
1939	1,023	1,017	1,020	1,022	1,024	1,039	1,031	1,024	1,000	980	952	949	28	36	43	67	87	115	118
1940	945	940	949	996	1,017	1,025	1,059	1,064	1,053	1,033	1,017	1,015	42	8	3	14	34	50	52
1941	1,013	1,013	1,019	1,020	1,024	1,045	1,064	1,067	1,067	1,058	1,047	1,036	22	3	0	0	9	20	31
1942	1,023	1,017	1,020	1,023	1,028	1,042	1,067	1,067	1,067	1,058	1,046	1,036	25	0	0	0	9	21	31
1943	1,023	1,017	1,022	1,030	1,042	1,051	1,067	1,067	1,059	1,046	1,031	1,025	16	0	0	8	21	36	42
1944	1,023	1,017	1,015	1,014	1,023	1,033	1,038	1,038	1,021	997	977	970	34	29	29	46	70	90	97
1945	972	983	997	1,005	1,039	1,052	1,064	1,067	1,062	1,041	1,023	1,018	15	3	0	5	26	44	49
1946	1,017	1,017	1,018	1,033	1,039	1,050	1,062	1,064	1,056	1,039	1,023	1,020	17	5	3	11	28	44	47
1947	1,017	1,017	1,018	1,014	1,021	1,040	1,046	1,037	1,023	1,000	983	977	27	21	30	44	67	84	90
1948	982	984	985	1,009	1,008	1,019	1,057	1,067	1,067	1,053	1,038	1,036	48	10	0	0	14	29	31
1949	1,023	1,017	1,016	1,012	1,016	1,050	1,063	1,064	1,050	1,029	1,011	1,007	17	4	3	17	38	56	60
1950	1,003	999	995	1,003	1,016	1,033	1,046	1,045	1,033	1,011	994	992	34	21	22	34	56	73	75
1951	1,005	1,017	1,020	1,033	1,040	1,057	1,064	1,067	1,051	1,030	1,012	1,010	10	3	0	16	37	55	57
1952	1,008	1,013	1,019	1,032	1,038	1,048	1,058	1,067	1,067	1,058	1,046	1,036	19	9	0	0	9	21	31
1953	1,023	1,017	1,021	1,022	1,033	1,051	1,065	1,067	1,067	1,058	1,046	1,036	16	2	0	0	9	21	31
1954	1,023	1,017	1,021	1,030	1,035	1,051	1,067	1,064	1,059	1,042	1,030	1,030	16	0	3	8	25	37	37
1955	1,023	1,017	1,022	1,024	1,027	1,025	1,039	1,047	1,031	1,007	989	988	42	28	20	36	60	78	79
1956	986	989	1,017	1,017	1,019	1,048	1,067	1,067	1,067	1,058	1,047	1,036	19	0	0	0	9	20	31
1957	1,023	1,017	1,016	1,017	1,035	1,052	1,058	1,067	1,060	1,043	1,029	1,032	15	9	0	7	24	38	35
1958	1,023	1,017	1,021	1,029	1,067	1,024	1,053	1,067	1,067	1,058	1,047	1,036	43	14	0	0	9	20	31
1959	1,023	1,017	1,017	1,034	1,039	1,050	1,054	1,054	1,036	1,012	995	999	17	13	13	31	55	72	68
1960	996	994	991	997	1,025	1,052	1,059	1,067	1,050	1,030	1,012	1,010	15	8	0	17	37	55	57
1961	1,007	1,009	1,021	1,026	1,044	1,057	1,064	1,067	1,049	1,025	1,005	1,004	10	3	0	18	42	62	63
1962	1,000	1,003	1,014	1,016	1,035	1,050	1,062	1,063	1,051	1,031	1,014	1,011	17	5	4	16	36	53	56
1963	1,023	1,017	1,021	1,025	1,045	1,055	1,052	1,067	1,063	1,052	1,040	1,036	12	15	0	4	15	27	31
1964	1,023	1,017	1,018	1,033	1,034	1,038	1,032	1,027	1,012	991	971	969	29	35	40	55	76	96	98
1965	968	978	1,017	1,022	1,040	1,052	1,065	1,066	1,057	1,042	1,032	1,030	15	2	1	10	25	35	37
1966	1,023	1,017	1,021	1,037	1,049	1,055	1,067	1,064	1,049	1,030	1,015	1,012	12	0	3	18	37	52	55
1967	1,008	1,017	1,021	1,030	1,044	1,048	1,064	1,067	1,067	1,058	1,047	1,036	19	3	0	0	9	20	31
1968	1,023	1,017	1,019	1,025	1,034	1,054	1,056	1,058	1,042	1,022	1,015	1,012	13	11	9	25	45	52	55
1969	1,012	1,013	1,021	1,022	1,027	1,048	1,063	1,067	1,067	1,058	1,047	1,036	19	4	0	0	9	20	31
1970	1,023	1,017	1,020	1,017	1,025	1,052	1,055	1,055	1,044	1,025	1,012	1,010	15	12	12	23	42	55	57
1971	1,010	1,017	1,020	1,028	1,040	1,043	1,063	1,067	1,067	1,058	1,047	1,036	24	4	0	0	9	20	31
1972	1,023	1,017	1,022	1,033	1,045	1,056	1,067	1,067	1,051	1,032	1,018	1,018	11	0	0	16	35	49	49
1973	1,020	1,017	1,021	1,030	1,034	1,053	1,065	1,067	1,058	1,044	1,033	1,032	14	2	0	9	23	34	35
1974	1,023	1,017	1,016	1,017	1,036	1,024	1,058	1,067	1,067	1,058	1,047	1,036	43	9	0	0	9	20	31
1975	1,023	1,017	1,021	1,024	1,045	1,039	1,061	1,067	1,067	1,058	1,047	1,036	28	6	0	0	9	20	31
1976	1,023	1,017	1,018	1,017	1,012	1,017	1,024	1,020	996	974	970	972	50	43	47	71	93	97	95
1977	975	976	976	977	968	967	949	944	923	905	888	884	100	118	123	144	162	179	183
1978	873	872	916	1,019	1,031	1,047	1,067	1,067	1,064	1,057	1,047	1,036	20	0	0	3	10	20	31
1979	1,023	1,017	1,015	1,018	1,029	1,046	1,053	1,062	1,051	1,034	1,022	1,020	21	14	5	16	33	45	47
1980	1,020	1,017	1,020	1,029	1,019	1,046	1,059	1,064	1,056	1,045	1,035	1,035	21	8	3	11	22	32	32
1981	1,023	1,017	1,020	1,029	1,042	1,056	1,064	1,062	1,042	1,019	1,003	1,000	11	3	5	25	48	64	67
1982	999	1,017	1,018	1,033	1,029	1,046	1,051	1,067	1,067	1,058	1,047	1,036	21	16	0	0	9	20	31
1983	1,023	1,017	1,020	1,022	1,017	1,045	1,050	1,067	1,067	1,058	1,047	1,036	22	17	0	0	9	20	31
1984	1,023	1,017	1,016	1,034	1,047	1,056	1,064	1,067	1,060	1,044	1,038	1,036	11	3	0	7	23	29	31
1985	1,023	1,017	1,022	1,023	1,027	1,034	1,042	1,034	1,012	993	977	979	33	25	33	55	74	90	88
1986	982	985	993	1,017	1,017	1,029	1,047	1,049	1,037	1,020	1,005	1,008	38	20	18	30	47	62	59
1987	1,008	1,007	1,007	1,008	1,018	1,045	1,045	1,039	1,008	985	957	951	22	22	28	59	82	110	116
1988	947	948	960	1,001	1,003	1,005	1,010	1,010	992	961	946	942	62	57	57	75	106	121	125
1989	942	955	962	969	976	1,039	1,058	1,054	1,040	1,020	1,009	1,009	28	9	13	27	47	58	58
1990	1,011	1,009	1,005	1,011	1,011	1,017	1,012	1,018	1,003	982	962	959	50	55	49	64	85	105	108
1991	953	951	950	951	947	973	984	984	974	961	946	940	94	83	83	93	106	121	127
1992	939	937	938	942	980	1,002	1,014	1,007	993	975	962	955	65	53	60	74	92	105	112
1993	951	949	968	998	1,029	1,031	1,059	1,067	1,067	1,056	1,048	1,048	36	8	0	0	11	19	19
1994	1,043	1,017	1,019	1,020	1,026	1,027	1,027	1,026	999	979	967	954	40	40	41	68	88	110	113

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	4	6	4	2	1	1	19	19	22	7	-5	-14	-17	-6	6	6	6	5	3	2	4	32	608
1923	1	1	1	1	1	1	1	7	1	12	-4	-14	-18	-18	-2	6	6	5	3	2	2	5	29	203
1924	1	1	1	1	1	1	1	7	0	-11	-14	-15	-22	-18	-14	6	3	3	3	1	2	3	21	147
1925	1	1	3	2	1	1	1	10	15	31	10	-5	-17	-14	-3	6	6	6	5	2	3	5	33	330
1926	1	1	1	1	1	1	1	7	1	12	-5	-20	-24	-17	-7	6	6	5	2	1	2	4	26	182
1927	2	6	6	4	1	1	1	21	26	15	0	-9	-13	-16	-6	6	6	6	4	3	2	4	31	651
1928	1	5	4	2	1	1	1	15	2	20	-4	-14	-25	-21	-6	6	6	5	3	1	1	4	26	390
1929	1	1	1	1	1	1	1	7	2	2	-6	-7	-16	-18	-7	6	6	4	4	2	2	4	28	196
1930	1	1	1	1	1	1	1	7	22	11	0	-16	-19	-14	-2	6	6	6	2	2	3	5	30	210
1931	1	1	1	1	1	1	1	7	6	-8	-10	-8	-18	-12	-13	6	4	4	4	2	3	3	26	182
1932	1	1	1	1	1	1	1	7	24	3	8	-7	-14	-14	-6	6	6	6	4	3	3	4	32	224
1933	1	1	1	1	1	1	1	7	34	8	3	-4	-17	-15	-6	6	6	6	5	2	3	4	32	224
1934	1	1	1	1	1	1	1	7	11	0	-5	-8	-30	-23	-15	6	6	5	4	1	1	3	26	182
1935	1	1	1	1	1	1	1	7	23	44	6	-7	-19	-13	-5	6	6	6	4	2	3	5	32	224
1936	1	2	2	1	1	1	1	9	11	9	-2	-8	-20	-20	-5	6	6	5	4	2	2	5	30	270
1937	1	1	1	1	1	1	1	7	27	29	8	-4	-18	-19	-7	6	6	6	5	2	2	4	31	217
1938	1	2	6	6	4	1	1	21	-6	25	18	0	-9	-13	-9	4	6	6	6	4	3	4	33	693
1939	1	1	1	1	1	1	1	7	15	-8	-7	-24	-20	-28	-3	6	4	4	1	2	1	5	23	161
1940	1	4	5	3	1	1	1	16	8	34	5	-11	-20	-16	-2	6	6	6	3	2	2	5	30	480
1941	1	5	6	6	4	1	1	24	21	19	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1942	1	6	6	6	4	1	1	25	14	25	0	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1943	2	6	6	4	1	1	1	21	9	16	0	-8	-13	-15	-6	6	6	6	4	3	3	4	32	672
1944	1	1	1	1	1	1	1	7	10	5	0	-17	-24	-20	-7	6	6	6	2	1	2	4	27	189
1945	2	5	6	4	1	1	1	20	13	12	3	-5	-21	-18	-5	6	6	6	5	1	2	5	31	620
1946	2	4	5	3	1	1	1	17	11	12	2	-8	-17	-16	-3	6	6	6	4	2	2	5	31	527
1947	1	1	1	1	1	1	1	7	19	6	-9	-14	-23	-17	-6	6	6	4	3	1	2	4	26	182
1948	1	3	6	6	3	1	1	21	11	38	10	0	-14	-15	-2	6	6	6	6	3	3	5	35	735
1949	2	5	5	2	1	1	1	17	34	13	1	-14	-21	-18	-4	6	6	6	3	1	2	5	29	493
1950	1	1	1	1	1	1	1	7	17	13	-1	-12	-22	-17	-2	6	6	5	3	1	2	5	28	196
1951	3	5	6	2	1	1	1	19	17	7	3	-16	-21	-18	-2	6	6	6	2	1	2	5	28	532
1952	2	4	6	6	4	1	1	24	10	10	9	0	-9	-12	-10	6	6	6	6	4	3	4	35	840
1953	2	5	6	6	4	1	1	25	18	14	2	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1954	2	6	5	4	1	1	1	20	16	16	-3	-5	-17	-12	0	6	6	5	5	2	3	6	33	660
1955	1	1	1	1	1	1	1	7	-2	14	8	-16	-24	-18	-1	5	6	6	2	1	2	5	27	189
1956	2	6	6	6	4	1	1	26	29	19	0	0	-9	-11	-11	6	6	6	6	4	3	3	34	884
1957	2	4	6	4	1	1	1	19	17	6	9	-7	-17	-14	3	6	6	6	4	2	3	6	33	627
1958	1	3	6	6	4	1	1	22	-43	29	14	0	-9	-11	-11	1	6	6	6	4	3	3	29	638
1959	2	3	3	1	1	1	1	12	11	4	0	-18	-24	-17	4	6	6	6	2	1	2	6	29	348
1960	2	4	6	2	1	1	1	17	27	7	8	-17	-20	-18	-2	6	6	6	2	2	2	5	29	493
1961	3	5	6	2	1	1	1	19	13	7	3	-18	-24	-20	-1	6	6	6	2	1	2	5	28	532
1962	2	4	5	2	1	1	1	16	15	12	1	-12	-20	-17	-3	6	6	6	3	2	2	5	30	480
1963	3	2	6	5	2	1	1	20	10	-3	15	-4	-11	-12	-4	6	5	6	5	3	3	5	33	660
1964	1	1	1	1	1	1	1	7	4	-6	-5	-15	-21	-20	-2	6	4	5	3	1	2	5	26	182
1965	2	5	5	3	1	1	1	18	12	13	1	-9	-15	-10	-2	6	6	6	4	3	4	5	34	612
1966	3	6	5	2	1	1	1	19	6	12	-3	-15	-19	-15	-3	6	6	5	3	2	3	5	30	570
1967	2	5	6	6	4	1	1	25	4	16	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1968	3	3	4	1	1	1	1	14	20	2	2	-16	-20	-7	-3	6	6	6	2	2	4	5	31	434
1969	2	5	6	6	4	1	1	25	21	15	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1970	2	3	3	1	1	1	1	12	27	3	0	-11	-19	-13	-2	6	6	6	3	2	3	5	31	372
1971	1	5	6	6	4	1	1	24	3	20	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1972	3	6	6	2	1	1	1	20	11	11	0	-16	-19	-14	0	6	6	6	2	2	3	6	31	620
1973	3	5	6	4	1	1	1	21	19	12	2	-9	-14	-11	-1	6	6	6	4	3	3	5	33	693
1974	1	4	6	6	4	1	1	23	-12	34	9	0	-9	-11	-11	3	6	6	6	4	3	3	31	713
1975	1	4	6	6	4	1	1	23	-6	22	6	0	-9	-11	-11	4	6	6	6	4	3	3	32	736
1976	1	1	1	1	1	1	1	7	5	7	-4	-24	-22	-4	2	6	6	5	1	1	5	6	30	210
1977	1	1	1	1	1	1	1	7	-1	-18	-5	-21	-18	-17	-4	5	2	5	1	2	2	5	22	154
1978	1	6	6	5	3	1	1	23	16	20	0	-3	-7	-10	-11	6	6	6	5	4	4	3	34	782
1979	1	3	4	2	1	1	1	13	17	7	9	-11	-17	-12	-2	6	6	6	3	2	3	5	31	403
1980	1	4	5	3	1	1	1	16	27	13	5	-8	-11	-10	0	6	6	6	4	3	4	6	35	560
1981	3	5	4	1	1	1	1	16	14	8	-2	-20	-23	-16	-3	6	6	5	2	1	2	5	27	432
1982	1	2	6	6	4	1	1	21	17	5	16	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1983	1	2	6	6	4	1	1	21	28	5	17	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1984	3	5	6	4	1	1	1	21	9	8	3	-7	-16	-6	-2	6	6	6	4	2	4	5	33	693
1985	1	1	1	1	1	1	1	7	7	8	-8	-22	-19	-16	2	6	6	4	1	2	2	6	27	189
1986	1	1	2	1	1	1	1	8	12	18	2	-12	-17	-15	3	6	6	6	3	2	3	6	32	256
1987	1	1	1	1	1	1	1	7	27	0	-6	-31	-23	-28	-6	6	6	4	1	1	1	4	23	161
1988	1	1	1	1	1	1	1	7	2	5	0	-18	-31	-15	-4	6	6	6	2	1	3	5	29	203
1989	1	4	3	1	1	1	1	12	63	19	-4	-14	-20	-11	0	6	6	5	3	2	3	6	31	372
1990	1	1	1	1	1	1	1	7	6	-5	6	-15	-21	-20	-3	6	5	6	3	1	2	5	28	196
1991	1	1	1	1	1	1	1	7	26	11	0	-10	-13	-15	-6	6	6	6	4	3	3	4	32	224
1992	1	1	1	1	1	1	1	7	22	12	-7	-14	-18	-13	-7	6	6	4	3	2	3	4	28	196
1993	1	4	6	6	3	2	2	24	2	28	8	0	-11	-8	0	6	6	6	6	3	4	6	37	888
1994	1	1	1	1	1	1	1	7	1	0	-1	-27	-20	-22	-3	6	6	5	1	2	1	5	26	182

73 - year Average: 15

73 - year Average: 30 463.2
1929 - '34 Average: 203.0

A2-175

STUDY: 1995C06F-SWRCB-506 DWRSIM: recirc818-f, 17 Jun 97
CP # 6, LAKE OROVILLE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-506/6/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 900'

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE]							Reservoir Elevation Score								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Score								Largemouth Bass Reservoir Habitat Index
													MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	833	833	835	844	850	858	893	900	900	880	876	877	42	7	0	0	20	24	23	1	4	6	6	1	1	1	20	8	35	7	0	-20	-4	1	6	6	6	6	2	5	6	37	740
1923	874	874	858	862	859	868	891	897	881	843	811	814	32	9	3	19	57	89	86	1	4	5	2	1	1	1	15	9	23	6	-16	-38	-32	3	6	6	6	2	1	1	6	28	420
1924	802	791	783	768	787	776	763	752	731	712	704	697	124	137	148	169	188	196	203	1	1	1	1	1	1	1	7	-11	-13	-11	-21	-19	-8	-7	3	3	3	1	2	4	4	20	140
1925	698	702	709	726	792	820	838	846	831	804	793	791	80	62	54	69	96	107	109	1	1	1	1	1	1	1	7	28	18	8	-15	-27	-11	-2	6	6	6	3	1	3	5	30	210
1926	777	779	781	795	837	857	887	874	854	814	801	786	43	13	26	46	86	99	114	1	3	1	1	1	1	1	9	20	30	-13	-20	-40	-13	-15	6	6	3	2	1	3	3	24	216
1927	787	798	798	826	849	863	890	900	900	865	856	853	37	10	0	0	35	44	47	1	3	6	6	1	1	1	19	14	27	10	0	-35	-9	-3	6	6	6	6	1	4	5	34	646
1928	851	861	862	868	871	849	878	863	843	791	739	732	51	22	37	57	109	161	168	1	1	1	1	1	1	1	7	-22	29	-15	-20	-52	-52	-7	1	6	3	2	1	1	4	18	126
1929	719	714	712	717	731	748	751	753	748	732	723	716	152	149	147	152	168	177	184	1	1	1	1	1	1	1	7	17	3	2	-5	-16	-9	-7	6	6	6	5	2	4	4	33	231
1930	708	705	766	794	821	852	874	877	861	823	790	787	48	26	23	39	77	110	113	1	1	1	1	1	1	1	7	31	22	3	-16	-38	-33	-3	6	6	6	2	1	1	5	27	189
1931	776	768	760	773	786	801	788	773	749	727	717	710	99	112	127	151	173	183	190	1	1	1	1	1	1	1	7	15	-13	-15	-24	-22	-10	-7	6	3	3	1	1	4	4	22	154
1932	704	695	700	724	747	780	785	809	779	727	710	704	120	115	91	121	173	190	196	1	1	1	1	1	1	1	7	33	5	24	-30	-52	-17	-6	6	6	6	1	1	2	4	26	182
1933	695	683	682	693	703	708	711	728	721	707	697	690	192	189	172	179	193	203	210	1	1	1	1	1	1	1	7	5	3	17	-7	-14	-10	-7	6	6	6	4	3	4	4	33	231
1934	686	677	680	707	730	758	751	741	719	697	688	681	142	149	159	181	203	212	219	1	1	1	1	1	1	1	7	28	-7	-10	-22	-22	-9	-7	6	4	4	1	1	4	4	24	168
1935	669	673	680	708	731	762	851	861	846	823	813	798	138	49	39	54	77	87	102	1	1	1	1	1	1	1	7	31	89	10	-15	-23	-10	-15	6	6	6	3	1	4	3	29	203
1936	790	780	778	826	849	860	886	897	886	847	827	824	40	14	3	14	53	73	76	1	3	5	3	1	1	1	15	11	26	11	-11	-39	-20	-3	6	6	6	3	1	2	5	29	435
1937	817	805	801	804	821	845	870	883	862	836	823	819	55	30	17	38	64	77	81	1	1	2	1	1	1	1	8	24	25	13	-21	-26	-13	-4	6	6	6	1	1	3	5	28	224
1938	814	828	854	858	849	849	882	900	900	899	896	887	51	18	0	0	1	4	13	1	2	6	6	5	5	3	28	0	33	18	0	-1	-3	-9	6	6	6	6	5	5	4	38	1064
1939	874	864	854	845	837	833	822	814	779	715	659	653	67	78	86	121	185	241	247	1	1	1	1	1	1	1	7	-4	-11	-8	-35	-64	-56	-6	5	3	4	1	1	1	4	19	133
1940	643	632	635	706	815	849	879	884	871	834	826	817	51	21	16	29	66	74	83	1	1	2	1	1	1	1	8	34	30	5	-13	-37	-8	-9	6	6	6	3	1	4	4	30	240
1941	806	807	848	849	849	858	886	900	900	890	886	887	42	14	0	0	10	14	13	1	3	6	6	3	3	3	25	9	28	14	0	-10	-4	1	6	6	6	6	4	5	6	39	975
1942	874	874	849	849	850	867	882	900	900	886	882	883	33	18	0	0	14	18	17	1	2	6	6	3	2	2	22	17	15	18	0	-14	-4	1	6	6	6	6	3	5	6	38	836
1943	874	869	861	849	858	859	887	893	892	860	850	851	41	13	7	8	40	50	49	1	3	4	4	1	1	1	15	3	28	6	-1	-32	-10	1	6	6	6	5	1	4	6	34	510
1944	852	854	853	860	857	868	879	895	876	836	800	794	32	21	5	24	64	100	106	1	1	4	1	1	1	1	10	11	11	16	-19	-40	-36	-6	6	6	6	2	1	1	4	26	260
1945	789	796	812	825	862	865	880	896	877	837	816	811	35	20	4	23	63	84	89	1	1	5	1	1	1	1	11	3	15	16	-19	-40	-21	-5	6	6	6	2	1	1	5	27	297
1946	811	819	849	864	868	868	887	892	871	833	791	788	32	13	8	29	67	109	112	1	3	4	1	1	1	1	12	0	19	5	-21	-38	-42	-3	6	6	6	1	1	1	5	26	312
1947	780	786	794	800	826	847	857	852	835	783	729	722	53	43	48	65	117	171	178	1	1	1	1	1	1	1	7	22	10	-5	-17	-52	-54	-7	6	6	5	2	1	1	4	25	175
1948	725	727	722	758	761	781	841	870	876	843	827	821	119	59	30	24	57	73	79	1	1	1	1	1	1	1	7	20	60	29	6	-33	-16	-6	6	6	6	6	1	2	4	31	217
1949	814	812	812	817	823	843	862	866	845	799	754	749	57	38	34	55	101	146	151	1	1	1	1	1	1	1	7	20	19	4	-21	-46	-45	-5	6	6	6	1	1	1	5	26	182
1950	736	736	737	767	815	848	879	898	893	855	827	827	54	21	2	7	45	73	73	1	1	5	4	1	1	1	14	31	33	19	-5	-38	-28	0	6	6	6	5	1	1	6	31	434
1951	830	849	854	853	858	870	886	900	891	850	822	823	30	14	0	9	50	78	77	1	3	6	4	1	1	1	17	12	16	14	-9	-41	-28	1	6	6	6	4	1	1	6	30	510
1952	827	830	849	849	852	862	894	900	900	900	899	887	38	6	0	0	0	1	13	1	4	6	6	6	5	3	31	10	32	6	0	0	-1	-12	6	6	6	6	6	5	3	38	1178
1953	874	874	858	850	867	867	883	900	900	870	869	870	33	17	0	0	30	31	30	1	2	6	6	1	1	1	18	0	16	17	0	-30	-1	1	6	6	6	6	1	5	6	36	648
1954	872	871	874	858	857	859	883	863	848	800	754	754	41	17	37	52	100	146	146	1	2	1	1	1	1	1	8	2	24	-20	-15	-48	-46	0	6	6	2	3	1	1	6	25	200
1955	755	757	765	778	787	799	809	823	797	735	715	712	101	91	77	103	165	185	188	1	1	1	1	1	1	1	7	12	10	14	-26	-62	-20	-3	6	6	6	1	1	2	5	27	189
1956	703	699	849	849	849	864	892	900	900	872	870	873	36	8	0	0	28	30	27	1	4	6	6	1	1	1	20	15	28	8	0	-28	-2	3	6	6	6	6	1	5	6	36	720
1957	869	874	874	871	853	863	863	881	866	828	790	796	37	37	19	34	72	110	104	1	1	2	1	1	1	1	8	10	0	18	-15	-38	-38	6	6	6	6	3	1	1	6	29	232
1958	798	802	822	842	849	849	879	900	900	898	894	887	51	21	0	0	2	6	13	1	1	6	6	5	4	3	26	0	30	21	0	-2	-4	-7	6	6	6	6	5	5	4	38	988
1959	874	874	874	862	852	867	871	874	853	808	758	762	33	29	26	47	92	142	138	1	1	1	1	1	1	1	7	15	4	3	-21	-45	-50	4	6	6	6	1	1	1	6	27	189
1960	755	744	739	753	815	854	854	860	841	801	789	780	46	46	40	59	99	111	120	1	1	1	1	1	1	1	7	39	0	6	-19	-40	-12	-9	6	6	6	2	1	3	4	28	196
1961	769	772	781	792	822	839	839	844	825	767	716	712	61	61	56	75	133	184	188	1	1	1	1	1	1	1	7	17	0	5	-19	-58	-51	-4	6	6	6	2	1	1	5	27	189
1962	695	690	700	714	778	814	837	836	821	762	734	713	86	63	64	79	138	166	187	1	1	1	1	1	1	1	7	36	23	-1	-15	-59	-28	-21	6	6	5	3	1	1	1	23	161
1963	788	800	832	855	867	858	876	900	893	857	846	847	42	24	0	7	43	54	53	1	1	6	4	1	1	1	15	-9	18	24	-7	-36	-11	1	4	6	6	4	1	3	6	30	450
1964	848	859	862	866	874	874	880	885	889	829	783	758	26	20	15	31	71	117	142	1	1	2	1	1	1	1	8	0	6	5	-16	-40	-46	-25	6	6	6	2	1	1	1	23	184
1965	746	746	849	849	863	870	887	881	883	853	847	848	30	13	19	17	47	53	52	1	3	2	2	1	1	1	11	7	17	-6	2	-30	-6	1	6	6	4	6	1	4	6	33	363
1966	852	859	860	864	870	874	894	882	862	822	774	768	26	6	18	38	78	126	132	1	4	2	1	1	1	1	11	4	20	-12	-20	-40	-48	-6	6	6	3	2	1	1	4	23	253
1967	765	785	803	849	860	853	879	900	900	900	896	887	47	21	0	0	0	4	13	1	1	6	6	6	5	3	28	-7	26	21	0	0	-4	-9	4	6	6	6	6	5	4	37	1036
1968	874	874	873	858	861	866	863	867	848	802	765	762	34	37	33	52	98	135	138	1	1	1	1	1	1	1	7	5	-3	4	-19	-48	-37	-3	6	5	6	2	1	1	5	26	182
1969	764	769	792	849	849	865	895	900	900	895	893	874	35	5	0	0	5	7	26	1	4	6	6	4	4	1	26	16	30	5	0	-5	-2	-19	6	6	6	6	5	5	2	36	936
1970	874	874	850	849	849	874	869	871	858	820	790	791	26	31	29	42	80	110	109	1	1	1	1	1	1	1	7	25	-5	2	-13	-38	-30	1	6	5	6	3	1	1	6	28	196
1971	794	820	848	864	874	874	893	900	900	872	853	856	26	7	0	0	28	47	44	1	4	6	6	1	1	1	20	0	19	7	0	-28	-19	3	6	6	6	6	1	2	6	33	660
1972	861	866	865	869	867	874	884	887	868	829	786	787	26	16	13	32	71	114	113	1	2	3	1	1	1	1	10	7	10	3	-19	-39	-43	1	6	6	6	2	1	1	6	28	280
1973	783	798	823	849	849	860	882	900	879	841	820	817	40	18	0	21	59	80	83	1	2	6	1	1	1	1	13	11	22	18	-21	-38	-21	-3	6	6	6	1	1	1	5	26	338
1974	820	849	850	854	859	849	883	900	900	889	888	886	51	17	0	0	11	12	14	1	2	6	6	3	3	3	24	-10	34	17	0	-11	-1	-2	4	6	6	6	3	5	5	35	840
1975	874	874	874	874	855	852	881	900	900	878	876	878	48	19	0	0	22	24	22	1	2	6	6	1	1	1	18	-3	29	19	0	-22	-2	2	5	6	6	6	1	5	6	35	630
1976	873	874	874	874	874	874	871	862	840	796	752	752	26	29	38	60	104	148	148	1	1	1	1	1	1	1	7	0	-3	-9	-22	-44	-44	0	6	5	4	1	1	1	6	24	168
1977	740	729	712	708	693	688	663	652	624	602	593	590	212	237	248	276	298	307	310	1	1	1	1	1	1	1	7	-5	-25	-11	-28	-22	-9	-3	5	1	3	1	1	4	5	20	140
1978	580	579	616	743	797	859	878	897	893	876	867	874	41	22	3	7	24	33	26	1	1	5	4	1	1	1	14	62	19	19	-4	-17	-9	7	6	6	6	5	2	4	6	35	490
1979	874	874	874	871	853	863	878	896	865	831	822	820	37	22	4	35	69	78	80	1	1	5	1	1	1	1	11	10	15	18	-31	-34	-9	-2	6	6	6	1	1	4	5	29	319
1980	824	828	836	850	849	865	881	893	888	873	866	865	35	19	7	12	27	34	35	1	2	4	3	1	1	1	13	16	16	12	-5	-15	-7	-1	6	6	6	5	3	4	5	35	455
1981	864	865	873	860	868	865	875	872	851	807	763	764	35	25	28	49	93	137	136	1	1	1	1	1	1	1	7	-3	10	-3	-21	-44	-44	1	5	6	5	1	1	1	6	25	175
1982	771	849	849	859	862	859	884	900	900	889	886	887	41	16	0	0	11	14	13	1	2	6	6	3	3	3	24	-3	25	16	0	-11	-3	1	5	6	6	6	3	5	6	37	888
1983	873	862	858	853	849	849	877	900	900	899	887	851	51	23	0	0	0	1	13	1	1	6	6	6	5	3	28	0	28	23	0	0	-1	-12	6	6	6	6	6	5	3	38	1064
1984	874	860	849	869	869	871	885	894	879	842	833	834	29	15	6	21	58	67	68	1	2	4	1	1	1	1	11	2	14	9	-15	-37	-9	1	6	6	6	3	1	4	6	32	352
1985	838	852	862	868	874	871	886	872	850	807	759	745	29	14	28	50	93	141	155	1	3	1	1	1	1	1	9	-3	15	-14	-22	-43	-48	-14	5	6	3	1	1	1	3	20	180
1986	738	733	740	774	849	849	871	875	871	841	831	842	51	29	25	29	59	69	58	1	1	1	1	1	1	1	7	0	22	4	-4	-30	-10	11	6	6	6	5	1	4	6	34	238
1987	844	849	848	847	858	867	855	845	817	757	713	708	33	45	55	83	143	187	192	1	1	1	1	1	1	1	7	9	-12	-10	-28	-60	-44	-5	6	3	4	1	1	1	5	21	147
1988	696	698	738	765	768	768	767	756	733	713	701	699	132	133	144	167	187	199	201	1	1	1	1	1	1	1	7	0	-1	-11	-23	-20	-12	-2	6	5	3	1	2	3	5	25	175
1989	690	709	719	726	727	841	867	857	841	795	778	775	59	33	43	59	105	122	125	1	1	1	1	1	1	1	7	114	26	-10	-16	-46	-17	-3	6	6	4	2	1	2	5	26	182
1990	787	788	772	785	793	819	797	797	773	726	713	707	81	103	103	127	174	187	193	1	1	1	1	1	1	1	7	26	-22	0	-24	-47	-13	-6	6	1	6	1	1	3	4	22	154
1991	689	680	663	660	648	702	724	739	726	704	699	698	198	176	181	174	196	201	202	1	1	1	1	1	1	1	7	54	22	15	-13	-22	-5	-1	6	6	6	3	1	5	5	32	224
1992	693	688	690	693	725	754	769	760	736	712	700	694	146	131	140	164	188	200	206	1	1	1	1	1	1	1	7	29	15	-9	-24	-24	-12	-6	6	6	4	1	1	3	4	25	175
1993	685	679	698	785	817	861	894	900	900	881	877	876	39	6	0	0	19	23	24	1	4	6	6	2	1	1	21	44	33	6	0	-19	-4	-1	6	6	6	6	2	5	5	38	756
1994	874	874	874	871	852	874	872	866	845	803	756	751	26	28	34	55	97	144	149	1	1	1	1	1	1	1	7	12	-2	-6	-21	-42	-47	-5	6	5	4	1	1	1	5	23	161

73 - year Average: 12

73 - year Average: 29 388.2
1929 - '34 Average: 192.5

C-032516

C—032516

STUDY 1995C06F-SWRCB-506 DWRSIM. recirc818-f, 17 Jun 97
CP # 8, FOLSOM LAKE, EOP SURFACE ELEVATION (FT)
Project. /1995C06F-SWRCB-506/8/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 466'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Sco... ...le:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	414	409	414	414	424	428	443	466	466	463	449	434	38	23	0	0	3	17	32	1	1	6	6	5	2	1	22	4	15	23	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1923	425	423	424	424	419	420	449	466	452	435	429	426	46	17	0	14	31	37	40	1	2	6	3	1	1	1	15	1	29	17	-14	-17	-6	-3	6	6	6	3	2	4	5	32	480
1924	421	412	404	392	390	374	376	372	334	334	337	334	92	90	94	132	132	129	132	1	1	1	1	1	1	1	7	-16	2	-4	-38	0	3	-3	2	6	5	1	6	6	5	31	217
1925	348	363	379	389	424	437	449	466	454	439	428	422	29	17	0	12	27	38	44	1	2	6	3	1	1	1	15	13	12	17	-12	-15	-11	-6	6	6	6	3	3	3	4	31	465
1926	418	411	406	399	417	418	446	446	423	391	353	363	48	18	20	43	75	113	103	1	2	1	1	1	1	1	8	1	30	-2	-23	-32	-38	10	6	6	5	1	1	1	6	26	208
1927	369	405	424	424	424	437	449	466	461	457	449	434	29	17	0	5	9	17	32	1	2	6	4	4	2	1	20	13	12	17	-5	-4	-8	-15	6	6	6	5	5	4	3	35	700
1928	425	424	424	424	424	437	449	453	442	418	411	411	29	17	13	24	48	55	55	1	2	3	1	1	1	1	10	13	12	4	-11	-24	-7	0	6	6	6	3	1	4	6	32	320
1929	405	399	395	384	382	381	393	398	388	346	356	359	85	73	68	78	120	110	107	1	1	1	1	1	1	1	7	-1	12	5	-10	-42	10	3	5	6	6	4	1	2	6	34	238
1930	335	334	384	406	421	437	443	442	421	394	375	377	29	23	24	45	72	91	89	1	1	1	1	1	1	1	7	16	6	-1	-21	-27	-19	2	6	6	5	1	1	2	6	27	189
1931	374	384	392	402	407	414	410	408	353	334	339	334	52	56	58	113	132	127	132	1	1	1	1	1	1	1	7	7	-4	-2	-55	-19	5	-5	6	5	5	1	2	6	5	30	210
1932	334	334	380	402	424	424	432	450	435	394	366	370	42	34	16	31	72	100	96	1	1	2	1	1	1	1	8	0	8	18	-15	-41	-28	4	6	6	6	3	1	1	6	29	232
1933	342	334	355	366	369	382	356	379	347	334	355	351	84	108	87	119	132	111	115	1	1	1	1	1	1	1	7	13	-24	21	-32	-13	21	-4	6	1	6	1	3	6	5	28	196
1934	336	334	376	402	420	426	419	413	353	333	323	334	40	47	53	113	133	143	132	1	1	1	1	1	1	1	7	6	-7	-6	-60	-20	-10	11	6	4	4	1	2	4	6	27	189
1935	334	361	378	402	415	417	449	453	453	435	423	418	49	17	13	13	31	43	48	1	2	3	3	1	1	1	12	2	32	4	0	-18	-12	-5	6	6	6	6	2	3	5	34	408
1936	414	409	403	424	424	437	449	461	455	448	442	434	29	17	5	11	18	24	32	1	2	4	3	2	1	1	14	13	12	12	-6	-7	-6	-8	6	6	6	4	4	4	4	34	476
1937	425	417	411	404	424	437	449	466	454	444	439	434	29	17	0	12	22	27	32	1	2	6	3	1	1	1	15	13	12	17	-12	-10	-5	-5	6	6	6	3	4	5	5	35	525
1938	426	423	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1939	426	420	415	409	402	409	415	418	392	334	334	335	57	51	48	74	132	132	131	1	1	1	1	1	1	1	7	7	6	3	-26	-58	0	1	6	6	6	1	1	6	6	32	224
1940	334	334	334	420	424	437	449	461	447	430	423	425	29	17	5	19	36	43	41	1	2	4	2	1	1	1	12	13	12	12	-14	-17	-7	2	6	6	6	3	2	4	6	33	396
1941	420	415	424	424	424	437	449	466	458	455	449	434	29	17	0	8	11	17	32	1	2	6	4	3	2	1	19	13	12	17	-8	-3	-6	-15	6	6	6	4	5	4	3	34	646
1942	426	422	424	424	424	430	449	466	466	463	449	434	36	17	0	0	3	17	32	1	2	6	6	5	2	1	23	6	19	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1943	425	424	423	422	422	434	449	459	451	448	444	434	32	17	7	15	18	22	32	1	2	4	2	2	1	1	13	12	15	10	-8	-3	-4	-10	6	6	6	4	5	5	4	36	468
1944	425	419	413	405	407	419	420	433	418	396	384	376	47	46	33	50	70	82	90	1	1	1	1	1	1	1	7	12	1	13	-17	-20	-12	-8	6	6	6	2	2	3	4	29	203
1945	370	397	416	424	424	437	449	466	455	444	439	434	29	17	0	11	22	27	32	1	2	6	3	1	1	1	15	13	12	17	-11	-11	-5	-5	6	6	6	3	3	5	5	34	510
1946	427	424	424	424	424	437	449	466	453	440	435	432	29	17	0	13	26	31	34	1	2	6	3	1	1	1	15	13	12	17	-13	-13	-5	-3	6	6	6	3	3	5	5	34	510
1947	424	424	423	414	417	433	442	445	420	394	378	382	33	24	21	46	72	88	84	1	1	1	1	1	1	1	7	16	9	3	-25	-26	-16	4	6	6	6	1	1	2	6	28	196
1948	395	402	392	409	405	401	438	458	455	451	446	434	65	28	8	11	15	20	32	1	1	4	3	2	1	1	13	-4	37	20	-3	-4	-5	-12	5	6	6	5	5	3	3	35	455
1949	425	419	416	406	400	422	443	459	444	425	418	417	44	23	7	22	41	48	49	1	1	4	1	1	1	1	10	22	21	16	-15	-19	-7	-1	6	6	6	3	2	4	5	32	320
1950	411	405	398	422	424	437	449	466	455	444	439	434	29	17	0	11	22	27	32	1	2	6	3	1	1	1	15	13	12	17	-11	-11	-5	-5	6	6	6	3	3	5	5	34	510
1951	428	393	386	388	388	426	449	466	450	436	431	431	40	17	0	16	30	35	35	1	2	6	2	1	1	1	14	38	23	17	-16	-14	-5	0	6	6	6	2	3	5	6	34	476
1952	425	424	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1953	428	423	424	424	424	430	446	458	464	463	449	434	36	20	8	2	3	17	32	1	1	4	5	5	2	1	19	6	16	12	6	-1	-14	-15	6	6	6	6	5	3	3	35	665
1954	425	423	421	422	424	437	449	452	441	422	417	420	29	17	14	25	44	49	46	1	2	3	1	1	1	1	10	13	12	3	-11	-19	-5	3	6	6	6	3	2	5	6	34	340
1955	415	408	412	418	418	414	424	434	421	400	388	387	52	42	32	45	66	78	79	1	1	1	1	1	1	1	7	-4	10	10	-13	-21	-12	-1	5	6	6	3	1	3	5	29	203
1956	379	379	420	402	406	425	441	466	466	463	449	434	41	25	0	0	3	17	32	1	1	6	6	5	2	1	22	19	16	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1957	428	422	417	412	424	437	433	459	448	436	430	429	29	33	7	18	30	36	37	1	1	4	2	1	1	1	11	13	-4	26	-11	-12	-6	-1	6	5	6	3	3	4	5	32	352
1958	422	416	417	422	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1959	425	419	412	417	424	425	433	433	411	389	378	387	41	33	33	55	77	88	79	1	1	1	1	1	1	1	7	1	8	0	-22	-22	-11	9	6	6	6	1	1	3	6	29	203
1960	387	383	382	390	424	437	448	446	427	406	395	401	29	18	20	39	60	71	65	1	2	1	1	1	1	1	8	13	11	-2	-19	-21	-11	6	6	6	5	2	1	3	6	29	232
1961	397	395	393	387	392	401	411	423	407	389	379	384	65	55	43	59	77	87	82	1	1	1	1	1	1	1	7	9	10	12	-16	-18	-10	5	6	6	6	2	2	4	6	32	224
1962	385	387	394	395	424	431	448	454	448	428	420	418	35	18	12	16	38	46	48	1	2	3	2	1	1	1	11	7	17	6	-6	-20	-8	-2	6	6	6	4	2	4	5	33	363
1963	441	424	424	424	419	430	449	466	459	454	449	434	36	17	0	7	12	17	32	1	2	6	4	3	2	1	19	11	19	17	-7	-5	-5	-15	6	6	6	4	5	5	3	35	665
1964	427	424	424	424	418	415	426	432	413	382	355	334	51	40	34	53	84	111	132	1	1	1	1	1	1	1	7	-3	11	6	-19	-31	-27	-21	5	6	6	2	1	1	1	22	154
1965	335	367	393	392	395	414	449	464	454	448	445	434	52	17	2	12	18	21	32	1	2	5	3	2	1	1	15	19	35	15	-10	-6	-3	-11	6	6	6	4	4	5	3	34	510
1966	426	424	424	424	422	430	448	447	428	405	395	396	36	18	19	38	61	71	70	1	2	2	1	1	1	1	9	8	18	-1	-19	-23	-10	1	6	6	5	2	1	4	6	30	270
1967	391	395	418	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1968	427	424	423	424	424	437	439	441	419	396	391	394	29	27	25	47	70	75	72	1	1	1	1	1	1	1	7	13	2	2	-22	-23	-5	3	6	6	6	1	1	5	6	31	217
1969	399	407	419	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1970	427	424	423	393	396	426	431	440	431	415	414	417	40	35	26	35	51	52	49	1	1	1	1	1	1	1	7	30	5	9	-9	-16	-1	3	6	6	6	4	2	5	6	35	245
1971	411	421	424	424	423	437	447	461	461	459	449	434	29	19	5	5	7	17	32	1	2	4	4	4	2	1	18	14	10	14	0	-2	-10	-15	6	6	6	6	5	4	3	36	648
1972	425	422	424	424	424	437	444	451	433	413	407	407	29	22	15	33	53	59	59	1	1	2	1	1	1	1	8	13	7	7	-18	-20	-6	0	6	6	6	2	2	4	6	32	256
1973	402	407	422	424	424	437	449	466	451	439	432	433	29	17	0	15	27	34	33	1	2	6	2	1	1	1	14	13	12	17	-15	-12	-7	1	6	6	6	3	3	4	6	34	476
1974	427	423	422	409	417	432	449	466	463	463	449	434	34	17	0	3	3	17	32	1	2	6	5	5	2	1	22	15	17	17	-3	0	-14	-15	6	6	6	5	6	3	3	35	770
1975	426	419	417	415	424	437	441	466	466	463	449	434	29	25	0	0	3	17	32	1	1	6	6	5	2	1	22	13	4	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1976	431	423	419	410	402	392	397	401	368	334	340	341	74	69	65	98	132	126	125	1	1	1	1	1	1	1	7	-10	5	4	-33	-34	6	1	4	6	6	1	1	6	6	30	210
1977	335	334	330	325	321	323	333	341	334	319	306	291	143	133	125	132	147	160	175	1	1	1	1	1	1	1	7	2	10	8	-7	-15	-13	-15	6	6	6	4	3	3	3	31	217
1978	287	304	359	424	424	437	449	466	459	456	449	434	29	17	0	7	10	17	32	1	2	6	4	3	2	1	19	13	12	17	-7	-3	-7	-15	6	6	6	4	5	4	3	34	646
1979	423	417	411	418	424	437	447	466	452	437	429	426	29	19	0	14	29	37	40	1	2	6	3	1	1	1	15	13	10	19	-14	-15	-8	-3	6	6	6	3	3	4	5	33	495
1980	423	420	421	405	399	430	449	464	453	453	449	434	36	17	2	13	13	17	32	1	2	5	3	3	2	1	17	31	19	15	-11	0	-4	-15	6	6	6	3	6	5	3	35	595
1981	425	419	415	413	412	422	433	435	411	392	386	387	44	33	31	55	74	80	79	1	1	1	1	1	1	1	7	10	11	2	-24	-19	-6	1	6	6	6	1	2	4	6	31	217
1982	398	420	392	398	388	424	449	466	466	463	449	434	42	17	0	0	3	17	32	1	2	6	6	5	2	1	23	36	25	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1983	438	415	417	416	418	433	449	466	466	463	449	434	33	17	0	0	3	17	32	1	2	6	6	5	2	1	23	15	16	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1984	435	392	388	388	392	424	441	464	454	442	437	434	42	25	2	12	24	29	32	1	1	5	3	1	1	1	13	32	17	23	-10	-12	-5	-3	6	6	6	4	3	5	5	36	456
1985	427	424	424	420	422	428	443	444	418	385	361	368	38	23	22	48	81	105	96	1	1	1	1	1	1	1	7	6	15	1	-26	-33	-24	7	6	6	6	1	1	1	6	27	189
1986	386	386	409	424	396	424	449	464	456	451	447	434	42	17	2	10	15	19	32	1	2	5	3	2	2	1	16	28	25	15	-8	-5	-4	-13	6	6	6	4	5	5	3	35	560
1987	427	420	413	405	404	410	416	418	387	339	327	334	56	50	48	79	127	139	132	1	1	1	1	1	1	1	7	6	6	2	-31	-48	-12	7	6	6	6	1	1	3	6	29	203
1988	334	334	369	396	389	387	395	393	358	334	318	383	79	71	73	108	132	148	83	1	1	1	1	1	1	1	7	-2	8	-2	-35	-24	-16	65	5	6	5	1	1	2	6	26	182
1989	365	378	389	394	388	437	449	452	435	413	407	411	29	17	14	31	53	59	55	1	1	3	1	1	1	1	10	49	12	3	-17	-22	-6	4	6	6	6	2	1	4	6	31	310
1990	408	407	403	403	401	413	420	419	389	334	334	335	53	46	47	77	132	132	131	1	1	1	1	1	1	1	7	12	7	-1	-30	-55	0	1	6	6	5	1	1	6	6	31	217
1991	334	334	334	332	332	383	407	425	426	421	416	414	63	59	41	40	45	50	52	1	1	1	1	1	1	1	7	51	24	18	1	-5	-5	-2	6	6	6	6	5	5	5	39	273
1992	408	397	389	376	395	408	416	412	385	334	323	316	58	50	54	81	132	143	150	1	1	1	1	1	1	1	7	13	8	-4	-27	-51	-11	-7	6	6	5	1	1	3	4	26	182
1993	315	314	357	424	427	434	449	466	466	458	449	434	32	17	0	0	8	17	32	1	2	6	6	4	2	1	22	7	15	17	0	-6	-9	-15	6	6	6	6	4	4	3	35	770
1994	423	413	407	395	390	388	396	401	376	334	334	332	78	70	65	90	132	132	134	1	1	1	1	1	1	1	7	-2	8	5	-25	-42	0	-2	5	6	6	1	1	6	5	30	210

73 - year Average: 13

73 - year Average: 32 430.7
1929 - '34 Average: 209.0

A2-177

C-032517

C-032517

C-032518

STUDY: 1995 [illegible] WRCB-506 DWRSIM: recirc818-d, 21 May 97
CP # 10, NEW MELONES RESERVOIR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-506/10/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 1088'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', [illegible] else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	940	942	948	954	968	978	977	993	1015	1008	996	987
1923	986	990	998	1006	1013	1013	1015	1020	1020	1013	1001	994
1924	993	994	997	1000	1003	1003	997	991	979	969	957	953
1925	946	950	954	957	976	987	987	997	1001	997	985	978
1926	975	976	979	981	992	993	995	992	981	967	954	946
1927	943	946	954	962	980	991	997	1000	1007	1000	991	984
1928	985	991	995	998	1005	1023	1023	1026	1020	1010	1000	994
1929	990	992	995	997	1000	1001	997	995	989	979	969	962
1930	958	959	962	966	972	980	980	975	974	964	953	944
1931	945	948	950	953	965	957	952	945	934	924	909	900
1932	899	902	913	921	936	942	943	957	970	965	955	947
1933	947	949	953	955	958	960	954	951	950	938	925	916
1934	911	915	921	925	931	937	931	921	903	886	867	856
1935	847	849	853	861	868	878	896	932	945	937	926	918
1936	917	921	924	935	959	970	982	998	1003	997	987	979
1937	979	982	986	990	1001	1011	1011	1029	1030	1019	1008	1001
1938	1001	1003	1013	1022	1041	1055	1063	1088	1088	1084	1075	1069
1939	1050	1050	1050	1050	1050	1052	1050	1042	1031	1020	1008	1001
1940	999	999	1002	1013	1028	1044	1050	1060	1060	1050	1039	1032
1941	1031	1033	1037	1044	1050	1055	1052	1066	1072	1066	1056	1049
1942	1048	1049	1050	1050	1050	1055	1055	1067	1081	1078	1067	1062
1943	1050	1050	1050	1050	1050	1055	1061	1068	1068	1061	1052	1045
1944	1043	1044	1046	1047	1050	1053	1048	1047	1043	1031	1019	1011
1945	1010	1014	1018	1024	1038	1045	1043	1054	1060	1053	1043	1035
1946	1035	1039	1048	1050	1050	1054	1054	1061	1060	1051	1040	1033
1947	1032	1035	1037	1040	1043	1045	1037	1032	1021	1009	996	988
1948	985	986	988	990	991	994	994	996	1003	997	988	981
1949	978	981	984	987	990	996	995	999	997	987	976	968
1950	965	965	968	976	985	994	994	999	1005	998	987	979
1951	976	1009	1048	1050	1050	1055	1054	1054	1050	1038	1026	1018
1952	1017	1020	1027	1041	1050	1055	1058	1087	1088	1086	1076	1070
1953	1050	1050	1050	1050	1050	1054	1051	1045	1051	1043	1030	1023
1954	1020	1022	1025	1028	1030	1037	1036	1038	1030	1018	1005	997
1955	995	997	1000	1005	1005	1008	1003	1001	1000	991	979	970
1956	968	971	1001	1027	1041	1050	1049	1062	1072	1067	1056	1050
1957	1048	1050	1050	1050	1050	1055	1046	1050	1053	1042	1030	1021
1958	1017	1019	1021	1028	1037	1051	1057	1084	1088	1082	1072	1065
1959	1050	1050	1050	1050	1050	1053	1049	1037	1026	1014	1002	995
1960	991	993	995	997	1002	1008	1006	1002	996	985	973	963
1961	955	959	963	965	968	971	967	962	951	940	929	923
1962	922	924	927	929	940	946	948	948	950	942	929	921
1963	918	921	925	933	952	954	955	978	983	977	964	957
1964	958	963	967	973	975	978	973	968	963	951	939	930
1965	926	930	961	988	1001	1009	1017	1018	1023	1017	1005	999
1966	998	1002	1007	1013	1018	1023	1021	1025	1017	1007	998	990
1967	988	991	1001	1012	1020	1031	1033	1055	1081	1084	1074	1069
1968	1050	1050	1050	1050	1050	1054	1048	1044	1034	1022	1008	1000
1969	998	1001	1004	1034	1050	1055	1066	1088	1088	1084	1074	1066
1970	1050	1050	1050	1050	1050	1055	1048	1053	1054	1043	1029	1022
1971	1021	1025	1033	1041	1045	1051	1044	1048	1052	1042	1029	1022
1972	1018	1021	1027	1033	1033	1037	1024	1027	1018	1005	992	982
1973	979	982	988	1001	1016	1027	1027	1036	1037	1025	1012	1005
1974	1005	1011	1021	1034	1043	1055	1059	1070	1071	1061	1050	1043
1975	1042	1044	1047	1050	1050	1055	1050	1050	1063	1055	1043	1036
1976	1034	1037	1040	1042	1044	1047	1042	1036	1026	1017	1007	1002
1977	1001	1003	1004	1004	1005	1005	998	990	982	971	959	953
1978	952	951	955	966	978	996	1003	1018	1026	1021	1009	1004
1979	1004	1006	1010	1018	1031	1044	1045	1054	1051	1039	1025	1018
1980	1019	1022	1025	1050	1050	1055	1056	1063	1070	1068	1057	1051
1981	1050	1050	1050	1050	1050	1053	1050	1044	1031	1018	1005	999
1982	997	1004	1019	1039	1050	1055	1071	1086	1088	1084	1074	1071
1983	1050	1050	1050	1050	1050	1055	1056	1070	1088	1088	1081	1075
1984	1050	1050	1050	1050	1050	1055	1049	1055	1054	1046	1035	1029
1985	1029	1034	1039	1042	1045	1049	1041	1039	1027	1015	1003	997
1986	996	999	1002	1011	1050	1055	1056	1061	1065	1057	1047	1042
1987	1041	1043	1046	1046	1048	1051	1046	1038	1029	1021	1014	1010
1988	1005	1005	1005	1007	1008	1010	1006	1000	993	985	977	971
1989	970	970	971	972	974	986	984	981	976	965	954	949
1990	952	955	959	962	965	970	963	953	942	930	921	912
1991	911	912	917	917	917	923	920	916	905	888	871	863
1992	865	867	872	876	887	895	887	873	856	842	825	816
1993	819	824	831	850	930	964	968	967	978	970	959	954
1994	954	955	958	959	960	966	962	960	952	942	931	926

YEAR	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP	Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	120	110	111	95	73	80	92	1	1	1	1	1	1	1	7
1923	75	75	73	68	68	75	87	1	1	1	1	1	1	1	7
1924	85	85	91	97	109	119	131	1	1	1	1	1	1	1	7
1925	112	101	101	91	87	91	103	1	1	1	1	1	1	1	7
1926	96	95	93	96	107	121	134	1	1	1	1	1	1	1	7
1927	108	97	91	88	81	88	97	1	1	1	1	1	1	1	7
1928	83	65	65	62	68	78	88	1	1	1	1	1	1	1	7
1929	88	87	91	93	99	109	119	1	1	1	1	1	1	1	7
1930	116	108	108	113	114	124	135	1	1	1	1	1	1	1	7
1931	133	131	136	143	154	164	179	1	1	1	1	1	1	1	7
1932	152	146	145	131	118	123	133	1	1	1	1	1	1	1	7
1933	130	128	134	137	138	150	163	1	1	1	1	1	1	1	7
1934	157	151	157	167	185	202	221	1	1	1	1	1	1	1	7
1935	220	210	192	156	143	151	162	1	1	1	1	1	1	1	7
1936	129	118	106	90	85	91	101	1	1	1	1	1	1	1	7
1937	87	77	77	59	58	69	80	1	1	1	1	1	1	1	7
1938	47	33	25	0	0	4	13	1	1	1	6	6	5	3	23
1939	38	36	38	46	57	68	80	1	1	1	1	1	1	1	7
1940	60	44	38	28	28	38	49	1	1	1	1	1	1	1	7
1941	38	33	36	22	16	22	32	1	1	1	1	2	1	1	8
1942	38	33	33	21	7	10	21	1	1	1	1	4	3	1	12
1943	38	33	27	20	20	27	36	1	1	1	1	1	1	1	7
1944	38	35	40	41	45	57	69	1	1	1	1	1	1	1	7
1945	50	43	45	34	28	35	45	1	1	1	1	1	1	1	7
1946	38	34	34	27	28	37	48	1	1	1	1	1	1	1	7
1947	45	43	51	56	67	79	92	1	1	1	1	1	1	1	7
1948	97	94	94	92	85	91	100	1	1	1	1	1	1	1	7
1949	98	92	93	89	91	101	112	1	1	1	1	1	1	1	7
1950	103	94	94	89	83	90	101	1	1	1	1	1	1	1	7
1951	38	33	34	34	38	50	62	1	1	1	1	1	1	1	7
1952	38	33	30	1	0	2	12	1	1	1	5	6	5	3	22
1953	38	34	37	43	37	45	58	1	1	1	1	1	1	1	7
1954	58	51	52	50	58	70	83	1	1	1	1	1	1	1	7
1955	83	80	85	87	88	97	109	1	1	1	1	1	1	1	7
1956	47	38	39	26	16	21	32	1	1	1	1	2	1	1	8
1957	38	33	42	38	35	46	58	1	1	1	1	1	1	1	7
1958	51	37	31	4	0	6	16	1	1	1	5	6	4	2	20
1959	38	35	39	51	62	74	86	1	1	1	1	1	1	1	7
1960	86	80	82	86	92	103	115	1	1	1	1	1	1	1	7
1961	120	117	121	126	137	148	159	1	1	1	1	1	1	1	7
1962	148	142	140	140	138	146	159	1	1	1	1	1	1	1	7
1963	136	134	133	110	105	111	124	1	1	1	1	1	1	1	7
1964	113	110	115	120	125	137	149	1	1	1	1	1	1	1	7
1965	87	79	71	70	65	71	83	1	1	1	1	1	1	1	7
1966	70	65	67	63	71	81	90	1	1	1	1	1	1	1	7
1967	68	57	55	33	7	4	14	1	1	1	1	4	5	3	16
1968	38	34	40	44	54	66	80	1	1	1	1	1	1	1	7
1969	38	33	22	0	0	4	14	1	1	1	6	6	5	3	23
1970	38	33	40	35	34	45	59	1	1	1	1	1	1	1	7
1971	43	37	44	40	36	46	59	1	1	1	1	1	1	1	7
1972	55	51	64	61	70	83	96	1	1	1	1	1	1	1	7
1973	72	61	61	52	51	63	76	1	1	1	1	1	1	1	7
1974	45	33	29	18	17	27	38	1	1	1	2	2	1	1	9
1975	38	33	38	38	25	33	45	1	1	1	1	1	1	1	7
1976	44	41	46	52	62	71	81	1	1	1	1	1	1	1	7
1977	83	83	90	98	106	117	129	1	1	1	1	1	1	1	7
1978	110	92	85	70	62	67	79	1	1	1	1	1	1	1	7
1979	57	44	43	34	37	49	63	1	1	1	1	1	1	1	7
1980	38	33	32	25	18	20	31	1	1	1	1	2	1	1	8
1981	38	35	38	44	57	70	83	1	1	1	1	1	1	1	7
1982	38	33	17	2	0	4	14	1	1	2	5	6	5	3	23
1983	38	33	32	18	0	0	7	1	1	1	2	6	6	4	21
1984	38	33	39	33	34	42	53	1	1	1	1	1	1	1	7
1985	43	39	47	49	61	73	85	1	1	1	1	1	1	1	7
1986	38	33	32	27	23	31	41	1	1	1	1	1	1	1	7
1987	40	37	42	50	59	67	74	1	1	1	1	1	1	1	7
1988	80	78	82	88	95	103	111	1	1	1	1	1	1	1	7
1989	114	102	104	107	112	123	134	1	1	1	1	1	1	1	7
1990	123	118	125	135	146	158	167	1	1	1	1	1	1	1	7
1991	171	165	168	172	183	200	217	1	1	1	1	1	1	1	7
1992	201	193	201	215	232	246	263	1	1	1	1	1	1	1	7
1993	158	124	120	121	110	118	129	1	1	1	1	1	1	1	7
1994	128	122	126	128	136	146	157	1	1	1	1	1	1	1	7

73 - year Average: 8

YEAR	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	10	-1	16	22	-7	-12	-9	6	5	6	6	4	3	4	34	238
1923	0	2	5	0	-7	-12	-7	6	6	6	6	4	3	4	35	245
1924	0	-6	-6	-12	-10	-12	-4	6	4	4	3	4	3	5	29	203
1925	11	0	10	4	-4	-12	-7	6	6	6	6	5	3	4	36	252
1926	1	2	-3	-11	-14	-13	-8	6	6	5	3	3	3	4	30	210
1927	11	6	3	7	-7	-9	-7	6	6	6	6	4	4	4	36	252
1928	18	0	3	-6	-10	-10	-6	6	6	6	4	4	4	4	34	238
1929	1	-4	-2	-6	-10	-10	-7	6	5	5	4	4	4	4	32	224
1930	8	0	-5	-1	-10	-11	-9	6	6	5	5	4	3	4	33	231
1931	2	-5	-7	-11	-10	-15	-9	6	5	4	3	4	3	4	29	203
1932	6	1	14	13	-5	-10	-8	6	6	6	6	5	4	4	37	259
1933	2	-6	-3	-1	-12	-13	-9	6	4	5	5	3	3	4	30	210
1934	6	-6	-10	-18	-17	-19	-11	6	4	4	2	2	2	3	23	161
1935	10	18	36	13	-8	-11	-8	6	6	6	6	4	3	4	35	245
1936	11	12	16	5	-6	-10	-8	6	6	6	6	4	4	4	36	252
1937	10	0	18	1	-11	-11	-7	6	6	6	6	3	3	4	34	238
1938	14	8	25	0	-4	-9	-6	6	6	6	6	5	4	4	37	851
1939	2	-2	-8	-11	-11	-12	-7	6	5	4	3	3	3	4	28	196
1940	16	6	10	0	-10	-11	-7	6	6	6	6	4	3	4	35	245
1941	5	-3	14	6	-6	-10	-7	6	5	6	6	4	4	4	35	280
1942	5	0	12	14	-3	-11	-5	6	6	6	6	5	3	5	37	444
1943	5	6	7	0	-7	-9	-7	6	6	6	6	4	4	4	36	252
1944	3	-5	-1	-4	-12	-12	-8	6	5	5	5	3	3	4	31	217
1945	7	-2	11	6	-7	-10	-8	6	5	6	6	4	4	4	35	245
1946	4	0	7	-1	-9	-11	-7	6	6	6	5	4	3	4	34	238
1947	2	-8	-5	-11	-12	-13	-8	6	4	5	3	3	3	4	28	196
1948	3	0	2	7	-6	-9	-7	6	6	6	6	4	4	4	36	252
1949	6	-1	4	-2	-10	-11	-8	6	5	6	5	4	3	4	33	231
1950	9	0	5	6	-7	-11	-8	6	6	6	6	4	3	4	35	245
1951	5	-1	0	-4	-12	-12	-8	6	5	6	5	3	3	4	32	224
1952	5	3	29	1	-2	-10	-6	6	6	6	6	5	4	4	37	814
1953	4	-3	-6	6	-8	-13	-7	6	5	4	6	4	3	4	32	224
1954	7	-1	2	-8	-12	-13	-8	6	5	6	4	3	3	4	31	217
1955	3	-5	-2	-1	-9	-12	-9	6	5	5	5	4	3	4	32	224
1956	9	-1	13	10	-5	-11	-6	6	5	6	6	5	3	4	35	280
1957	5	-9	4	3	-11	-12	-9	6	4	6	6	3	3	4	32	224
1958	14	6	27	4	-6	-10	-7	6	6	6	6	4	4	4	36	720
1959	3	-4	-12	-11	-12	-12	-7	6	5	3	3	3	3	4	27	189
1960	6	-2	-4	-6	-11	-12	-10	6	5	5	4	3	3	4	30	210
1961	3	-4	-5	-11	-11	-11	-6	6	5	5	3	3	3	4	29	203
1962	6	2	0	2	-8	-13	-8	6	6	6	6	4	3	4	35	245
1963	2	1	23	5	-6	-13	-7	6	6	6	6	4	3	4	35	245
1964	3	-5	-5	-5	-12	-12	-9	6	5	5	5	3	3	4	31	217
1965	8	8	1	5	-6	-12	-6	6	6	6	6	4	3	4	35	245
1966	5	-2	4	-8	-10	-9	-8	6	5	6	4	4	4	4	33	231
1967	11	2	22	26	3	-10	-5	6	6	6	6	6	4	5	39	624
1968	4	-6	-4	-10	-12	-14	-8	6	4	5	4	3	3	4	29	203
1969	5	11	22	0	-4	-10	-8	6	6	6	6	5	4	4	37	851
1970	5	-7	5	1	-11	-14	-7	6	4	6	6	3	3	4	32	224
1971	6	-7	4	4	-10	-13	-7	6	4	6	6	4	3	4	33	231
1972	4	-13	3	-9	-13	-13	-10	6	3	6	4	3	3	4	29	203
1973	11	0	9	1	-12	-13	-7	6	6	6	6	3	3	4	34	238
1974	12	4	11	1	-10	-11	-7	6	6	6	6	4	3	4	35	315
1975	5	-5	0	13	-8	-12	-7	6	5	6	6	4	3	4	34	238
1976	3	-5	-6	-10	-9	-10	-5	6	5	4	4	4	4	5	32	224
1977	0	-7	-8	-8	-11	-12	-8	6	4	4	4	3	3	4	28	196
1978	18	7	15	8	-5	-12	-5	6	6	6	6	5	3	5	37	259
1979	13	1	9	-3	-12	-14	-7	6	6	6	5	3	3	4	33	231
1980	5	1	7	7	-2	-11	-6	6	6	6	6	5	3	4	36	288
1981	3	-3	-6	-13	-13	-13	-6	6	5	4	3	3	3	4	28	196
1982	5	16	15	2	-4	-10	-3	6	6	6	6	5	4	5	38	874
1983	5	1	14	18	0	-7	-6	6	6	6	6	6	4	4	38	798
1984	5	-6	6	-1	-8	-11	-6	6	4	6	5	4	3	4	32	224
1985	4	-8	-2	-12	-12	-12	-6	6	4	5	3	3	3	4	28	196
1986	5	1	5	4	-8	-10	-5	6	6	6	6	4	4	5	37	259
1987	3	-5	-8	-9	-8	-7	-4	6	5	4	4	4	4	5	32	224
1988	2	-4	-6	-7	-8	-8	-6	6	5	4	4	4	4	4	31	217
1989	12	-2	-3	-5	-11	-11	-5	6	5	5	5	3	3	5	32	224
1990	5	-7	-10	-11	-12	-9	-9	6	4	4	3	3	4	4	28	196
1991	6	-3	-4	-11	-17	-17	-8	6	5	5	3	2	2	4	27	189
1992	8	-8	-14	-17	-14	-17	-9	6	4	3	2	3	2	4	24	168
1993	34	4	-1	11	-8	-11	-5	6	6	5	6	4	3	5	35	245
1994	6	-4	-2	-8	-10	-11	-5	6	5	5	4	4	3	5	32	224

73 - year Average: 33 285.3
1929 - '34 Average: 214.7

A2-178

C-032518

STUDY: [illegible]F-SWRCB-506 DWRSIM: recirc618-d, 21 May 97
CP # 81, DON PEDRO RESERVOIR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-506/81/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 832'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	599	582	579	601	656	690	699	724	782	779	763	752	142	133	108	50	53	69	80
1923	746	745	748	761	778	784	789	792	792	785	770	760	48	43	40	40	47	62	72
1924	754	751	748	744	745	743	738	733	725	711	697	689	89	94	99	107	121	135	143
1925	685	686	687	691	712	731	744	757	758	747	730	718	101	88	75	74	85	102	114
1926	711	708	703	702	712	719	734	740	737	720	702	691	113	98	92	95	112	130	141
1927	688	685	690	698	732	748	761	762	782	775	759	748	84	71	70	50	57	73	84
1928	741	741	742	745	755	774	781	800	799	785	769	759	58	51	32	33	47	63	73
1929	752	747	742	743	745	747	747	751	751	741	731	723	85	85	81	81	91	101	109
1930	720	716	713	713	720	728	730	733	733	723	712	704	104	102	99	99	109	120	128
1931	702	700	700	702	705	704	696	686	669	651	635	624	128	136	146	163	181	197	208
1932	617	609	630	658	697	715	717	726	746	741	725	712	117	115	106	86	91	107	120
1933	703	695	689	688	695	699	696	693	714	701	684	670	133	136	139	118	131	148	162
1934	661	659	656	660	674	685	685	679	674	653	635	622	147	147	153	158	179	197	210
1935	612	611	614	636	662	682	707	720	752	738	720	706	150	125	112	80	94	112	126
1936	698	696	690	698	741	759	768	788	806	796	781	770	73	64	44	26	36	51	62
1937	764	758	754	757	785	800	802	815	832	819	805	795	32	30	17	0	13	27	37
1938	789	784	800	800	800	800	800	804	831	832	819	808	32	32	28	1	0	13	24
1939	806	799	799	800	800	800	802	800	796	783	770	762	32	30	32	36	49	62	70
1940	760	759	757	770	799	800	802	816	816	801	785	775	32	30	16	16	31	47	57
1941	769	767	769	784	800	800	800	812	832	831	817	808	32	32	20	0	1	15	24
1942	800	798	800	800	800	800	802	807	831	832	818	808	32	30	25	1	0	14	24
1943	800	800	800	800	800	800	802	821	832	824	810	799	32	30	11	0	8	22	33
1944	794	792	788	787	793	800	801	808	808	795	780	770	32	31	24	24	37	52	62
1945	765	766	769	775	800	800	802	807	831	825	810	799	32	30	25	1	7	22	33
1946	796	797	800	800	800	800	802	806	806	790	774	763	32	30	26	26	42	58	69
1947	757	756	759	762	770	775	772	776	770	757	743	736	57	60	56	62	75	89	96
1948	733	732	731	732	733	734	730	738	765	753	736	725	98	102	94	67	79	96	107
1949	719	712	707	706	713	725	732	742	742	724	703	690	107	100	90	90	108	129	142
1950	683	675	668	674	686	709	719	733	733	715	695	682	123	113	99	99	117	137	150
1951	675	729	780	800	800	800	798	794	794	779	765	754	32	34	38	38	53	67	78
1952	748	746	752	778	799	800	800	820	832	832	819	808	32	32	12	0	0	13	24
1953	800	795	793	800	800	800	800	800	809	806	792	782	32	32	32	23	26	40	50
1954	778	773	770	772	781	793	802	819	819	804	789	779	39	30	13	13	28	43	53
1955	773	769	768	774	780	782	779	782	783	770	758	750	50	53	50	49	62	74	82
1956	745	741	791	800	800	800	801	817	832	832	818	808	32	31	15	0	0	14	24
1957	800	798	795	795	799	800	800	805	827	814	800	791	32	32	27	5	18	32	41
1958	786	781	779	783	800	800	800	821	832	832	819	808	32	32	11	0	0	13	24
1959	800	794	789	793	800	800	802	800	794	782	770	763	32	30	32	38	50	62	69
1960	761	758	755	756	763	769	770	776	776	765	755	749	63	62	56	56	67	77	83
1961	746	744	744	748	748	747	741	733	726	713	701	694	85	91	99	106	119	131	138
1962	691	688	686	688	712	733	742	747	773	765	751	741	99	90	85	59	67	81	91
1963	736	731	728	732	758	778	778	792	817	812	798	790	62	54	40	15	20	34	42
1964	784	785	786	791	797	799	797	794	794	783	772	765	33	35	38	38	49	60	67
1965	763	764	795	800	800	800	802	807	827	827	816	807	32	30	25	5	5	16	25
1966	800	800	800	800	800	800	800	796	789	775	759	750	32	32	36	43	57	73	82
1967	745	743	754	769	787	800	800	817	832	832	820	808	32	32	15	0	0	12	24
1968	800	795	791	792	800	800	800	800	798	786	774	766	32	32	32	34	46	58	66
1969	761	762	766	800	800	800	800	823	832	832	819	808	32	32	9	0	0	13	24
1970	800	799	800	800	800	800	799	799	799	786	771	762	32	33	33	33	46	61	70
1971	756	756	763	779	792	800	801	801	807	798	786	778	32	31	31	25	34	46	54
1972	773	769	772	778	792	800	800	798	795	784	773	766	32	32	34	37	48	59	66
1973	763	762	764	776	800	800	802	812	812	797	782	772	32	30	20	20	35	50	60
1974	787	772	783	800	800	800	800	806	828	819	805	796	32	32	26	4	13	27	36
1975	791	789	786	786	798	800	802	812	832	825	812	803	32	30	20	0	7	20	29
1976	800	800	799	799	800	799	794	787	777	767	757	751	33	38	45	55	65	75	81
1977	748	745	742	741	741	737	728	715	702	687	672	663	95	104	117	130	145	160	169
1978	659	655	658	684	717	749	762	777	814	814	800	795	83	70	55	18	18	32	37
1979	790	786	782	792	800	800	802	822	823	808	794	784	32	30	10	9	24	38	48
1980	779	778	777	800	800	800	800	817	832	832	819	808	32	32	15	0	0	13	24
1981	800	797	794	795	799	800	802	806	805	793	782	774	32	30	26	27	39	50	58
1982	770	776	795	800	800	800	800	820	832	832	820	808	32	32	12	0	0	12	24
1983	800	800	800	800	800	800	800	819	832	832	832	808	32	32	13	0	0	0	24
1984	800	800	800	800	800	800	797	803	803	790	774	764	32	35	29	29	42	58	68
1985	761	761	767	774	783	790	791	790	785	773	762	755	42	41	42	47	59	70	77
1986	752	753	757	764	800	800	802	827	832	825	811	802	32	30	5	0	7	21	30
1987	796	791	786	784	786	786	786	783	779	769	759	752	44	46	49	53	63	73	80
1988	750	749	749	754	759	761	756	747	740	728	716	709	71	76	85	92	104	116	123
1989	705	702	702	706	709	722	734	748	748	737	726	720	110	98	84	84	95	106	112
1990	718	717	717	720	724	727	724	722	719	705	691	684	105	108	110	113	127	141	148
1991	679	676	671	670	669	678	677	695	695	685	673	665	154	155	137	137	147	159	167
1992	664	664	668	666	678	684	687	687	686	669	652	641	148	145	145	146	163	180	191
1993	665	629	639	666	702	734	741	757	789	788	773	763	98	91	75	43	44	59	69
1994	758	751	746	745	749	752	750	754	752	741	731	725	80	82	78	80	91	101	107

Reservoir Elev[illegible]able:
If [DFMRE] <= 0', the[illegible]
If [DFMRE] <= 5', then [illegible]
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Elev. MAR	Elev. APR	Elev. MAY	Elev. JUN	Elev. JUL	Elev. AUG	Elev. SEP	Elev. SUM	Fluct. MAR	Fluct. APR	Fluct. MAY	Fluct. JUN	Fluct. JUL	Fluct. AUG	Fluct. SEP	Score MAR	Score APR	Score MAY	Score JUN	Score JUL	Score AUG	Score SEP	Score SUM	Product
1922	1	1	1	1	1	1	1	7	34	9	25	58	-3	-16	-11	6	6	6	6	5	2	3	34	238
1923	1	1	1	1	1	1	1	7	8	5	3	0	-7	-15	-10	6	6	6	6	4	3	4	35	245
1924	1	1	1	1	1	1	1	7	-2	-5	-5	-8	-14	-14	-8	5	5	5	4	3	3	4	29	203
1925	1	1	1	1	1	1	1	7	19	13	13	1	-11	-17	-12	6	6	6	6	3	2	3	32	224
1926	1	1	1	1	1	1	1	7	7	15	6	-3	-17	-18	-11	6	6	6	5	2	2	3	30	210
1927	1	1	1	1	1	1	1	7	16	13	1	20	-7	-16	-11	6	6	6	6	4	2	3	33	231
1928	1	1	1	1	1	1	1	7	19	7	19	-1	-14	-16	-10	6	6	6	5	3	2	4	32	224
1929	1	1	1	1	1	1	1	7	2	0	4	0	-10	-10	-8	6	6	6	6	4	4	4	36	252
1930	1	1	1	1	1	1	1	7	8	2	3	0	-10	-11	-8	6	6	6	6	4	3	4	35	245
1931	1	1	1	1	1	1	1	7	-1	-8	-10	-17	-18	-16	-11	5	4	4	2	2	2	3	22	154
1932	1	1	1	1	1	1	1	7	18	2	9	20	-5	-16	-13	6	6	6	6	5	2	3	34	238
1933	1	1	1	1	1	1	1	7	4	-3	-3	21	-13	-17	-14	6	5	5	6	3	2	3	30	210
1934	1	1	1	1	1	1	1	7	11	0	-6	-5	-21	-18	-13	6	6	4	5	1	2	3	27	189
1935	1	1	1	1	1	1	1	7	20	25	13	32	-14	-18	-14	6	6	6	6	3	2	3	32	224
1936	1	1	1	1	1	1	1	7	18	9	20	18	-10	-15	-11	6	6	6	6	4	3	3	34	238
1937	1	1	2	6	3	1	1	15	15	2	13	17	-13	-14	-10	6	6	6	6	3	3	4	34	510
1938	1	1	1	5	6	3	1	18	0	0	4	27	1	-13	-11	6	6	6	6	6	3	3	36	648
1939	1	1	1	1	1	1	1	7	0	2	-2	-4	-13	-13	-8	6	6	5	5	3	3	4	32	224
1940	1	1	2	2	1	1	1	9	1	2	14	0	-15	-16	-10	6	6	6	6	3	2	4	33	297
1941	1	1	1	6	5	2	1	17	0	0	12	20	-1	-14	-9	6	6	6	6	5	3	4	36	612
1942	1	1	1	5	6	3	1	18	0	2	5	24	1	-14	-10	6	6	6	6	6	3	4	37	666
1943	1	1	3	6	4	1	1	17	0	2	19	11	-8	-14	-11	6	6	6	6	4	3	3	34	578
1944	1	1	1	1	1	1	1	7	7	1	7	0	-13	-15	-10	6	6	6	6	3	3	4	34	238
1945	1	1	1	5	4	1	1	14	0	2	5	24	-6	-15	-11	6	6	6	6	4	3	3	34	476
1946	1	1	1	1	1	1	1	7	0	2	4	0	-16	-16	-11	6	6	6	6	2	2	3	31	217
1947	1	1	1	1	1	1	1	7	5	-3	4	-6	-13	-14	-7	6	5	6	4	3	3	4	31	217
1948	1	1	1	1	1	1	1	7	1	-4	8	27	-12	-17	-11	6	5	6	6	3	2	3	31	217
1949	1	1	1	1	1	1	1	7	12	7	10	0	-18	-21	-13	6	6	6	6	2	1	3	30	210
1950	1	1	1	1	1	1	1	7	13	10	14	0	-18	-20	-13	6	6	6	6	2	2	3	31	217
1951	1	1	1	1	1	1	1	7	0	-2	-4	0	-15	-14	-11	6	5	5	6	3	3	3	31	217
1952	1	1	3	6	6	3	1	21	1	0	20	12	0	-13	-11	6	6	6	6	6	3	3	36	756
1953	1	1	1	1	1	1	1	7	0	0	0	9	-3	-14	-10	6	6	6	6	5	3	4	36	252
1954	1	1	3	3	1	1	1	11	12	9	17	0	-15	-15	-10	6	6	6	6	3	3	4	34	374
1955	1	1	1	1	1	1	1	7	2	-3	3	1	-13	-12	-8	6	5	6	6	3	3	4	33	231
1956	1	1	2	6	6	3	1	20	0	1	16	15	0	-14	-10	6	6	6	6	6	3	4	37	740
1957	1	1	1	4	2	1	1	11	1	0	5	22	-13	-14	-9	6	6	6	6	3	3	4	34	374
1958	1	1	3	6	6	3	1	21	0	0	21	11	0	-13	-11	6	6	6	6	6	3	3	36	756
1959	1	1	1	1	1	1	1	7	0	2	-2	-6	-12	-12	-7	6	6	5	4	3	3	4	31	217
1960	1	1	1	1	1	1	1	7	6	1	6	0	-11	-10	-6	6	6	6	6	3	4	4	35	245
1961	1	1	1	1	1	1	1	7	-1	-6	-8	-7	-13	-12	-7	5	4	4	4	3	3	4	27	189
1962	1	1	1	1	1	1	1	7	21	9	5	26	-8	-14	-10	6	6	6	6	4	3	4	35	245
1963	1	1	1	2	1	1	1	8	12	8	14	25	-5	-14	-8	6	6	6	6	5	3	4	36	288
1964	1	1	1	1	1	1	1	7	2	-2	-3	0	-11	-11	-7	6	5	5	6	3	3	4	32	224
1965	1	1	1	4	4	2	1	14	0	2	5	20	0	-11	-9	6	6	6	6	6	3	4	37	518
1966	1	1	1	1	1	1	1	7	0	0	-4	-7	-14	-16	-9	6	6	5	4	3	2	4	30	210
1967	1	1	2	6	6	3	1	20	13	0	17	15	0	-12	-12	6	6	6	6	6	3	3	36	720
1968	1	1	1	1	1	1	1	7	0	0	0	-2	-12	-12	-8	6	6	6	5	3	3	4	33	231
1969	1	1	4	6	6	3	1	22	0	0	23	9	0	-13	-11	6	6	6	6	6	3	3	36	792
1970	1	1	1	1	1	1	1	7	0	-1	0	0	-13	-15	-9	6	5	6	6	3	3	4	33	231
1971	1	1	1	1	1	1	1	7	8	1	0	6	-9	-12	-8	6	6	6	6	4	3	4	35	245
1972	1	1	1	1	1	1	1	7	8	0	-2	-3	-11	-11	-7	6	6	5	5	3	3	4	32	224
1973	1	1	1	1	1	1	1	7	0	2	10	0	-15	-15	-10	6	6	6	6	3	3	4	34	238
1974	1	1	1	5	3	1	1	13	0	0	6	22	-9	-14	-9	6	6	6	6	4	3	4	35	455
1975	1	1	1	6	4	1	1	15	2	2	10	20	-7	-13	-9	6	6	6	6	4	3	4	35	525
1976	1	1	1	1	1	1	1	7	-1	-5	-7	-10	-10	-10	-6	5	5	4	4	4	4	4	30	210
1977	1	1	1	1	1	1	1	7	-4	-9	-13	-13	-15	-15	-9	5	4	3	3	3	3	4	25	175
1978	1	1	1	2	2	1	1	9	32	13	15	37	0	-14	-5	6	6	6	6	6	3	5	38	342
1979	1	1	3	4	1	1	1	12	0	2	20	1	-15	-14	-10	6	6	6	6	3	3	4	34	408
1980	1	1	2	6	6	3	1	20	0	0	17	15	0	-13	-11	6	6	6	6	6	3	3	36	720
1981	1	1	1	1	1	1	1	7	1	2	4	-1	-12	-11	-8	6	6	6	5	3	3	4	33	231
1982	1	1	3	6	6	3	1	21	0	0	20	12	0	-12	-12	6	6	6	6	6	3	3	36	756
1983	1	1	3	6	6	6	1	24	0	0	19	13	0	0	-24	6	6	6	6	6	6	1	37	888
1984	1	1	1	1	1	1	1	7	0	-3	6	0	-13	-16	-10	6	5	6	6	3	2	4	32	224
1985	1	1	1	1	1	1	1	7	7	1	-1	-5	-12	-11	-7	6	6	5	5	3	3	4	32	224
1986	1	1	4	6	4	1	1	18	0	2	25	5	-7	-14	-9	6	6	6	6	4	3	4	35	630
1987	1	1	1	1	1	1	1	7	2	-2	-3	-4	-10	-10	-7	6	5	5	5	4	4	4	33	231
1988	1	1	1	1	1	1	1	7	2	-5	-9	-7	-12	-12	-7	6	5	4	4	3	3	4	29	203
1989	1	1	1	1	1	1	1	7	13	12	14	0	-11	-11	-6	6	6	6	6	3	3	4	34	238
1990	1	1	1	1	1	1	1	7	3	-3	-2	-3	-14	-14	-7	6	5	5	5	3	3	4	31	217
1991	1	1	1	1	1	1	1	7	9	-1	18	0	-10	-12	-8	6	5	6	6	4	3	4	34	238
1992	1	1	1	1	1	1	1	7	6	3	0	-1	-17	-17	-11	6	6	6	5	2	2	3	30	210
1993	1	1	1	1	1	1	1	7	32	7	16	32	-1	-15	-10	6	6	6	6	5	3	4	36	252
1994	1	1	1	1	1	1	1	7	3	-2	4	-2	-11	-10	-6	6	5	6	5	3	4	4	33	231

73 - year Average: 10 (Elevation SUM)

73 - year Average: 33 (Fluctuation SUM) 339.4 (Product)
1929 - '34 Average: 214.7

STUDY: 19[illegible] SWRCB-506 DWRSIM: recirc818-d, 21 May 97
CP # 20, LAK[illegible]cCLURE, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-506/20/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation 867'

Reservoir Elevation Table:
If [DFMRE] <= 0', th[illegible]e
If [DFMRE] <= 5', then [illegible], else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Largemouth Bass Reservoir Habitat Index Product
1922	880	880	896	712	759	779	789	845	867	860	847	837	88	78	22	0	7	20	30	1	1	1	6	4	1	1	15	20	10	56	22	-7	-13	-10	6	6	6	6	4	3	4	35	525
1923	808	808	808	808	808	813	818	847	847	837	822	810	54	49	20	20	30	45	57	1	1	1	1	1	1	1	7	5	5	29	0	-10	-15	-12	6	6	6	6	4	3	3	34	238
1924	808	808	808	808	808	807	806	804	792	773	760	749	60	61	63	75	94	107	118	1	1	1	1	1	1	1	7	-1	-1	-2	-12	-19	-13	-11	5	5	5	3	2	3	3	26	182
1925	749	754	760	765	789	798	818	842	842	829	813	801	69	49	25	25	38	54	66	1	1	1	1	1	1	1	7	9	20	24	0	-13	-16	-12	6	6	6	6	3	2	3	32	224
1926	800	799	800	802	808	814	830	829	828	824	817	809	53	37	38	39	43	50	58	1	1	1	1	1	1	1	7	6	16	-1	-1	-4	-7	-8	6	6	5	5	5	4	4	35	245
1927	807	808	808	808	808	815	818	849	850	845	842	840	52	49	18	17	22	25	27	1	1	2	2	1	1	1	9	7	3	31	1	-5	-3	-2	6	6	6	6	5	5	5	39	351
1928	808	808	808	808	808	809	808	820	818	812	809	805	58	59	47	49	55	58	62	1	1	1	1	1	1	1	7	1	-1	12	-2	-6	-3	-4	6	5	6	5	4	5	5	36	252
1929	806	804	804	803	808	807	809	810	810	810	811	804	60	58	57	57	57	56	63	1	1	1	1	1	1	1	7	1	2	1	0	0	1	-7	6	6	6	6	6	6	4	40	280
1930	803	802	802	802	802	798	800	800	800	801	801	799	69	67	67	67	66	66	68	1	1	1	1	1	1	1	7	-4	2	0	0	1	0	-2	5	6	6	6	6	6	5	40	280
1931	798	798	798	798	800	800	797	796	783	764	748	737	67	70	71	84	103	119	130	1	1	1	1	1	1	1	7	0	-3	-1	-13	-19	-16	-11	6	5	5	3	2	2	3	26	182
1932	735	736	759	770	805	814	823	850	867	857	843	832	53	44	17	0	10	24	35	1	1	2	6	3	1	1	15	9	9	27	17	-10	-14	-11	6	6	6	6	4	3	3	34	510
1933	808	807	806	808	808	811	812	812	826	812	797	788	56	55	55	41	55	70	79	1	1	1	1	1	1	1	7	3	1	0	14	-14	-15	-9	6	6	6	6	3	3	4	34	238
1934	786	785	789	796	803	811	816	812	803	786	773	763	56	51	55	64	81	94	104	1	1	1	1	1	1	1	7	8	5	-4	-9	-17	-13	-10	6	6	5	4	2	3	4	30	210
1935	762	766	771	789	800	810	840	859	867	854	839	828	57	27	8	0	13	28	39	1	1	4	6	3	1	1	17	10	30	19	8	-13	-15	-11	6	6	6	6	3	3	3	33	561
1936	808	808	808	808	808	820	840	859	865	853	838	827	47	27	8	2	14	29	40	1	1	4	5	3	1	1	16	12	20	19	6	-12	-15	-11	6	6	6	6	3	3	3	33	528
1937	808	808	808	808	808	820	834	859	867	853	838	827	47	33	8	0	14	29	40	1	1	4	6	3	1	1	17	12	14	25	8	-14	-15	-11	6	6	6	6	3	3	3	33	561
1938	808	808	808	808	808	820	840	859	867	867	855	840	47	27	8	0	0	12	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1939	808	808	808	808	808	816	831	830	819	801	784	773	51	36	37	48	66	83	94	1	1	1	1	1	1	1	7	8	15	-1	-11	-18	-17	-11	6	6	5	3	2	2	3	27	189
1940	773	774	775	802	808	820	837	859	856	840	823	810	47	30	8	11	27	44	57	1	1	4	3	1	1	1	12	12	17	22	-3	-16	-17	-13	6	6	6	5	2	2	3	30	360
1941	807	807	808	808	808	820	834	859	867	864	851	840	47	33	8	0	3	16	27	1	1	4	6	5	2	1	20	12	14	25	8	-3	-13	-11	6	6	6	6	5	3	3	35	700
1942	808	808	808	808	808	820	838	859	867	861	852	840	47	29	8	0	6	15	27	1	1	4	6	4	2	1	19	12	18	21	8	-6	-9	-12	6	6	6	6	4	4	3	35	665
1943	808	808	808	808	808	820	840	859	862	851	836	825	47	27	8	5	16	31	42	1	1	4	4	2	1	1	14	12	20	19	3	-11	-15	-11	6	6	6	6	3	3	3	33	462
1944	808	808	808	808	808	817	815	834	835	821	803	789	50	52	33	32	46	64	78	1	1	1	1	1	1	1	7	9	-2	19	1	-14	-18	-14	6	5	6	6	3	2	3	31	217
1945	787	794	800	804	808	820	833	856	867	856	842	832	47	34	11	0	11	25	35	1	1	3	6	3	1	1	16	12	13	23	11	-11	-14	-10	6	6	6	6	3	3	4	34	544
1946	808	808	808	808	808	818	834	857	856	841	825	811	49	33	10	11	26	42	56	1	1	3	3	1	1	1	11	10	16	23	-1	-15	-16	-14	6	6	6	5	3	2	3	31	341
1947	808	808	808	808	808	815	815	820	812	795	778	769	52	52	47	55	72	89	98	1	1	1	1	1	1	1	7	7	0	5	-8	-17	-17	-9	6	6	6	4	2	2	4	30	210
1948	768	769	770	772	774	774	776	800	820	803	784	768	93	91	67	47	64	83	99	1	1	1	1	1	1	1	7	0	2	24	20	-17	-19	-16	6	6	6	6	2	2	2	30	210
1949	766	765	766	767	771	780	781	801	800	777	754	735	87	86	66	67	90	113	132	1	1	1	1	1	1	1	7	9	1	20	-1	-23	-23	-19	6	6	6	5	1	1	2	27	189
1950	731	730	731	740	757	761	775	800	801	779	756	737	106	92	67	66	88	111	130	1	1	1	1	1	1	1	7	4	14	25	1	-22	-23	-19	6	6	6	6	1	1	2	28	196
1951	734	797	808	808	808	819	819	819	817	796	774	759	48	48	48	50	71	93	108	1	1	1	1	1	1	1	7	11	0	0	-2	-21	-22	-15	6	6	6	5	1	1	3	28	196
1952	765	756	769	804	808	820	840	859	867	864	852	840	47	27	8	0	3	15	27	1	1	4	6	5	2	1	20	12	20	19	8	-3	-12	-12	6	6	6	6	5	3	3	35	700
1953	808	808	808	808	808	809	809	810	810	796	775	760	58	58	57	57	71	92	107	1	1	1	1	1	1	1	7	1	0	1	0	-14	-21	-15	6	6	6	6	3	1	3	31	217
1954	756	756	757	760	770	784	802	823	814	793	771	755	83	65	44	53	74	96	112	1	1	1	1	1	1	1	7	14	18	21	-9	-21	-22	-16	6	6	6	4	1	1	2	26	182
1955	752	750	754	781	786	766	767	783	785	767	748	735	101	100	84	82	100	119	132	1	1	1	1	1	1	1	7	0	1	16	2	-18	-19	-13	6	6	6	6	2	2	3	31	217
1956	732	732	808	808	808	819	819	853	867	863	850	840	48	48	14	0	4	17	27	1	1	3	6	5	2	1	19	11	0	34	14	-4	-13	-10	6	6	6	6	5	3	4	36	684
1957	808	808	808	808	808	813	813	814	817	798	778	763	54	54	53	50	69	89	104	1	1	1	1	1	1	1	7	5	0	1	3	-19	-20	-15	6	6	6	6	2	2	3	31	217
1958	759	760	765	772	791	817	840	859	867	862	850	840	50	27	8	0	5	17	27	1	1	4	6	4	2	1	19	26	23	19	8	-5	-12	-10	6	6	6	6	5	3	4	36	684
1959	808	808	808	808	808	813	816	817	808	788	770	763	54	51	50	59	79	97	104	1	1	1	1	1	1	1	7	5	3	1	-9	-20	-18	-7	6	6	6	4	2	2	4	30	210
1960	762	761	761	762	774	782	797	809	806	790	775	766	85	70	58	61	77	92	101	1	1	1	1	1	1	1	7	8	15	12	-3	-16	-15	-9	6	6	6	5	2	3	4	32	224
1961	765	765	767	768	770	771	775	775	767	747	730	718	96	92	92	100	120	137	149	1	1	1	1	1	1	1	7	1	4	0	-8	-20	-17	-12	6	6	6	4	2	2	3	29	203
1962	717	717	720	722	767	776	801	815	830	816	798	783	91	66	52	37	51	69	84	1	1	1	1	1	1	1	7	9	25	14	15	-14	-18	-15	6	6	6	6	3	2	3	32	224
1963	782	782	783	792	808	814	823	848	861	852	837	826	53	44	19	6	15	30	41	1	1	2	4	2	1	1	12	6	9	25	13	-9	-15	-11	6	6	6	6	4	3	3	34	408
1964	808	808	808	808	808	808	809	809	807	791	774	764	59	58	58	60	76	93	103	1	1	1	1	1	1	1	7	0	1	0	-2	-16	-17	-10	6	6	6	5	2	2	4	31	217
1965	762	765	808	808	808	815	831	853	867	861	850	840	52	36	14	0	6	17	27	1	1	3	6	4	2	1	18	7	16	22	14	-6	-11	-10	6	6	6	6	4	3	4	35	630
1966	808	808	808	808	808	814	814	815	800	776	752	736	53	53	52	67	91	115	131	1	1	1	1	1	1	1	7	8	0	1	-15	-24	-24	-16	6	6	6	3	1	1	2	25	175
1967	732	735	766	779	791	819	840	859	867	867	856	840	48	27	8	0	0	11	27	1	1	4	6	6	3	1	22	28	21	19	8	0	-11	-16	6	6	6	6	6	3	2	35	770
1968	808	808	808	808	808	812	813	813	803	783	767	756	55	54	54	64	84	100	111	1	1	1	1	1	1	1	7	4	1	0	-10	-20	-16	-11	6	6	6	4	2	2	3	29	203
1969	762	757	765	808	808	820	840	859	867	867	854	840	47	27	8	0	0	13	27	1	1	4	6	6	3	1	22	12	20	19	8	0	-13	-14	6	6	6	6	6	3	3	36	792
1970	808	808	808	808	808	820	821	821	822	802	782	767	47	46	46	45	65	85	100	1	1	1	1	1	1	1	7	12	1	0	1	-20	-20	-15	6	6	6	6	2	2	3	31	217
1971	765	767	778	788	795	800	800	801	803	786	765	749	67	67	66	64	81	102	118	1	1	1	1	1	1	1	7	5	0	1	2	-17	-21	-16	6	6	6	6	2	1	2	29	203
1972	745	745	755	761	768	781	781	782	782	763	743	734	86	86	85	85	104	124	133	1	1	1	1	1	1	1	7	13	0	1	0	-19	-20	-9	6	6	6	6	2	2	4	32	224
1973	734	736	744	762	791	807	817	859	862	848	833	823	60	50	8	5	19	34	44	1	1	4	4	2	1	1	14	16	10	42	3	-14	-15	-10	6	6	6	6	3	3	4	34	476
1974	808	808	808	808	808	820	833	859	866	852	838	827	47	34	8	1	15	29	40	1	1	4	5	2	1	1	15	12	13	26	7	-14	-14	-11	6	6	6	6	3	3	3	33	495
1975	808	808	808	808	808	820	823	852	867	856	842	832	47	44	15	0	11	25	35	1	1	2	6	3	1	1	15	12	3	29	15	-11	-14	-10	6	6	6	6	3	3	4	34	510
1976	808	808	808	808	808	809	808	807	795	778	764	755	58	59	60	72	89	103	112	1	1	1	1	1	1	1	7	1	-1	-1	-12	-17	-14	-9	6	5	5	3	2	3	4	28	196
1977	754	752	750	750	750	745	737	726	715	685	655	631	122	130	141	152	182	212	236	1	1	1	1	1	1	1	7	-5	-8	-11	-11	-30	-30	-24	5	4	3	3	1	1	1	18	126
1978	626	626	642	693	741	782	815	859	867	867	857	840	85	52	8	0	0	10	27	1	1	4	6	6	3	1	22	41	33	44	8	0	-10	-17	6	6	6	6	6	4	2	36	792
1979	808	808	808	808	808	820	828	859	859	844	829	818	47	39	8	8	23	38	49	1	1	4	4	1	1	1	13	12	8	31	0	-15	-15	-11	6	6	6	6	3	3	3	33	429
1980	808	808	808	808	808	820	835	859	867	867	855	840	47	32	8	0	0	12	27	1	1	4	6	6	3	1	22	12	15	24	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1981	808	807	807	808	808	813	813	818	813	797	781	772	54	54	49	54	70	86	95	1	1	1	1	1	1	1	7	5	0	5	-5	-16	-16	-9	6	6	6	5	2	2	4	31	217
1982	771	780	795	808	808	820	840	859	867	865	854	840	47	27	8	0	2	13	27	1	1	4	6	5	3	1	21	12	20	19	8	-2	-11	-14	6	6	6	6	5	3	3	35	735
1983	808	808	808	808	808	820	836	859	867	867	864	840	47	31	8	0	0	3	27	1	1	4	6	6	5	1	24	12	16	23	8	0	-3	-24	6	6	6	6	6	5	1	36	864
1984	808	808	808	808	808	820	821	821	819	800	778	763	47	46	46	48	67	89	104	1	1	1	1	1	1	1	7	12	1	0	-2	-19	-22	-15	6	6	6	5	2	1	3	29	203
1985	762	768	770	773	780	787	799	800	793	774	758	744	80	68	67	74	93	109	123	1	1	1	1	1	1	1	7	7	12	1	-7	-19	-16	-14	6	6	6	4	2	2	3	29	203
1986	745	748	757	767	808	820	839	859	867	855	841	830	47	28	8	0	12	26	37	1	1	4	6	3	1	1	17	12	19	20	8	-12	-14	-11	6	6	6	6	3	3	3	33	561
1987	808	807	807	807	808	810	818	815	805	789	776	767	57	49	52	62	78	91	100	1	1	1	1	1	1	1	7	2	8	-3	-10	-16	-13	-9	6	6	5	4	2	3	4	30	210
1988	766	767	769	775	779	785	789	790	782	765	749	738	82	78	77	85	102	118	129	1	1	1	1	1	1	1	7	6	4	1	-8	-17	-16	-11	6	6	6	4	2	2	3	29	203
1989	738	735	738	739	744	763	782	790	786	769	754	743	104	85	77	81	98	113	124	1	1	1	1	1	1	1	7	19	19	8	-4	-17	-15	-11	6	6	6	5	2	3	3	31	217
1990	745	748	747	750	755	762	772	764	754	734	716	701	105	95	103	113	133	151	166	1	1	1	1	1	1	1	7	7	10	-8	-10	-20	-18	-15	6	6	4	4	2	2	3	27	189
1991	699	697	697	696	698	721	727	751	752	734	717	703	146	140	116	115	133	150	164	1	1	1	1	1	1	1	7	25	6	24	1	-18	-17	-14	6	6	6	6	2	2	3	31	217
1992	703	704	706	706	726	734	755	749	734	717	697	682	133	112	118	133	150	170	185	1	1	1	1	1	1	1	7	8	21	-6	-15	-17	-20	-15	6	6	4	3	2	2	3	26	182
1993	680	681	689	749	775	803	803	837	861	855	841	831	64	64	30	6	12	26	36	1	1	1	4	3	1	1	12	28	0	34	24	-6	-14	-10	6	6	6	6	4	3	4	35	420
1994	808	807	808	808	808	810	815	819	811	796	782	772	57	52	48	56	71	85	95	1	1	1	1	1	1	1	7	2	5	4	-8	-15	-14	-10	6	6	6	4	3	3	4	32	224
																							73 - year Average:				11													73 - year Average:		32	365.8
																																								1929 - '34 Average:			283.3

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Change from Previous Month [fluctuation]

A2-180

C-032520

C—032520

STUDY: F-SWRCB-506 DWRSIM: recirc818-f, 17 Jun 97
CP # 18, MILLERTON LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-506/18/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 576'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	491	505	527	547	549	566	559	576	576	562	518	491	10	17	0	0	14	58	85
1923	465	495	520	537	531	517	541	549	540	526	463	470	59	35	27	36	50	113	106
1924	483	494	508	522	516	503	506	511	505	478	464	468	73	70	65	71	98	112	108
1925	465	474	490	503	508	493	514	532	522	499	483	475	83	62	44	54	77	93	101
1926	477	490	505	519	522	508	549	563	535	494	473	485	68	27	13	41	82	103	91
1927	491	508	528	545	560	561	560	569	576	543	492	482	15	16	7	0	33	84	94
1928	482	503	525	542	540	543	551	554	522	477	465	477	33	25	22	54	99	111	99
1929	485	490	513	528	517	513	531	531	527	506	466	477	63	45	45	49	70	110	99
1930	480	495	507	518	514	510	525	534	518	489	466	482	66	51	42	58	87	110	94
1931	487	501	513	522	517	508	510	516	508	482	466	466	68	66	60	68	94	110	110
1932	467	476	503	520	543	531	524	532	552	518	492	477	45	52	44	24	58	84	99
1933	477	489	501	516	512	501	520	537	526	509	466	467	75	56	39	50	67	110	109
1934	470	480	500	517	511	503	516	527	523	498	477	486	73	60	49	53	78	99	90
1935	490	500	515	535	532	509	542	563	574	538	469	479	67	34	13	2	38	107	97
1936	486	502	518	533	560	558	564	576	563	521	472	478	18	12	0	13	55	104	98
1937	488	497	516	535	560	570	576	576	576	538	484	469	6	0	0	0	38	92	107
1938	472	486	533	560	560	542	529	467	572	576	532	520	34	47	109	4	0	44	56
1939	513	514	529	538	532	524	542	560	539	504	473	495	52	34	16	37	72	103	81
1940	495	504	517	550	550	552	548	561	553	512	466	471	24	28	15	23	64	110	105
1941	481	494	528	556	560	573	573	569	576	569	527	506	3	3	7	0	7	49	70
1942	497	507	532	552	549	553	554	562	576	555	509	477	23	22	14	0	21	67	99
1943	477	494	518	557	556	576	574	576	562	526	491	476	0	2	0	14	50	85	100
1944	479	491	508	521	524	507	516	517	501	494	490	480	69	60	59	75	82	86	96
1945	481	503	523	533	560	568	565	571	576	554	511	491	8	11	5	0	22	65	85
1946	485	502	531	548	528	524	536	559	546	510	478	480	52	40	17	30	66	98	96
1947	481	500	526	543	541	530	545	556	535	497	473	481	46	31	20	41	79	103	95
1948	488	503	518	529	523	530	556	551	541	483	480	484	46	20	25	35	93	96	92
1949	490	500	513	526	524	511	522	538	521	482	477	489	65	54	38	55	94	99	87
1950	492	503	519	536	541	524	534	551	539	506	476	482	52	42	25	37	70	100	94
1951	490	533	560	560	554	546	552	546	514	463	463	481	30	24	30	62	113	113	95
1952	488	500	530	559	560	567	559	526	576	571	525	508	9	17	50	0	5	51	68
1953	501	514	533	549	538	532	541	536	518	497	478	481	44	35	40	58	79	98	95
1954	488	497	514	532	532	527	537	560	544	507	465	483	49	39	16	32	69	111	93
1955	489	502	522	540	537	520	534	545	537	504	481	487	56	42	31	39	72	95	89
1956	491	499	560	560	560	576	576	561	576	566	524	505	0	0	15	0	10	52	71
1957	495	504	517	527	525	529	546	561	562	526	471	481	47	30	15	14	50	105	95
1958	488	501	525	545	554	565	576	576	576	557	516	498	11	0	0	0	19	60	78
1959	492	507	523	530	536	528	550	566	551	500	470	475	48	26	10	25	76	106	101
1960	474	475	480	490	503	498	515	525	509	496	483	481	78	61	51	67	80	93	95
1961	481	491	505	511	510	511	526	539	527	486	467	467	65	50	37	49	90	109	109
1962	468	471	484	492	538	529	527	555	569	540	489	476	47	49	21	7	36	87	100
1963	479	491	501	518	558	558	576	576	576	564	520	503	18	0	0	0	12	56	73
1964	490	517	542	551	547	544	553	561	551	508	476	484	32	23	15	25	68	100	92
1965	481	496	529	560	556	554	559	551	561	540	512	496	22	17	25	15	36	64	80
1966	487	513	546	558	541	526	545	564	550	506	486	486	50	31	12	26	70	90	90
1967	490	502	539	559	560	571	565	514	570	576	539	522	5	11	62	6	0	37	54
1968	515	521	539	545	545	539	550	554	539	506	478	482	37	26	22	37	70	98	94
1969	480	496	513	560	524	521	467	469	576	576	538	513	55	109	107	0	0	38	63
1970	498	516	540	560	560	554	554	555	544	517	476	477	22	22	21	32	59	100	99
1971	482	502	534	551	548	533	541	544	520	498	491	478	43	35	32	56	78	85	98
1972	479	491	519	536	532	524	537	543	540	497	481	481	52	39	33	36	79	95	95
1973	489	501	523	545	560	560	550	575	576	542	483	477	16	26	1	0	34	93	99
1974	487	510	545	560	544	550	559	570	573	537	490	473	26	17	6	3	39	86	103
1975	476	494	515	528	535	526	533	536	567	525	476	482	50	43	40	9	51	100	94
1976	489	511	531	541	539	544	547	542	519	492	479	494	32	29	34	57	84	97	82
1977	490	496	500	503	501	464	465	464	462	466	461	462	112	111	112	114	110	115	114
1978	462	462	484	532	560	552	510	498	576	576	548	539	24	66	78	0	0	28	37
1979	528	535	549	560	555	562	560	571	563	521	477	482	14	16	5	13	55	99	94
1980	489	488	508	560	560	558	566	550	576	576	542	513	18	10	26	0	0	34	63
1981	503	512	520	528	531	533	547	553	543	510	477	488	43	29	23	33	66	99	88
1982	491	504	556	560	560	576	546	561	576	576	546	541	0	30	15	0	0	30	35
1983	531	568	560	560	513	484	467	467	483	564	572	576	92	109	109	93	12	4	0
1984	560	560	560	560	560	568	570	570	557	530	487	483	8	6	6	19	46	89	93
1985	482	492	511	536	533	526	551	563	539	501	483	483	50	25	13	37	75	93	93
1986	490	508	534	554	550	552	574	565	576	558	503	479	24	2	11	0	18	73	97
1987	480	489	492	495	496	511	530	551	539	503	473	480	65	46	25	37	73	103	96
1988	482	495	507	526	516	527	539	547	527	498	483	486	49	37	29	49	78	93	90
1989	486	497	505	515	512	516	537	552	540	502	478	484	60	39	24	36	74	98	92
1990	489	495	502	510	510	517	532	544	525	508	479	483	59	44	32	51	68	97	93
1991	480	486	492	499	493	489	501	508	512	506	480	486	87	75	68	64	70	96	90
1992	485	490	494	498	499	490	493	494	480	470	465	466	86	83	82	96	106	111	110
1993	487	466	476	536	543	556	558	576	576	571	522	499	20	18	0	0	5	54	77
1994	490	497	507	512	508	520	534	548	528	498	478	484	56	42	28	48	78	98	92

Reservoir Elev[illegible]able:
If [DFMRE] <= 0', the[illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	3	2	6	6	3	1	1	22	17	-7	17	0	-14	-44	-27	6	4	6	6	3	1	1	27	594
1923	1	1	1	1	1	1	1	7	-14	24	8	-9	-14	-63	7	3	6	6	4	3	1	6	29	203
1924	1	1	1	1	1	1	1	7	-13	3	5	-6	-27	-14	4	3	6	6	4	1	3	6	29	203
1925	1	1	1	1	1	1	1	7	-15	21	18	-10	-23	-16	-8	3	6	6	4	1	2	4	26	182
1926	1	1	3	1	1	1	1	9	-14	41	14	-28	-41	-21	12	3	6	6	1	1	1	6	24	216
1927	2	2	4	6	1	1	1	17	1	-1	9	7	-33	-51	-10	6	5	6	6	1	1	4	29	493
1928	1	1	1	1	1	1	1	7	3	8	3	-32	-45	-12	12	6	6	6	1	1	3	6	29	203
1929	1	1	1	1	1	1	1	7	-4	18	0	-4	-21	-40	11	5	6	6	5	1	1	6	30	210
1930	1	1	1	1	1	1	1	7	-4	15	9	-16	-29	-23	16	5	6	6	2	1	1	6	27	189
1931	1	1	1	1	1	1	1	7	-9	2	6	-8	-26	-16	0	4	6	6	4	1	2	6	29	203
1932	1	1	1	1	1	1	1	7	-12	-7	8	20	-34	-26	-15	3	4	6	6	1	1	3	24	168
1933	1	1	1	1	1	1	1	7	-11	19	17	-11	-17	-43	1	3	6	6	3	2	1	6	27	189
1934	1	1	1	1	1	1	1	7	-8	13	11	-4	-25	-21	9	4	6	6	5	1	1	6	29	203
1935	1	1	3	5	1	1	1	13	-23	33	21	11	-36	-69	10	1	6	6	6	1	1	6	27	351
1936	2	3	6	3	1	1	1	17	-2	6	12	-13	-42	-49	6	5	6	6	3	1	1	6	28	476
1937	4	6	6	6	1	1	1	25	10	6	0	0	-38	-54	-15	6	6	6	6	1	1	3	29	725
1938	1	1	1	5	6	1	1	16	-18	-13	-62	105	4	-44	-12	2	3	1	6	6	1	3	22	352
1939	1	1	2	1	1	1	1	8	-8	18	18	-21	-35	-31	22	4	6	6	1	1	1	6	25	200
1940	1	1	2	1	1	1	1	8	2	-4	13	-8	-41	-46	5	6	5	6	4	1	1	6	29	232
1941	5	5	4	6	4	1	1	26	13	0	-4	7	-7	-42	-21	6	6	5	6	4	1	1	29	754
1942	1	1	3	6	1	1	1	14	4	1	8	14	-21	-46	-32	6	6	6	6	1	1	1	27	378
1943	6	5	6	3	1	1	1	23	20	-2	2	-14	-36	-35	-15	6	5	6	3	1	1	3	25	575
1944	1	1	1	1	1	1	1	7	-17	9	1	-16	-7	-4	-10	2	6	6	2	4	5	4	29	203
1945	4	3	4	6	1	1	1	20	8	-3	6	5	-22	-43	-20	6	5	6	6	1	1	2	27	540
1946	1	1	2	1	1	1	1	8	-4	12	23	-13	-36	-32	2	5	6	6	3	1	1	6	28	224
1947	1	1	1	1	1	1	1	7	-11	15	11	-21	-38	-24	8	3	6	6	1	1	1	6	24	168
1948	1	1	1	1	1	1	1	7	7	26	-5	-10	-58	-3	4	6	6	5	4	1	5	6	33	231
1949	1	1	1	1	1	1	1	7	-13	11	16	-17	-39	-5	12	3	6	6	2	1	5	6	29	203
1950	1	1	1	1	1	1	1	7	-17	10	17	-12	-33	-30	6	2	6	6	3	1	1	6	25	175
1951	1	1	1	1	1	1	1	7	-8	6	-6	-32	-51	0	18	4	6	4	1	1	6	6	28	196
1952	4	2	1	6	4	1	1	19	7	-8	-33	50	-5	-46	-17	6	4	1	6	5	1	2	25	475
1953	1	1	1	1	1	1	1	7	-6	9	-5	-18	-21	-19	3	4	6	5	2	1	2	6	26	182
1954	1	1	2	1	1	1	1	8	-5	10	23	-16	-37	-42	18	5	6	6	2	1	1	6	27	216
1955	1	1	1	1	1	1	1	7	-17	14	11	-8	-33	-23	6	2	6	6	4	1	1	6	26	182
1956	6	6	2	6	3	1	1	25	16	0	-15	15	-10	-42	-19	6	6	3	6	4	1	2	28	700
1957	1	1	2	3	1	1	1	10	4	17	15	1	-36	-55	10	6	6	6	6	1	1	6	32	320
1958	3	6	6	6	2	1	1	25	11	11	0	0	-19	-41	-18	6	6	6	6	2	1	2	29	725
1959	1	1	3	1	1	1	1	9	-8	22	16	-15	-51	-30	5	4	6	6	3	1	1	6	27	243
1960	1	1	1	1	1	1	1	7	-5	17	10	-16	-13	-13	-2	5	6	6	2	3	3	5	30	210
1961	1	1	1	1	1	1	1	7	1	15	13	-12	-41	-19	0	6	6	6	3	1	2	6	30	210
1962	1	1	1	4	1	1	1	10	-9	-2	28	14	-29	-51	-13	4	5	6	6	1	1	3	26	260
1963	2	6	6	6	3	1	1	25	0	18	0	0	-12	-44	-17	6	6	6	6	3	1	2	30	750
1964	1	1	2	1	1	1	1	8	-3	9	8	-10	-43	-32	8	5	6	6	4	1	1	6	29	232
1965	1	2	1	2	1	1	1	9	-2	5	-8	10	-21	-28	-16	5	6	4	6	1	1	2	25	225
1966	1	1	3	1	1	1	1	9	-15	19	19	-14	-44	-20	0	3	6	6	3	1	2	6	27	243
1967	4	3	1	4	6	1	1	20	11	-6	-51	56	6	-37	-17	6	4	1	6	6	1	2	26	520
1968	1	1	1	1	1	1	1	7	-6	11	4	-15	-33	-28	4	4	6	6	3	1	1	6	27	189
1969	1	1	1	6	6	1	1	17	-3	-54	2	107	0	-38	-25	5	1	6	6	6	1	1	26	442
1970	1	1	1	1	1	1	1	7	-6	0	1	-11	-27	-41	1	4	6	6	3	1	1	6	27	189
1971	1	1	1	1	1	1	1	7	-15	8	3	-24	-22	-7	-13	3	6	6	1	1	4	3	24	168
1972	1	1	1	1	1	1	1	7	-8	13	6	-3	-43	-16	0	4	6	6	5	1	2	6	30	210
1973	2	1	5	6	1	1	1	17	0	-10	25	1	-34	-59	-6	6	4	6	6	1	1	4	28	476
1974	1	2	4	5	1	1	1	15	6	9	11	3	-36	-47	-17	6	6	6	6	1	1	2	28	420
1975	1	1	1	4	1	1	1	10	-9	7	3	31	-42	-49	6	4	6	6	6	1	1	6	30	300
1976	1	1	1	1	1	1	1	7	5	3	-5	-23	-27	-13	15	6	6	5	1	1	3	6	28	196
1977	1	1	1	1	1	1	1	7	-37	1	-1	-2	4	-5	1	1	6	5	5	6	5	6	34	238
1978	1	1	1	6	6	1	1	17	-8	-42	-12	78	0	-28	-9	4	1	3	6	6	1	4	25	425
1979	3	2	4	3	1	1	1	15	7	-2	11	-8	-42	-44	5	6	5	6	4	1	1	6	29	435
1980	2	3	1	6	6	1	1	20	-2	8	-16	26	0	-34	-29	5	6	2	6	6	1	1	27	540
1981	1	1	1	1	1	1	1	7	2	14	6	-10	-33	-33	11	6	6	6	4	1	1	6	30	210
1982	6	1	2	6	6	1	1	23	16	-30	15	15	0	-30	-5	6	1	6	6	6	1	5	31	713
1983	1	1	1	1	3	5	6	18	-29	-17	0	16	81	8	4	1	2	6	6	6	6	6	33	594
1984	4	4	4	2	1	1	1	17	8	2	0	-13	-27	-43	-4	6	6	6	3	1	1	5	28	476
1985	1	1	3	1	1	1	1	9	-7	25	12	-24	-38	-18	0	4	6	6	1	1	2	6	26	234
1986	1	5	3	6	2	1	1	19	2	22	-9	11	-18	-55	-24	6	6	4	6	2	1	1	26	494
1987	1	1	1	1	1	1	1	7	15	19	21	-12	-36	-30	7	6	6	6	3	1	1	6	29	203
1988	1	1	1	1	1	1	1	7	11	12	8	-20	-29	-15	3	6	6	6	2	1	3	6	30	210
1989	1	1	1	1	1	1	1	7	4	21	15	-12	-38	-24	6	6	6	6	3	1	1	6	29	203
1990	1	1	1	1	1	1	1	7	7	15	12	-19	-17	-29	4	6	6	6	2	2	1	6	29	203
1991	1	1	1	1	1	1	1	7	-4	12	7	4	-6	-26	6	5	6	6	6	4	1	6	34	238
1992	1	1	1	1	1	1	1	7	-9	3	1	-14	-10	-5	1	4	6	6	3	4	5	6	34	238
1993	1	2	6	6	4	1	1	21	13	2	18	0	-5	-49	-23	6	6	6	6	5	1	1	31	651
1994	1	1	1	1	1	1	1	7	12	14	14	-20	-30	-20	6	6	6	6	2	1	2	6	29	203

73 - year Average: 12

73 - year Average: 28 329.2
1929 - '34 Average: 193.7

A2-181

STUDY: 1995C06F-SWRCB-506 DWRSIM: recirc818-I, 17 Jun 97
CP # 12, SWP SAN LUIS RESERVIOR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-506/12/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 544'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV.	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	419	441	475	520	539	544	543	539	524	477	432	442	0	1	5	20	67	112	102
1923	473	497	502	517	527	534	529	507	473	448	418	405	10	15	37	71	96	126	139
1924	420	433	461	508	528	528	520	497	464	426	389	384	16	24	47	80	118	155	160
1925	385	395	439	470	517	528	521	495	453	409	351	334	16	23	49	91	135	193	210
1926	374	390	407	463	505	516	511	487	451	438	385	371	28	33	57	93	106	159	173
1927	401	440	477	523	541	544	540	530	499	464	414	423	0	4	14	45	80	130	121
1928	457	488	500	515	527	533	527	506	458	437	415	402	11	17	38	86	107	129	142
1929	414	440	489	517	532	541	532	518	495	467	436	433	3	12	26	49	77	108	111
1930	433	438	482	531	542	544	526	495	465	456	437	414	0	18	49	79	88	107	130
1931	418	423	424	467	481	485	475	462	452	422	370	366	59	69	82	92	122	174	178
1932	377	376	439	498	526	526	518	499	479	472	441	426	18	26	45	65	72	103	118
1933	442	449	449	493	513	521	518	506	479	444	399	398	23	26	38	65	100	145	146
1934	412	412	457	509	519	519	507	484	458	433	403	391	25	37	60	86	111	141	153
1935	389	410	429	489	497	528	530	507	472	429	360	356	16	14	37	72	115	184	188
1936	395	416	435	489	532	543	543	526	493	458	416	410	1	1	18	51	86	128	134
1937	429	442	467	516	535	543	544	540	511	462	412	405	1	0	4	33	82	132	139
1938	437	470	499	515	530	540	544	544	537	504	471	486	4	0	0	7	40	73	58
1939	513	522	526	539	544	544	526	495	463	450	434	414	0	18	49	81	94	110	130
1940	419	416	409	475	516	523	523	500	463	435	354	353	21	21	44	81	109	190	191
1941	392	425	463	515	538	542	539	536	521	472	431	450	2	5	8	23	72	113	94
1942	482	495	500	516	528	532	528	520	511	464	423	440	12	16	24	33	80	121	104
1943	472	487	492	507	519	531	533	537	508	464	415	422	13	11	7	36	80	129	122
1944	455	486	501	516	530	537	518	487	453	439	421	411	7	26	57	91	105	123	133
1945	417	454	490	517	533	539	530	504	467	448	409	402	5	14	40	77	96	135	142
1946	439	472	497	512	523	530	517	490	449	428	411	399	14	27	54	95	116	133	145
1947	419	453	486	515	526	536	521	487	452	437	425	404	8	23	57	92	107	119	140
1948	410	422	435	488	503	524	523	501	464	417	342	351	20	21	43	80	127	202	193
1949	382	408	438	484	506	537	519	489	447	427	407	394	7	25	55	97	117	137	150
1950	406	420	434	487	524	532	520	491	455	432	413	403	12	24	53	89	112	131	141
1951	426	457	493	523	534	539	526	506	464	435	411	406	5	18	38	80	109	133	138
1952	432	461	491	520	533	538	542	544	536	510	492	499	6	2	0	8	34	52	45
1953	506	515	519	532	542	544	529	515	493	469	430	447	0	15	29	51	75	114	97
1954	478	494	501	516	527	533	526	508	480	436	415	403	11	18	36	84	108	129	141
1955	435	465	494	518	530	537	520	494	467	461	425	418	7	24	50	77	83	119	126
1956	431	453	495	528	542	544	538	528	506	475	434	444	0	6	16	38	69	110	100
1957	470	495	500	514	527	533	523	500	466	446	430	420	11	21	44	78	98	114	124
1958	452	481	506	522	534	537	538	538	530	494	474	488	7	6	6	14	50	70	56
1959	496	505	509	523	534	541	521	488	453	438	426	421	3	23	56	91	106	118	123
1960	432	446	457	504	539	544	525	491	458	437	380	358	0	19	53	86	107	164	186
1961	376	414	452	501	534	544	523	487	457	445	430	407	0	21	57	87	99	114	137
1962	412	419	456	492	530	535	517	485	433	402	326	336	9	27	59	111	142	218	208
1963	376	411	443	489	522	529	528	520	496	465	431	445	15	16	24	48	79	113	99
1964	475	503	515	531	541	544	518	482	437	413	391	395	0	26	62	107	131	153	149
1965	401	431	466	516	531	538	539	525	492	464	419	428	6	5	19	52	80	125	116
1966	458	487	497	512	523	529	512	481	435	413	397	387	15	32	63	109	131	147	157
1967	401	437	476	515	528	534	538	541	534	522	502	505	10	6	3	10	22	42	39
1968	512	523	527	540	544	544	529	496	458	440	423	417	0	15	48	86	104	121	127
1969	432	462	495	523	536	544	544	544	537	517	489	504	0	0	0	7	27	55	40
1970	517	526	530	544	544	544	534	511	470	449	414	409	0	10	33	74	95	130	135
1971	431	464	496	514	524	530	520	503	476	455	435	448	14	24	41	68	89	109	96
1972	475	502	513	528	540	544	526	493	453	434	419	404	0	18	51	91	110	125	140
1973	431	463	494	523	534	540	534	512	485	452	422	422	4	10	32	59	92	122	122
1974	454	483	504	520	531	536	534	522	493	464	438	450	8	10	22	51	80	106	94
1975	474	484	488	503	516	521	517	502	477	444	429	440	23	27	42	67	100	115	104
1976	467	485	491	506	520	532	514	487	467	465	448	429	12	30	57	77	79	96	115
1977	430	437	439	456	456	456	459	447	428	405	399	413	88	85	97	116	139	145	131
1978	418	435	485	535	544	544	544	544	526	469	414	433	0	0	0	18	75	130	111
1979	466	489	493	508	521	528	522	504	474	455	409	405	16	22	40	70	89	135	139
1980	439	474	502	519	534	544	544	544	527	493	453	469	0	0	0	17	51	91	75
1981	500	520	526	540	544	544	530	496	459	441	423	411	0	14	48	85	103	121	133
1982	423	458	491	523	536	543	544	544	531	494	462	472	1	0	0	13	50	82	72
1983	496	515	521	535	544	544	544	544	537	527	514	521	0	0	0	7	17	30	23
1984	536	544	544	544	544	544	536	514	479	459	413	421	0	8	30	65	85	131	123
1985	456	487	498	513	525	533	515	484	439	420	403	397	11	29	60	105	124	141	147
1986	402	409	447	499	530	544	544	544	532	492	459	468	0	0	0	12	52	85	76
1987	497	506	533	544	544	544	523	488	459	447	425	410	0	21	56	85	97	119	134
1988	420	416	454	504	517	517	506	491	479	460	425	421	27	38	53	65	84	119	123
1989	421	439	462	501	501	532	521	490	453	440	386	395	12	23	54	91	104	158	149
1990	409	426	455	499	519	523	507	478	460	448	401	383	21	37	66	84	96	143	161
1991	383	389	389	404	404	468	468	457	444	424	408	410	76	76	87	100	120	136	134
1992	413	425	439	484	516	539	528	512	489	470	430	422	5	16	32	55	74	114	122
1993	422	428	472	528	540	543	539	533	518	464	411	416	1	5	11	26	80	133	128
1994	451	482	491	505	516	528	507	475	450	446	445	432	16	37	69	94	96	99	112

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Change MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	5	4	1	1	1	1	19	5	-1	-4	-15	-47	-45	10	6	5	5	3	1	1	6	27	513
1923	3	2	1	1	1	1	1	10	7	-5	-22	-34	-25	-30	-13	6	5	1	1	1	1	3	18	180
1924	2	1	1	1	1	1	1	8	0	-8	-23	-33	-38	-37	-5	6	4	1	1	1	1	5	19	152
1925	2	1	1	1	1	1	1	8	11	-7	-26	-42	-44	-58	-17	6	4	1	1	1	1	2	16	128
1926	1	1	1	1	1	1	1	7	11	-5	-24	-36	-13	-53	-14	6	5	1	1	3	1	3	20	140
1927	6	5	3	1	1	1	1	18	3	-4	-10	-31	-35	-50	9	6	5	4	1	1	1	6	24	432
1928	3	2	1	1	1	1	1	10	6	-6	-21	-48	-21	-22	-13	6	4	1	1	1	1	3	17	170
1929	5	3	1	1	1	1	1	13	9	-9	-14	-23	-28	-31	-3	6	4	3	1	1	1	5	21	273
1930	6	2	1	1	1	1	1	13	2	-18	-31	-30	-9	-19	-23	6	2	1	1	4	2	1	17	221
1931	1	1	1	1	1	1	1	7	4	-10	-13	-10	-30	-52	-4	6	4	3	4	1	1	5	24	168
1932	2	1	1	1	1	1	1	8	0	-8	-19	-20	-7	-31	-15	6	4	2	2	4	1	3	22	176
1933	1	1	1	1	1	1	1	7	8	-3	-12	-27	-35	-45	-1	6	5	3	1	1	1	5	22	154
1934	1	1	1	1	1	1	1	7	0	-12	-23	-26	-25	-30	-12	6	3	1	1	1	1	3	16	112
1935	2	3	1	1	1	1	1	10	31	2	-23	-35	-43	-69	-4	6	6	1	1	1	1	5	21	210
1936	5	5	2	1	1	1	1	16	11	0	-17	-33	-35	-42	-6	6	6	2	1	1	1	4	21	336
1937	5	6	5	1	1	1	1	20	8	1	-4	-29	-49	-50	-7	6	6	5	1	1	1	4	24	480
1938	5	6	6	4	1	1	1	24	10	4	0	-7	-33	-33	15	6	6	6	4	1	1	6	30	720
1939	6	2	1	1	1	1	1	13	0	-18	-31	-32	-13	-16	-20	6	2	1	1	3	2	2	17	221
1940	1	1	1	1	1	1	1	7	7	0	-23	-37	-28	-81	-1	6	6	1	1	1	1	5	21	147
1941	5	4	4	1	1	1	1	17	4	-3	-3	-15	-49	-41	19	6	5	5	3	1	1	6	27	459
1942	3	2	1	1	1	1	1	10	4	-4	-8	-9	-47	-41	17	6	5	4	4	1	1	6	27	270
1943	3	3	4	1	1	1	1	14	12	2	4	-29	-44	-49	7	6	6	6	1	1	1	6	27	378
1944	4	1	1	1	1	1	1	10	7	-19	-31	-34	-14	-18	-10	6	2	1	1	3	2	4	19	190
1945	4	3	1	1	1	1	1	12	6	-9	-26	-37	-19	-39	-7	6	4	1	1	2	1	4	19	228
1946	3	1	1	1	1	1	1	9	7	-13	-27	-41	-21	-17	-12	6	3	1	1	1	2	3	17	153
1947	4	1	1	1	1	1	1	10	8	-15	-34	-35	-15	-12	-21	6	3	1	1	3	3	1	18	180
1948	1	1	1	1	1	1	1	7	21	-1	-22	-37	-47	-75	9	6	5	1	1	1	1	6	21	147
1949	4	1	1	1	1	1	1	10	31	-18	-30	-42	-20	-20	-13	6	2	1	1	2	2	3	17	170
1950	3	1	1	1	1	1	1	9	8	-12	-29	-36	-23	-19	-10	6	3	1	1	1	2	4	18	162
1951	4	2	1	1	1	1	1	11	5	-13	-20	-42	-29	-24	-5	6	3	2	1	1	1	5	19	209
1952	4	5	6	4	1	1	1	22	5	4	2	-8	-26	-18	7	6	6	6	4	1	2	6	31	682
1953	6	2	1	1	1	1	1	13	2	-15	-14	-22	-24	-39	17	6	3	3	1	1	1	6	21	273
1954	3	2	1	1	1	1	1	10	6	-7	-18	-48	-24	-21	-12	6	4	2	1	1	1	3	18	180
1955	4	1	1	1	1	1	1	10	7	-17	-26	-27	-6	-36	-7	6	2	1	1	4	1	4	19	190
1956	6	4	2	1	1	1	1	16	2	-6	-10	-22	-31	-41	10	6	4	4	1	1	1	6	23	368
1957	3	1	1	1	1	1	1	9	6	-10	-23	-34	-20	-16	-10	6	4	1	1	2	2	4	20	180
1958	4	4	4	3	1	1	1	18	3	1	0	-8	-36	-20	14	6	6	6	4	1	2	6	31	558
1959	5	1	1	1	1	1	1	11	7	-20	-33	-35	-15	-12	-5	6	2	1	1	3	3	5	21	231
1960	6	2	1	1	1	1	1	13	5	-19	-34	-33	-21	-57	-22	6	2	1	1	1	1	1	13	169
1961	6	1	1	1	1	1	1	12	10	-21	-36	-30	-12	-15	-23	6	1	1	1	3	3	1	16	192
1962	4	1	1	1	1	1	1	10	5	-18	-32	-52	-31	-76	10	6	2	1	1	1	1	6	18	180
1963	2	2	1	1	1	1	1	9	7	-1	-8	-24	-31	-34	14	6	5	4	1	1	1	6	24	216
1964	6	1	1	1	1	1	1	12	3	-26	-36	-45	-24	-22	4	6	1	1	1	1	1	6	17	204
1965	4	4	2	1	1	1	1	14	7	1	-14	-33	-28	-45	9	6	6	3	1	1	1	6	24	336
1966	2	1	1	1	1	1	1	8	6	-17	-31	-46	-22	-16	-10	6	2	1	1	1	2	4	17	136
1967	3	4	5	3	1	1	1	18	6	4	3	-7	-12	-20	3	6	6	6	4	3	2	6	33	594
1968	6	2	1	1	1	1	1	13	0	-15	-33	-38	-18	-17	-6	6	3	1	1	2	2	4	19	247
1969	6	6	6	4	1	1	1	25	8	0	0	-7	-20	-28	15	6	6	6	4	2	1	6	31	775
1970	6	3	1	1	1	1	1	14	0	-10	-23	-41	-21	-35	-5	6	4	1	1	1	1	5	19	266
1971	3	1	1	1	1	1	1	9	6	-10	-17	-27	-21	-20	13	6	4	2	1	1	2	6	22	198
1972	6	2	1	1	1	1	1	13	4	-18	-33	-40	-19	-15	-15	6	2	1	1	2	3	3	18	234
1973	5	3	1	1	1	1	1	13	6	-6	-22	-27	-33	-30	0	6	4	1	1	1	1	6	20	260
1974	4	3	1	1	1	1	1	12	5	-2	-12	-29	-29	-26	12	6	5	3	1	1	1	6	23	276
1975	1	1	1	1	1	1	1	7	5	-4	-15	-25	-33	-15	11	6	5	3	1	1	3	6	25	175
1976	3	1	1	1	1	1	1	9	12	-18	-27	-20	-2	-17	-19	6	2	1	2	5	2	2	20	180
1977	1	1	1	1	1	1	1	7	0	3	-12	-19	-23	-8	14	6	6	3	2	1	4	6	28	196
1978	6	6	6	2	1	1	1	23	0	0	0	-18	-57	-55	19	6	6	6	2	1	1	6	28	644
1979	2	1	1	1	1	1	1	8	7	-6	-18	-30	-19	-46	-4	6	4	2	1	2	1	5	21	168
1980	6	6	6	2	1	1	1	23	10	0	0	-17	-34	-40	16	6	6	6	2	1	1	6	28	644
1981	6	3	1	1	1	1	1	14	0	-14	-34	-37	-18	-18	-12	6	3	1	1	2	2	3	18	252
1982	5	6	6	3	1	1	1	23	7	1	0	-13	-37	-32	10	6	6	6	3	1	1	6	29	667
1983	6	6	6	4	2	1	1	26	0	0	0	-7	-10	-13	7	6	6	6	4	4	3	6	35	910
1984	6	4	1	1	1	1	1	15	0	-8	-22	-35	-20	-46	8	6	4	1	1	2	1	6	21	315
1985	3	1	1	1	1	1	1	9	8	-18	-31	-45	-19	-17	-6	6	2	1	1	2	2	4	18	162
1986	6	6	6	3	1	1	1	24	14	0	0	-12	-40	-33	9	6	6	6	3	1	1	6	29	696
1987	6	1	1	1	1	1	1	12	0	-21	-35	-29	-12	-22	-15	6	1	1	1	3	1	3	16	192
1988	1	1	1	1	1	1	1	7	0	-11	-15	-12	-19	-35	-4	6	3	3	3	2	1	5	23	161
1989	3	1	1	1	1	1	1	9	31	-11	-31	-37	-13	-54	9	6	3	1	1	3	1	6	21	189
1990	1	1	1	1	1	1	1	7	4	-16	-29	-18	-12	-47	-18	6	2	1	2	3	1	2	17	119
1991	1	1	1	1	1	1	1	7	64	0	-11	-13	-20	-16	2	6	6	3	3	2	2	6	28	196
1992	4	2	1	1	1	1	1	11	23	-11	-16	-23	-19	-40	-8	6	3	2	1	2	1	4	19	209
1993	5	4	3	1	1	1	1	16	3	-4	-6	-15	-54	-53	5	6	5	4	3	1	1	6	26	416
1994	2	1	1	1	1	1	1	8	10	-21	-32	-25	-4	-1	-13	6	1	1	1	5	5	3	22	176

73 - year Average: 13

73 - year Average: 22 288.9
1929 - '34 Average: 184.0

AZ-182

C-032522

C-032522

STUDY 1995C06F-SWRCB-507 DWRSIM: recirc818-f, 17 Jun 97
CP # 4, SHASTA LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-507/4/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 1067'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	969	993	999	1,003	1,019	1,038	1,060	1,067	1,062	1,048	1,031	1,025	29	7	0	5	19	36	42
1923	1,023	1,017	1,019	1,023	1,020	1,021	1,033	1,029	1,015	997	979	977	46	34	38	52	70	88	90
1924	979	979	979	979	987	987	976	962	947	925	907	893	80	91	105	120	142	160	174
1925	898	909	918	928	999	1,014	1,045	1,056	1,050	1,033	1,019	1,016	53	22	11	17	34	48	51
1926	1,013	1,011	1,008	1,004	1,031	1,032	1,044	1,039	1,019	995	978	971	35	23	28	48	72	89	96
1927	970	994	1,017	1,035	1,026	1,052	1,067	1,067	1,058	1,045	1,029	1,023	15	0	0	9	22	38	44
1928	1,021	1,017	1,020	1,028	1,044	1,046	1,066	1,062	1,048	1,023	1,002	996	21	1	5	19	44	65	71
1929	994	994	994	994	1,000	1,002	1,004	998	991	975	957	950	65	63	69	76	92	110	117
1930	949	947	978	989	1,006	1,028	1,039	1,039	1,023	1,004	990	988	39	28	28	44	63	77	79
1931	985	983	980	982	984	990	982	972	964	946	933	921	77	85	95	103	121	134	146
1932	916	915	931	941	949	974	977	985	978	964	949	943	93	90	82	89	103	118	124
1933	942	939	939	941	943	977	985	988	984	967	953	946	90	82	79	83	100	114	121
1934	946	944	952	969	968	999	999	993	985	956	932	917	68	68	74	82	111	135	150
1935	912	924	928	948	968	990	1,034	1,041	1,033	1,015	1,002	996	77	33	26	34	52	65	71
1936	993	989	986	1,010	1,032	1,043	1,052	1,050	1,042	1,022	1,002	997	24	15	17	25	45	65	70
1937	993	989	985	979	980	1,007	1,036	1,044	1,040	1,020	1,001	994	60	31	23	27	47	66	73
1938	991	1,013	1,020	1,035	1,030	1,024	1,049	1,067	1,067	1,058	1,045	1,036	43	18	0	0	9	22	31
1939	1,023	1,017	1,020	1,022	1,024	1,039	1,031	1,024	999	979	951	948	28	36	43	68	88	116	119
1940	944	939	947	995	1,017	1,025	1,059	1,064	1,053	1,033	1,016	1,014	42	8	3	14	34	51	53
1941	1,013	1,012	1,019	1,020	1,024	1,045	1,064	1,067	1,067	1,058	1,047	1,036	22	3	0	0	9	20	31
1942	1,023	1,017	1,020	1,023	1,028	1,042	1,067	1,067	1,067	1,058	1,046	1,036	25	0	0	0	9	21	31
1943	1,023	1,017	1,022	1,030	1,042	1,051	1,067	1,067	1,059	1,046	1,031	1,025	16	0	0	8	21	36	42
1944	1,023	1,017	1,015	1,014	1,023	1,033	1,038	1,038	1,021	997	977	970	34	29	29	46	70	90	97
1945	972	983	997	1,005	1,039	1,052	1,064	1,067	1,062	1,041	1,023	1,018	15	3	0	5	26	44	49
1946	1,017	1,017	1,018	1,033	1,039	1,050	1,062	1,064	1,056	1,039	1,023	1,020	17	5	3	11	28	44	47
1947	1,017	1,017	1,018	1,014	1,021	1,040	1,046	1,037	1,023	1,000	983	977	27	21	30	44	67	84	90
1948	982	984	985	1,009	1,007	1,019	1,057	1,067	1,067	1,053	1,038	1,036	48	10	0	0	14	29	31
1949	1,023	1,017	1,016	1,012	1,016	1,050	1,063	1,064	1,050	1,029	1,011	1,007	17	4	3	17	38	56	60
1950	1,003	999	995	1,003	1,016	1,033	1,046	1,045	1,033	1,011	994	992	34	21	22	34	56	73	75
1951	1,005	1,017	1,020	1,033	1,040	1,057	1,064	1,067	1,051	1,030	1,012	1,010	10	3	0	16	37	55	57
1952	1,008	1,013	1,019	1,032	1,038	1,048	1,058	1,067	1,067	1,058	1,046	1,036	19	9	0	0	9	21	31
1953	1,023	1,017	1,021	1,022	1,033	1,051	1,065	1,067	1,067	1,058	1,046	1,036	16	2	0	0	9	21	31
1954	1,023	1,017	1,021	1,030	1,035	1,051	1,067	1,064	1,060	1,043	1,031	1,030	16	0	3	7	24	36	37
1955	1,023	1,017	1,022	1,024	1,027	1,026	1,040	1,048	1,031	1,008	990	989	41	27	19	36	59	77	78
1956	987	990	1,017	1,017	1,019	1,048	1,067	1,067	1,067	1,058	1,047	1,036	19	0	0	0	9	20	31
1957	1,023	1,017	1,016	1,017	1,035	1,052	1,058	1,067	1,060	1,043	1,029	1,032	15	9	0	7	24	38	35
1958	1,023	1,017	1,021	1,029	1,067	1,024	1,053	1,067	1,067	1,058	1,047	1,036	43	14	0	0	9	20	31
1959	1,023	1,017	1,017	1,034	1,039	1,050	1,054	1,054	1,036	1,012	995	999	17	13	13	31	55	72	68
1960	996	994	991	997	1,025	1,052	1,059	1,067	1,050	1,030	1,012	1,010	15	8	0	17	37	55	57
1961	1,007	1,009	1,021	1,026	1,044	1,057	1,064	1,067	1,049	1,025	1,005	1,004	10	3	0	18	42	62	63
1962	1,000	1,003	1,014	1,016	1,035	1,050	1,062	1,063	1,051	1,031	1,014	1,011	17	5	4	16	36	53	56
1963	1,023	1,017	1,021	1,025	1,045	1,055	1,052	1,067	1,063	1,052	1,040	1,036	12	15	0	4	15	27	31
1964	1,023	1,017	1,018	1,033	1,034	1,038	1,032	1,027	1,012	991	971	969	29	35	40	55	76	96	98
1965	968	978	1,017	1,022	1,040	1,052	1,065	1,066	1,057	1,042	1,032	1,030	15	2	1	10	25	35	37
1966	1,023	1,017	1,021	1,037	1,049	1,055	1,067	1,064	1,049	1,030	1,015	1,012	12	0	3	18	37	52	55
1967	1,008	1,017	1,021	1,030	1,044	1,048	1,064	1,067	1,067	1,058	1,047	1,036	19	3	0	0	9	20	31
1968	1,023	1,017	1,019	1,025	1,034	1,054	1,056	1,058	1,042	1,022	1,015	1,012	13	11	9	25	45	52	55
1969	1,012	1,013	1,021	1,022	1,027	1,048	1,063	1,067	1,067	1,058	1,047	1,036	19	4	0	0	9	20	31
1970	1,023	1,017	1,020	1,017	1,025	1,052	1,055	1,055	1,043	1,025	1,012	1,010	15	12	12	24	42	55	57
1971	1,010	1,017	1,020	1,028	1,040	1,043	1,063	1,067	1,067	1,058	1,047	1,036	24	4	0	0	9	20	31
1972	1,023	1,017	1,022	1,033	1,045	1,056	1,067	1,067	1,051	1,032	1,018	1,019	11	0	0	16	35	49	48
1973	1,020	1,017	1,021	1,030	1,034	1,053	1,065	1,067	1,058	1,044	1,033	1,032	14	2	0	9	23	34	35
1974	1,023	1,017	1,018	1,017	1,036	1,025	1,058	1,067	1,067	1,058	1,047	1,036	42	9	0	0	9	20	31
1975	1,023	1,017	1,021	1,024	1,045	1,039	1,061	1,067	1,067	1,058	1,047	1,036	28	6	0	0	9	20	31
1976	1,023	1,017	1,018	1,017	1,012	1,017	1,024	1,020	996	974	970	972	50	43	47	71	93	97	95
1977	975	976	976	977	968	968	950	944	923	906	889	885	99	117	123	144	161	178	182
1978	874	873	916	1,019	1,031	1,047	1,067	1,067	1,064	1,056	1,047	1,036	20	0	0	3	11	20	31
1979	1,023	1,017	1,015	1,018	1,029	1,046	1,053	1,062	1,051	1,034	1,022	1,020	21	14	5	16	33	45	47
1980	1,020	1,017	1,020	1,029	1,019	1,046	1,059	1,064	1,056	1,045	1,035	1,035	21	8	3	11	22	32	32
1981	1,023	1,017	1,020	1,029	1,042	1,056	1,064	1,062	1,042	1,019	1,003	1,000	11	3	5	25	48	64	67
1982	989	1,017	1,018	1,033	1,029	1,046	1,051	1,067	1,067	1,058	1,047	1,036	21	16	0	0	9	20	31
1983	1,023	1,017	1,020	1,022	1,017	1,045	1,050	1,067	1,067	1,058	1,047	1,036	22	17	0	0	9	20	31
1984	1,023	1,017	1,018	1,034	1,047	1,056	1,064	1,067	1,060	1,044	1,038	1,036	11	3	0	7	23	29	31
1985	1,023	1,017	1,022	1,023	1,027	1,034	1,042	1,034	1,013	993	979	980	33	25	33	54	74	88	87
1986	983	986	994	1,018	1,017	1,029	1,047	1,049	1,037	1,020	1,005	1,008	38	20	18	30	47	62	59
1987	1,008	1,007	1,007	1,008	1,018	1,045	1,045	1,039	1,007	985	957	950	22	22	28	60	82	110	117
1988	946	948	979	1,001	1,002	1,005	1,011	1,010	993	962	947	945	62	56	57	74	105	120	122
1989	945	958	964	971	978	1,040	1,060	1,056	1,042	1,022	1,011	1,011	27	7	11	25	45	56	56
1990	1,013	1,011	1,007	1,013	1,013	1,019	1,014	1,020	1,005	985	964	960	48	53	47	62	82	103	107
1991	955	953	952	953	948	974	985	985	976	962	948	941	93	82	82	91	105	119	126
1992	940	939	940	943	982	1,003	1,014	1,006	992	971	957	951	64	53	61	75	96	110	116
1993	947	944	959	993	1,025	1,031	1,059	1,067	1,067	1,056	1,048	1,048	36	8	0	0	11	19	19
1994	1,043	1,017	1,019	1,020	1,028	1,027	1,027	1,026	999	979	958	955	40	40	41	68	88	109	112

Reservoir E. Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	E. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluct. MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	4	6	4	2	1	1	19	19	22	7	-5	-14	-17	-6	6	6	6	5	3	2	4	32	608
1923	1	1	1	1	1	1	1	7	1	12	-4	-14	-18	-18	-2	6	6	5	3	2	2	5	29	203
1924	1	1	1	1	1	1	1	7	0	-11	-14	-15	-22	-18	-14	6	3	3	3	1	2	3	21	147
1925	1	1	3	2	1	1	1	10	15	31	11	-6	-17	-14	-3	6	6	6	4	2	3	5	32	320
1926	1	1	1	1	1	1	1	7	1	12	-5	-20	-24	-17	-7	6	6	5	2	1	2	4	26	182
1927	2	6	6	4	1	1	1	21	26	15	0	-9	-13	-16	-6	6	6	6	4	3	2	4	31	651
1928	1	5	4	2	1	1	1	15	2	20	-4	-14	-25	-21	-6	6	6	5	3	1	1	4	26	390
1929	1	1	1	1	1	1	1	7	2	2	-6	-7	-16	-18	-7	6	6	4	4	2	2	4	28	196
1930	1	1	1	1	1	1	1	7	22	11	0	-16	-19	-14	-2	6	6	6	2	2	3	5	30	210
1931	1	1	1	1	1	1	1	7	6	-8	-10	-8	-18	-13	-12	6	4	4	4	2	3	3	26	182
1932	1	1	1	1	1	1	1	7	25	3	8	-7	-14	-15	-6	6	6	6	4	3	3	4	32	224
1933	1	1	1	1	1	1	1	7	34	8	3	-4	-17	-14	-7	6	6	6	5	2	3	4	32	224
1934	1	1	1	1	1	1	1	7	11	0	-6	-8	-29	-24	-15	6	6	4	4	1	1	3	25	175
1935	1	1	1	1	1	1	1	7	22	44	7	-8	-18	-13	-6	6	6	6	4	2	3	4	31	217
1936	1	2	2	1	1	1	1	9	11	9	-2	-8	-20	-20	-5	6	6	5	4	2	2	5	30	270
1937	1	1	1	1	1	1	1	7	27	29	8	-4	-20	-19	-7	6	6	6	5	2	2	4	31	217
1938	1	2	6	6	4	1	1	21	-6	25	18	0	-9	-13	-9	4	6	6	6	4	3	4	33	693
1939	1	1	1	1	1	1	1	7	15	-8	-7	-25	-20	-28	-3	6	4	4	1	2	1	5	23	161
1940	1	4	5	3	1	1	1	16	8	34	5	-11	-20	-17	-2	6	6	6	3	2	2	5	30	480
1941	1	5	6	6	4	1	1	24	21	19	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1942	1	6	6	6	4	1	1	25	14	25	0	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1943	2	6	6	4	1	1	1	21	9	16	0	-8	-13	-15	-6	6	6	6	4	3	3	4	32	672
1944	1	1	1	1	1	1	1	7	10	5	0	-17	-24	-20	-7	6	6	6	2	1	2	4	27	189
1945	2	5	6	4	1	1	1	20	13	12	3	-5	-21	-18	-5	6	6	6	5	1	2	5	31	620
1946	2	4	5	3	1	1	1	17	11	12	2	-8	-17	-16	-3	6	6	6	4	2	2	5	31	527
1947	1	1	1	1	1	1	1	7	19	6	-9	-14	-23	-17	-6	6	6	4	3	1	2	4	26	182
1948	1	3	6	6	3	1	1	21	12	38	10	0	-14	-15	-2	6	6	6	6	3	3	5	35	735
1949	2	5	5	2	1	1	1	17	34	13	1	-14	-21	-18	-4	6	6	6	3	1	2	5	29	493
1950	1	1	1	1	1	1	1	7	17	13	-1	-12	-22	-17	-2	6	6	5	3	1	2	5	28	196
1951	3	5	6	2	1	1	1	19	17	7	3	-16	-21	-18	-2	6	6	6	2	1	2	5	28	532
1952	2	4	6	6	4	1	1	24	10	10	9	0	-9	-12	-10	6	6	6	6	4	3	4	35	840
1953	2	5	6	6	4	1	1	25	18	14	2	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1954	2	6	5	4	1	1	1	20	16	16	-3	-4	-17	-12	-1	6	6	5	5	2	3	5	32	640
1955	1	1	2	1	1	1	1	8	-1	14	8	-17	-23	-18	-1	5	6	6	2	1	2	5	27	216
1956	2	6	6	6	4	1	1	26	29	19	0	0	-9	-11	-11	6	6	6	6	4	3	3	34	884
1957	2	4	6	4	1	1	1	19	17	6	9	-7	-17	-14	3	6	6	6	4	2	3	6	33	627
1958	1	3	6	6	4	1	1	22	-43	29	14	0	-9	-11	-11	1	6	6	6	4	3	3	29	638
1959	2	3	3	1	1	1	1	12	11	4	0	-18	-24	-17	4	6	6	6	2	1	2	6	29	348
1960	2	4	6	2	1	1	1	17	27	7	8	-17	-20	-18	-2	6	6	6	2	2	2	5	29	493
1961	3	5	6	2	1	1	1	19	13	7	3	-18	-24	-20	-1	6	6	6	2	1	2	5	28	532
1962	2	4	5	2	1	1	1	16	15	12	1	-12	-20	-17	-3	6	6	6	3	2	2	5	30	480
1963	3	2	6	5	2	1	1	20	10	-3	15	-4	-11	-12	-4	6	5	6	5	3	3	5	33	660
1964	1	1	1	1	1	1	1	7	4	-6	-5	-15	-21	-20	-2	6	4	5	3	1	2	5	26	182
1965	2	5	5	3	1	1	1	18	12	13	1	-9	-15	-10	-2	6	6	6	4	3	4	5	34	612
1966	3	6	5	2	1	1	1	19	6	12	-3	-15	-19	-15	-3	6	6	5	3	2	3	5	30	570
1967	2	5	6	6	4	1	1	25	4	16	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1968	3	3	4	1	1	1	1	14	20	2	2	-16	-20	-7	-3	6	6	6	2	2	4	5	31	434
1969	2	5	6	6	4	1	1	25	21	15	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1970	2	3	3	1	1	1	1	12	27	3	0	-12	-18	-13	-2	6	6	6	3	2	3	5	31	372
1971	1	5	6	6	4	1	1	24	3	20	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1972	3	6	6	2	1	1	1	20	11	11	0	-16	-19	-14	1	6	6	6	2	2	3	6	31	620
1973	3	5	6	4	1	1	1	21	19	12	2	-9	-14	-11	-1	6	6	6	4	3	3	5	33	693
1974	1	4	6	6	4	1	1	23	-11	33	9	0	-9	-11	-11	3	6	6	6	4	3	3	31	713
1975	1	4	6	6	4	1	1	23	-6	22	6	0	-9	-11	-11	4	6	6	6	4	3	3	32	736
1976	1	1	1	1	1	1	1	7	5	7	-4	-24	-22	-4	2	6	6	5	1	1	5	6	30	210
1977	1	1	1	1	1	1	1	7	0	-18	-6	-21	-17	-17	-4	6	2	4	1	2	2	5	22	154
1978	1	6	6	5	3	1	1	23	16	20	0	-3	-8	-9	-11	6	6	6	5	4	4	3	34	782
1979	1	3	4	2	1	1	1	13	17	7	9	-11	-17	-12	-2	6	6	6	3	2	3	5	31	403
1980	1	4	5	3	1	1	1	16	27	13	5	-8	-11	-10	0	6	6	6	4	3	4	6	35	560
1981	3	5	4	1	1	1	1	16	14	8	-2	-20	-23	-16	-3	6	6	5	2	1	2	5	27	432
1982	1	2	6	6	4	1	1	21	17	5	16	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1983	1	2	6	6	4	1	1	21	28	5	17	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1984	3	5	6	4	1	1	1	21	9	8	3	-7	-16	-6	-2	6	6	6	4	2	4	5	33	693
1985	1	1	1	1	1	1	1	7	7	8	-8	-21	-20	-14	1	6	6	4	1	2	3	6	28	196
1986	1	1	2	1	1	1	1	8	12	18	2	-12	-17	-15	3	6	6	6	3	2	3	6	32	256
1987	1	1	1	1	1	1	1	7	27	0	-6	-32	-22	-28	-7	6	6	4	1	1	1	4	23	161
1988	1	1	1	1	1	1	1	7	3	6	-1	-17	-31	-15	-2	6	6	5	2	1	3	5	28	196
1989	1	4	3	1	1	1	1	12	62	20	-4	-14	-20	-11	0	6	6	5	3	2	3	6	31	372
1990	1	1	1	1	1	1	1	7	6	-5	6	-15	-20	-21	-4	6	5	6	3	2	1	5	28	196
1991	1	1	1	1	1	1	1	7	26	11	0	-9	-14	-14	-7	6	6	6	4	3	3	4	32	224
1992	1	1	1	1	1	1	1	7	21	11	-8	-14	-21	-14	-6	6	6	4	3	1	3	4	27	189
1993	1	4	6	6	3	2	2	24	6	28	8	0	-11	-8	0	6	6	6	6	3	4	6	37	888
1994	1	1	1	1	1	1	1	7	1	0	-1	-27	-20	-21	-3	6	6	5	1	2	1	5	26	182
					73 - year Average:			15												73 - year Average:			30	462.9
																				1929 - '34 Average:				201.8

C-032523
C-032523

STUDY 1995C06F-SWRCB-507 DWRSIM. recirc818-f, 17 Jun 97
CP # 6. LAKE OROVILLE, EOP SURFACE ELEVATION (FT)
Project. /1995C06F-SWRCB-507/6/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation 900'

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE]							Reservoir Elevation Scoring Table								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Scoring Table								Largemouth Bass Reservoir Habitat Index =
													MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	833	833	835	844	850	858	893	900	900	880	876	877	42	7	0	0	20	24	23	1	4	6	6	1	1	1	20	8	35	7	0	-20	-4	1	6	6	6	6	2	5	6	37	740
1923	874	874	856	862	859	868	891	897	882	843	812	814	32	9	3	18	57	88	86	1	4	5	2	1	1	1	15	9	23	6	-15	-39	-31	2	6	6	6	3	1	1	6	29	435
1924	805	793	785	770	789	778	765	752	731	711	703	697	122	135	148	169	189	197	203	1	1	1	1	1	1	1	7	-11	-13	-13	-21	-20	-8	-6	3	3	3	1	2	4	4	20	140
1925	697	701	708	725	791	819	838	845	830	803	792	789	81	62	55	70	97	108	111	1	1	1	1	1	1	1	7	28	19	7	-15	-27	-11	-3	6	6	6	3	1	3	5	30	210
1926	776	777	780	793	836	856	887	874	854	814	802	786	44	13	26	46	86	98	114	1	3	1	1	1	1	1	9	20	31	-13	-20	-40	-12	-16	6	6	3	2	1	3	2	23	207
1927	767	796	798	826	849	863	890	900	900	865	856	853	37	10	0	0	35	44	47	1	3	6	6	1	1	1	19	14	27	10	0	-35	-9	-3	6	6	6	6	1	4	5	34	646
1928	851	861	862	868	871	849	878	863	843	791	739	732	51	22	37	57	109	161	168	1	1	1	1	1	1	1	7	-22	29	-15	-20	-52	-52	-7	1	6	3	2	1	1	4	18	126
1929	719	714	712	717	731	748	751	753	748	732	723	716	152	149	147	152	168	177	184	1	1	1	1	1	1	1	7	17	3	2	-5	-16	-9	-7	6	6	6	5	2	4	4	33	231
1930	708	705	786	794	821	852	874	877	861	823	790	787	48	26	23	39	77	110	113	1	1	1	1	1	1	1	7	31	22	3	-16	-38	-33	-3	6	6	6	2	1	1	5	27	189
1931	776	768	760	773	786	801	788	773	748	727	716	710	99	112	127	152	173	184	190	1	1	1	1	1	1	1	7	15	-13	-15	-25	-21	-11	-6	6	3	3	1	1	3	4	21	147
1932	704	694	700	724	746	780	785	809	779	727	711	704	120	115	91	121	173	189	196	1	1	1	1	1	1	1	7	34	5	24	-30	-52	-16	-7	6	6	6	1	1	2	4	26	182
1933	695	683	682	694	704	709	712	728	722	707	698	691	191	188	172	178	193	202	209	1	1	1	1	1	1	1	7	5	3	16	-8	-15	-9	-7	6	6	6	4	3	4	4	33	231
1934	687	678	681	708	730	759	751	742	720	697	689	681	141	149	158	180	203	211	219	1	1	1	1	1	1	1	7	29	-8	-9	-22	-23	-8	-8	6	4	4	1	1	4	4	24	168
1935	669	674	680	708	732	763	851	861	846	823	813	798	137	49	39	54	77	87	102	1	1	1	1	1	1	1	7	31	88	10	-15	-23	-10	-15	6	6	6	3	1	4	3	29	203
1936	790	780	778	828	849	860	886	897	886	847	827	824	40	14	3	14	53	73	76	1	3	5	3	1	1	1	15	11	26	11	-11	-39	-20	-3	6	6	6	3	1	2	5	29	435
1937	817	805	801	804	821	845	870	882	860	835	821	816	55	30	18	40	65	79	84	1	1	2	1	1	1	1	8	24	25	12	-22	-25	-14	-5	6	6	6	1	1	3	5	28	224
1938	811	825	854	858	849	849	882	900	900	899	896	887	51	18	0	0	1	4	13	1	2	6	6	5	5	3	28	0	33	18	0	-1	-3	-9	6	6	6	6	5	5	4	38	1064
1939	874	864	854	845	837	833	822	813	778	714	656	651	67	78	87	122	186	244	249	1	1	1	1	1	1	1	7	-4	-11	-9	-35	-64	-58	-5	5	3	4	1	1	1	5	20	140
1940	640	629	632	705	813	849	879	884	871	834	825	816	51	21	16	29	66	75	84	1	1	2	1	1	1	1	8	36	30	5	-13	-37	-9	-9	6	6	6	3	1	4	4	30	240
1941	805	806	845	849	849	858	886	900	900	890	886	887	42	14	0	0	10	14	13	1	3	6	6	3	3	3	25	9	28	14	0	-10	-4	1	6	6	6	6	4	5	6	39	975
1942	874	874	849	849	850	867	882	900	900	886	882	883	33	18	0	0	14	18	17	1	2	6	6	3	2	2	22	17	15	18	0	-14	-4	1	6	6	6	6	3	5	6	38	836
1943	874	869	861	849	856	859	887	893	892	860	850	851	41	13	7	8	40	50	49	1	3	4	4	1	1	1	15	3	28	6	-1	-32	-10	1	6	6	6	5	1	4	6	34	510
1944	852	854	853	860	857	868	879	895	876	836	800	794	32	21	5	24	64	100	106	1	1	4	1	1	1	1	10	11	11	16	-19	-40	-36	-6	6	6	6	2	1	1	4	26	260
1945	789	796	812	825	862	865	880	896	877	837	815	810	35	20	4	23	63	85	90	1	1	5	1	1	1	1	11	3	15	16	-19	-40	-22	-5	6	6	6	2	1	1	5	27	297
1946	810	818	849	864	868	868	887	892	871	833	791	788	32	13	8	29	67	109	112	1	3	4	1	1	1	1	12	0	19	5	-21	-38	-42	-3	6	6	6	1	1	1	5	26	312
1947	780	786	794	800	825	847	857	852	835	783	729	722	53	43	48	65	117	171	178	1	1	1	1	1	1	1	7	22	10	-5	-17	-52	-54	-7	6	6	5	2	1	1	4	25	175
1948	725	727	722	758	761	781	841	870	876	844	827	821	119	59	30	24	56	73	79	1	1	1	1	1	1	1	7	20	60	29	6	-32	-17	-6	6	6	6	6	1	2	4	31	217
1949	815	812	812	817	823	843	862	866	845	799	754	749	57	38	34	55	101	146	151	1	1	1	1	1	1	1	7	20	19	4	-21	-46	-45	-5	6	6	6	1	1	1	5	26	182
1950	736	736	737	767	815	846	879	898	893	855	828	827	54	21	2	7	45	72	73	1	1	5	4	1	1	1	14	31	33	19	-5	-38	-27	-1	6	6	6	5	1	1	5	30	420
1951	831	849	854	853	858	870	886	900	891	850	822	823	30	14	0	9	50	78	77	1	3	6	4	1	1	1	17	12	16	14	-9	-41	-28	1	6	6	6	4	1	1	6	30	510
1952	827	830	849	849	852	862	894	900	900	900	899	887	38	6	0	0	0	1	13	1	4	6	6	6	5	3	31	10	32	6	0	0	-1	-12	6	6	6	6	6	5	3	38	1178
1953	874	874	858	850	867	867	883	900	900	871	869	870	33	17	0	0	29	31	30	1	2	6	6	1	1	1	18	0	16	17	0	-29	-2	1	6	6	6	6	1	5	6	36	648
1954	873	871	874	858	857	859	883	863	848	801	754	754	41	17	37	52	99	146	146	1	2	1	1	1	1	1	8	2	24	-20	-15	-47	-47	0	6	6	2	3	1	1	6	26	200
1955	756	757	766	778	787	800	809	823	797	735	715	711	100	91	77	103	165	185	189	1	1	1	1	1	1	1	7	13	9	14	-26	-62	-20	-4	6	6	6	1	1	2	5	27	189
1956	702	699	849	849	849	864	892	900	900	873	870	874	36	8	0	0	27	30	26	1	4	6	6	1	1	1	20	15	28	8	0	-27	-3	4	6	6	6	6	1	5	6	36	720
1957	869	874	874	871	853	863	863	881	866	828	791	796	37	37	19	34	72	109	104	1	1	2	1	1	1	1	8	10	0	18	-15	-38	-37	5	6	6	6	3	1	1	6	29	232
1958	799	802	822	842	849	849	879	900	900	898	894	887	51	21	0	0	2	6	13	1	1	6	6	5	4	3	26	0	30	21	0	-2	-4	-7	6	6	6	6	5	5	4	38	988
1959	874	874	874	862	852	867	871	874	853	808	758	762	33	29	26	47	92	142	138	1	1	1	1	1	1	1	7	15	4	3	-21	-45	-50	4	6	6	6	1	1	1	6	27	189
1960	755	744	739	753	815	854	854	860	841	801	789	780	46	46	40	59	99	111	120	1	1	1	1	1	1	1	7	39	0	6	-19	-40	-12	-9	6	6	6	2	1	3	4	28	196
1961	770	772	781	792	822	839	839	844	825	767	716	712	61	61	56	75	133	184	188	1	1	1	1	1	1	1	7	17	0	5	-19	-58	-51	-4	6	6	6	2	1	1	5	27	189
1962	695	690	700	714	778	814	837	836	821	762	734	713	86	63	64	79	138	166	187	1	1	1	1	1	1	1	7	36	23	-1	-15	-59	-28	-21	6	6	5	3	1	1	1	23	161
1963	788	800	832	855	867	858	876	900	893	857	846	847	42	24	0	7	43	54	53	1	1	6	4	1	1	1	15	-9	18	24	-7	-36	-11	1	4	6	6	4	1	3	6	30	450
1964	848	859	862	866	874	874	880	885	869	829	783	758	26	20	15	31	71	117	142	1	1	2	1	1	1	1	8	0	6	5	-16	-40	-46	-25	6	6	6	2	1	1	1	23	184
1965	746	748	849	849	863	870	887	881	883	853	847	848	30	13	19	17	47	53	52	1	3	2	2	1	1	1	11	7	17	-6	2	-30	-6	1	6	6	4	6	1	4	6	33	363
1966	852	859	860	864	870	874	894	882	862	822	774	768	26	6	18	38	78	126	132	1	4	2	1	1	1	1	11	4	20	-12	-20	-40	-48	-6	6	6	3	2	1	1	4	23	253
1967	755	765	803	849	860	853	879	900	900	900	896	887	47	21	0	0	0	4	13	1	1	6	6	6	5	3	28	-7	26	21	0	0	-4	-9	4	6	6	6	6	5	4	37	1036
1968	874	874	873	858	861	866	863	867	848	802	765	762	34	37	33	52	98	135	138	1	1	1	1	1	1	1	7	5	-3	4	-19	-46	-37	-3	6	5	6	2	1	1	5	26	182
1969	764	769	792	849	849	865	895	900	900	895	893	874	35	5	0	0	5	7	26	1	4	6	6	4	4	1	26	16	30	5	0	-5	-2	-19	6	6	6	6	1	5	2	36	936
1970	874	874	850	849	849	874	869	871	858	820	790	792	26	31	29	42	80	110	108	1	1	1	1	1	1	1	7	25	-5	2	-13	-38	-30	2	6	5	6	3	1	1	6	28	196
1971	795	820	848	864	874	874	893	900	900	872	854	858	26	7	0	0	28	46	44	1	4	6	6	1	1	1	20	0	19	7	0	-28	-18	2	6	6	6	6	1	2	6	33	660
1972	861	867	865	869	867	874	884	887	868	829	786	787	26	16	13	32	71	114	113	1	2	3	1	1	1	1	10	7	10	3	-19	-39	-43	1	6	6	6	2	1	1	6	28	280
1973	783	798	824	849	849	860	882	900	879	841	820	817	40	18	0	21	59	80	83	1	2	6	1	1	1	1	13	11	22	18	-21	-38	-21	-3	6	6	6	1	1	1	5	26	338
1974	820	849	850	854	864	849	883	900	900	889	889	886	51	17	0	0	11	11	14	1	2	6	6	3	3	3	24	-15	34	17	0	-11	0	-3	3	6	6	6	3	6	5	35	840
1975	874	874	874	874	855	852	881	900	900	878	876	878	48	19	0	0	22	24	22	1	2	6	6	1	1	1	18	-3	29	19	0	-22	-2	2	5	6	6	6	1	5	6	35	630
1976	873	874	874	874	874	874	871	862	840	796	752	752	26	29	38	60	104	148	148	1	1	1	1	1	1	1	7	0	-3	-9	-22	-44	-44	0	6	5	4	1	1	1	6	24	168
1977	740	729	712	708	693	689	664	653	625	603	595	591	211	236	247	275	297	305	309	1	1	1	1	1	1	1	7	-4	-25	-11	-28	-22	-8	-4	5	1	3	1	1	4	5	20	140
1978	581	581	817	744	798	859	878	897	893	875	866	874	41	22	3	7	25	34	26	1	1	5	4	1	1	1	14	61	19	19	-4	-18	-9	8	6	6	6	5	2	4	6	35	490
1979	874	874	874	871	853	863	878	896	865	831	822	820	37	22	4	35	69	78	80	1	1	5	1	1	1	1	11	10	15	18	-31	-34	-9	-2	6	6	6	1	1	4	5	29	319
1980	824	828	836	850	849	865	881	893	888	873	866	865	35	19	7	12	27	34	35	1	2	4	3	1	1	1	13	16	16	12	-5	-15	-7	-1	6	6	6	5	3	4	5	35	455
1981	864	865	873	860	868	865	875	872	851	807	763	764	35	25	28	49	93	137	136	1	1	1	1	1	1	1	7	-3	10	-3	-21	-44	-44	1	5	6	5	1	1	1	6	25	175
1982	771	849	849	859	862	859	884	900	900	889	886	887	41	16	0	0	11	14	13	1	2	6	6	3	3	3	24	-3	25	16	0	-11	-3	1	5	6	6	6	3	5	6	37	888
1983	873	862	858	853	849	849	877	900	900	900	899	887	51	23	0	0	0	0	1	1	1	6	6	6	5	3	28	0	28	23	0	0	-1	-12	6	6	6	6	6	5	3	38	1064
1984	874	860	849	869	869	871	885	894	879	842	833	834	29	15	6	21	58	67	66	1	2	4	1	1	1	1	11	2	14	9	-15	-37	-9	1	6	6	6	3	1	4	6	32	352
1985	838	852	862	868	874	871	886	872	850	807	758	746	29	14	28	50	93	142	154	1	3	1	1	1	1	1	9	-3	15	-14	-22	-43	-49	-12	5	6	3	1	1	1	3	20	180
1986	737	733	741	775	849	849	871	875	871	841	831	842	51	29	25	29	59	69	58	1	1	1	1	1	1	1	7	0	22	4	-4	-30	-10	11	6	6	6	5	1	4	6	34	238
1987	844	850	846	847	858	867	855	845	817	757	712	707	33	45	55	83	143	188	193	1	1	1	1	1	1	1	7	9	-12	-10	-28	-60	-45	-5	6	3	4	1	1	1	5	21	147
1988	695	698	738	765	767	768	766	756	733	713	701	698	132	134	144	167	187	199	202	1	1	1	1	1	1	1	7	1	-2	-10	-23	-20	-12	-3	6	5	4	1	2	3	5	26	182
1989	690	709	719	726	727	842	867	857	842	795	778	776	58	33	43	58	105	122	124	1	1	1	1	1	1	1	7	115	25	-10	-15	-47	-17	-2	6	6	4	3	1	2	5	27	189
1990	767	768	772	785	793	819	797	798	773	726	713	706	81	103	102	127	174	187	194	1	1	1	1	1	1	1	7	26	-22	1	-25	-47	-13	-7	6	1	6	1	1	3	4	22	154
1991	688	680	682	660	648	702	724	739	722	700	695	693	198	176	161	178	200	205	207	1	1	1	1	1	1	1	7	54	22	15	-17	-22	-5	-2	6	6	6	2	1	5	5	31	217
1992	689	684	686	689	720	750	765	756	731	708	696	690	150	135	144	169	192	204	210	1	1	1	1	1	1	1	7	30	15	-9	-25	-23	-12	-6	6	6	4	1	1	3	4	25	175
1993	682	676	695	752	814	861	894	900	900	881	877	876	39	6	0	0	19	23	24	1	4	6	6	2	1	1	21	47	33	6	0	-19	-4	-1	6	6	6	6	2	5	5	36	756
1994	874	874	874	871	862	874	872	866	845	803	756	751	26	28	34	55	97	144	149	1	1	1	1	1	1	1	7	12	-2	-8	-21	-42	-47	-5	6	5	4	1	1	1	5	23	161
																										73 - year Average:	12														73 - year Average:	29	388.2
																																											1929 - '34 Average:	191.3

A2-184

C-032524

C—032524

STUDY 1995C06F-SWRCB-507 DWRSIM: recirc818-f, 17 Jun 97
CP # 8, FOLSOM LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-507/B/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 466'

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE]							Habitat Index								Reservoir Change from Previous Month [fluctuation]							Fluctuation Score								Product
													MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	
1922	414	409	414	414	424	428	443	466	466	463	449	434	38	23	0	0	3	17	32	1	1	6	6	5	2	1	22	4	15	23	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1923	425	423	424	424	419	420	449	466	452	435	429	426	46	17	0	14	31	37	40	1	2	6	3	1	1	1	15	1	29	17	-14	-17	-6	-3	6	6	6	3	2	4	5	32	480
1924	421	412	404	392	390	373	375	371	334	334	337	334	93	91	95	132	132	129	132	1	1	1	1	1	1	1	7	-17	2	-4	-37	0	3	-3	2	6	5	1	6	6	5	31	217
1925	348	363	379	389	424	437	449	466	454	439	428	422	29	17	0	12	27	38	44	1	2	6	3	1	1	1	15	13	12	17	-12	-15	-11	-6	6	6	6	3	3	3	4	31	465
1926	418	411	406	399	417	418	448	446	423	391	353	363	48	18	20	43	75	113	103	1	2	1	1	1	1	1	8	1	30	-2	-23	-32	-38	10	6	6	5	1	1	1	6	26	208
1927	399	405	424	424	424	437	449	466	461	457	449	434	29	17	0	5	9	17	32	1	2	6	4	4	2	1	20	13	12	17	-5	-4	-8	-15	6	6	6	5	5	4	3	35	700
1928	425	424	424	424	424	437	449	453	442	418	411	411	29	17	13	24	48	55	55	1	2	3	1	1	1	1	10	13	12	4	-11	-24	-7	0	6	6	6	3	1	4	6	32	320
1929	405	399	395	384	382	381	393	398	388	346	356	359	85	73	68	78	120	110	107	1	1	1	1	1	1	1	7	-1	12	5	-10	-42	10	3	5	6	6	4	1	6	6	34	238
1930	335	334	384	406	421	437	443	442	421	394	375	377	29	23	24	45	72	91	89	1	1	1	1	1	1	1	7	16	6	-1	-21	-27	-19	2	6	6	5	1	1	2	6	27	189
1931	374	384	392	402	407	414	410	407	351	334	339	334	52	56	59	115	132	127	132	1	1	1	1	1	1	1	7	7	-4	-3	-56	-17	5	-5	6	5	5	1	2	6	5	30	210
1932	334	334	380	402	424	424	432	450	436	396	368	372	42	34	16	30	70	98	94	1	1	2	1	1	1	1	8	0	8	18	-14	-40	-28	4	6	6	6	3	1	1	6	29	232
1933	346	334	355	366	369	382	359	379	348	334	355	351	84	107	87	118	132	111	115	1	1	1	1	1	1	1	7	13	-23	20	-31	-14	21	-4	6	1	6	1	3	6	5	28	196
1934	337	334	375	402	420	426	419	413	354	333	323	334	40	47	53	112	133	143	132	1	1	1	1	1	1	1	7	6	-7	-6	-59	-21	-10	11	6	4	4	1	1	4	6	26	182
1935	334	361	378	402	415	417	449	454	453	436	423	418	49	17	12	13	30	43	48	1	2	3	3	1	1	1	12	2	32	5	-1	-17	-13	-5	6	6	6	5	2	3	5	33	396
1936	415	409	403	424	424	437	449	461	455	448	442	434	29	17	5	11	18	24	32	1	2	4	3	2	1	1	14	13	12	12	-6	-7	-6	-6	6	6	5	4	4	4	4	34	476
1937	425	417	411	404	424	437	449	466	454	442	435	432	29	17	0	12	24	31	34	1	2	6	3	1	1	1	15	13	12	17	-12	-12	-7	-3	6	6	6	3	3	4	5	33	495
1938	424	422	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1939	426	420	415	409	402	409	415	418	391	334	334	335	57	51	48	75	132	132	131	1	1	1	1	1	1	1	7	7	6	3	-27	-57	0	1	6	6	6	1	1	6	6	32	224
1940	334	334	334	420	424	437	449	461	447	430	423	424	29	17	5	19	36	43	42	1	2	4	2	1	1	1	12	13	12	12	-14	-17	-7	1	6	6	6	3	2	4	6	33	396
1941	419	415	424	424	424	437	449	466	458	455	449	434	29	17	0	8	11	17	32	1	2	6	4	3	2	1	19	13	12	17	-8	-3	-6	-15	6	6	6	4	5	4	3	34	648
1942	426	422	424	424	424	430	449	466	466	463	449	434	36	17	0	0	3	17	32	1	2	6	6	5	2	1	23	6	19	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1943	425	424	423	422	422	434	449	459	451	447	443	434	32	17	7	15	19	23	32	1	2	4	2	2	1	1	13	12	15	10	-8	-4	-4	-9	6	6	6	4	5	5	4	36	468
1944	425	419	413	405	407	419	420	433	416	396	384	377	47	46	33	50	70	82	89	1	1	1	1	1	1	1	7	12	1	13	-17	-20	-12	-7	6	6	6	2	3	4	2	29	203
1945	370	397	416	424	424	437	449	466	455	444	439	434	29	17	0	11	22	27	32	1	2	6	3	1	1	1	15	13	12	17	-11	-11	-5	-5	6	6	6	3	3	5	5	34	510
1946	427	424	424	424	424	437	449	466	453	440	435	432	29	17	0	13	26	31	34	1	2	6	3	1	1	1	15	13	12	17	-13	-13	-5	-3	6	6	6	3	3	5	5	34	510
1947	424	424	423	414	417	433	442	445	420	394	378	382	33	24	21	46	72	88	84	1	1	1	1	1	1	1	7	16	9	3	-25	-26	-16	4	6	6	6	1	1	2	6	28	196
1948	395	402	392	409	405	401	438	458	455	450	446	434	65	28	8	11	16	20	32	1	1	4	3	2	1	1	13	-4	37	20	-3	-5	-4	-12	5	6	6	5	5	5	3	35	455
1949	425	419	416	406	400	422	443	459	444	426	418	417	44	23	7	22	40	48	49	1	1	4	1	1	1	1	10	22	21	16	-15	-18	-8	-1	6	6	6	3	2	4	5	32	320
1950	411	405	396	422	424	437	449	466	455	444	439	434	29	17	0	11	22	27	32	1	2	6	3	1	1	1	15	13	12	17	-11	-11	-5	-5	6	6	6	3	3	5	5	34	510
1951	428	393	388	388	388	426	449	466	450	436	431	431	40	17	0	16	30	35	35	1	2	6	2	1	1	1	14	38	23	17	-16	-14	-5	0	6	6	6	2	3	5	6	34	476
1952	425	424	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1953	428	423	424	424	424	430	446	458	464	463	449	434	36	20	8	2	3	17	32	1	1	4	5	5	2	1	19	6	16	12	6	-1	-14	-15	6	6	6	6	5	3	3	35	665
1954	425	423	421	422	424	437	449	452	441	423	418	421	29	17	14	25	43	48	45	1	2	3	1	1	1	1	10	13	12	3	-11	-18	-5	3	6	6	6	3	2	5	6	34	340
1955	415	409	412	419	419	409	420	437	423	402	390	389	57	46	29	43	64	76	77	1	1	1	1	1	1	1	7	-10	11	17	-14	-21	-12	-1	4	6	6	3	1	3	5	28	196
1956	381	379	420	402	406	425	441	466	466	463	449	434	41	25	0	0	3	17	32	1	1	6	6	5	2	1	22	19	16	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1957	428	422	417	412	424	437	433	459	448	436	430	429	29	33	7	18	30	36	37	1	1	4	2	1	1	1	11	13	-4	26	-11	-12	-6	-1	6	5	6	3	3	4	5	32	352
1958	422	416	417	422	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1959	425	419	412	417	424	425	433	433	411	389	378	387	41	33	33	55	77	88	79	1	1	1	1	1	1	1	7	1	8	0	-22	-22	-11	9	6	6	6	1	1	3	6	29	203
1960	387	383	382	390	424	437	448	446	427	406	395	401	29	18	20	39	60	71	65	1	2	1	1	1	1	1	8	13	11	-2	-19	-21	-11	6	6	6	5	2	1	3	6	29	232
1961	397	395	393	387	392	401	411	423	407	389	379	384	65	55	43	59	77	87	82	1	1	1	1	1	1	1	7	9	10	12	-16	-18	-10	5	6	6	6	2	2	4	6	32	224
1962	385	387	394	395	424	431	448	454	448	428	420	418	35	18	12	18	38	46	48	1	2	3	2	1	1	1	11	7	17	6	-6	-20	-8	-2	6	6	6	4	2	4	5	33	363
1963	441	424	424	424	419	430	449	466	459	454	449	434	36	17	0	7	12	17	32	1	2	6	4	3	2	1	19	11	19	17	-7	-5	-5	-15	6	6	6	4	5	5	3	35	665
1964	427	424	424	424	418	415	426	432	413	382	355	334	51	40	34	53	84	111	132	1	1	1	1	1	1	1	7	-3	11	6	-19	-31	-27	-21	5	6	6	2	1	1	1	22	154
1965	335	367	393	392	395	414	449	464	454	448	445	434	52	17	2	12	18	21	32	1	2	5	3	2	1	1	15	19	35	15	-10	-6	-3	-11	6	6	6	4	4	5	3	34	510
1966	428	424	424	424	422	430	448	447	428	405	395	396	36	18	19	38	61	71	70	1	2	2	1	1	1	1	9	8	18	-1	-19	-23	-10	1	6	6	5	2	1	4	6	30	270
1967	391	395	419	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1968	427	424	423	424	424	437	439	441	419	396	391	394	29	27	25	47	70	75	72	1	1	1	1	1	1	1	7	13	2	2	-22	-23	-5	3	6	6	6	1	1	5	6	31	217
1969	399	407	419	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1970	427	424	423	393	396	426	431	440	430	415	414	417	40	35	26	36	51	52	49	1	1	1	1	1	1	1	7	30	5	9	-10	-15	-1	3	6	6	6	4	3	5	6	36	252
1971	411	420	424	424	423	437	447	461	461	459	449	434	29	19	5	5	7	17	32	1	2	4	4	4	2	1	18	14	10	14	0	-2	-10	-15	6	6	6	6	5	4	3	36	648
1972	425	422	424	424	424	437	444	451	433	413	407	407	29	22	15	33	53	59	59	1	1	2	1	1	1	1	8	13	7	7	-18	-20	-6	0	6	6	6	2	2	4	6	32	256
1973	403	408	422	424	424	437	449	466	451	439	432	433	29	17	0	15	27	34	33	1	2	6	2	1	1	1	14	13	12	17	-15	-12	-7	1	6	6	6	3	3	4	6	34	476
1974	427	423	422	409	417	433	449	466	463	463	449	434	33	17	0	3	3	17	32	1	2	6	5	5	2	1	22	16	16	17	-3	0	-14	-15	6	6	6	5	6	3	3	35	770
1975	426	419	417	415	424	437	441	466	466	463	449	434	29	25	0	0	3	17	32	1	1	6	6	5	2	1	22	13	4	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1976	431	423	419	410	402	392	397	401	368	334	340	341	74	69	65	98	132	126	125	1	1	1	1	1	1	1	7	-10	5	4	-33	-34	6	1	4	6	6	1	1	6	6	30	210
1977	335	334	330	325	321	323	333	341	334	319	306	291	143	133	125	132	147	160	175	1	1	1	1	1	1	1	7	2	10	8	-7	-15	-13	-15	6	6	6	4	3	3	3	31	217
1978	287	304	359	424	424	437	449	466	459	455	449	434	29	17	0	7	11	17	32	1	2	6	4	3	2	1	19	13	12	17	-7	-4	-6	-15	6	6	6	4	5	4	3	34	646
1979	423	417	411	418	424	437	447	466	452	437	429	426	29	19	0	14	29	37	40	1	2	6	3	1	1	1	15	13	10	19	-14	-15	-8	-3	6	6	6	3	3	4	5	33	495
1980	423	420	421	408	399	430	449	464	453	453	449	434	36	17	2	13	13	17	32	1	2	5	3	3	2	1	17	31	19	15	-11	0	-4	-15	6	6	6	3	6	5	3	35	595
1981	425	419	415	413	412	422	433	435	411	392	386	387	44	33	31	55	74	80	79	1	1	1	1	1	1	1	7	10	11	2	-24	-19	-6	1	6	6	6	1	2	4	6	31	217
1982	397	420	392	396	388	424	449	466	466	463	449	434	42	17	0	0	3	17	32	1	2	6	6	5	2	1	23	36	25	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1983	438	415	417	418	418	433	449	466	466	463	449	434	33	17	0	0	3	17	32	1	2	6	6	5	2	1	23	15	16	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1984	435	392	388	388	392	424	441	464	454	442	437	434	42	25	2	12	24	29	32	1	1	5	3	1	1	1	13	32	17	23	-10	-12	-5	-3	6	6	6	4	3	5	5	35	455
1985	427	424	424	420	422	428	443	444	420	388	365	372	38	23	22	46	78	101	94	1	1	1	1	1	1	1	7	6	15	1	-24	-32	-23	7	6	6	6	1	1	1	6	27	189
1986	370	389	411	424	396	424	449	464	456	451	447	434	42	17	2	10	15	19	32	1	2	5	3	2	2	1	16	26	25	15	-8	-5	-4	-13	6	6	6	4	5	5	3	35	560
1987	427	420	413	405	404	410	416	418	386	336	324	334	56	50	48	80	130	142	132	1	1	1	1	1	1	1	7	6	6	2	-32	-50	-12	10	6	6	6	1	1	3	6	29	203
1988	334	334	369	396	388	386	394	391	356	332	316	376	80	72	75	110	134	150	90	1	1	1	1	1	1	1	7	-2	8	-3	-35	-24	-16	60	5	6	5	1	1	2	6	26	182
1989	356	377	393	402	397	437	449	452	435	414	409	413	29	17	14	31	52	57	53	1	2	3	1	1	1	1	10	40	12	3	-17	-21	-5	4	6	6	6	2	1	5	6	32	320
1990	409	408	405	405	403	414	422	421	392	338	334	335	52	44	45	74	128	132	131	1	1	1	1	1	1	1	7	11	8	-1	-29	-54	-4	1	6	6	5	1	1	5	6	30	210
1991	334	334	334	332	332	383	407	425	414	409	405	404	83	59	41	52	57	61	62	1	1	1	1	1	1	1	7	51	24	18	-11	-5	-4	-1	6	6	6	3	5	5	5	36	252
1992	397	384	374	356	381	397	409	405	375	334	322	316	69	57	61	91	132	144	150	1	1	1	1	1	1	1	7	16	12	-4	-30	-41	-12	-6	6	6	5	1	1	3	4	26	182
1993	315	314	357	424	427	434	449	466	466	458	449	434	32	17	0	0	8	17	32	1	2	6	6	4	2	1	22	7	15	17	0	-8	-9	-15	6	6	6	6	4	4	3	35	770
1994	423	413	407	395	390	388	396	401	376	334	334	332	78	70	65	90	132	132	134	1	1	1	1	1	1	1	7	-2	8	5	-25	-42	0	-2	5	6	6	1	1	6	5	30	210
																						73 - year Average:					13											73 - year Average:			32	429.8
																																										1929 - '34 Average:		207.8

Prepared by Kevin Long

Study 507 - Reservoirs Elevations Fish Habitat Analysis.xls - Folsom Lake

11/17/1997

A2-185

C-032525

C—032525

C-032526

STUDY. 1995C[illegible]VRCB-507 DWRSIM: rscirc818-f, 17 Jun 97
CP # 10, NEW MELONES RESERVOIR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-507/10/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 1088'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	939	942	948	953	968	977	974	990	1013	1006	995	986	120	111	114	98	75	82	93
1923	964	988	997	1005	1011	1011	1008	1013	1013	1005	994	985	77	77	80	75	75	83	94
1924	985	986	990	994	998	997	991	982	971	961	950	945	92	91	97	106	117	127	138
1925	940	942	946	950	968	979	979	991	995	991	978	971	120	109	109	97	93	97	110
1926	968	969	972	974	985	987	985	972	961	948	935	927	103	101	103	116	127	140	153
1927	925	928	937	944	963	974	981	986	985	977	965	959	125	114	107	102	103	111	123
1928	960	966	971	975	983	1003	1001	1003	997	986	972	965	105	85	87	85	91	102	116
1929	962	964	967	970	973	975	970	967	960	950	940	933	115	113	118	121	128	138	148
1930	929	931	933	937	943	951	949	942	941	931	920	908	145	137	139	146	147	157	168
1931	909	913	917	921	923	925	920	907	890	875	858	848	165	163	168	181	198	213	230
1932	847	850	862	870	893	904	904	924	938	933	923	912	195	184	184	164	150	155	165
1933	913	916	921	924	926	928	919	904	904	885	865	853	162	160	169	184	184	203	223
1934	847	851	857	863	872	882	871	851	833	816	791	773	216	206	217	237	255	272	297
1935	757	761	768	782	793	809	827	870	891	879	862	850	295	279	261	218	197	209	226
1936	850	854	859	877	913	927	939	957	964	955	945	937	175	161	149	131	124	133	143
1937	937	940	944	948	961	975	977	1001	1005	997	988	981	127	113	111	87	83	91	100
1938	981	984	996	1005	1024	1045	1053	1080	1088	1084	1075	1070	64	43	35	8	0	4	13
1939	1050	1050	1050	1050	1050	1052	1050	1038	1027	1016	1004	996	38	36	38	50	61	72	84
1940	995	995	997	1009	1024	1040	1048	1059	1058	1049	1038	1030	64	48	40	29	30	39	50
1941	1029	1031	1036	1043	1050	1055	1052	1066	1072	1066	1056	1050	38	33	36	22	16	22	32
1942	1048	1050	1050	1050	1050	1055	1055	1067	1081	1078	1068	1062	38	33	33	21	7	10	20
1943	1050	1050	1050	1050	1050	1055	1061	1068	1067	1060	1051	1044	38	33	27	20	21	28	37
1944	1042	1043	1044	1046	1048	1052	1047	1046	1041	1030	1018	1010	40	36	41	42	47	58	70
1945	1008	1013	1017	1022	1036	1044	1043	1054	1060	1053	1043	1036	52	44	45	34	28	35	45
1946	1035	1039	1049	1050	1050	1054	1052	1060	1059	1050	1039	1032	38	34	36	28	29	38	49
1947	1031	1034	1036	1039	1042	1044	1034	1023	1012	1000	986	977	46	44	54	65	76	88	102
1948	973	975	977	979	980	984	982	985	994	986	976	969	108	104	106	103	94	102	112
1949	966	969	972	975	978	985	979	981	978	968	956	949	110	103	109	107	110	120	132
1950	945	946	948	956	966	975	971	978	987	977	966	958	122	113	117	110	101	111	122
1951	955	992	1032	1043	1050	1055	1053	1053	1049	1037	1025	1018	38	33	35	35	39	51	63
1952	1016	1019	1026	1040	1050	1055	1058	1087	1088	1086	1077	1070	38	33	30	1	0	2	11
1953	1050	1050	1050	1050	1050	1054	1049	1043	1049	1041	1029	1021	38	34	39	45	39	47	59
1954	1018	1020	1023	1028	1028	1036	1036	1038	1031	1019	1007	999	60	52	52	50	57	69	81
1955	996	998	1002	1006	1007	1010	1003	997	996	986	974	968	81	78	85	91	92	102	114
1956	963	966	997	1024	1037	1047	1039	1055	1065	1060	1050	1043	51	41	49	33	23	28	38
1957	1041	1043	1045	1047	1050	1055	1044	1043	1042	1031	1020	1012	38	33	44	45	46	57	68
1958	1007	1009	1012	1018	1027	1042	1049	1075	1088	1082	1072	1065	61	46	39	13	0	6	16
1959	1050	1050	1050	1050	1050	1053	1046	1030	1019	1008	996	988	38	35	42	58	69	80	92
1960	983	984	987	990	996	1002	999	994	987	975	962	953	92	86	89	94	101	113	126
1961	945	948	952	954	957	960	954	944	933	923	908	898	131	128	134	144	155	165	180
1962	897	900	904	907	923	929	931	929	932	923	906	893	165	159	157	159	156	165	182
1963	887	892	899	912	933	935	936	959	965	958	946	940	155	153	152	129	123	130	142
1964	940	945	949	955	957	961	952	943	938	926	911	897	131	127	136	145	150	162	177
1965	891	897	937	964	979	989	998	999	1004	998	985	977	109	99	90	89	84	90	103
1966	976	982	988	994	999	1004	996	993	983	971	959	950	89	84	92	95	105	117	129
1967	948	951	963	978	989	1001	1002	1025	1054	1058	1049	1042	99	87	86	63	34	30	39
1968	1040	1042	1044	1047	1050	1054	1045	1039	1029	1017	1003	995	38	34	43	49	59	71	85
1969	993	997	999	1029	1049	1055	1066	1088	1088	1084	1074	1066	39	33	22	10	0	4	14
1970	1050	1050	1050	1050	1050	1055	1048	1053	1054	1043	1030	1023	38	33	40	35	34	45	58
1971	1021	1025	1033	1040	1045	1051	1045	1049	1053	1044	1031	1024	43	37	43	39	35	44	57
1972	1020	1023	1029	1034	1035	1037	1025	1025	1016	1003	990	981	53	51	63	63	72	85	98
1973	977	980	986	999	1014	1025	1025	1037	1038	1026	1014	1007	74	63	63	51	50	62	74
1974	1007	1013	1022	1035	1045	1055	1059	1070	1070	1061	1050	1043	43	33	29	18	18	27	38
1975	1042	1044	1047	1050	1050	1055	1050	1049	1061	1054	1042	1035	38	33	38	39	27	34	46
1976	1034	1037	1039	1041	1043	1046	1040	1034	1024	1016	1006	1000	45	42	48	54	64	72	82
1977	1000	1001	1003	1003	1003	1003	997	989	981	969	957	952	85	85	91	99	107	119	131
1978	950	950	954	964	977	995	1002	1017	1025	1019	1009	1004	111	93	86	71	63	69	79
1979	1003	1006	1009	1018	1030	1044	1044	1054	1051	1038	1025	1018	58	44	44	34	37	50	63
1980	1019	1022	1025	1050	1050	1055	1056	1063	1070	1068	1057	1051	38	33	32	25	18	20	31
1981	1050	1050	1050	1050	1050	1053	1045	1035	1022	1010	998	992	38	35	43	53	66	78	90
1982	989	997	1012	1032	1050	1055	1071	1086	1088	1084	1075	1071	38	33	17	2	0	4	13
1983	1050	1050	1050	1050	1050	1055	1056	1070	1088	1088	1082	1075	38	33	32	18	0	0	6
1984	1050	1050	1050	1050	1050	1055	1049	1052	1051	1043	1032	1027	38	33	39	36	37	45	56
1985	1026	1031	1036	1039	1042	1046	1036	1030	1019	1007	996	989	46	42	52	58	69	81	92
1986	987	990	994	1003	1050	1055	1056	1061	1065	1057	1048	1043	38	33	32	27	23	31	40
1987	1042	1045	1047	1048	1049	1052	1048	1039	1030	1022	1015	1011	39	36	40	49	58	66	73
1988	1007	1008	1007	1008	1010	1012	1006	997	989	982	974	967	78	76	82	91	99	106	114
1989	967	966	967	968	971	982	978	972	967	956	946	941	117	106	110	116	121	132	142
1990	944	947	951	964	967	962	953	938	927	914	899	890	131	126	135	150	161	174	189
1991	889	890	895	895	895	904	898	892	876	859	842	835	193	184	190	196	212	229	246
1992	836	839	844	847	859	867	859	845	828	814	790	775	229	221	229	243	260	274	298
1993	780	789	800	822	915	959	953	955	966	957	947	943	173	129	135	133	122	131	141
1994	942	943	946	947	949	954	950	946	938	928	917	909	139	134	138	142	150	160	171

Reservoir Elevat[illegible]ing Table:
If [DFMRE] <= 0', [illegible], else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index = Product

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	1	1	1	1	1	7	9	-3	16	23	-7	-11	-9	6	5	6	6	4	3	4	34	238
1923	1	1	1	1	1	1	1	7	0	-3	5	0	-8	-11	-9	6	5	6	6	4	3	4	34	238
1924	1	1	1	1	1	1	1	7	1	-6	-9	-11	-10	-11	-5	6	4	4	3	4	3	5	29	203
1925	1	1	1	1	1	1	1	7	11	0	12	4	-4	-13	-7	6	6	6	6	5	3	4	36	252
1926	1	1	1	1	1	1	1	7	2	-2	-13	-11	-13	-13	-8	6	5	3	3	3	3	4	27	189
1927	1	1	1	1	1	1	1	7	11	7	5	-1	-8	-12	-6	6	6	6	5	4	3	4	34	238
1928	1	1	1	1	1	1	1	7	20	-2	2	-6	-11	-14	-7	6	5	6	4	3	3	4	31	217
1929	1	1	1	1	1	1	1	7	2	-5	-3	-7	-10	-10	-7	6	5	5	4	4	4	4	32	224
1930	1	1	1	1	1	1	1	7	8	-2	-7	-1	-10	-11	-12	6	5	4	5	4	3	3	30	210
1931	1	1	1	1	1	1	1	7	2	-5	-13	-17	-15	-17	-10	6	5	3	2	3	2	4	25	175
1932	1	1	1	1	1	1	1	7	11	0	20	14	-5	-10	-11	6	6	6	6	5	4	3	36	252
1933	1	1	1	1	1	1	1	7	2	-9	-15	0	-19	-20	-12	6	4	3	6	2	2	3	26	182
1934	1	1	1	1	1	1	1	7	10	-11	-20	-18	-17	-25	-18	6	3	2	2	2	1	2	18	126
1935	1	1	1	1	1	1	1	7	16	18	43	21	-12	-17	-12	6	6	6	6	3	2	3	32	224
1936	1	1	1	1	1	1	1	7	14	12	18	7	-9	-10	-8	6	6	6	6	4	4	4	36	252
1937	1	1	1	1	1	1	1	7	14	2	24	4	-8	-9	-7	6	6	6	6	4	4	4	36	252
1938	1	1	1	4	6	5	3	21	21	8	27	8	-4	-9	-5	6	6	6	6	5	4	5	38	798
1939	1	1	1	1	1	1	1	7	2	-2	-12	-11	-11	-12	-8	6	5	3	3	3	3	4	27	189
1940	1	1	1	1	1	1	1	7	16	8	11	-1	-9	-11	-8	6	6	6	5	4	3	4	34	238
1941	1	1	1	1	2	1	1	8	5	-3	14	6	-6	-10	-6	6	5	6	6	4	4	4	35	280
1942	1	1	1	1	4	3	1	12	5	0	12	14	-3	-10	-6	6	6	6	6	5	4	4	37	444
1943	1	1	1	1	1	1	1	7	5	6	7	-1	-7	-9	-7	6	6	6	5	4	4	4	35	245
1944	1	1	1	1	1	1	1	7	4	-5	-1	-5	-11	-12	-8	6	5	5	5	3	3	4	31	217
1945	1	1	1	1	1	1	1	7	8	-1	11	6	-7	-10	-7	6	5	6	6	4	4	4	35	245
1946	1	1	1	1	1	1	1	7	4	-2	8	-1	-9	-11	-7	6	5	6	5	4	3	4	33	231
1947	1	1	1	1	1	1	1	7	2	-10	-11	-11	-12	-14	-9	6	4	3	3	3	3	4	26	182
1948	1	1	1	1	1	1	1	7	4	-2	3	9	-8	-10	-7	6	5	6	6	4	4	4	35	245
1949	1	1	1	1	1	1	1	7	7	-6	2	-3	-10	-12	-7	6	4	6	5	4	3	4	32	224
1950	1	1	1	1	1	1	1	7	9	-4	7	9	-10	-11	-8	6	5	6	6	4	3	4	34	238
1951	1	1	1	1	1	1	1	7	5	-2	0	-4	-12	-12	-7	6	5	6	5	3	3	4	32	224
1952	1	1	1	5	6	5	3	22	5	3	29	1	-2	-9	-7	6	6	6	6	5	4	4	37	814
1953	1	1	1	1	1	1	1	7	4	-5	-6	6	-8	-12	-8	6	5	4	6	4	3	4	32	224
1954	1	1	1	1	1	1	1	7	8	0	2	-7	-12	-12	-8	6	6	6	4	3	3	4	32	224
1955	1	1	1	1	1	1	1	7	3	-7	-6	-1	-10	-12	-6	6	4	4	5	4	3	4	30	210
1956	1	1	1	1	1	1	1	7	10	-8	16	10	-5	-10	-7	6	4	6	6	5	4	4	35	245
1957	1	1	1	1	1	1	1	7	5	-11	-1	-1	-11	-11	-8	6	3	5	5	3	3	4	29	203
1958	1	1	1	3	6	4	2	18	15	7	26	13	-6	-10	-7	6	6	6	6	4	4	4	36	648
1959	1	1	1	1	1	1	1	7	3	-7	-16	-11	-11	-12	-8	6	4	2	3	3	3	4	25	175
1960	1	1	1	1	1	1	1	7	6	-3	-5	-7	-12	-13	-9	6	5	5	4	3	3	4	30	210
1961	1	1	1	1	1	1	1	7	3	-6	-10	-11	-10	-15	-10	6	4	4	3	4	3	4	28	196
1962	1	1	1	1	1	1	1	7	6	2	-2	3	-9	-17	-13	6	6	5	6	4	2	3	32	224
1963	1	1	1	1	1	1	1	7	2	1	23	6	-7	-12	-6	6	6	6	6	4	3	4	35	245
1964	1	1	1	1	1	1	1	7	4	-9	-9	-5	-12	-15	-14	6	4	4	5	3	3	3	28	196
1965	1	1	1	1	1	1	1	7	10	9	1	5	-6	-13	-8	6	6	6	6	4	3	4	35	245
1966	1	1	1	1	1	1	1	7	5	-8	-3	-10	-12	-12	-9	6	4	5	4	3	3	4	29	203
1967	1	1	1	1	1	1	1	7	12	1	23	29	4	-9	-7	6	6	6	6	6	4	4	38	266
1968	1	1	1	1	1	1	1	7	4	-9	-6	-10	-12	-14	-8	6	4	4	4	3	3	4	28	196
1969	1	1	1	6	6	5	3	23	6	11	22	0	-4	-10	-8	6	6	6	6	5	4	4	37	851
1970	1	1	1	1	1	1	1	7	5	-7	5	1	-11	-13	-7	6	4	6	6	3	3	4	32	224
1971	1	1	1	1	1	1	1	7	6	-6	4	4	-9	-13	-7	6	4	6	6	4	3	4	33	231
1972	1	1	1	1	1	1	1	7	2	-12	0	-9	-13	-13	-9	6	3	6	4	3	3	4	29	203
1973	1	1	1	1	1	1	1	7	11	0	12	1	-12	-12	-7	6	6	6	6	3	3	4	34	238
1974	1	1	1	2	2	1	1	9	10	4	11	0	-9	-11	-7	6	6	6	6	4	3	4	35	315
1975	1	1	1	1	1	1	1	7	5	-5	-1	12	-7	-12	-7	6	5	5	6	4	3	4	33	231
1976	1	1	1	1	1	1	1	7	3	-6	-6	-10	-8	-10	-6	6	4	4	4	4	4	4	30	210
1977	1	1	1	1	1	1	1	7	0	-6	-8	-8	-12	-12	-5	6	4	4	4	3	3	5	29	203
1978	1	1	1	1	1	1	1	7	18	7	15	8	-6	-10	-5	6	6	6	6	4	4	5	37	259
1979	1	1	1	1	1	1	1	7	14	0	10	-3	-13	-13	-7	6	6	6	5	3	3	4	33	231
1980	1	1	1	1	2	1	1	8	5	1	7	7	-2	-11	-6	6	6	6	6	5	3	4	36	288
1981	1	1	1	1	1	1	1	7	3	-8	-10	-13	-12	-12	-6	6	4	4	3	3	3	4	27	189
1982	1	1	2	5	6	5	3	23	5	16	15	2	-4	-9	-4	6	6	6	6	5	4	5	38	874
1983	1	1	1	2	6	6	4	21	5	1	14	18	0	-6	-7	6	6	6	6	6	4	4	38	798
1984	1	1	1	1	1	1	1	7	5	-6	3	-1	-8	-11	-5	6	4	6	5	4	3	5	33	231
1985	1	1	1	1	1	1	1	7	4	-10	-6	-11	-12	-11	-7	6	4	4	3	3	3	4	27	189
1986	1	1	1	1	1	1	1	7	5	1	5	4	-8	-9	-5	6	6	6	6	4	4	5	37	259
1987	1	1	1	1	1	1	1	7	3	-4	-9	-9	-8	-7	-4	6	5	4	4	4	4	5	32	224
1988	1	1	1	1	1	1	1	7	2	-6	-9	-8	-7	-8	-7	6	4	4	4	4	4	4	30	210
1989	1	1	1	1	1	1	1	7	11	-4	-6	-5	-11	-10	-5	6	5	4	5	3	4	5	32	224
1990	1	1	1	1	1	1	1	7	5	-9	-15	-11	-13	-15	-9	6	4	3	3	3	3	4	26	182
1991	1	1	1	1	1	1	1	7	9	-6	-6	-16	-17	-17	-7	6	4	4	2	2	2	4	24	168
1992	1	1	1	1	1	1	1	7	8	-8	-14	-17	-14	-24	-15	6	4	3	2	3	1	3	22	154
1993	1	1	1	1	1	1	1	7	44	-6	2	11	-9	-10	-4	6	4	6	6	4	4	5	35	245
1994	1	1	1	1	1	1	1	7	5	-4	-4	-8	-10	-11	-8	6	5	5	4	4	3	4	31	217
73 - year Average:								8								73 - year Average:							32	271.8
1929 - '34 Average:																								[illegible]

A2-180

C-032526

STUDY 1 ___ .6F-SWRCB-507 DWRSIM: recirc818-f, 17 Jun 97
CP # 81, DON PEDRO RESERVOIR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-507/81/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 832'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	599	582	579	601	656	690	699	724	782	779	763	752	142	133	108	50	53	69	80
1923	748	745	748	761	776	784	789	792	792	785	770	760	48	43	40	40	47	62	72
1924	754	751	746	744	745	743	738	733	725	711	697	689	89	94	99	107	121	135	143
1925	685	686	687	691	712	731	744	757	758	747	730	718	101	88	75	74	85	102	114
1926	711	708	703	702	712	719	734	748	745	729	712	701	113	98	84	87	103	120	131
1927	695	694	699	708	740	756	768	769	789	781	766	756	76	64	63	43	51	66	76
1928	749	749	750	753	762	781	790	808	808	793	777	768	51	42	24	24	39	55	64
1929	762	758	752	751	755	757	757	761	761	750	740	733	75	75	71	71	82	92	99
1930	730	727	724	725	730	738	739	743	743	733	723	716	94	93	89	89	99	109	116
1931	713	712	711	713	717	716	708	697	684	666	649	640	116	124	135	148	166	183	192
1932	637	632	644	665	708	726	727	735	755	750	734	722	106	105	97	77	82	98	110
1933	714	706	699	696	705	709	707	704	724	711	694	684	123	125	128	108	121	138	148
1934	674	672	669	673	687	695	695	690	686	666	648	637	137	137	142	146	166	184	195
1935	632	632	633	648	675	692	717	729	760	746	729	716	140	115	103	72	86	103	116
1936	708	705	700	705	748	766	775	794	812	803	788	777	66	57	38	20	29	44	55
1937	771	765	761	764	792	800	802	815	832	819	805	795	32	30	17	0	13	27	37
1938	789	784	800	800	800	800	800	804	831	832	819	808	32	32	28	1	0	13	24
1939	800	799	799	800	800	800	802	804	799	787	774	766	32	30	28	33	45	58	66
1940	764	763	761	774	800	800	802	816	816	801	785	775	32	30	16	16	31	47	57
1941	769	767	769	784	800	800	800	812	832	831	817	808	32	32	20	0	1	15	24
1942	800	798	800	800	800	800	802	807	831	832	818	808	32	30	25	1	0	14	24
1943	800	800	800	800	800	800	802	821	832	824	810	799	32	30	11	0	8	22	33
1944	794	792	788	787	793	800	801	808	808	795	780	770	32	31	24	24	37	52	62
1945	765	766	769	775	800	800	802	807	831	825	810	799	32	30	25	1	7	22	33
1946	796	797	800	800	800	800	802	806	806	790	774	763	32	30	26	26	42	58	69
1947	757	756	759	762	770	775	772	776	770	757	743	736	57	60	56	62	75	89	96
1948	733	732	731	732	733	734	730	738	765	753	736	725	98	102	94	67	79	96	107
1949	719	712	707	706	713	725	732	742	742	725	703	690	107	100	90	90	107	129	142
1950	684	676	668	675	696	709	719	733	733	716	695	682	123	113	99	99	116	137	150
1951	675	730	780	800	800	800	798	794	794	779	765	754	32	34	38	38	53	67	78
1952	748	746	752	778	799	800	800	820	832	832	819	808	32	32	12	0	0	13	24
1953	800	795	793	800	800	800	802	802	811	808	794	784	32	30	30	21	24	38	48
1954	779	775	772	774	783	795	802	819	819	804	789	779	37	30	13	13	28	43	53
1955	774	769	768	774	780	782	779	783	783	770	758	750	50	53	49	49	62	74	82
1956	745	741	791	800	800	800	802	818	832	832	818	808	32	30	14	0	0	14	24
1957	800	796	793	793	799	800	800	806	827	814	800	791	32	32	26	5	18	32	41
1958	786	781	779	784	800	800	800	821	832	832	819	808	32	32	11	0	0	13	24
1959	800	794	789	793	800	800	802	800	794	782	770	763	32	30	32	38	50	62	69
1960	761	758	755	756	763	769	770	776	776	765	755	749	63	62	56	56	67	77	83
1961	746	744	744	746	748	747	741	733	726	713	701	694	85	91	99	106	119	131	138
1962	691	688	686	688	712	733	742	747	773	765	751	741	99	90	85	59	67	81	91
1963	736	731	728	732	758	770	778	792	817	812	798	790	62	54	40	15	20	34	42
1964	784	785	786	791	797	799	797	794	794	783	772	765	33	35	38	38	49	60	67
1965	763	764	795	800	800	800	802	807	827	827	816	807	32	30	25	5	5	16	25
1966	800	800	800	800	800	800	801	798	791	776	761	752	32	31	34	41	56	71	80
1967	747	745	755	771	789	800	800	817	832	832	820	808	32	32	15	0	0	12	24
1968	800	795	791	792	800	800	802	804	802	790	778	770	32	30	28	30	42	54	62
1969	766	766	769	800	800	800	800	823	832	832	819	808	32	32	9	0	0	13	24
1970	800	799	800	800	800	800	799	799	799	786	771	762	32	33	33	33	46	61	70
1971	758	756	763	779	792	800	800	799	805	797	785	776	32	32	33	27	35	47	56
1972	771	767	770	777	790	800	800	798	795	784	773	766	32	32	34	37	48	59	66
1973	763	762	764	776	800	800	802	812	812	797	782	772	32	30	20	20	35	50	60
1974	767	772	783	800	800	800	800	806	828	819	805	796	32	32	26	4	13	27	36
1975	791	789	786	786	798	800	802	812	832	825	812	803	32	30	20	0	7	20	29
1976	800	800	799	799	800	799	794	787	777	767	757	751	33	38	45	55	65	75	81
1977	748	745	742	741	741	737	728	715	702	687	672	663	95	104	117	130	145	160	169
1978	659	655	658	684	717	749	762	777	814	814	800	795	83	70	55	18	18	32	37
1979	790	786	782	792	800	800	802	822	823	808	794	784	32	30	10	9	24	38	48
1980	779	778	777	800	800	800	800	817	832	832	819	808	32	32	15	0	0	13	24
1981	800	797	794	795	799	800	802	806	805	793	782	774	32	30	26	27	39	50	58
1982	770	776	795	800	800	800	800	820	832	832	820	808	32	32	12	0	0	12	24
1983	800	800	800	800	800	800	800	819	832	832	832	808	32	32	13	0	0	0	24
1984	800	800	800	800	800	800	797	803	803	790	774	764	32	35	29	29	42	58	68
1985	761	761	767	774	783	790	791	790	786	773	762	756	42	41	42	46	59	70	76
1986	753	753	757	764	800	800	802	827	832	825	811	802	32	30	5	0	7	21	30
1987	796	791	786	784	786	788	786	783	779	769	759	752	44	46	49	53	63	73	80
1988	750	749	749	754	759	761	756	747	740	728	716	709	71	76	85	92	104	116	123
1989	705	702	702	705	709	722	734	748	748	737	726	720	110	98	84	84	95	106	112
1990	718	717	717	720	724	727	724	722	719	705	691	684	105	108	110	113	127	141	148
1991	679	675	671	670	669	678	677	695	706	696	686	679	154	155	137	126	136	146	153
1992	677	678	677	680	690	695	697	697	697	683	665	654	137	135	135	135	149	167	178
1993	648	643	642	679	712	743	750	766	797	796	781	771	89	82	66	35	36	51	61
1994	766	760	755	754	758	761	759	762	761	750	740	734	71	73	70	71	82	92	98

Reservoir Elevation [Scoring Ta]ble:
If [DFMRE] <= 0', then [6, else]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

YEAR	Score MAR	Score APR	Score MAY	Score JUN	Score JUL	Score AUG	Score SEP	SUM	Fluct. MAR	Fluct. APR	Fluct. MAY	Fluct. JUN	Fluct. JUL	Fluct. AUG	Fluct. SEP
1922	1	1	1	1	1	1	1	7	34	9	25	58	-3	-16	-11
1923	1	1	1	1	1	1	1	7	8	5	3	0	-7	-15	-10
1924	1	1	1	1	1	1	1	7	-2	-5	-5	-8	-14	-14	-8
1925	1	1	1	1	1	1	1	7	19	13	13	1	-11	-17	-12
1926	1	1	1	1	1	1	1	7	7	15	14	-3	-16	-17	-11
1927	1	1	1	1	1	1	1	7	16	12	1	20	-8	-15	-10
1928	1	1	1	1	1	1	1	7	19	9	18	0	-15	-16	-9
1929	1	1	1	1	1	1	1	7	2	0	4	0	-11	-10	-7
1930	1	1	1	1	1	1	1	7	8	1	4	0	-10	-10	-7
1931	1	1	1	1	1	1	1	7	-1	-8	-11	-13	-18	-17	-9
1932	1	1	1	1	1	1	1	7	18	1	8	20	-5	-16	-12
1933	1	1	1	1	1	1	1	7	4	-2	-3	20	-13	-17	-10
1934	1	1	1	1	1	1	1	7	8	0	-5	-4	-20	-18	-11
1935	1	1	1	1	1	1	1	7	17	25	12	31	-14	-17	-13
1936	1	1	1	1	1	1	1	7	18	9	19	18	-9	-15	-11
1937	1	1	2	6	3	1	1	15	8	2	13	17	-13	-14	-10
1938	1	1	1	5	6	3	1	18	0	0	4	27	1	-13	-11
1939	1	1	1	1	1	1	1	7	0	2	2	-5	-12	-13	-8
1940	1	1	2	2	1	1	1	9	0	2	14	0	-15	-16	-10
1941	1	1	1	6	5	2	1	17	0	0	12	20	-1	-14	-9
1942	1	1	1	5	6	3	1	18	0	2	5	24	1	-14	-10
1943	1	1	3	6	4	1	1	17	0	2	19	11	-8	-14	-11
1944	1	1	1	1	1	1	1	7	7	1	7	0	-13	-15	-10
1945	1	1	1	5	4	1	1	14	0	2	5	24	-6	-15	-11
1946	1	1	1	1	1	1	1	7	0	2	4	0	-16	-16	-11
1947	1	1	1	1	1	1	1	7	5	-3	4	-6	-13	-14	-7
1948	1	1	1	1	1	1	1	7	1	-4	8	27	-12	-17	-11
1949	1	1	1	1	1	1	1	7	12	7	10	0	-17	-22	-13
1950	1	1	1	1	1	1	1	7	13	10	14	0	-17	-21	-13
1951	1	1	1	1	1	1	1	7	0	-2	-4	0	-15	-14	-11
1952	1	1	3	6	6	3	1	21	1	0	20	12	0	-13	-11
1953	1	1	1	1	1	1	1	7	0	2	0	9	-3	-14	-10
1954	1	1	3	3	1	1	1	11	12	7	17	0	-15	-15	-10
1955	1	1	1	1	1	1	1	7	2	-3	4	0	-13	-12	-8
1956	1	1	3	6	6	3	1	21	0	2	16	14	0	-14	-10
1957	1	1	1	4	2	1	1	11	1	0	6	21	-13	-14	-9
1958	1	1	3	6	6	3	1	21	0	0	21	11	0	-13	-11
1959	1	1	1	1	1	1	1	7	0	2	-2	-6	-12	-12	-7
1960	1	1	1	1	1	1	1	7	6	1	6	0	-11	-10	-6
1961	1	1	1	1	1	1	1	7	-1	-6	-8	-7	-13	-12	-7
1962	1	1	1	1	1	1	1	7	21	9	5	26	-8	-14	-10
1963	1	1	1	2	1	1	1	8	12	8	14	25	-5	-14	-8
1964	1	1	1	1	1	1	1	7	2	-2	-3	0	-11	-11	-7
1965	1	1	1	4	4	2	1	14	0	2	5	20	0	-11	-9
1966	1	1	1	1	1	1	1	7	0	1	-3	-7	-15	-15	-9
1967	1	1	2	6	6	3	1	20	11	0	17	15	0	-12	-12
1968	1	1	1	1	1	1	1	7	0	2	2	-2	-12	-12	-8
1969	1	1	4	6	6	3	1	22	0	0	23	9	0	-13	-11
1970	1	1	1	1	1	1	1	7	0	-1	0	0	-13	-15	-9
1971	1	1	1	1	1	1	1	7	8	0	-1	6	-8	-12	-9
1972	1	1	1	1	1	1	1	7	10	0	-2	-3	-11	-11	-7
1973	1	1	1	1	1	1	1	7	0	2	10	0	-15	-15	-10
1974	1	1	1	5	3	1	1	13	0	0	6	22	-9	-14	-9
1975	1	1	1	6	4	1	1	15	2	2	10	20	-7	-13	-9
1976	1	1	1	1	1	1	1	7	-1	-5	-7	-10	-10	-10	-6
1977	1	1	1	1	1	1	1	7	-4	-9	-13	-13	-15	-15	-9
1978	1	1	1	2	2	1	1	9	32	13	15	37	0	-14	-5
1979	1	1	3	4	1	1	1	12	0	2	20	1	-15	-14	-10
1980	1	1	2	6	6	3	1	20	0	0	17	15	0	-13	-11
1981	1	1	1	1	1	1	1	7	1	2	4	-1	-12	-11	-8
1982	1	1	3	6	6	3	1	21	0	0	20	12	0	-12	-12
1983	1	1	3	6	6	6	1	24	0	0	19	13	0	0	-24
1984	1	1	1	1	1	1	1	7	0	-3	6	0	-13	-16	-10
1985	1	1	1	1	1	1	1	7	7	1	-1	-4	-13	-11	-6
1986	1	1	4	6	4	1	1	18	0	2	25	5	-7	-14	-9
1987	1	1	1	1	1	1	1	7	2	-2	-3	-4	-10	-10	-7
1988	1	1	1	1	1	1	1	7	2	-5	-9	-7	-12	-12	-7
1989	1	1	1	1	1	1	1	7	13	12	14	0	-11	-11	-6
1990	1	1	1	1	1	1	1	7	3	-3	-2	-3	-14	-14	-7
1991	1	1	1	1	1	1	1	7	9	-1	18	11	-10	-10	-7
1992	1	1	1	1	1	1	1	7	5	2	0	0	-14	-18	-11
1993	1	1	1	1	1	1	1	7	31	7	16	31	-1	-15	-10
1994	1	1	1	1	1	1	1	7	3	-2	3	-1	-11	-10	-6
					73 - year Average:			10							

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	6	6	6	5	2	3	34	238
1923	6	6	6	6	4	3	4	35	245
1924	5	5	5	4	3	3	4	29	203
1925	6	6	6	6	3	2	3	32	224
1926	6	6	6	5	2	2	3	30	210
1927	6	6	6	6	4	3	4	35	245
1928	6	6	6	6	3	2	4	33	231
1929	6	6	6	6	3	4	4	35	245
1930	6	6	6	6	4	4	4	36	252
1931	5	4	3	3	2	2	4	23	161
1932	6	6	6	6	5	2	3	34	238
1933	6	5	5	6	3	2	4	31	217
1934	6	6	5	5	2	2	3	29	203
1935	6	6	6	6	3	2	3	32	224
1936	6	6	6	6	4	3	3	34	238
1937	6	6	6	6	3	3	4	34	510
1938	6	6	6	6	6	3	3	36	648
1939	6	6	6	5	3	3	4	33	231
1940	6	6	6	6	3	2	4	33	297
1941	6	6	6	6	5	3	4	36	612
1942	6	6	6	6	6	3	4	37	666
1943	6	6	6	6	4	3	3	34	578
1944	6	6	6	6	3	3	4	34	238
1945	6	6	6	6	4	3	3	34	476
1946	6	6	6	6	2	2	3	31	217
1947	6	5	6	4	3	3	4	31	217
1948	6	5	6	6	3	2	3	31	217
1949	6	6	6	6	2	1	3	30	210
1950	6	6	6	6	2	1	3	30	210
1951	6	5	5	6	3	3	3	31	217
1952	6	6	6	6	6	3	3	36	756
1953	6	6	6	6	5	3	4	36	252
1954	6	6	6	6	3	3	4	34	374
1955	6	5	6	6	3	3	4	33	231
1956	6	6	6	6	6	3	4	37	777
1957	6	6	6	6	3	3	4	34	374
1958	6	6	6	6	6	3	3	36	756
1959	6	6	5	4	3	3	4	31	217
1960	6	6	6	6	3	4	4	35	245
1961	5	4	4	4	3	3	4	27	189
1962	6	6	6	6	4	3	4	35	245
1963	6	6	6	6	5	3	4	36	288
1964	6	5	5	6	3	3	4	32	224
1965	6	6	6	6	6	3	4	37	518
1966	6	6	5	4	3	3	4	31	217
1967	6	6	6	6	6	3	3	36	720
1968	6	6	6	5	3	3	4	33	231
1969	6	6	6	6	6	3	3	36	792
1970	6	5	6	6	3	3	4	33	231
1971	6	6	5	6	4	3	4	34	238
1972	6	6	5	5	3	3	4	32	224
1973	6	6	6	6	3	3	4	34	238
1974	6	6	6	6	4	3	4	35	455
1975	6	6	6	6	4	3	4	35	525
1976	5	5	4	4	4	4	4	30	210
1977	5	4	3	3	3	3	4	25	175
1978	6	6	6	6	6	3	5	38	342
1979	6	6	6	6	3	3	4	34	408
1980	6	6	6	6	6	3	3	36	720
1981	6	6	6	5	3	3	4	33	231
1982	6	6	6	6	6	3	3	36	756
1983	6	6	6	6	6	6	1	37	888
1984	6	5	6	6	3	2	4	32	224
1985	6	6	5	5	3	3	4	32	224
1986	6	6	6	6	4	3	4	35	630
1987	6	5	5	5	4	4	4	33	231
1988	6	5	4	4	3	3	4	29	203
1989	6	6	6	6	3	3	4	34	238
1990	6	5	5	5	3	3	4	31	217
1991	6	5	6	6	4	4	4	35	245
1992	6	6	6	6	3	2	3	32	224
1993	6	6	6	6	5	3	4	36	252
1994	6	5	6	5	3	4	4	33	231
					73 - year Average:			33	340.9
						1929 - '34 Average:			219.3

A2-187

STUDY: 1995 [illegible]RCB-507 DWRSIM: recirc818-f, 17 Jun 97
CP # 20, LAKE [illegible]LURE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-507/20/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 867'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation [illegible] Table:
If [DFMRE] <= 0', t[illegible] [illegible]se
If [DFMRE] <= 5', the[illegible] else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index = Product

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	680	680	695	712	759	779	789	845	867	860	847	837	88	78	22	0	7	20	30
1923	808	808	808	808	808	813	827	854	854	845	830	820	54	40	13	13	22	37	47
1924	808	808	808	808	808	807	808	806	794	776	762	751	60	59	61	73	91	105	116
1925	751	757	762	767	791	800	819	843	844	831	815	803	67	48	24	23	36	52	64
1926	801	801	802	804	808	814	834	832	832	828	821	813	53	33	35	35	39	46	54
1927	808	808	808	808	808	815	818	849	860	856	853	840	52	49	18	7	11	14	27
1928	808	808	808	808	808	809	808	824	822	816	812	809	58	59	43	45	51	55	58
1929	808	807	807	808	808	810	811	813	813	813	814	807	57	56	54	54	54	53	60
1930	807	808	805	805	805	801	805	807	807	807	808	806	66	62	60	60	60	59	61
1931	804	804	804	805	806	806	804	802	790	771	757	746	61	63	65	77	96	110	121
1932	744	745	766	777	808	817	826	852	867	857	843	832	50	41	15	0	10	24	35
1933	808	807	806	808	808	811	816	825	836	824	810	801	56	51	42	31	43	57	66
1934	800	799	802	808	808	816	823	819	810	794	780	771	51	44	48	57	73	87	96
1935	770	774	779	798	806	817	840	859	867	854	839	828	50	27	8	0	13	28	39
1936	808	808	808	808	808	820	840	859	865	853	838	827	47	27	8	2	14	29	40
1937	808	808	808	808	808	820	834	859	867	853	838	827	47	33	8	0	14	29	40
1938	808	808	808	808	808	820	840	859	867	867	855	840	47	27	8	0	0	12	27
1939	808	808	808	808	808	816	831	832	821	803	787	776	51	36	35	46	64	80	91
1940	776	777	778	804	808	820	837	859	856	840	823	810	47	30	8	11	27	44	57
1941	807	807	808	808	808	820	834	859	867	864	851	840	47	33	8	0	3	16	27
1942	808	808	808	808	808	820	838	859	867	861	852	840	47	29	8	0	6	15	27
1943	808	808	808	808	808	820	840	859	864	853	838	828	47	27	8	3	14	29	39
1944	808	808	808	808	808	817	815	835	835	822	804	790	50	52	32	32	45	63	77
1945	788	795	801	805	808	820	833	856	867	856	842	832	47	34	11	0	11	25	35
1946	808	808	808	808	808	818	837	859	858	843	826	813	49	30	8	9	24	41	54
1947	808	808	808	808	808	815	818	832	825	809	794	784	52	49	35	42	58	73	83
1948	784	785	786	788	790	789	794	815	833	818	800	786	78	73	52	34	49	67	81
1949	783	782	783	785	789	797	804	827	826	805	786	770	70	63	40	41	62	81	97
1950	767	767	767	774	787	791	808	830	830	811	792	777	76	59	37	37	56	75	90
1951	774	808	808	808	808	819	819	819	817	796	774	759	48	48	48	50	71	93	108
1952	754	756	769	804	808	820	840	859	867	864	852	840	47	27	8	0	3	15	27
1953	808	808	808	808	808	809	810	810	810	796	775	760	58	58	57	57	71	92	107
1954	756	756	757	760	770	784	802	823	814	793	771	755	83	65	44	53	74	96	112
1955	752	750	754	761	766	766	767	791	791	774	756	744	101	100	76	76	93	111	123
1956	740	740	808	808	808	819	831	859	867	863	851	840	48	36	8	0	4	16	27
1957	808	808	808	808	808	813	813	826	834	817	799	784	54	54	41	33	50	68	83
1958	781	782	786	794	808	820	840	859	867	862	850	840	47	27	8	0	5	17	27
1959	808	808	808	808	808	813	823	826	817	797	780	773	54	44	41	50	70	87	94
1960	772	771	771	772	784	792	806	819	816	801	787	777	75	61	48	51	66	80	90
1961	776	776	779	779	782	783	789	793	784	766	752	740	84	78	74	83	101	115	127
1962	739	739	741	744	784	793	816	831	845	832	815	802	74	51	36	22	35	52	65
1963	801	800	801	808	808	814	823	848	861	852	837	826	53	44	19	6	15	30	41
1964	808	808	808	808	808	808	811	817	815	799	783	774	59	56	50	52	68	84	93
1965	771	775	808	808	808	815	831	854	867	861	850	840	52	36	13	0	6	17	27
1966	808	808	808	808	808	814	825	835	823	801	780	767	53	42	32	44	66	87	100
1967	764	766	791	804	808	820	840	859	867	867	856	840	47	27	8	0	0	11	27
1968	808	808	808	808	808	812	812	813	803	783	767	755	55	55	54	64	84	100	112
1969	751	757	765	808	808	820	840	859	867	867	855	840	47	27	8	0	0	12	27
1970	808	808	808	808	808	820	821	821	822	802	782	767	47	46	46	45	65	85	100
1971	765	767	778	788	795	800	800	801	803	786	765	749	67	67	66	64	81	102	118
1972	745	745	755	761	768	781	781	789	788	769	751	742	86	86	78	79	98	116	125
1973	742	744	752	768	797	813	822	859	862	848	833	823	54	45	8	5	19	34	44
1974	808	808	808	808	808	820	833	859	867	854	839	829	47	34	8	0	13	28	38
1975	808	808	808	808	808	820	823	855	867	856	842	832	47	44	12	0	11	25	35
1976	808	808	808	808	808	809	808	806	795	777	764	755	58	59	61	72	90	103	112
1977	753	751	750	750	750	745	737	726	715	685	655	631	122	130	141	152	182	212	236
1978	626	626	642	693	741	782	815	859	867	867	857	840	85	52	8	0	0	10	27
1979	808	808	808	808	808	820	828	859	859	844	829	818	47	39	8	8	23	38	49
1980	808	808	808	808	808	820	835	859	867	867	855	840	47	32	8	0	0	12	27
1981	808	807	807	808	808	813	823	832	828	813	799	791	54	44	35	39	54	68	76
1982	789	798	808	808	808	820	840	859	867	865	854	840	47	27	8	0	2	13	27
1983	808	808	808	808	808	820	836	859	867	867	864	840	47	31	8	0	0	3	27
1984	808	808	808	808	808	820	821	826	824	805	784	769	47	46	41	43	62	83	98
1985	768	772	776	779	786	793	808	809	802	784	768	757	74	59	58	65	83	99	110
1986	758	760	768	777	808	820	839	859	867	855	841	830	47	28	8	0	12	26	37
1987	808	807	807	807	808	810	818	818	808	793	779	770	57	49	49	59	74	88	97
1988	769	771	773	778	782	788	794	799	791	775	761	750	79	73	68	76	92	106	117
1989	748	747	750	751	756	773	795	806	802	786	772	764	94	72	61	65	81	95	103
1990	765	766	767	769	773	779	791	792	783	767	751	739	88	76	75	84	100	116	128
1991	737	736	736	735	735	755	761	781	795	782	768	759	112	106	86	72	85	99	108
1992	758	759	760	762	775	780	797	797	786	772	759	747	87	70	70	81	95	108	120
1993	746	746	752	796	808	820	833	859	867	861	848	837	47	34	8	0	6	19	30
1994	808	807	808	808	808	810	815	821	813	798	784	775	57	52	46	54	69	83	92

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Change MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	1	1	1	6	4	1	1	15	20	10	56	22	-7	-13	-10
1923	1	1	3	3	1	1	1	11	5	14	27	0	-9	-15	-10
1924	1	1	1	1	1	1	1	7	-1	1	-2	-12	-18	-14	-11
1925	1	1	1	1	1	1	1	7	9	19	24	1	-13	-16	-12
1926	1	1	1	1	1	1	1	7	6	20	-2	0	-4	-7	-8
1927	1	1	2	4	3	3	1	15	7	3	31	11	-4	-3	-13
1928	1	1	1	1	1	1	1	7	1	-1	16	-2	-6	-4	-3
1929	1	1	1	1	1	1	1	7	2	1	2	0	0	1	-7
1930	1	1	1	1	1	1	1	7	-4	4	2	0	0	1	-2
1931	1	1	1	1	1	1	1	7	0	-2	-2	-12	-19	-14	-11
1932	1	1	2	6	3	1	1	15	9	9	26	15	-10	-14	-11
1933	1	1	1	1	1	1	1	7	3	5	9	11	-12	-14	-9
1934	1	1	1	1	1	1	1	7	8	7	-4	-9	-16	-14	-9
1935	1	1	4	6	3	1	1	17	11	23	19	8	-13	-15	-11
1936	1	1	4	5	3	1	1	16	12	20	19	6	-12	-15	-11
1937	1	1	4	6	3	1	1	17	12	14	25	8	-14	-15	-11
1938	1	1	4	6	6	3	1	22	12	20	19	8	0	-12	-15
1939	1	1	1	1	1	1	1	7	8	15	1	-11	-18	-16	-11
1940	1	1	4	3	1	1	1	12	12	17	22	-3	-16	-17	-13
1941	1	1	4	6	5	2	1	20	12	14	25	8	-3	-13	-11
1942	1	1	4	6	4	2	1	19	12	18	21	8	-6	-9	-12
1943	1	1	4	5	3	1	1	16	12	20	19	5	-11	-15	-10
1944	1	1	1	1	1	1	1	7	9	-2	20	0	-13	-18	-14
1945	1	1	3	6	3	1	1	16	12	13	23	11	-11	-14	-10
1946	1	1	4	4	1	1	1	13	10	19	22	-1	-15	-17	-13
1947	1	1	1	1	1	1	1	7	7	3	14	-7	-16	-15	-10
1948	1	1	1	1	1	1	1	7	-1	5	21	18	-15	-18	-14
1949	1	1	1	1	1	1	1	7	8	7	23	-1	-21	-19	-16
1950	1	1	1	1	1	1	1	7	4	17	22	0	-19	-19	-15
1951	1	1	1	1	1	1	1	7	11	0	0	-2	-21	-22	-15
1952	1	1	4	6	5	2	1	20	12	20	19	8	-3	-12	-12
1953	1	1	1	1	1	1	1	7	1	0	1	0	-14	-21	-15
1954	1	1	1	1	1	1	1	7	14	18	21	-9	-21	-22	-16
1955	1	1	1	1	1	1	1	7	0	1	24	0	-17	-18	-12
1956	1	1	4	6	5	2	1	20	11	12	28	8	-4	-12	-11
1957	1	1	1	1	1	1	1	7	5	0	13	8	-17	-18	-15
1958	1	1	4	6	4	2	1	19	12	20	19	8	-5	-12	-10
1959	1	1	1	1	1	1	1	7	5	10	3	-9	-20	-17	-7
1960	1	1	1	1	1	1	1	7	8	14	13	-3	-15	-14	-10
1961	1	1	1	1	1	1	1	7	1	6	4	-9	-18	-14	-12
1962	1	1	1	1	1	1	1	7	9	23	15	14	-13	-17	-13
1963	1	1	2	4	2	1	1	12	6	9	25	13	-9	-15	-11
1964	1	1	1	1	1	1	1	7	0	3	6	-2	-16	-16	-9
1965	1	1	3	6	4	2	1	18	7	16	23	13	-6	-11	-10
1966	1	1	1	1	1	1	1	7	6	11	10	-12	-22	-21	-13
1967	1	1	4	6	6	3	1	22	12	20	19	8	0	-11	-16
1968	1	1	1	1	1	1	1	7	4	0	1	-10	-20	-16	-12
1969	1	1	4	6	6	3	1	22	12	20	19	8	0	-12	-15
1970	1	1	1	1	1	1	1	7	12	1	0	1	-20	-20	-15
1971	1	1	1	1	1	1	1	7	5	0	1	2	-17	-21	-16
1972	1	1	1	1	1	1	1	7	13	0	8	-1	-19	-18	-9
1973	1	1	4	4	2	1	1	14	16	9	37	3	-14	-15	-10
1974	1	1	4	6	3	1	1	17	12	13	26	8	-13	-15	-10
1975	1	1	3	6	3	1	1	16	12	3	32	12	-11	-14	-10
1976	1	1	1	1	1	1	1	7	1	-1	-2	-11	-18	-13	-9
1977	1	1	1	1	1	1	1	7	-5	-8	-11	-11	-30	-30	-24
1978	1	1	4	6	6	3	1	22	41	33	44	8	0	-10	-17
1979	1	1	4	4	1	1	1	13	12	8	31	0	-15	-15	-11
1980	1	1	4	6	6	3	1	22	12	15	24	8	0	-12	-15
1981	1	1	1	1	1	1	1	7	5	10	9	-4	-15	-14	-8
1982	1	1	4	6	5	3	1	21	12	20	19	8	-2	-11	-14
1983	1	1	4	6	6	5	1	24	12	16	23	8	0	-3	-24
1984	1	1	1	1	1	1	1	7	12	1	5	-2	-19	-21	-15
1985	1	1	1	1	1	1	1	7	7	15	1	-7	-18	-16	-11
1986	1	1	4	6	3	1	1	17	12	19	20	8	-12	-14	-11
1987	1	1	1	1	1	1	1	7	2	8	0	-10	-15	-14	-9
1988	1	1	1	1	1	1	1	7	6	6	5	-8	-16	-14	-11
1989	1	1	1	1	1	1	1	7	17	22	11	-4	-16	-14	-8
1990	1	1	1	1	1	1	1	7	6	12	1	-9	-16	-16	-12
1991	1	1	1	1	1	1	1	7	20	6	20	14	-13	-14	-9
1992	1	1	1	1	1	1	1	7	5	17	0	-11	-14	-13	-12
1993	1	1	4	6	4	2	1	19	12	13	26	8	-6	-13	-11
1994	1	1	1	1	1	1	1	7	2	5	6	-8	-15	-14	-9
							73 - year Average:	11							

YEAR	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	6	6	6	4	3	4	35	525
1923	6	6	6	6	4	3	4	35	385
1924	5	6	5	3	2	3	3	27	189
1925	6	6	6	6	3	2	3	32	224
1926	6	6	5	6	5	4	4	36	252
1927	6	6	6	6	5	5	3	37	555
1928	6	5	6	5	4	5	5	36	252
1929	6	6	6	6	6	6	4	40	280
1930	5	6	6	6	6	6	5	40	280
1931	6	5	5	3	2	3	3	27	189
1932	6	6	6	6	4	3	3	34	510
1933	6	6	6	6	3	3	4	34	238
1934	6	6	5	4	2	3	4	30	210
1935	6	6	6	6	3	3	3	33	561
1936	6	6	6	6	3	3	3	33	528
1937	6	6	6	6	3	3	3	33	561
1938	6	6	6	6	6	3	3	36	792
1939	6	6	6	3	2	2	3	28	196
1940	6	6	6	5	2	2	3	30	360
1941	6	6	6	6	5	3	3	35	700
1942	6	6	6	6	4	4	3	35	665
1943	6	6	6	6	3	3	4	34	544
1944	6	5	6	6	3	2	3	31	217
1945	6	6	6	6	3	3	4	34	544
1946	6	6	6	5	3	2	3	31	403
1947	6	6	6	4	2	3	4	31	217
1948	5	6	6	6	3	2	3	31	217
1949	6	6	6	5	1	2	2	28	196
1950	6	6	6	6	2	2	3	31	217
1951	6	6	6	5	1	1	3	28	196
1952	6	6	6	6	5	3	3	35	700
1953	6	6	6	6	3	1	3	31	217
1954	6	6	6	4	1	1	2	26	182
1955	6	6	6	6	2	2	3	31	217
1956	6	6	6	6	5	3	3	35	700
1957	6	6	6	6	2	2	3	31	217
1958	6	6	6	6	5	3	4	36	684
1959	6	6	6	4	2	2	4	30	210
1960	6	6	6	5	3	3	4	33	231
1961	6	6	6	4	2	3	3	30	210
1962	6	6	6	6	3	2	3	32	224
1963	6	6	6	6	4	3	3	34	408
1964	6	6	6	5	2	2	4	31	217
1965	6	6	6	6	4	3	4	35	630
1966	6	6	6	3	1	1	3	26	182
1967	6	6	6	6	6	3	2	35	770
1968	6	6	6	4	2	2	3	29	203
1969	6	6	6	6	6	3	3	36	792
1970	6	6	6	6	2	2	3	31	217
1971	6	6	6	6	2	1	2	29	203
1972	6	6	6	5	2	2	4	31	217
1973	6	6	6	6	3	3	4	34	476
1974	6	6	6	6	3	3	4	34	578
1975	6	6	6	6	3	3	4	34	544
1976	6	5	5	3	2	3	4	28	196
1977	5	4	3	3	1	1	1	18	126
1978	6	6	6	6	6	4	2	36	792
1979	6	6	6	6	3	3	3	33	429
1980	6	6	6	6	6	3	3	36	792
1981	6	6	6	5	3	3	4	33	231
1982	6	6	6	6	5	3	3	35	735
1983	6	6	6	6	6	5	1	36	864
1984	6	6	6	5	2	1	3	29	203
1985	6	6	6	4	2	2	3	29	203
1986	6	6	6	6	3	3	3	33	561
1987	6	6	6	4	3	3	4	32	224
1988	6	6	6	4	2	3	3	30	210
1989	6	6	6	5	2	3	4	32	224
1990	6	6	6	4	2	2	3	29	203
1991	6	6	6	6	3	3	4	34	238
1992	6	6	6	3	3	3	3	30	210
1993	6	6	6	6	4	3	3	34	646
1994	6	6	6	4	3	3	4	32	224
							73 - year Average:	32	380.0
							1929 - '34 Average:		284.5

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STUDY: ___6F-SWRCB-507 DWRSIM: reoirc818-f, 17 Jun 97
CP # 18, MILLERTON LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-507/18/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 576'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	491	505	527	547	549	566	559	576	576	562	518	491
1923	485	495	520	537	531	517	541	549	540	526	463	470
1924	483	494	508	522	516	503	506	511	505	478	464	468
1925	465	474	490	503	508	493	514	532	522	499	483	475
1926	477	490	505	519	522	508	549	563	535	494	473	485
1927	491	506	528	545	560	561	560	569	576	543	492	482
1928	482	503	525	542	540	543	551	554	522	477	465	477
1929	485	499	513	523	517	513	531	531	527	506	466	477
1930	480	495	507	518	514	510	525	534	518	489	466	482
1931	487	501	513	522	517	508	510	516	508	482	466	466
1932	467	476	503	520	543	531	524	532	552	518	492	477
1933	477	489	501	518	512	501	520	537	526	509	466	467
1934	470	480	500	517	511	503	516	527	523	498	477	486
1935	490	500	515	535	532	509	542	563	574	538	469	479
1936	486	502	518	533	560	558	564	576	563	521	472	478
1937	488	497	516	535	560	570	576	576	576	538	484	469
1938	472	486	533	560	560	542	529	467	572	576	532	520
1939	513	514	529	534	532	524	542	560	539	504	473	495
1940	495	504	517	550	550	552	548	561	553	512	466	471
1941	481	494	528	556	560	573	573	569	576	569	527	506
1942	497	507	532	552	549	553	554	562	576	555	509	477
1943	477	494	516	557	556	576	574	576	562	526	491	476
1944	479	491	508	521	524	507	516	517	501	494	490	480
1945	481	503	523	533	560	568	565	571	576	554	511	491
1946	485	502	531	546	528	524	536	559	546	510	478	480
1947	481	500	526	543	541	530	545	556	535	497	473	481
1948	486	503	518	529	523	530	556	551	541	483	480	484
1949	490	500	513	526	524	511	522	538	521	482	477	489
1950	492	503	519	536	541	524	534	551	539	506	476	482
1951	490	533	560	560	554	546	552	546	514	463	463	481
1952	486	500	530	559	560	567	559	526	576	571	525	508
1953	501	514	533	549	538	532	541	536	518	497	478	481
1954	486	497	514	532	532	527	537	560	544	507	465	483
1955	489	502	522	549	537	520	534	545	537	504	481	487
1956	491	499	560	560	560	576	576	561	576	566	524	505
1957	496	504	517	527	525	529	546	561	562	526	471	481
1958	488	501	526	545	554	565	576	576	576	557	516	498
1959	492	507	523	530	536	528	550	566	551	500	470	475
1960	474	475	480	490	503	498	515	525	509	496	483	481
1961	481	491	505	511	510	511	526	539	527	486	467	467
1962	468	471	484	492	538	529	527	555	569	540	489	476
1963	479	491	501	518	558	558	576	576	576	564	520	503
1964	490	517	542	551	547	544	553	561	551	508	476	484
1965	481	496	529	560	556	554	559	551	561	540	512	496
1966	487	513	546	558	541	526	545	564	550	506	486	486
1967	490	502	539	559	560	571	565	514	570	576	539	522
1968	515	521	539	545	545	539	550	554	539	506	478	482
1969	480	498	513	560	524	521	467	469	576	576	538	513
1970	498	516	540	560	560	554	554	555	544	517	476	477
1971	482	502	534	551	548	533	541	544	520	498	491	478
1972	479	491	519	536	532	524	537	543	540	497	481	481
1973	489	501	523	545	560	560	550	575	576	542	483	477
1974	487	510	545	560	544	550	559	570	573	537	490	473
1975	476	494	515	528	535	526	533	536	567	525	476	482
1976	489	511	531	541	539	544	547	542	519	492	479	494
1977	490	496	500	503	501	464	465	464	462	466	461	462
1978	462	462	484	532	560	552	510	498	576	576	548	539
1979	528	535	549	560	555	562	560	571	563	521	477	482
1980	489	488	508	560	560	558	566	550	576	576	542	513
1981	503	512	520	528	531	533	547	553	543	510	477	488
1982	491	504	536	560	560	576	546	561	576	576	546	541
1983	531	556	560	560	513	484	467	467	483	564	572	576
1984	560	560	560	560	560	568	570	570	557	530	487	483
1985	482	492	511	536	533	526	551	563	539	501	483	483
1986	490	508	534	554	550	552	574	565	576	558	503	479
1987	480	489	492	496	496	511	530	551	539	503	473	480
1988	482	495	507	526	516	527	539	547	527	498	483	486
1989	486	497	505	515	512	516	537	552	540	502	478	484
1990	489	495	502	510	510	517	532	544	525	508	479	483
1991	480	486	492	490	493	489	501	508	512	506	480	486
1992	485	490	494	498	499	490	493	494	480	470	465	466
1993	467	486	478	536	543	556	558	576	576	571	522	499
1994	490	497	507	512	508	520	534	548	528	498	478	484

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation [illegible] Table:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP	Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	10	17	0	0	14	58	85	3	2	6	6	3	1	1	22
1923	59	35	27	36	50	113	106	1	1	1	1	1	1	1	7
1924	73	70	65	71	98	112	108	1	1	1	1	1	1	1	7
1925	83	62	44	54	77	93	101	1	1	1	1	1	1	1	7
1926	68	27	13	41	82	103	91	1	1	3	1	1	1	1	9
1927	15	16	7	0	33	84	94	2	2	4	6	1	1	1	17
1928	33	25	22	54	99	111	99	1	1	1	1	1	1	1	7
1929	63	45	45	49	70	110	99	1	1	1	1	1	1	1	7
1930	66	51	42	58	87	110	94	1	1	1	1	1	1	1	7
1931	68	66	60	68	94	110	110	1	1	1	1	1	1	1	7
1932	45	52	44	24	58	84	99	1	1	1	1	1	1	1	7
1933	75	56	39	50	67	110	109	1	1	1	1	1	1	1	7
1934	73	60	49	53	78	99	90	1	1	1	1	1	1	1	7
1935	67	34	13	2	38	107	97	1	1	3	5	1	1	1	13
1936	18	12	0	13	55	104	98	2	3	6	3	1	1	1	17
1937	6	0	0	0	38	92	107	4	6	6	6	1	1	1	25
1938	34	47	109	4	0	44	56	1	1	1	5	6	1	1	16
1939	52	34	16	37	72	103	81	1	1	2	1	1	1	1	8
1940	24	28	15	23	64	110	105	1	1	2	1	1	1	1	8
1941	3	3	7	0	7	49	70	5	5	4	6	4	1	1	26
1942	23	22	14	0	21	67	99	1	1	3	6	1	1	1	14
1943	0	2	0	14	50	85	100	6	5	6	3	1	1	1	23
1944	69	60	59	75	82	86	96	1	1	1	1	1	1	1	7
1945	8	11	5	0	22	65	85	4	3	4	6	1	1	1	20
1946	52	40	17	30	66	98	96	1	1	2	1	1	1	1	8
1947	46	31	20	41	79	103	95	1	1	1	1	1	1	1	7
1948	46	20	25	35	93	96	92	1	1	1	1	1	1	1	7
1949	65	54	38	55	94	99	87	1	1	1	1	1	1	1	7
1950	52	42	25	37	70	100	94	1	1	1	1	1	1	1	7
1951	30	24	30	62	113	113	95	1	1	1	1	1	1	1	7
1952	9	17	50	0	5	51	68	4	2	1	6	4	1	1	19
1953	44	35	40	58	79	98	95	1	1	1	1	1	1	1	7
1954	49	39	16	32	69	111	93	1	1	2	1	1	1	1	8
1955	56	42	31	39	72	95	89	1	1	1	1	1	1	1	7
1956	0	0	15	0	10	52	71	6	6	2	6	3	1	1	25
1957	47	30	15	14	50	105	95	1	1	2	3	1	1	1	10
1958	11	0	0	0	19	60	78	3	6	6	6	2	1	1	25
1959	48	26	10	25	76	106	101	1	1	3	1	1	1	1	9
1960	78	61	51	67	80	93	95	1	1	1	1	1	1	1	7
1961	65	50	37	49	90	109	109	1	1	1	1	1	1	1	7
1962	47	49	21	7	36	87	100	1	1	1	4	1	1	1	10
1963	18	0	0	0	12	56	73	2	6	6	6	3	1	1	25
1964	32	23	15	25	68	100	92	1	1	2	1	1	1	1	8
1965	22	17	25	15	36	64	80	1	2	1	2	1	1	1	9
1966	50	31	12	26	70	90	90	1	1	3	1	1	1	1	9
1967	5	11	62	6	0	37	54	4	3	1	4	6	1	1	20
1968	37	26	22	37	70	98	94	1	1	1	1	1	1	1	7
1969	55	109	107	0	0	38	63	1	1	1	6	6	1	1	17
1970	22	22	21	32	59	100	99	1	1	1	1	1	1	1	7
1971	43	35	32	56	78	85	98	1	1	1	1	1	1	1	7
1972	52	39	33	36	79	95	95	1	1	1	1	1	1	1	7
1973	16	26	1	0	34	93	99	2	1	5	6	1	1	1	17
1974	26	17	6	3	39	86	103	1	2	4	5	1	1	1	15
1975	50	43	40	9	51	100	94	1	1	1	4	1	1	1	10
1976	32	29	34	57	84	97	82	1	1	1	1	1	1	1	7
1977	112	111	112	114	110	115	114	1	1	1	1	1	1	1	7
1978	24	66	78	0	0	28	37	1	1	1	6	6	1	1	17
1979	14	16	5	13	55	99	94	3	2	4	3	1	1	1	15
1980	18	10	26	0	0	34	63	2	3	1	6	6	1	1	20
1981	43	29	23	33	66	99	88	1	1	1	1	1	1	1	7
1982	0	30	15	0	0	30	35	6	1	2	6	6	1	1	23
1983	92	109	109	93	12	4	0	1	1	1	1	3	5	6	18
1984	8	6	6	19	46	89	93	4	4	4	2	1	1	1	17
1985	50	25	13	37	75	93	93	1	1	3	1	1	1	1	9
1986	24	2	11	0	18	73	97	1	5	3	6	2	1	1	19
1987	65	46	25	37	73	103	96	1	1	1	1	1	1	1	7
1988	49	37	29	49	78	93	90	1	1	1	1	1	1	1	7
1989	60	39	24	36	74	98	92	1	1	1	1	1	1	1	7
1990	59	44	32	51	68	97	93	1	1	1	1	1	1	1	7
1991	87	75	68	64	70	96	90	1	1	1	1	1	1	1	7
1992	86	83	82	96	106	111	110	1	1	1	1	1	1	1	7
1993	20	18	0	0	5	54	77	1	2	6	6	4	1	1	21
1994	56	42	28	48	78	98	92	1	1	1	1	1	1	1	7
												73 - year Average:			12

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir *Habitat Index* =

YEAR	Fluct. MAR	APR	MAY	JUN	JUL	AUG	SEP	Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	17	-7	17	0	-14	-44	-27	6	4	6	6	3	1	1	27	594
1923	-14	24	8	-9	-14	-63	7	3	6	6	4	3	1	6	29	203
1924	-13	3	5	-6	-27	-14	4	3	6	6	4	1	3	6	29	203
1925	-15	21	18	-10	-23	-16	-8	3	6	6	4	1	2	4	26	182
1926	-14	41	14	-28	-41	-21	12	3	6	6	1	1	1	6	24	216
1927	1	-1	9	7	-33	-51	-10	6	5	6	6	1	1	4	29	493
1928	3	8	3	-32	-45	-12	12	6	6	6	1	1	3	6	29	203
1929	-4	18	0	-4	-21	-40	11	5	6	6	5	1	1	6	30	210
1930	-4	15	9	-16	-29	-23	16	5	6	6	2	1	1	6	27	189
1931	-9	2	6	-8	-26	-16	0	4	6	6	4	1	2	6	29	203
1932	-12	-7	8	20	-34	-26	-15	3	4	6	6	1	1	3	24	168
1933	-11	19	17	-11	-17	-43	1	3	6	6	3	2	1	6	27	189
1934	-8	13	11	-4	-25	-21	9	4	6	6	5	1	1	6	29	203
1935	-23	33	21	11	-36	-69	10	1	6	6	6	1	1	6	27	351
1936	-2	6	12	-13	-42	-49	6	5	6	6	3	1	1	6	28	476
1937	10	6	0	0	-38	-54	-15	6	6	6	6	1	1	3	29	725
1938	-18	-13	-62	105	4	-44	-12	2	3	1	6	6	1	3	22	352
1939	-8	18	18	-21	-35	-31	22	4	6	6	1	1	1	6	25	200
1940	2	-4	13	-8	-41	-46	5	6	5	6	4	1	1	6	29	232
1941	13	0	-4	7	-7	-42	-21	6	6	5	6	4	1	1	29	754
1942	4	1	8	14	-21	-46	-32	6	6	6	6	1	1	1	27	378
1943	20	-2	2	-14	-36	-35	-15	6	5	6	3	1	1	3	25	575
1944	-17	9	1	-16	-7	-4	-10	2	6	6	2	4	5	4	29	203
1945	8	-3	6	5	-22	-43	-20	6	5	6	6	1	1	2	27	540
1946	-4	12	23	-13	-36	-32	2	5	6	6	3	1	1	6	28	224
1947	-11	15	11	-21	-38	-24	8	3	6	6	1	1	1	6	24	168
1948	7	26	-5	-10	-58	-3	4	6	6	5	4	1	5	6	33	231
1949	-13	11	16	-17	-39	-5	12	3	6	6	2	1	5	6	29	203
1950	-17	10	17	-12	-33	-30	6	2	6	6	3	1	1	6	25	175
1951	-8	6	-6	-32	-51	0	18	4	6	4	1	1	6	6	28	196
1952	7	-8	-33	50	-5	-46	-17	6	4	1	6	5	1	2	25	475
1953	-6	9	-5	-18	-21	-19	3	4	6	5	2	1	2	6	26	182
1954	-5	10	23	-16	-37	-42	18	5	6	6	2	1	1	6	27	216
1955	-17	14	11	-8	-33	-23	6	2	6	6	4	1	1	6	26	182
1956	16	0	-15	15	-10	-42	-19	6	6	3	6	4	1	2	28	700
1957	4	17	15	1	-36	-55	10	6	6	6	6	1	1	6	32	320
1958	11	11	0	0	-19	-41	-18	6	6	6	6	2	1	2	29	725
1959	-8	22	16	-15	-51	-30	5	4	6	6	3	1	1	6	27	243
1960	-5	17	10	-16	-13	-13	-2	5	6	6	2	3	3	5	30	210
1961	1	15	13	-12	-41	-19	0	6	6	6	3	1	2	6	30	210
1962	-9	-2	28	14	-29	-51	-13	4	5	6	6	1	1	3	26	260
1963	0	18	0	0	-12	-44	-17	6	6	6	6	3	1	2	30	750
1964	-3	9	8	-10	-43	-32	8	5	6	6	4	1	1	6	29	232
1965	-2	5	-8	10	-21	-28	-16	5	6	4	6	1	1	2	25	225
1966	-15	19	19	-14	-44	-20	0	3	6	6	3	1	2	6	27	243
1967	11	-6	-51	56	6	-37	-17	6	4	1	6	6	1	2	26	520
1968	-6	11	4	-15	-33	-28	4	4	6	6	3	1	1	6	27	189
1969	-3	-54	2	107	0	-38	-25	5	1	6	6	6	1	1	26	442
1970	-6	0	1	-11	-27	-41	1	4	6	6	3	1	1	6	27	189
1971	-15	8	3	-24	-22	-7	-13	3	6	6	1	1	4	3	24	168
1972	-8	13	6	-3	-43	-16	0	4	6	6	5	1	2	6	30	210
1973	0	-10	25	1	-34	-59	-6	6	4	6	6	1	1	4	28	476
1974	6	9	11	3	-36	-47	-17	6	6	6	6	1	1	2	28	420
1975	-9	7	3	31	-42	-49	6	4	6	6	6	1	1	6	30	300
1976	5	3	-5	-23	-27	-13	15	6	6	5	1	1	3	6	28	196
1977	-37	1	-1	-2	4	-5	1	1	6	5	5	6	5	6	34	238
1978	-8	-42	-12	78	0	-28	-9	4	1	3	6	6	1	4	25	425
1979	7	-2	11	-8	-42	-44	5	6	5	6	4	1	1	6	29	435
1980	-2	8	-16	26	0	-34	-29	5	6	2	6	6	1	1	27	540
1981	2	14	6	-10	-33	-33	11	6	6	6	4	1	1	6	30	210
1982	16	-30	15	15	0	-30	-5	6	1	6	6	6	1	5	31	713
1983	-29	-17	0	16	81	8	4	1	2	6	6	6	6	6	33	594
1984	8	2	0	-13	-27	-43	-4	6	6	6	3	1	1	5	28	476
1985	-7	25	12	-24	-38	-18	0	4	6	6	1	1	2	6	26	234
1986	2	22	-9	11	-18	-55	-24	6	6	4	6	2	1	1	26	494
1987	15	19	21	-12	-36	-30	7	6	6	6	3	1	1	6	29	203
1988	11	12	8	-20	-29	-15	3	6	6	6	2	1	3	6	30	210
1989	4	21	15	-12	-38	-24	6	6	6	6	3	1	1	6	29	203
1990	7	15	12	-19	-17	-29	4	6	6	6	2	2	1	6	29	203
1991	-4	12	7	4	-6	-26	6	5	6	6	6	4	1	6	34	238
1992	-9	3	1	-14	-10	-5	1	4	6	6	3	4	5	6	34	238
1993	13	2	18	0	-5	-49	-23	6	6	6	6	5	1	1	31	651
1994	12	14	14	-20	-30	-20	6	6	6	6	2	1	2	6	29	203
												73 - year Average:			28	329.2
												1929 - '34 Average:				193.7

A2-189

STUDY: 1995C06F-SWRCB-507 DWRSIM: recirc818-f, 17 Jun 97
CP # 12, SWP SAN LUIS RESERVIOR, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-507/12/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 544'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP
1922	419	441	475	520	539	544	543	539	524	477	433	442	0	1	5	20	67	111	102
1923	473	497	502	517	527	534	529	507	473	448	418	405	10	15	37	71	96	126	139
1924	422	435	463	509	530	530	520	498	465	427	389	384	14	24	46	79	117	155	160
1925	384	394	438	469	516	528	520	494	453	409	350	334	16	24	50	91	135	194	210
1926	374	390	408	464	506	517	512	488	452	437	384	371	27	32	56	92	107	160	173
1927	400	439	477	523	541	544	540	530	500	464	414	428	0	4	14	44	80	130	116
1928	461	492	500	515	527	533	527	506	458	437	415	402	11	17	38	86	107	129	142
1929	414	440	489	517	532	541	532	518	495	467	436	433	3	12	26	49	77	108	111
1930	433	438	482	531	542	544	526	495	465	456	437	414	0	18	49	79	88	107	130
1931	418	423	424	467	481	485	475	462	452	422	370	366	59	69	82	92	122	174	178
1932	377	378	439	498	527	527	519	500	479	472	441	427	17	25	44	65	72	103	117
1933	442	449	450	493	513	521	518	506	479	444	399	397	23	26	38	65	100	145	147
1934	413	413	457	510	521	521	508	486	459	434	403	391	23	36	58	85	110	141	153
1935	389	410	429	489	497	528	531	507	473	429	360	357	16	13	37	71	115	184	187
1936	396	416	435	490	532	543	543	527	493	458	416	410	1	1	17	51	86	128	134
1937	429	442	467	516	535	543	544	539	510	462	412	401	1	0	5	34	82	132	143
1938	433	466	499	515	530	540	544	544	537	504	471	486	4	0	0	7	40	73	58
1939	513	522	526	539	544	544	526	494	462	449	434	414	0	18	50	82	95	110	130
1940	419	416	409	475	516	523	522	499	462	435	352	352	21	22	45	82	109	192	192
1941	391	424	462	514	537	541	538	535	520	470	430	449	3	6	9	24	74	114	95
1942	481	494	499	515	527	531	527	519	510	463	422	440	13	17	25	34	81	122	104
1943	472	486	491	507	518	530	533	536	508	464	415	422	14	11	8	36	80	129	122
1944	455	486	501	516	530	537	519	487	453	439	421	411	7	25	57	91	105	123	133
1945	417	454	490	517	533	539	529	503	466	447	409	402	5	15	41	78	97	135	142
1946	439	471	496	512	523	529	517	490	449	428	411	399	15	27	54	95	116	133	145
1947	421	454	487	515	529	536	521	487	452	437	425	404	8	23	57	92	107	119	140
1948	410	422	435	488	503	524	523	501	464	417	342	351	20	21	43	80	127	202	193
1949	382	408	436	484	506	537	519	489	447	427	407	394	7	25	55	97	117	137	150
1950	406	420	434	487	524	532	520	491	455	432	413	403	12	24	53	89	112	131	141
1951	426	457	493	523	534	539	526	506	464	435	411	406	5	18	38	80	109	133	138
1952	432	461	491	520	533	538	542	544	536	510	492	499	6	2	0	8	34	52	45
1953	506	515	519	532	542	544	529	515	493	469	430	447	0	15	29	51	75	114	97
1954	478	494	501	516	527	533	526	508	460	436	415	403	11	18	36	84	108	129	141
1955	435	465	494	518	530	537	520	493	466	461	425	418	7	24	51	78	83	119	126
1956	431	453	496	528	542	544	538	528	507	475	434	444	0	6	16	37	69	110	100
1957	470	496	500	514	527	533	523	500	466	446	430	420	11	21	44	78	98	114	124
1958	452	481	506	522	534	537	538	538	530	494	474	488	7	6	6	14	50	70	56
1959	496	505	509	523	534	541	521	488	453	438	426	421	3	23	56	91	106	118	123
1960	432	446	457	504	539	544	525	491	458	437	380	358	0	19	53	86	107	164	186
1961	376	414	452	501	534	544	523	487	457	445	430	407	0	21	57	87	99	114	137
1962	412	419	456	492	530	535	517	484	433	402	326	336	9	27	60	111	142	218	208
1963	376	411	443	489	522	529	528	520	496	465	431	445	15	16	24	48	79	113	99
1964	475	503	516	531	541	544	518	482	437	413	391	395	0	26	62	107	131	153	149
1965	401	431	467	517	531	538	539	525	492	464	419	428	6	5	19	52	80	125	116
1966	459	487	497	512	523	529	512	481	435	413	397	387	15	32	63	109	131	147	157
1967	401	437	476	515	528	534	538	541	534	522	502	505	10	6	3	10	22	42	39
1968	512	523	527	540	544	544	529	496	458	440	423	417	0	15	48	86	104	121	127
1969	432	462	495	523	536	544	544	544	537	517	489	503	0	0	0	7	27	55	41
1970	517	526	530	544	544	544	534	511	472	451	415	410	0	10	33	72	93	129	134
1971	432	465	496	515	524	531	520	504	476	455	435	448	13	24	40	68	89	109	96
1972	475	502	513	528	540	544	526	493	453	434	419	404	0	18	51	91	110	125	140
1973	432	463	494	523	534	540	534	512	485	452	422	422	4	10	32	59	92	122	122
1974	454	483	504	520	531	536	534	522	493	464	438	451	8	10	22	51	80	106	93
1975	474	484	486	503	516	521	517	502	477	444	430	440	23	27	42	67	100	114	104
1976	467	485	491	506	520	532	514	487	467	465	448	429	12	30	57	77	79	96	115
1977	430	437	439	456	456	456	459	447	428	405	399	413	88	85	97	116	139	145	131
1978	418	435	486	535	544	544	544	544	526	469	413	433	0	0	0	18	75	131	111
1979	466	488	492	507	521	528	522	504	474	455	409	405	16	22	40	70	89	135	139
1980	439	474	502	519	534	544	544	544	527	492	452	469	0	0	0	17	52	92	75
1981	500	519	525	539	544	544	530	496	459	441	423	411	0	14	48	85	103	121	133
1982	423	458	491	523	536	543	544	544	531	494	462	472	1	0	0	13	50	82	72
1983	496	515	521	535	544	544	544	544	537	527	514	521	0	0	0	7	17	30	23
1984	536	544	544	544	544	544	536	514	479	459	413	421	0	8	30	65	85	131	123
1985	456	487	498	513	525	533	515	485	440	421	404	397	11	29	59	104	123	140	147
1986	402	409	447	499	530	544	544	544	532	492	459	468	0	0	0	12	52	85	76
1987	497	508	534	544	544	544	523	487	458	447	425	410	0	21	57	86	97	119	134
1988	420	416	454	504	517	517	506	491	479	460	425	421	27	38	53	65	84	119	123
1989	421	437	457	494	494	527	516	486	450	439	386	395	17	28	58	94	105	158	149
1990	410	427	456	498	519	523	506	477	458	446	401	383	21	38	67	86	98	143	161
1991	383	389	389	404	404	468	468	457	444	424	408	409	76	76	87	100	120	136	135
1992	412	425	439	484	517	540	530	514	492	475	436	429	4	14	30	52	69	108	115
1993	429	435	479	532	542	544	539	533	518	464	412	417	0	5	11	26	80	132	127
1994	452	482	491	505	518	528	507	475	450	446	445	432	16	37	69	94	98	99	112

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index =

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	5	4	1	1	1	1	19	5	-1	-4	-15	-47	-44	9	6	5	5	3	1	1	6	27	513
1923	3	2	1	1	1	1	1	10	7	-5	-22	-34	-25	-30	-13	6	5	1	1	1	1	3	18	180
1924	3	1	1	1	1	1	1	9	0	-10	-22	-33	-38	-38	-5	6	4	1	1	1	1	5	19	171
1925	2	1	1	1	1	1	1	8	12	-8	-26	-41	-44	-59	-16	6	4	1	1	1	1	2	16	128
1926	1	1	1	1	1	1	1	7	11	-5	-24	-36	-15	-53	-13	6	5	1	1	3	1	3	20	140
1927	6	5	3	1	1	1	1	18	3	-4	-10	-30	-36	-50	14	6	5	4	1	1	1	6	24	432
1928	3	2	1	1	1	1	1	10	6	-6	-21	-48	-21	-22	-13	6	4	1	1	1	1	3	17	170
1929	5	3	1	1	1	1	1	13	9	-9	-14	-23	-28	-31	-3	6	4	3	1	1	1	5	21	273
1930	6	2	1	1	1	1	1	13	2	-18	-31	-30	-9	-19	-23	6	2	1	1	4	2	1	17	221
1931	1	1	1	1	1	1	1	7	4	-10	-13	-10	-30	-52	-4	6	4	3	4	1	1	5	24	168
1932	2	1	1	1	1	1	1	8	0	-8	-19	-21	-7	-31	-14	6	4	2	1	4	1	3	21	168
1933	1	1	1	1	1	1	1	7	8	-3	-12	-27	-35	-45	-2	6	5	3	1	1	1	5	22	154
1934	1	1	1	1	1	1	1	7	0	-13	-22	-27	-25	-31	-12	6	3	1	1	1	1	3	16	112
1935	2	3	1	1	1	1	1	10	31	3	-24	-34	-44	-69	-3	6	6	1	1	1	1	5	21	210
1936	5	5	2	1	1	1	1	16	11	0	-16	-34	-35	-42	-6	6	6	2	1	1	1	4	21	336
1937	5	6	4	1	1	1	1	19	8	1	-5	-29	-48	-50	-11	6	6	5	1	1	1	3	23	437
1938	5	6	6	4	1	1	1	24	10	4	0	-7	-33	-33	15	6	6	6	4	1	1	6	30	720
1939	6	2	1	1	1	1	1	13	0	-18	-32	-32	-13	-15	-20	6	2	1	1	3	3	2	18	234
1940	1	1	1	1	1	1	1	7	7	-1	-23	-37	-27	-83	0	6	5	1	1	1	1	6	21	147
1941	5	4	4	1	1	1	1	17	4	-3	-3	-15	-50	-40	19	6	5	5	3	1	1	6	27	459
1942	3	2	1	1	1	1	1	10	4	-4	-8	-9	-47	-41	18	6	5	4	4	1	1	6	27	270
1943	3	3	4	1	1	1	1	14	12	3	3	-28	-44	-49	7	6	6	6	1	1	1	6	27	378
1944	4	1	1	1	1	1	1	10	7	-18	-32	-34	-14	-18	-10	6	2	1	1	3	2	4	19	190
1945	4	2	1	1	1	1	1	11	6	-10	-26	-37	-19	-38	-7	6	4	1	1	2	1	4	19	209
1946	2	1	1	1	1	1	1	8	6	-12	-27	-41	-21	-17	-12	6	3	1	1	1	2	3	17	136
1947	4	1	1	1	1	1	1	10	7	-15	-34	-35	-15	-12	-21	6	3	1	1	3	3	1	18	180
1948	1	1	1	1	1	1	1	7	21	-1	-22	-37	-47	-75	9	6	5	1	1	1	1	6	21	147
1949	4	1	1	1	1	1	1	10	31	-18	-30	-42	-20	-20	-13	6	2	1	1	2	2	3	17	170
1950	3	1	1	1	1	1	1	9	8	-12	-29	-36	-23	-19	-10	6	3	1	1	1	2	4	18	162
1951	4	2	1	1	1	1	1	11	5	-13	-20	-42	-29	-24	-5	6	3	2	1	1	1	5	19	209
1952	4	5	6	4	1	1	1	22	5	4	2	-8	-26	-18	7	6	6	6	4	1	2	6	31	682
1953	6	2	1	1	1	1	1	13	2	-15	-14	-22	-24	-39	17	6	3	3	1	1	1	6	21	273
1954	3	2	1	1	1	1	1	10	6	-7	-18	-48	-24	-21	-12	6	4	2	1	1	1	3	18	180
1955	4	1	1	1	1	1	1	10	7	-17	-27	-27	-5	-36	-7	6	2	1	1	5	1	4	20	200
1956	6	4	2	1	1	1	1	16	2	-6	-10	-21	-32	-41	10	6	4	4	1	1	1	6	23	368
1957	3	1	1	1	1	1	1	9	6	-10	-23	-34	-20	-16	-10	6	4	1	1	2	2	4	20	180
1958	4	4	4	3	1	1	1	18	3	1	0	-8	-36	-20	14	6	6	6	4	1	2	6	31	558
1959	5	1	1	1	1	1	1	11	7	-20	-33	-35	-15	-12	-5	6	2	1	1	3	3	5	21	231
1960	6	2	1	1	1	1	1	13	5	-19	-34	-33	-21	-57	-22	6	2	1	1	1	1	1	13	169
1961	6	1	1	1	1	1	1	12	10	-21	-36	-30	-12	-15	-23	6	1	1	1	3	3	1	16	192
1962	4	1	1	1	1	1	1	10	5	-18	-33	-51	-31	-76	10	6	2	1	1	1	1	6	18	180
1963	2	2	1	1	1	1	1	9	7	-1	-8	-24	-31	-34	14	6	5	4	1	1	1	6	24	216
1964	6	1	1	1	1	1	1	12	3	-26	-36	-45	-24	-22	4	6	1	1	1	1	1	6	17	204
1965	4	4	2	1	1	1	1	14	7	1	-14	-33	-28	-45	9	6	6	3	1	1	1	6	24	336
1966	2	1	1	1	1	1	1	8	6	-17	-31	-46	-22	-16	-10	6	2	1	1	1	2	4	17	136
1967	3	4	5	3	1	1	1	18	6	4	3	-7	-12	-20	3	6	6	6	4	3	2	6	33	594
1968	6	2	1	1	1	1	1	13	0	-15	-33	-38	-18	-17	-6	6	3	1	1	2	2	4	19	247
1969	6	6	6	4	1	1	1	25	8	0	0	-7	-20	-28	14	6	6	6	4	2	1	6	31	775
1970	6	3	1	1	1	1	1	14	0	-10	-23	-39	-21	-36	-5	6	4	1	1	1	1	5	19	266
1971	3	1	1	1	1	1	1	9	7	-11	-16	-28	-21	-20	13	6	3	2	1	1	2	6	21	189
1972	6	2	1	1	1	1	1	13	4	-18	-33	-40	-19	-15	-15	6	2	1	1	2	3	3	18	234
1973	5	3	1	1	1	1	1	13	6	-6	-22	-27	-33	-30	0	6	4	1	1	1	1	6	20	260
1974	4	3	1	1	1	1	1	12	5	-2	-12	-29	-29	-26	13	6	5	3	1	1	1	6	23	276
1975	1	1	1	1	1	1	1	7	5	-4	-15	-25	-33	-14	10	6	5	3	1	1	3	6	25	175
1976	3	1	1	1	1	1	1	9	12	-18	-27	-20	-2	-17	-19	6	2	1	2	5	2	2	20	180
1977	1	1	1	1	1	1	1	7	0	3	-12	-19	-23	-6	14	6	6	3	2	1	4	6	28	196
1978	6	6	6	2	1	1	1	23	0	0	0	-18	-57	-56	20	6	6	6	2	1	1	6	28	644
1979	2	1	1	1	1	1	1	8	7	-6	-18	-30	-19	-46	-4	6	4	2	1	2	1	5	21	168
1980	6	6	6	2	1	1	1	23	10	0	0	-17	-35	-40	17	6	6	6	2	1	1	6	28	644
1981	6	3	1	1	1	1	1	14	0	-14	-34	-37	-18	-18	-12	6	3	1	1	2	2	3	18	252
1982	5	6	6	3	1	1	1	23	7	1	0	-13	-37	-32	10	6	6	6	3	1	1	6	29	667
1983	6	6	6	4	2	1	1	26	0	0	0	-7	-10	-13	7	6	6	6	4	4	3	6	35	910
1984	6	4	1	1	1	1	1	15	0	-8	-22	-35	-20	-46	8	6	4	1	1	2	1	6	21	315
1985	3	1	1	1	1	1	1	9	8	-18	-30	-45	-19	-17	-7	6	2	1	1	2	2	4	18	162
1986	6	6	6	3	1	1	1	24	14	0	0	-12	-40	-33	9	6	6	6	3	1	1	6	29	696
1987	6	1	1	1	1	1	1	12	0	-21	-36	-29	-11	-22	-15	6	1	1	1	3	1	3	16	192
1988	1	1	1	1	1	1	1	7	0	-11	-15	-12	-19	-35	-4	6	3	3	3	2	1	5	23	161
1989	2	1	1	1	1	1	1	8	33	-11	-30	-36	-11	-53	9	6	3	1	1	3	1	6	21	168
1990	1	1	1	1	1	1	1	7	4	-17	-29	-19	-12	-45	-18	6	2	1	2	3	1	2	17	119
1991	1	1	1	1	1	1	1	7	64	0	-11	-13	-20	-16	1	6	6	3	3	2	2	6	28	196
1992	5	3	1	1	1	1	1	13	23	-10	-16	-22	-17	-39	-7	6	4	2	1	2	1	4	20	260
1993	6	4	3	1	1	1	1	17	2	-5	-6	-15	-54	-52	5	6	5	4	3	1	1	6	26	442
1994	2	1	1	1	1	1	1	8	10	-21	-32	-25	-4	-1	-13	6	1	1	1	5	5	3	22	176
					73 - year Average:			13													73 - year Average:		22	288.9
																					1929 - '34 Average:			182.7

A2-190

STUDY: 1995C06H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97
CP # 4, SHASTA LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06H-SWRCB-513/4/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 1067'

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE]																			Reservoir Change from Previous Month [fluctuation]																			Largemouth Bass Reservoir Habitat Index
													MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	989	993	999	1,003	1,018	1,037	1,059	1,067	1,062	1,048	1,031	1,025	30	8	0	5	19	36	42	1	4	6	4	2	1	1	19	19	22	8	-5	-14	-17	-6	6	6	6	5	3	2	4	32	608
1923	1,022	1,017	1,019	1,022	1,022	1,022	1,034	1,030	1,016	1,001	984	982	45	33	37	51	66	83	85	1	1	1	1	1	1	1	7	0	12	-4	-14	-15	-17	-2	6	6	5	3	3	2	5	30	210
1924	983	982	981	981	987	987	977	963	949	933	915	905	80	90	104	118	134	152	162	1	1	1	1	1	1	1	7	0	-10	-14	-14	-16	-18	-10	6	4	3	3	2	2	4	24	168
1925	908	919	927	936	1,003	1,011	1,042	1,052	1,048	1,037	1,024	1,024	56	25	15	19	30	43	43	1	1	2	2	1	1	1	9	8	31	10	-4	-11	-13	0	6	6	6	5	3	3	6	35	315
1926	1,021	1,017	1,014	1,010	1,036	1,039	1,050	1,047	1,031	1,012	996	990	26	17	20	38	55	71	77	1	2	1	1	1	1	1	8	3	11	-3	-16	-19	-16	-6	6	5	5	2	2	2	4	27	216
1927	988	1,007	1,021	1,035	1,026	1,052	1,067	1,067	1,061	1,047	1,032	1,027	15	0	0	6	20	35	40	2	6	6	4	1	1	1	21	26	15	0	-6	-14	-15	-5	6	6	6	4	3	3	5	33	693
1928	1,023	1,017	1,020	1,028	1,043	1,048	1,066	1,064	1,046	1,029	1,010	1,004	21	1	3	21	38	57	63	1	5	5	1	1	1	1	15	3	20	-2	-18	-17	-19	-6	6	6	5	2	2	2	4	27	405
1929	1,001	1,000	999	998	1,002	1,003	1,008	1,005	995	980	962	955	64	59	62	72	87	105	112	1	1	1	1	1	1	1	7	1	5	-3	-10	-15	-18	-7	6	6	6	4	3	2	4	30	210
1930	953	953	983	993	1,009	1,031	1,041	1,040	1,029	1,014	1,003	1,000	36	26	27	38	53	64	67	1	1	1	1	1	1	1	7	22	10	-1	-11	-15	-11	-3	6	6	5	3	3	3	5	31	217
1931	996	992	988	987	987	991	984	975	967	955	944	935	76	83	92	100	112	123	132	1	1	1	1	1	1	1	7	4	-7	-9	-8	-12	-11	-9	6	4	4	4	3	3	4	28	196
1932	935	935	948	956	964	988	990	997	990	978	964	958	79	77	70	77	89	103	109	1	1	1	1	1	1	1	7	24	2	7	-7	-12	-14	-8	6	6	6	4	3	3	4	32	224
1933	955	954	955	957	959	991	993	995	992	980	964	958	76	74	72	75	87	103	111	1	1	1	1	1	1	1	7	32	2	2	-3	-12	-16	-8	6	6	6	5	3	2	4	32	224
1934	954	954	962	979	995	1,007	1,010	1,004	995	985	973	964	60	57	63	72	82	94	103	1	1	1	1	1	1	1	7	12	3	-6	-9	-10	-12	-9	6	6	4	4	3	4	31	217
1935	962	970	973	989	1,004	1,022	1,060	1,067	1,057	1,046	1,036	1,030	45	7	0	10	21	31	37	1	4	6	3	1	1	1	17	18	38	7	-10	-11	-10	-6	6	6	6	4	3	4	4	33	561
1936	1,023	1,017	1,012	1,034	1,032	1,041	1,048	1,046	1,039	1,021	1,002	997	26	19	21	28	46	65	70	1	2	1	1	1	1	1	8	9	7	-2	-7	-18	-19	-5	6	6	5	4	2	2	5	30	240
1937	992	988	983	977	979	1,005	1,034	1,042	1,037	1,020	1,001	995	62	33	25	30	47	66	72	1	1	1	1	1	1	1	7	26	29	8	-5	-17	-19	-8	6	6	6	5	2	2	4	31	217
1938	992	1,013	1,020	1,034	1,030	1,024	1,049	1,067	1,067	1,058	1,045	1,036	43	18	0	0	9	22	31	1	2	6	6	4	1	1	21	-6	25	18	0	-9	-13	-9	4	6	6	6	4	3	4	33	693
1939	1,023	1,017	1,020	1,022	1,023	1,038	1,033	1,026	1,009	993	976	972	29	34	41	58	74	91	95	1	1	1	1	1	1	1	7	15	-5	-7	-17	-16	-17	-4	6	5	4	2	2	2	5	26	182
1940	968	964	972	1,012	1,017	1,025	1,059	1,064	1,049	1,033	1,014	1,009	42	8	3	18	34	53	58	1	4	5	2	1	1	1	15	8	34	5	-15	-16	-19	-5	6	6	6	3	2	2	5	30	450
1941	1,007	1,007	1,019	1,020	1,024	1,045	1,064	1,067	1,067	1,058	1,047	1,036	22	3	0	0	9	20	31	1	5	6	6	4	1	1	24	21	19	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1942	1,023	1,017	1,020	1,023	1,028	1,042	1,067	1,067	1,067	1,058	1,048	1,036	25	0	0	0	9	21	31	1	6	6	6	4	1	1	25	14	25	0	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1943	1,023	1,017	1,022	1,030	1,042	1,051	1,067	1,067	1,060	1,048	1,033	1,028	16	0	0	7	19	34	39	2	6	6	4	2	1	1	22	9	16	0	-7	-12	-15	-5	6	6	6	4	3	3	5	33	726
1944	1,023	1,017	1,015	1,013	1,022	1,032	1,038	1,037	1,028	1,008	990	984	35	29	30	39	59	77	83	1	1	1	1	1	1	1	7	10	6	-1	-9	-20	-18	-8	6	6	5	4	2	2	4	29	203
1945	984	991	1,003	1,010	1,042	1,053	1,064	1,067	1,060	1,044	1,027	1,023	14	3	0	7	23	40	44	3	5	6	4	1	1	1	21	11	11	3	-7	-16	-17	-4	6	6	6	4	2	2	5	31	651
1946	1,021	1,017	1,018	1,033	1,039	1,050	1,062	1,064	1,054	1,041	1,027	1,024	17	5	3	13	26	40	43	2	4	5	3	1	1	1	17	11	12	2	-10	-13	-14	-3	6	6	6	4	3	3	5	33	561
1947	1,021	1,017	1,017	1,014	1,020	1,039	1,045	1,036	1,030	1,011	994	990	28	22	31	37	56	73	77	1	1	1	1	1	1	1	7	19	6	-9	-6	-19	-17	-4	6	6	4	4	2	2	5	29	203
1948	992	991	990	1,011	1,013	1,026	1,061	1,067	1,067	1,055	1,040	1,036	41	6	0	0	12	27	31	1	4	6	6	3	1	1	22	13	35	6	0	-12	-15	-4	6	6	6	6	3	3	5	35	770
1949	1,023	1,017	1,016	1,011	1,015	1,050	1,060	1,064	1,054	1,039	1,023	1,020	17	7	3	13	28	44	47	2	4	5	3	1	1	1	17	35	10	4	-10	-15	-16	-3	6	6	6	4	3	2	5	32	544
1950	1,016	1,012	1,008	1,016	1,029	1,043	1,056	1,055	1,043	1,027	1,010	1,008	24	11	12	24	40	57	59	1	3	3	1	1	1	1	11	14	13	-1	-12	-16	-17	-2	6	6	5	3	2	2	5	29	319
1951	1,018	1,017	1,020	1,033	1,040	1,055	1,062	1,067	1,052	1,035	1,017	1,015	12	5	0	15	32	50	52	3	4	6	2	1	1	1	18	15	7	5	-15	-17	-18	-2	6	6	6	3	2	2	5	30	540
1952	1,013	1,017	1,019	1,032	1,038	1,048	1,058	1,067	1,067	1,058	1,046	1,036	19	9	0	0	9	21	31	2	4	6	6	4	1	1	24	10	10	9	0	-9	-12	-10	6	6	6	6	4	3	4	35	840
1953	1,023	1,017	1,021	1,022	1,033	1,050	1,065	1,067	1,067	1,058	1,048	1,036	17	2	0	0	9	21	31	2	5	6	6	4	1	1	25	17	15	2	0	-9	-12	-10	6	6	6	6	4	3	4	35	875
1954	1,023	1,017	1,021	1,030	1,035	1,051	1,067	1,067	1,058	1,047	1,037	1,036	16	0	0	9	20	30	31	2	6	6	4	1	1	1	21	16	16	0	-9	-11	-10	-1	6	6	6	4	3	4	5	34	714
1955	1,023	1,017	1,022	1,024	1,026	1,027	1,040	1,048	1,038	1,020	1,003	1,003	40	27	19	29	47	64	64	1	1	2	1	1	1	1	8	1	13	8	-10	-18	-17	0	6	6	6	4	2	2	6	32	256
1956	1,000	1,001	1,017	1,017	1,019	1,046	1,064	1,067	1,067	1,058	1,047	1,036	21	3	0	0	9	20	31	1	5	6	6	4	1	1	24	27	18	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1957	1,023	1,017	1,016	1,017	1,035	1,052	1,060	1,067	1,059	1,047	1,034	1,036	15	7	0	8	20	33	31	2	4	6	4	1	1	1	19	17	8	7	-8	-12	-13	2	6	6	6	4	3	3	6	34	646
1958	1,023	1,017	1,021	1,029	1,067	1,024	1,053	1,067	1,067	1,058	1,047	1,036	43	14	0	0	9	20	31	1	3	6	6	4	1	1	22	-43	29	14	0	-9	-11	-11	1	6	6	6	4	3	3	29	638
1959	1,023	1,017	1,017	1,034	1,039	1,052	1,056	1,055	1,045	1,029	1,016	1,020	15	11	12	22	38	51	47	2	3	3	1	1	1	1	12	13	4	-1	-10	-18	-13	4	6	6	5	4	2	3	6	32	384
1960	1,018	1,017	1,015	1,019	1,044	1,057	1,064	1,067	1,056	1,042	1,027	1,026	10	3	0	11	25	40	41	3	5	6	3	1	1	1	20	13	7	3	-11	-14	-15	-1	6	6	6	3	3	3	5	32	640
1961	1,023	1,017	1,021	1,026	1,044	1,057	1,064	1,067	1,056	1,040	1,023	1,024	10	3	0	11	27	44	43	3	5	6	3	1	1	1	20	13	7	3	-11	-16	-17	1	6	6	6	3	2	2	6	31	620
1962	1,020	1,017	1,022	1,022	1,035	1,051	1,063	1,065	1,051	1,035	1,019	1,017	16	4	2	16	32	48	50	2	5	5	2	1	1	1	17	16	12	2	-14	-16	-16	-2	6	6	6	3	2	2	5	30	510
1963	1,023	1,017	1,021	1,025	1,045	1,055	1,052	1,067	1,064	1,053	1,041	1,036	12	15	0	3	14	26	31	3	2	6	5	3	1	1	21	10	-3	15	-3	-11	-12	-5	6	5	6	5	3	3	5	33	693
1964	1,023	1,017	1,018	1,032	1,036	1,040	1,035	1,030	1,017	999	982	981	27	32	37	50	68	85	86	1	1	1	1	1	1	1	7	4	-5	-5	-13	-18	-17	-1	6	5	5	3	2	2	5	28	196
1965	980	986	1,017	1,022	1,039	1,049	1,065	1,067	1,060	1,049	1,040	1,036	18	2	0	7	18	27	31	2	5	6	4	2	1	1	21	10	16	2	-7	-11	-9	-4	6	6	6	4	3	4	5	34	714
1966	1,023	1,017	1,021	1,037	1,049	1,055	1,065	1,065	1,056	1,045	1,034	1,034	12	2	2	11	22	33	33	3	5	5	3	1	1	1	19	6	10	0	-9	-11	-11	0	6	6	6	4	3	3	6	34	646
1967	1,023	1,017	1,021	1,030	1,044	1,048	1,064	1,067	1,067	1,058	1,047	1,036	19	3	0	0	9	20	31	2	5	6	6	4	1	1	25	4	16	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1968	1,023	1,017	1,019	1,025	1,034	1,054	1,057	1,059	1,046	1,035	1,029	1,030	13	10	8	21	32	38	37	3	3	4	1	1	1	1	14	20	3	2	-13	-11	-8	1	6	6	6	3	3	4	6	34	476
1969	1,023	1,017	1,021	1,022	1,027	1,048	1,063	1,067	1,067	1,058	1,047	1,036	19	4	0	0	9	20	31	2	5	6	6	4	1	1	25	21	15	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1970	1,023	1,017	1,020	1,017	1,025	1,051	1,055	1,055	1,044	1,033	1,020	1,018	16	12	12	23	34	47	49	2	3	3	1	1	1	1	12	26	4	0	-11	-11	-13	-2	6	6	6	3	3	3	5	32	384
1971	1,018	1,017	1,020	1,028	1,041	1,043	1,065	1,067	1,067	1,058	1,047	1,036	24	2	0	0	9	20	31	1	5	6	6	4	1	1	24	2	22	2	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1972	1,023	1,017	1,021	1,033	1,044	1,056	1,059	1,061	1,051	1,038	1,028	1,031	11	8	6	16	29	39	36	3	4	4	2	1	1	1	16	12	3	2	-10	-13	-10	3	6	6	6	4	3	4	6	35	560
1973	1,023	1,017	1,021	1,030	1,034	1,053	1,065	1,067	1,058	1,047	1,037	1,035	14	2	0	9	20	30	32	3	5	6	4	1	1	1	21	19	12	2	-9	-11	-10	-2	6	6	6	4	3	4	5	34	714
1974	1,023	1,017	1,018	1,017	1,036	1,025	1,058	1,067	1,067	1,058	1,047	1,036	42	9	0	0	9	20	31	1	4	6	6	4	1	1	23	-11	33	9	0	-9	-11	-11	3	6	6	6	4	3	3	31	713
1975	1,023	1,017	1,021	1,023	1,045	1,039	1,061	1,067	1,067	1,058	1,047	1,036	28	6	0	0	9	20	31	1	4	6	6	4	1	1	23	-6	22	6	0	-9	-11	-11	4	6	6	6	4	3	3	32	736
1976	1,023	1,017	1,018	1,017	1,012	1,018	1,026	1,025	1,006	992	989	990	49	41	42	61	75	78	77	1	1	1	1	1	1	1	7	6	8	-1	-19	-14	-3	1	6	5	5	2	3	5	6	33	231
1977	991	991	991	989	986	985	974	968	957	945	934	936	82	93	99	110	122	133	131	1	1	1	1	1	1	1	7	-1	-11	-6	-11	-12	-11	2	5	3	4	3	3	3	6	27	189
1978	934	936	963	1,020	1,031	1,047	1,067	1,067	1,064	1,057	1,047	1,036	20	0	0	3	10	20	31	1	6	6	5	3	1	1	23	16	20	0	-3	-7	-10	-11	6	6	6	5	4	4	3	34	782
1979	1,023	1,017	1,015	1,017	1,028	1,045	1,052	1,061	1,052	1,039	1,028	1,028	22	15	6	15	28	39	39	1	2	4	2	1	1	1	12	17	7	9	-9	-13	-11	0	6	6	6	4	3	3	6	34	408
1980	1,023	1,017	1,020	1,029	1,019	1,046	1,059	1,063	1,057	1,048	1,036	1,036	21	8	4	10	21	31	31	1	4	5	3	1	1	1	16	27	13	4	-6	-11	-10	0	6	6	6	4	3	4	6	35	560
1981	1,023	1,017	1,020	1,029	1,042	1,058	1,064	1,062	1,050	1,035	1,022	1,021	11	3	5	17	32	45	46	3	5	4	2	1	1	1	17	14	8	-2	-12	-15	-13	-1	6	6	5	3	3	3	5	31	527
1982	1,019	1,017	1,018	1,033	1,029	1,046	1,051	1,067	1,067	1,058	1,047	1,036	21	16	0	0	9	20	31	1	2	6	6	4	1	1	21	17	5	16	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1983	1,023	1,017	1,020	1,022	1,017	1,045	1,050	1,067	1,067	1,058	1,047	1,036	22	17	0	0	9	20	31	1	2	6	6	4	1	1	21	28	5	17	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1984	1,023	1,017	1,018	1,034	1,047	1,056	1,067	1,067	1,059	1,049	1,043	1,036	11	0	0	8	18	24	31	3	6	6	4	2	1	1	23	9	11	0	-8	-10	-6	-7	6	6	6	4	4	4	4	34	782
1985	1,023	1,017	1,022	1,023	1,027	1,033	1,041	1,035	1,019	1,003	990	981	34	26	32	48	64	77	76	1	1	1	1	1	1	1	7	6	8	-6	-16	-16	-13	1	6	6	4	2	2	3	6	29	203
1986	992	993	1,000	1,022	1,017	1,029	1,045	1,048	1,036	1,019	1,004	1,007	38	22	19	31	48	63	60	1	1	2	1	1	1	1	8	12	16	3	-12	-17	-15	3	6	6	6	3	2	3	6	32	256
1987	1,007	1,006	1,005	1,006	1,018	1,042	1,048	1,042	1,020	1,002	988	987	25	21	25	47	65	79	80	1	1	1	1	1	1	1	7	26	4	-4	-22	-18	-14	-1	6	6	5	1	2	3	5	28	196
1988	986	987	1,008	1,026	1,030	1,035	1,040	1,041	1,029	1,012	1,000	997	32	27	26	38	55	67	70	1	1	1	1	1	1	1	7	5	5	1	-12	-17	-12	-3	6	6	6	3	2	3	5	31	217
1989	994	1,000	1,001	1,002	1,003	1,042	1,057	1,049	1,039	1,025	1,015	1,015	25	10	18	28	42	52	52	1	3	2	1	1	1	1	10	39	15	-8	-10	-14	-10	0	6	6	4	4	3	4	6	33	330
1990	1,017	1,015	1,011	1,017	1,017	1,024	1,019	1,026	1,021	1,003	990	987	43	46	41	46	64	77	80	1	1	1	1	1	1	1	7	7	-5	7	-5	-18	-13	-3	6	5	6	5	2	3	5	32	224
1991	985	984	980	978	977	996	1,002	1,002	994	984	969	963	71	65	65	73	83	98	104	1	1	1	1	1	1	1	7	19	6	0	-6	-10	-15	-6	6	6	6	4	4	3	4	33	231
1992	960	958	956	962	998	1,017	1,030	1,024	1,010	998	986	982	50	37	43	57	69	81	85	1	1	1	1	1	1	1	7	21	13	-6	-14	-12	-12	-4	6	6	4	3	3	3	5	30	210
1993	981	980	986	1,016	1,044	1,031	1,057	1,067	1,067	1,057	1,049	1,049	36	10	0	0	10	18	18	1	3	6	6	3	2	2	23	-13	26	10	0	-10	-8	0	3	6	6	6	4	4	6	35	805
1994	1,043	1,017	1,016	1,020	1,026	1,027	1,028	1,027	1,007	990	978	975	40	39	40	60	77	89	92	1	1	1	1	1	1	1	7	1	1	-1	-20	-17	-12	-3	6	6	5	2	2	3	5	29	203
																		73 - year Average:								15															73 - year Average:		32	486.6
																																										1929 - '34 Average:			214.7

Prepared by Kevin Long

Study 513 - Reservoirs Elevations Fish Habitat Analysis.xls - Shasta Lake

11/17/1997

C-032531

C-032531

STUDY: 1995C06H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97
CP # 6, LAKE OROVILLE, EOP SURFACE ELEVATION (FT)
Project /1995C06H-SWRCB-513/6/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 900'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	834	834	837	846	850	858	893	900	900	891	888	887
1923	874	874	858	862	862	874	895	900	894	856	833	835
1924	830	822	800	805	822	811	807	788	739	706	687	681
1925	682	686	693	709	779	787	816	824	816	790	779	778
1926	774	776	781	794	837	856	887	879	868	828	791	786
1927	772	803	808	831	849	863	890	900	900	871	867	864
1928	861	861	864	868	871	849	878	866	859	817	782	776
1929	767	763	761	766	777	791	793	795	780	745	730	723
1930	716	706	768	796	824	856	878	886	874	836	811	808
1931	791	783	758	772	784	805	795	784	749	711	692	686
1932	676	664	675	699	721	758	769	802	790	772	763	759
1933	753	741	741	752	761	768	771	787	778	760	753	747
1934	745	741	748	771	795	811	794	792	772	749	739	726
1935	715	719	726	763	773	801	877	880	880	848	831	827
1936	822	819	812	849	849	860	886	878	878	846	832	828
1937	822	812	808	811	825	849	874	896	892	866	853	849
1938	846	854	854	858	849	849	882	900	900	899	896	887
1939	874	864	854	845	837	833	823	823	793	733	694	690
1940	682	669	670	731	830	849	879	888	885	856	850	843
1941	837	835	849	849	849	858	886	900	900	897	892	887
1942	874	874	849	849	850	867	882	900	900	897	894	887
1943	874	869	861	849	858	859	887	897	900	875	865	865
1944	866	869	868	870	857	868	879	895	880	841	822	818
1945	809	816	828	838	862	865	880	896	888	850	836	833
1946	833	838	849	864	868	868	887	900	886	849	823	821
1947	814	820	825	829	848	862	872	868	853	810	759	739
1948	742	744	740	773	777	797	852	881	887	852	825	821
1949	814	810	810	815	822	841	848	860	846	800	770	765
1950	759	759	760	788	830	859	889	900	900	863	833	833
1951	837	849	854	853	858	870	886	900	898	859	833	833
1952	837	840	849	849	852	862	894	900	900	900	899	887
1953	874	874	858	850	867	867	883	900	900	886	884	885
1954	874	871	874	858	857	859	883	868	863	823	783	783
1955	784	786	794	807	816	825	832	842	827	773	751	747
1956	739	735	849	849	849	864	892	900	900	891	888	887
1957	869	874	874	871	853	863	867	885	885	847	821	825
1958	826	829	843	854	849	849	879	900	900	898	894	887
1959	874	874	874	862	852	867	869	872	853	810	769	773
1960	765	758	756	768	826	857	870	876	866	836	828	812
1961	789	792	801	812	834	852	861	866	850	805	753	743
1962	724	725	735	749	808	835	863	869	859	826	809	796
1963	849	857	857	859	867	858	876	900	900	870	864	865
1964	866	865	867	866	874	874	880	885	876	836	793	776
1965	764	764	849	849	863	870	887	885	888	861	860	861
1966	865	859	860	864	870	874	890	884	868	830	785	780
1967	770	780	818	849	860	853	879	900	900	900	896	887
1968	874	874	873	868	861	866	866	871	858	819	791	789
1969	791	796	819	849	849	865	895	900	900	895	893	874
1970	874	874	850	849	849	874	872	874	867	830	818	819
1971	821	839	849	864	874	874	893	900	900	877	870	872
1972	874	874	866	869	867	874	871	875	858	819	771	771
1973	768	763	810	849	849	860	882	900	887	850	836	834
1974	836	849	850	854	864	849	883	900	900	900	899	886
1975	874	874	874	874	855	852	881	900	900	890	889	886
1976	873	874	874	874	874	874	871	864	846	804	766	765
1977	759	750	736	732	716	712	692	682	660	639	630	627
1978	615	616	651	764	817	859	878	897	896	881	876	884
1979	874	874	874	871	853	863	878	896	865	838	828	826
1980	831	834	842	850	849	865	881	893	888	879	872	871
1981	869	871	874	860	868	865	875	872	853	811	778	778
1982	786	849	849	859	862	859	884	900	900	897	893	887
1983	873	862	856	853	849	849	877	900	900	900	899	887
1984	874	860	849	869	869	871	886	895	892	859	851	853
1985	857	862	872	874	874	871	886	874	854	813	763	759
1986	752	749	755	788	849	849	871	875	871	845	839	849
1987	852	858	858	857	868	867	857	847	824	767	732	727
1988	714	716	765	780	783	785	784	782	758	715	703	700
1989	692	710	721	728	741	849	859	842	834	785	737	737
1990	750	752	758	769	777	803	785	785	771	745	731	726
1991	711	702	686	687	680	727	750	762	754	732	725	723
1992	723	718	719	723	754	778	794	785	761	733	721	717
1993	713	704	723	786	831	861	894	900	900	885	881	879
1994	874	874	874	871	862	874	873	870	852	814	773	768

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Sco[...]le:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP	Score MAR	Score APR	Score MAY	Score JUN	Score JUL	Score AUG	Score SEP	SUM
1922	42	7	0	0	9	12	13	1	4	6	6	4	3	3	27
1923	26	5	0	6	44	67	65	1	4	6	4	1	1	1	18
1924	89	93	112	161	194	213	219	1	1	1	1	1	1	1	7
1925	113	84	76	84	110	121	122	1	1	1	1	1	1	1	7
1926	44	13	21	32	72	109	114	1	3	1	1	1	1	1	9
1927	37	10	0	0	29	33	36	1	3	6	6	1	1	1	19
1928	51	22	34	41	83	118	124	1	1	1	1	1	1	1	7
1929	109	107	105	120	155	170	177	1	1	1	1	1	1	1	7
1930	44	22	14	26	64	89	92	1	1	3	1	1	1	1	9
1931	95	105	116	151	189	208	214	1	1	1	1	1	1	1	7
1932	142	131	98	110	128	137	141	1	1	1	1	1	1	1	7
1933	132	129	113	122	140	147	153	1	1	1	1	1	1	1	7
1934	89	106	108	128	151	161	174	1	1	1	1	1	1	1	7
1935	99	23	20	20	52	69	73	1	1	1	1	1	1	1	7
1936	40	14	22	22	54	68	72	1	3	1	1	1	1	1	9
1937	51	26	4	8	34	47	51	1	1	5	4	1	1	1	14
1938	51	18	0	0	1	4	13	1	2	6	6	5	5	3	28
1939	67	77	77	107	167	206	210	1	1	1	1	1	1	1	7
1940	51	21	12	15	44	50	57	1	1	3	2	1	1	1	10
1941	42	14	0	0	3	8	13	1	3	6	6	5	4	3	28
1942	33	18	0	0	3	6	13	1	2	6	6	5	4	3	27
1943	41	13	3	0	25	35	35	1	3	5	6	1	1	1	18
1944	32	21	5	20	59	78	82	1	1	4	1	1	1	1	10
1945	35	20	4	12	50	64	67	1	1	5	3	1	1	1	13
1946	32	13	0	14	51	77	79	1	3	6	3	1	1	1	16
1947	38	28	32	47	90	141	161	1	1	1	1	1	1	1	7
1948	103	48	19	13	48	75	79	1	1	2	3	1	1	1	10
1949	59	52	40	54	100	130	135	1	1	1	1	1	1	1	7
1950	41	11	0	0	37	67	67	1	3	6	6	1	1	1	19
1951	30	14	0	2	41	67	67	1	3	6	5	1	1	1	18
1952	38	6	0	0	0	1	13	1	4	6	6	6	5	3	31
1953	33	17	0	0	14	16	15	1	2	6	6	3	2	2	22
1954	41	17	32	37	77	117	117	1	2	1	1	1	1	1	8
1955	75	68	58	73	127	149	153	1	1	1	1	1	1	1	7
1956	36	8	0	0	9	12	13	1	4	6	6	4	3	3	27
1957	37	33	15	15	53	79	75	1	1	2	2	1	1	1	9
1958	51	21	0	0	2	6	13	1	1	6	6	5	4	3	26
1959	33	31	28	47	90	131	127	1	1	1	1	1	1	1	7
1960	43	30	24	34	64	72	88	1	1	1	1	1	1	1	7
1961	48	39	34	50	95	147	157	1	1	1	1	1	1	1	7
1962	65	37	31	41	74	91	104	1	1	1	1	1	1	1	7
1963	42	24	0	0	30	36	35	1	1	6	6	1	1	1	17
1964	26	20	15	24	64	107	124	1	1	2	1	1	1	1	8
1965	30	13	15	12	39	40	39	1	3	2	3	1	1	1	12
1966	26	10	16	32	70	115	120	1	3	2	1	1	1	1	10
1967	47	21	0	0	0	4	13	1	1	6	6	6	5	3	28
1968	34	34	29	42	81	109	111	1	1	1	1	1	1	1	7
1969	35	5	0	0	5	7	26	1	4	6	6	4	4	1	26
1970	26	28	26	33	70	82	81	1	1	1	1	1	1	1	7
1971	26	7	0	0	23	30	28	1	4	6	6	1	1	1	20
1972	26	29	25	42	81	129	129	1	1	1	1	1	1	1	7
1973	40	18	0	13	50	64	66	1	2	6	3	1	1	1	15
1974	51	17	0	0	0	1	14	1	2	6	6	6	5	3	29
1975	48	19	0	0	10	11	14	1	2	6	6	3	3	3	24
1976	26	29	36	54	96	134	135	1	1	1	1	1	1	1	7
1977	188	208	218	240	261	270	273	1	1	1	1	1	1	1	7
1978	41	22	3	4	19	24	16	1	1	5	5	2	1	2	17
1979	37	22	4	35	62	72	74	1	1	5	1	1	1	1	11
1980	35	19	7	12	21	28	29	1	2	4	3	1	1	1	13
1981	35	25	28	47	89	122	122	1	1	1	1	1	1	1	7
1982	41	16	0	0	3	7	13	1	2	6	6	5	4	3	27
1983	51	23	0	0	0	1	13	1	1	6	6	6	5	3	28
1984	29	14	5	8	41	49	47	1	3	4	4	1	1	1	15
1985	29	14	26	46	87	137	141	1	3	1	1	1	1	1	9
1986	51	29	25	29	55	61	51	1	1	1	1	1	1	1	7
1987	33	43	53	76	133	168	173	1	1	1	1	1	1	1	7
1988	115	116	118	142	185	197	200	1	1	1	1	1	1	1	7
1989	51	41	58	66	115	163	163	1	1	1	1	1	1	1	7
1990	97	115	115	129	155	169	174	1	1	1	1	1	1	1	7
1991	173	150	138	146	168	175	177	1	1	1	1	1	1	1	7
1992	122	106	115	139	167	179	183	1	1	1	1	1	1	1	7
1993	39	6	0	0	15	19	21	1	4	6	6	2	2	1	22
1994	26	27	30	48	86	127	132	1	1	1	1	1	1	1	7

73 - year Average: 13

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Fluct. MAR	Fluct. APR	Fluct. MAY	Fluct. JUN	Fluct. JUL	Fluct. AUG	Fluct. SEP	Score MAR	Score APR	Score MAY	Score JUN	Score JUL	Score AUG	Score SEP	SUM	Product
1922	8	35	7	0	-9	-3	-1	6	6	6	6	4	5	5	38	1026
1923	12	21	5	-6	-38	-23	2	6	6	6	4	1	1	6	30	540
1924	-11	-4	-19	-49	-33	-19	-6	3	5	2	1	1	2	4	18	126
1925	8	29	8	-8	-26	-11	-1	6	6	6	4	1	3	5	31	217
1926	19	31	-8	-11	-40	-37	-5	6	6	4	3	1	1	5	26	234
1927	14	27	10	0	-29	-4	-3	6	6	6	6	1	5	5	35	665
1928	-22	29	-12	-7	-42	-35	-6	1	6	3	4	1	1	4	20	140
1929	14	2	2	-15	-35	-15	-7	6	6	6	3	1	3	4	29	203
1930	32	22	8	-12	-38	-25	-3	6	6	6	3	1	1	5	28	252
1931	21	-10	-11	-35	-38	-19	-6	6	4	3	1	1	2	4	21	147
1932	37	11	33	-12	-18	-9	-4	6	6	6	3	2	4	5	32	224
1933	7	3	16	-9	-18	-7	-6	6	6	6	4	2	4	4	32	224
1934	16	-17	-2	-20	-23	-10	-13	6	2	5	2	1	4	3	23	161
1935	28	76	3	0	-32	-17	-4	6	6	6	6	1	2	5	32	224
1936	11	26	-8	0	-32	-14	-4	6	6	4	6	1	3	5	31	279
1937	24	25	22	-4	-26	-13	-4	6	6	6	5	1	3	5	32	448
1938	0	33	18	0	-1	-3	-9	6	6	6	6	5	5	4	38	1064
1939	-4	-10	0	-30	-60	-39	-4	5	4	6	1	1	1	5	23	161
1940	19	30	9	-3	-29	-6	-7	6	6	6	5	1	4	4	32	320
1941	9	28	14	0	-3	-5	-5	6	6	6	6	5	5	5	39	1092
1942	17	15	18	0	-3	-3	-7	6	6	6	6	5	5	4	38	1026
1943	3	28	10	3	-25	-10	0	6	6	6	6	1	4	6	35	630
1944	11	11	16	-15	-39	-19	-4	6	6	6	3	1	2	5	29	290
1945	3	15	16	-8	-38	-14	-3	6	6	6	4	1	3	5	31	403
1946	0	19	13	-14	-37	-26	-2	6	6	6	3	1	1	5	28	448
1947	14	10	-4	-15	-43	-51	-20	6	6	5	3	1	1	2	24	168
1948	20	55	29	6	-35	-27	-4	6	6	6	6	1	1	5	31	310
1949	19	7	12	-14	-46	-30	-5	6	6	6	3	1	1	5	28	196
1950	29	30	11	0	-37	-30	0	6	6	6	6	1	1	6	32	608
1951	12	16	14	-2	-39	-26	0	6	6	6	5	1	1	6	31	558
1952	10	32	6	0	0	-1	-12	6	6	6	6	6	5	3	38	1178
1953	0	16	17	0	-14	-2	1	6	6	6	6	3	5	6	38	836
1954	2	24	-15	-5	-40	-40	0	6	6	3	5	1	1	6	28	224
1955	9	7	10	-15	-54	-22	-4	6	6	6	3	1	1	5	28	196
1956	15	28	8	0	-9	-3	-1	6	6	6	6	4	5	5	38	1026
1957	10	4	18	0	-38	-26	4	6	6	6	6	1	1	6	32	288
1958	0	30	21	0	-2	-4	-7	6	6	6	6	5	5	4	38	988
1959	15	2	3	-19	-43	-41	4	6	6	6	2	1	1	6	28	196
1960	31	13	6	-10	-30	-8	-16	6	6	6	4	1	4	2	29	203
1961	18	9	5	-16	-45	-52	-10	6	6	6	2	1	1	4	26	182
1962	27	28	6	-10	-33	-17	-13	6	6	6	4	1	2	3	28	196
1963	-9	18	24	0	-30	-6	1	4	6	6	6	1	4	6	33	561
1964	0	6	5	-9	-40	-43	-17	6	6	6	4	1	1	2	26	208
1965	7	17	-2	3	-27	-1	1	6	6	5	6	1	5	6	35	420
1966	4	16	-6	-16	-38	-45	-5	6	6	4	2	1	1	5	25	250
1967	-7	26	21	0	0	-4	-9	4	6	6	6	6	5	4	37	1036
1968	5	0	5	-13	-39	-28	-2	6	6	6	3	1	1	5	28	196
1969	16	30	5	0	-5	-2	-19	6	6	6	6	5	5	2	36	936
1970	25	-2	2	-7	-37	-12	1	6	5	6	4	1	3	6	31	217
1971	0	19	7	0	-23	-7	2	6	6	6	6	1	4	6	35	700
1972	7	-3	4	-17	-39	-48	0	6	5	6	2	1	1	6	27	189
1973	11	22	18	-13	-37	-14	-2	6	6	6	3	1	3	5	30	450
1974	-15	34	17	0	0	-1	-13	3	6	6	6	6	5	3	35	1015
1975	-3	29	19	0	-10	-1	-3	5	6	6	6	4	5	5	37	888
1976	0	-3	-7	-18	-42	-38	-1	6	5	4	2	1	1	5	24	168
1977	-4	-20	-10	-22	-21	-9	-3	5	2	4	1	1	4	5	22	154
1978	42	19	19	-1	-15	-5	8	6	6	6	5	3	5	6	37	629
1979	10	15	18	-31	-27	-10	-2	6	6	6	1	1	4	5	29	319
1980	16	16	12	-5	-9	-7	-1	6	6	6	5	4	4	5	36	468
1981	-3	10	-3	-19	-42	-33	0	5	6	5	2	1	1	6	26	182
1982	-3	25	16	0	-3	-4	-6	5	6	6	6	5	5	4	37	999
1983	0	28	23	0	0	-1	-12	6	6	6	6	6	5	3	38	1064
1984	2	15	9	-3	-33	-8	2	6	6	6	5	1	4	6	34	510
1985	-3	15	-12	-20	-41	-50	-4	5	6	3	2	1	1	5	23	207
1986	0	22	4	-4	-26	-6	10	6	6	6	5	1	4	6	34	238
1987	-1	-10	-10	-23	-57	-35	-5	5	4	4	1	1	1	5	21	147
1988	2	-1	-2	-24	-43	-12	-3	6	5	5	1	1	3	5	26	182
1989	108	10	-17	-8	-49	-48	0	6	6	2	4	1	1	6	26	182
1990	26	-18	0	-14	-26	-14	-5	6	2	6	3	1	3	5	26	182
1991	47	23	12	-8	-22	-7	-2	6	6	6	4	1	4	5	32	224
1992	24	16	-9	-24	-28	-12	-4	6	6	4	1	1	3	5	26	182
1993	30	33	6	0	-15	-4	-2	6	6	6	6	3	5	5	37	814
1994	12	-1	-3	-18	-38	-41	-5	6	5	5	2	1	1	5	25	175

73 - year Average: 30 438.2
1929 - '34 Average: 201.8

A2-192

STUDY 1995C06H-SWRCB-513 *DWRSIM: recirc818-h, 05 Sep 97*
CP # 8, FOLSOM LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06H-SWRCB-513/8/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 466'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	414	409	414	414	424	428	443	466	466	463	449	434	38	23	0	0	3	17	32
1923	425	423	424	424	421	424	449	466	451	448	443	434	42	17	0	15	18	23	32
1924	425	416	407	395	385	373	382	385	388	388	389	392	93	84	81	78	78	77	74
1925	395	395	398	390	424	420	449	466	456	449	444	434	46	17	0	10	17	22	32
1926	425	419	414	405	419	420	449	449	433	415	406	408	46	17	17	33	51	60	58
1927	403	418	424	424	424	437	449	466	464	460	449	434	29	17	0	2	6	17	32
1928	425	424	424	424	424	437	449	456	440	427	421	423	29	17	10	26	39	45	43
1929	417	408	401	388	386	384	401	410	396	369	376	386	82	65	56	70	97	90	80
1930	392	394	415	424	424	437	443	442	429	412	405	406	29	23	24	37	54	61	60
1931	397	394	387	381	374	378	385	392	390	389	390	393	88	81	74	76	77	76	73
1932	388	385	402	413	424	434	443	459	457	448	443	434	32	23	7	9	18	23	32
1933	424	416	409	398	385	388	392	408	410	399	398	405	78	74	58	56	67	68	61
1934	401	396	404	412	419	428	435	433	412	387	370	375	38	31	33	54	79	96	91
1935	375	389	401	419	424	427	449	466	458	452	448	434	39	17	0	8	14	18	32
1936	426	420	415	424	424	437	449	461	456	454	449	434	29	17	5	10	12	17	32
1937	425	417	411	404	424	437	449	466	452	446	441	434	29	17	0	14	20	25	32
1938	426	423	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32
1939	426	420	415	409	402	409	417	418	406	390	385	392	57	49	48	60	76	81	74
1940	397	396	392	424	424	437	449	464	449	443	438	434	29	17	2	17	23	28	32
1941	425	420	424	424	424	437	449	466	458	455	449	434	29	17	0	8	11	17	32
1942	426	422	424	424	424	430	449	466	466	463	449	434	36	17	0	0	3	17	32
1943	425	424	423	422	422	434	449	459	452	450	446	434	32	17	7	14	16	20	32
1944	425	419	413	405	407	419	420	433	426	416	416	419	47	46	33	40	50	50	47
1945	414	418	421	421	424	437	449	466	454	449	444	434	29	17	0	12	17	22	32
1946	427	424	424	424	424	437	449	466	451	445	440	434	29	17	0	15	21	26	32
1947	425	424	423	414	417	433	442	445	431	414	411	413	33	24	21	35	52	55	53
1948	412	409	405	413	410	411	445	466	463	459	449	434	55	21	0	3	7	17	32
1949	425	419	416	406	400	422	441	460	449	438	432	431	44	25	6	17	28	34	35
1950	422	415	406	424	424	437	449	466	455	452	447	434	29	17	0	11	14	19	32
1951	429	393	388	388	388	426	449	466	451	442	437	434	40	17	0	15	24	29	32
1952	427	424	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32
1953	428	423	424	424	424	430	446	458	464	463	449	434	36	20	8	2	3	17	32
1954	425	423	421	422	424	437	449	455	440	429	424	427	29	17	11	26	37	42	39
1955	422	415	419	424	424	416	420	437	431	418	416	419	50	46	29	35	48	50	47
1956	413	406	420	402	406	425	441	466	466	463	449	434	41	25	0	0	3	17	32
1957	428	422	417	412	424	437	436	461	449	443	438	434	29	30	5	17	23	28	32
1958	426	421	422	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32
1959	425	419	412	417	424	428	435	435	421	404	392	401	38	31	31	45	62	74	65
1960	398	391	384	385	420	437	449	447	436	419	414	415	29	17	19	30	47	52	51
1961	408	403	397	386	387	392	404	416	408	396	391	397	74	62	50	58	70	75	69
1962	392	383	380	372	421	430	449	457	443	433	426	427	36	17	9	23	33	40	39
1963	441	424	424	424	419	430	449	466	460	455	449	434	36	17	0	6	11	17	32
1964	427	424	424	424	421	419	430	436	422	407	405	403	47	36	30	44	59	61	63
1965	402	404	393	392	395	414	449	465	458	457	449	434	52	17	1	8	9	17	32
1966	426	424	424	424	422	430	446	447	433	417	412	413	36	20	19	33	49	54	53
1967	407	409	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32
1968	427	424	423	424	424	437	441	442	424	409	406	408	29	25	24	42	57	60	58
1969	403	407	416	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32
1970	427	424	423	393	396	426	432	441	431	425	421	424	40	34	25	35	41	45	42
1971	418	424	424	424	424	437	449	463	463	461	449	434	29	17	3	3	5	17	32
1972	425	422	424	424	424	437	437	444	433	418	416	418	29	29	22	33	48	50	48
1973	414	415	424	424	424	437	449	466	450	442	436	434	29	17	0	16	24	30	32
1974	427	423	422	409	417	433	449	466	463	463	449	434	33	17	0	3	3	17	32
1975	426	419	417	416	424	437	441	466	466	463	449	434	29	25	0	0	3	17	32
1976	431	423	419	410	402	394	399	405	387	368	372	376	72	67	61	79	98	94	90
1977	381	383	381	379	357	358	358	363	363	355	346	339	108	108	103	103	111	120	127
1978	334	334	372	424	424	437	449	466	460	457	449	434	29	17	0	6	9	17	32
1979	423	417	411	418	424	437	447	466	455	445	439	434	29	19	0	11	21	27	32
1980	427	424	424	405	399	430	449	464	456	455	449	434	36	17	2	10	11	17	32
1981	425	419	415	413	412	422	433	435	419	402	397	403	44	33	31	47	64	69	63
1982	403	420	392	396	388	424	449	466	466	463	449	434	42	17	0	0	3	17	32
1983	438	415	417	418	418	433	449	466	466	463	449	434	33	17	0	0	3	17	32
1984	435	392	388	388	392	424	444	464	452	447	442	434	42	22	2	14	19	24	32
1985	427	424	424	420	422	428	443	447	433	415	411	415	38	23	19	33	51	55	51
1986	409	410	419	424	396	424	449	464	457	452	448	434	42	17	2	9	14	18	32
1987	427	420	413	405	404	410	419	423	403	382	363	369	56	47	43	63	84	103	97
1988	364	362	366	407	411	412	415	410	389	362	330	399	54	51	56	77	104	136	67
1989	391	391	391	389	393	437	448	447	437	424	418	422	29	18	19	29	42	48	44
1990	419	414	407	405	403	414	423	424	407	388	386	394	52	43	42	59	78	80	72
1991	394	388	381	371	381	394	415	433	434	429	420	419	72	51	33	32	37	46	47
1992	413	403	391	375	394	408	418	418	406	389	380	378	58	48	48	60	77	86	88
1993	377	377	394	424	427	434	449	466	466	460	449	434	32	17	0	0	6	17	32
1994	423	413	407	395	390	388	397	402	389	375	376	374	78	69	64	77	91	90	92

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index = Product

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	6	6	5	2	1	22	4	15	23	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1923	1	2	6	2	2	1	1	15	3	25	17	-15	-3	-5	-9	6	6	6	3	5	5	4	35	525
1924	1	1	1	1	1	1	1	7	-15	9	3	3	0	1	3	3	6	6	6	6	6	6	39	273
1925	1	2	6	3	2	1	1	16	-4	29	17	-10	-7	-5	-10	5	6	6	4	4	5	4	34	544
1926	1	2	2	1	1	1	1	9	1	29	0	-16	-18	-9	2	6	6	6	2	2	4	6	32	288
1927	1	2	6	5	4	2	1	21	13	12	17	-2	-4	-11	-15	6	6	6	5	5	3	3	34	714
1928	1	2	3	1	1	1	1	10	13	12	7	-16	-13	-6	2	6	6	6	2	3	4	6	33	330
1929	1	1	1	1	1	1	1	7	-2	17	9	-14	-27	7	10	5	6	6	3	1	6	6	33	231
1930	1	1	1	1	1	1	1	7	13	6	-1	-13	-17	-7	1	6	6	5	3	2	4	6	32	224
1931	1	1	1	1	1	1	1	7	4	7	7	-2	-1	1	3	6	6	6	5	5	6	6	40	280
1932	1	1	4	4	2	1	1	14	10	9	16	-2	-9	-5	-9	6	6	6	5	4	5	4	36	504
1933	1	1	1	1	1	1	1	7	3	4	16	2	-11	-1	7	6	6	6	6	3	5	6	38	266
1934	1	1	1	1	1	1	1	7	9	7	-2	-21	-25	-17	5	6	6	5	1	1	2	6	27	189
1935	1	2	6	4	3	2	1	19	3	22	17	-8	-6	-4	-14	6	6	6	4	4	5	3	34	646
1936	1	2	4	3	3	2	1	16	13	12	12	-5	-2	-5	-15	6	6	6	5	5	5	3	36	576
1937	1	2	6	3	1	1	1	15	13	12	17	-14	-6	-5	-7	6	6	6	3	4	5	4	34	510
1938	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1939	1	1	1	1	1	1	1	7	7	8	1	-12	-16	-5	7	6	6	6	3	2	5	6	34	238
1940	1	2	5	2	1	1	1	13	13	12	15	-15	-6	-5	-4	6	6	6	3	4	5	5	35	455
1941	1	2	6	4	3	2	1	19	13	12	17	-8	-3	-6	-15	6	6	6	4	5	4	3	34	646
1942	1	2	6	6	5	2	1	23	6	19	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1943	1	2	4	3	2	1	1	14	12	15	10	-7	-2	-4	-12	6	6	6	4	5	5	3	35	490
1944	1	1	1	1	1	1	1	7	12	1	13	-7	-10	0	3	6	6	6	4	4	6	6	38	266
1945	1	2	6	3	2	1	1	16	13	12	17	-12	-5	-5	-10	6	6	6	3	5	5	4	35	560
1946	1	2	6	2	1	1	1	14	13	12	17	-15	-6	-5	-6	6	6	6	3	4	5	4	34	476
1947	1	1	1	1	1	1	1	7	16	9	3	-14	-17	-3	2	6	6	6	3	2	5	6	34	238
1948	1	1	6	5	4	2	1	20	1	34	21	-3	-4	-10	-15	6	6	6	5	5	4	3	35	700
1949	1	1	4	2	1	1	1	11	22	19	19	-11	-11	-6	-1	6	6	6	3	3	4	5	33	363
1950	1	2	6	3	3	2	1	18	13	12	17	-11	-3	-5	-13	6	6	6	3	5	5	3	34	612
1951	1	2	6	2	1	1	1	14	38	23	17	-15	-9	-5	-3	6	6	6	3	4	5	5	35	490
1952	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1953	1	1	4	5	5	2	1	19	6	16	12	6	-1	-14	-15	6	6	6	6	5	3	3	35	665
1954	1	2	3	1	1	1	1	10	13	12	6	-15	-11	-6	3	6	6	6	3	3	5	6	35	350
1955	1	1	1	1	1	1	1	7	-8	4	17	-6	-13	-2	3	4	6	6	4	3	5	6	34	238
1956	1	1	6	6	5	2	1	22	19	16	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1957	1	1	4	2	1	1	1	11	13	-1	25	-12	-6	-5	-4	6	5	6	3	4	5	5	34	374
1958	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1959	1	1	1	1	1	1	1	7	4	7	0	-14	-17	-12	9	6	6	6	3	2	3	6	32	224
1960	1	2	2	1	1	1	1	9	17	12	-2	-11	-17	-5	1	6	6	5	3	2	5	6	33	297
1961	1	1	1	1	1	1	1	7	5	12	12	-8	-12	-5	6	6	6	6	4	3	5	6	36	252
1962	1	2	4	1	1	1	1	11	9	19	8	-14	-10	-7	1	6	6	6	3	4	4	6	35	385
1963	1	2	6	4	3	2	1	19	11	19	17	-6	-5	-6	-15	6	6	6	4	5	4	3	34	646
1964	1	1	1	1	1	1	1	7	-2	11	6	-14	-15	-2	-2	5	6	6	3	3	5	5	33	231
1965	1	2	5	4	4	2	1	19	19	35	16	-7	-1	-8	-15	6	6	6	4	5	4	3	34	646
1966	1	1	2	1	1	1	1	8	8	16	1	-14	-16	-5	1	6	6	6	3	2	5	6	34	272
1967	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1968	1	1	1	1	1	1	1	7	13	4	1	-18	-15	-3	2	6	6	6	2	3	5	6	34	238
1969	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1970	1	1	1	1	1	1	1	7	30	6	9	-10	-6	-4	3	6	6	6	4	4	5	6	37	259
1971	1	2	5	5	4	2	1	20	13	12	14	0	-2	-12	-15	6	6	6	6	5	3	3	35	700
1972	1	1	1	1	1	1	1	7	13	0	7	-11	-15	-2	2	6	6	6	3	3	5	6	35	245
1973	1	2	6	2	1	1	1	14	13	12	17	-16	-8	-6	-2	6	6	6	2	4	4	5	33	462
1974	1	2	6	5	5	2	1	22	16	16	17	-3	0	-14	-15	6	6	6	5	6	3	3	35	770
1975	1	1	6	6	5	2	1	22	13	4	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1976	1	1	1	1	1	1	1	7	-8	5	6	-18	-19	4	4	4	6	6	2	2	6	6	32	224
1977	1	1	1	1	1	1	1	7	1	0	5	0	-8	-9	-7	6	6	6	6	4	4	4	36	252
1978	1	2	6	4	4	2	1	20	13	12	17	-6	-3	-8	-15	6	6	6	4	5	4	3	34	680
1979	1	2	6	3	1	1	1	15	13	10	19	-11	-10	-6	-5	6	6	6	3	4	4	5	34	510
1980	1	2	5	3	3	2	1	17	31	19	15	-8	-1	-6	-15	6	6	6	4	5	4	3	34	578
1981	1	1	1	1	1	1	1	7	10	11	2	-16	-17	-5	6	6	6	6	2	2	5	6	33	231
1982	1	2	6	6	5	2	1	23	36	25	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	806
1983	1	2	6	6	5	2	1	23	15	16	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1984	1	1	5	3	2	1	1	14	32	20	20	-12	-5	-5	-8	6	6	6	3	5	5	4	35	490
1985	1	1	2	1	1	1	1	8	6	15	4	-14	-16	-4	4	6	6	6	3	2	5	6	34	272
1986	1	2	5	4	3	2	1	18	28	25	15	-7	-5	-4	-14	6	6	6	4	5	5	3	35	630
1987	1	1	1	1	1	1	1	7	6	9	4	-20	-21	-19	6	6	6	6	2	1	2	6	29	203
1988	1	1	1	1	1	1	1	7	1	3	-5	-21	-27	-32	69	6	6	5	1	1	1	6	26	182
1989	1	2	2	1	1	1	1	9	44	11	-1	-10	-13	-6	4	6	6	5	4	3	4	6	34	306
1990	1	1	1	1	1	1	1	7	11	9	1	-17	-19	-2	8	6	6	6	2	2	5	6	33	231
1991	1	1	1	1	1	1	1	7	33	21	18	1	-5	-9	-1	6	6	6	6	5	4	5	38	266
1992	1	1	1	1	1	1	1	7	14	10	0	-12	-17	-9	-2	6	6	6	3	2	4	5	32	224
1993	1	2	6	6	4	2	1	22	7	16	17	0	-6	-11	-15	6	6	6	6	4	3	3	34	748
1994	1	1	1	1	1	1	1	7	-2	9	5	-13	-14	1	-2	5	6	6	3	3	6	5	34	238

73 - year Average: 13

73 - year Average: 34 464.4
1929 - '34 Average: 282.3

A2-193

C-032533

C-032533

C-032534

STUDY 1995C0[illegible]WRCB-513 DWRSIM: recirc818-h, 05 Sep 97
CP # 10, NEW MELONES RESERVOIR, EOP SURFACE ELEVATION (FT)
Project. /1995C06H-SWRCB-513/10/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 1088'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevatio[illegible] Table:
If [DFMRE] <= 0', th[illegible] else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	940	943	949	954	968	978	977	1005	1026	1019	1009	1001	120	110	111	83	62	69	79
1923	1000	1003	1011	1019	1025	1029	1032	1047	1047	1039	1028	1021	63	59	56	41	41	49	60
1924	1020	1022	1025	1028	1031	1031	1025	1019	1011	1005	998	994	57	57	63	69	77	83	90
1925	994	996	999	1001	1015	1024	1025	1038	1039	1032	1020	1013	73	64	63	50	49	56	68
1926	1013	1014	1016	1018	1025	1030	1032	1030	1022	1012	1004	997	63	58	56	58	66	76	84
1927	998	1000	1007	1013	1027	1035	1041	1053	1058	1049	1039	1032	61	53	47	35	30	39	49
1928	1032	1036	1040	1043	1049	1055	1056	1063	1056	1044	1033	1025	39	33	32	25	32	44	55
1929	1025	1026	1029	1031	1034	1035	1031	1030	1024	1016	1009	1003	54	53	57	58	64	72	79
1930	1004	1005	1007	1010	1016	1021	1021	1018	1017	1009	1000	994	73	67	67	70	71	79	88
1931	994	997	999	1001	1003	1005	1001	995	987	979	970	964	85	83	87	93	101	109	118
1932	963	965	972	978	992	998	998	1015	1028	1024	1016	1010	96	90	90	73	60	64	72
1933	1010	1012	1015	1017	1019	1021	1017	1015	1015	1007	998	992	69	67	71	73	73	81	90
1934	992	994	997	1001	1005	1010	1006	999	992	982	972	965	83	78	82	89	96	106	116
1935	964	965	968	973	978	984	995	1016	1026	1019	1011	1005	110	104	93	72	62	69	77
1936	1005	1007	1009	1018	1036	1044	1048	1059	1062	1054	1043	1036	52	44	40	29	26	34	45
1937	1035	1036	1039	1042	1050	1055	1050	1063	1063	1054	1044	1036	38	33	38	25	25	34	44
1938	1035	1036	1045	1050	1050	1055	1063	1088	1088	1084	1076	1070	38	33	25	0	0	4	12
1939	1050	1050	1050	1050	1050	1052	1050	1042	1032	1021	1011	1004	38	36	38	46	56	67	77
1940	1003	1004	1006	1017	1032	1048	1051	1064	1063	1054	1044	1036	56	40	37	24	25	34	44
1941	1035	1036	1041	1047	1050	1055	1052	1066	1072	1066	1057	1050	38	33	36	22	16	22	31
1942	1049	1050	1050	1050	1050	1055	1055	1068	1082	1078	1069	1064	38	33	33	20	6	10	19
1943	1050	1050	1050	1050	1050	1055	1061	1068	1071	1064	1055	1048	38	33	27	20	17	24	33
1944	1048	1048	1049	1050	1050	1053	1048	1048	1043	1032	1021	1012	38	35	40	40	45	56	67
1945	1012	1017	1021	1026	1040	1048	1044	1054	1060	1053	1043	1036	48	40	44	34	28	35	45
1946	1035	1039	1048	1050	1050	1054	1055	1064	1062	1053	1043	1036	38	34	33	24	26	35	45
1947	1035	1037	1040	1042	1046	1050	1046	1041	1031	1019	1009	1002	42	38	42	47	57	69	79
1948	1002	1003	1005	1007	1009	1012	1013	1019	1029	1023	1015	1009	79	76	75	69	59	65	73
1949	1010	1012	1014	1017	1019	1024	1024	1030	1028	1020	1012	1006	69	64	64	58	60	68	76
1950	1006	1006	1008	1014	1022	1028	1030	1043	1046	1036	1025	1018	66	60	58	45	42	52	63
1951	1017	1046	1050	1050	1050	1055	1058	1064	1059	1050	1039	1032	38	33	30	24	29	38	49
1952	1031	1034	1041	1050	1050	1055	1058	1087	1088	1086	1078	1072	38	33	30	1	0	2	10
1953	1050	1050	1050	1050	1050	1054	1053	1052	1057	1052	1041	1034	38	34	35	36	31	36	47
1954	1033	1035	1038	1041	1045	1052	1055	1064	1057	1048	1037	1029	43	36	33	24	31	40	51
1955	1028	1031	1034	1039	1042	1045	1040	1036	1032	1021	1010	1002	46	43	48	52	56	67	78
1956	1002	1004	1030	1050	1050	1055	1055	1069	1079	1074	1065	1060	38	33	33	19	9	14	23
1957	1050	1050	1050	1050	1050	1055	1052	1056	1059	1049	1039	1031	38	33	36	32	29	39	49
1958	1028	1030	1032	1039	1048	1055	1062	1088	1088	1083	1074	1067	40	33	26	0	0	5	14
1959	1050	1050	1050	1050	1050	1053	1049	1040	1031	1020	1010	1003	38	35	39	48	57	68	78
1960	1002	1003	1005	1008	1013	1019	1017	1013	1007	999	991	981	75	69	71	75	81	89	97
1961	978	981	985	987	990	993	990	984	976	967	958	951	98	95	98	104	112	121	130
1962	951	953	956	958	969	975	977	986	992	984	974	965	119	113	111	102	96	104	114
1963	965	968	972	981	998	1003	1002	1024	1030	1021	1011	1004	90	85	86	64	58	67	77
1964	1004	1007	1011	1015	1019	1022	1019	1017	1013	1004	996	989	69	66	69	71	75	84	92
1965	988	992	1016	1037	1049	1055	1058	1067	1074	1069	1061	1055	39	33	30	21	14	19	27
1966	1050	1050	1050	1050	1050	1053	1051	1053	1043	1031	1020	1011	38	35	37	35	45	57	68
1967	1011	1013	1022	1034	1042	1053	1054	1074	1088	1088	1080	1074	46	35	34	14	0	0	8
1968	1050	1050	1050	1050	1050	1054	1050	1047	1038	1027	1015	1007	38	34	38	41	50	61	73
1969	1007	1011	1013	1043	1050	1055	1066	1088	1088	1084	1075	1068	38	33	22	0	0	4	13
1970	1050	1050	1050	1050	1050	1055	1054	1060	1061	1051	1040	1033	38	33	34	28	27	37	48
1971	1032	1036	1044	1050	1050	1055	1052	1056	1060	1053	1043	1036	38	33	36	32	28	35	45
1972	1034	1037	1043	1048	1050	1055	1050	1053	1045	1034	1022	1015	38	33	38	35	43	54	66
1973	1015	1017	1022	1034	1049	1055	1051	1063	1063	1054	1043	1036	39	33	37	25	25	34	45
1974	1035	1040	1049	1050	1050	1055	1059	1073	1077	1069	1060	1053	38	33	29	15	11	19	28
1975	1050	1050	1050	1050	1050	1055	1050	1056	1068	1061	1052	1045	38	33	38	32	20	27	36
1976	1044	1047	1050	1050	1050	1052	1047	1041	1033	1025	1018	1012	38	36	41	47	55	63	70
1977	1012	1014	1015	1015	1016	1016	1011	1006	1001	994	986	980	72	72	77	82	87	94	102
1978	979	978	982	993	1002	1017	1024	1039	1047	1041	1031	1026	86	71	64	49	41	47	57
1979	1026	1028	1032	1040	1050	1055	1054	1067	1064	1053	1043	1036	38	33	34	21	24	35	45
1980	1036	1039	1041	1050	1050	1055	1056	1063	1070	1068	1059	1053	38	33	32	25	18	20	29
1981	1050	1050	1050	1050	1050	1053	1050	1044	1032	1020	1010	1004	38	35	38	44	56	68	78
1982	1004	1011	1025	1046	1050	1055	1071	1086	1088	1084	1076	1072	38	33	17	2	0	4	12
1983	1050	1050	1050	1050	1050	1055	1056	1070	1088	1088	1083	1075	38	33	32	18	0	0	5
1984	1050	1050	1050	1050	1050	1055	1053	1059	1058	1051	1042	1036	38	33	35	29	30	37	46
1985	1036	1041	1046	1049	1050	1054	1052	1050	1039	1028	1018	1012	38	34	36	38	49	60	70
1986	1012	1015	1018	1028	1050	1055	1056	1061	1065	1057	1048	1043	38	33	32	27	23	31	40
1987	1043	1045	1047	1048	1049	1052	1048	1040	1032	1025	1020	1016	39	36	40	48	56	63	68
1988	1015	1015	1015	1017	1019	1021	1017	1011	1006	1001	997	992	69	67	71	77	82	87	91
1989	991	990	991	993	995	1004	1002	1000	996	989	981	976	93	84	86	88	92	99	107
1990	979	981	986	989	993	996	990	981	971	962	955	949	95	92	98	107	117	126	133
1991	948	949	953	953	955	960	957	955	948	938	930	925	133	128	131	133	140	150	158
1992	926	928	932	934	941	947	942	932	923	912	898	889	147	141	146	156	165	176	190
1993	888	889	895	923	937	957	961	980	990	985	975	969	151	131	127	108	98	103	113
1994	971	976	982	987	991	994	987	980	971	961	952	944	97	94	101	108	117	127	136

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	1	1	1	1	1	7	10	-1	28	21	-7	-10	-8	6	5	6	6	4	4	4	35	245
1923	1	1	1	1	1	1	1	7	4	3	15	0	-8	-11	-7	6	6	6	6	4	3	4	35	245
1924	1	1	1	1	1	1	1	7	0	-6	-6	-8	-6	-7	-4	6	4	4	4	4	4	5	31	217
1925	1	1	1	1	1	1	1	7	9	1	13	1	-7	-12	-7	6	6	6	6	4	3	4	35	245
1926	1	1	1	1	1	1	1	7	5	2	-2	-8	-10	-8	-7	6	6	5	4	4	4	4	33	231
1927	1	1	1	1	1	1	1	7	8	6	12	5	-9	-10	-7	6	6	6	6	4	4	4	36	252
1928	1	1	1	1	1	1	1	7	6	1	7	-7	-12	-11	-8	6	6	6	4	3	3	4	32	224
1929	1	1	1	1	1	1	1	7	1	-4	-1	-6	-8	-7	-6	6	5	5	4	4	4	4	32	224
1930	1	1	1	1	1	1	1	7	6	0	-3	-1	-8	-9	-6	6	6	5	5	4	4	4	34	238
1931	1	1	1	1	1	1	1	7	2	-4	-6	-8	-8	-9	-6	6	5	4	4	4	4	4	31	217
1932	1	1	1	1	1	1	1	7	6	0	17	13	-4	-8	-6	6	6	6	6	5	4	4	37	259
1933	1	1	1	1	1	1	1	7	2	-4	-2	0	-8	-9	-6	6	5	5	6	4	4	4	34	238
1934	1	1	1	1	1	1	1	7	5	-4	-7	-7	-10	-10	-7	6	5	4	4	4	4	4	31	217
1935	1	1	1	1	1	1	1	7	6	11	21	10	-7	-8	-6	6	6	6	6	4	4	4	36	252
1936	1	1	1	1	1	1	1	7	8	4	11	3	-8	-11	-7	6	6	6	6	4	3	4	35	245
1937	1	1	1	1	1	1	1	7	5	-5	13	0	-9	-10	-8	6	5	6	6	4	4	4	35	245
1938	1	1	1	6	6	5	3	23	5	8	25	0	-4	-8	-6	6	6	6	6	5	4	4	37	851
1939	1	1	1	1	1	1	1	7	2	-2	-8	-10	-11	-10	-7	6	5	4	4	3	4	4	30	210
1940	1	1	1	1	1	1	1	7	16	3	13	-1	-9	-10	-8	6	6	6	5	4	4	4	35	245
1941	1	1	1	1	2	1	1	8	5	-3	14	6	-6	-9	-7	6	5	6	6	4	4	4	35	280
1942	1	1	1	1	4	3	2	13	5	0	13	14	-4	-9	-5	6	6	6	6	5	4	5	38	494
1943	1	1	1	1	2	1	1	8	5	6	7	3	-7	-9	-7	6	6	6	6	4	4	4	36	288
1944	1	1	1	1	1	1	1	7	3	-5	0	-5	-11	-11	-9	6	5	6	5	3	3	4	32	224
1945	1	1	1	1	1	1	1	7	8	-4	10	6	-7	-10	-7	6	5	6	6	4	4	4	35	245
1946	1	1	1	1	1	1	1	7	4	1	9	-2	-9	-10	-7	6	6	6	5	4	4	4	35	245
1947	1	1	1	1	1	1	1	7	4	-4	-5	-10	-12	-10	-7	6	5	5	4	3	4	4	31	217
1948	1	1	1	1	1	1	1	7	3	1	6	10	-6	-8	-6	6	6	6	6	4	4	4	36	252
1949	1	1	1	1	1	1	1	7	5	0	6	-2	-8	-8	-6	6	6	6	5	4	4	4	35	245
1950	1	1	1	1	1	1	1	7	6	2	13	3	-10	-11	-7	6	6	6	6	4	3	4	35	245
1951	1	1	1	1	1	1	1	7	5	3	6	-5	-9	-11	-7	6	6	6	5	4	3	4	34	238
1952	1	1	1	5	6	5	3	22	5	3	29	1	-2	-8	-6	6	6	6	6	5	4	4	37	814
1953	1	1	1	1	1	1	1	7	4	-1	-1	5	-5	-11	-7	6	5	5	6	5	3	4	34	238
1954	1	1	1	1	1	1	1	7	7	3	9	-7	-9	-11	-8	6	6	6	4	4	3	4	33	231
1955	1	1	1	1	1	1	1	7	3	-5	-4	-4	-11	-11	-8	6	5	5	5	3	3	4	31	217
1956	1	1	1	2	4	3	1	13	5	0	14	10	-5	-9	-5	6	6	6	6	5	4	5	38	494
1957	1	1	1	1	1	1	1	7	5	-3	4	3	-10	-10	-8	6	5	6	6	4	4	4	35	245
1958	1	1	1	6	6	4	3	22	7	7	26	0	-5	-9	-7	6	6	6	6	5	4	4	37	814
1959	1	1	1	1	1	1	1	7	3	-4	-9	-9	-11	-10	-7	6	5	4	4	3	4	4	30	210
1960	1	1	1	1	1	1	1	7	6	-2	-4	-6	-8	-8	-10	6	5	5	4	4	4	4	32	224
1961	1	1	1	1	1	1	1	7	3	-3	-6	-8	-9	-9	-7	6	5	4	4	4	4	4	31	217
1962	1	1	1	1	1	1	1	7	6	2	9	6	-8	-10	-9	6	6	6	6	4	4	4	36	252
1963	1	1	1	1	1	1	1	7	5	-1	22	6	-9	-10	-7	6	5	6	6	4	4	4	35	245
1964	1	1	1	1	1	1	1	7	3	-3	-2	-4	-9	-8	-7	6	5	5	5	4	4	4	33	231
1965	1	1	1	1	3	2	1	10	6	3	9	7	-5	-8	-6	6	6	6	6	5	4	4	37	370
1966	1	1	1	1	1	1	1	7	3	-2	2	-10	-12	-11	-9	6	5	6	4	3	3	4	31	217
1967	1	1	1	3	6	6	4	22	11	1	20	14	0	-8	-6	6	6	6	6	6	4	4	38	836
1968	1	1	1	1	1	1	1	7	4	-4	-3	-9	-11	-12	-8	6	5	5	4	3	3	4	30	210
1969	1	1	1	6	6	5	3	23	5	11	22	0	-4	-9	-7	6	6	6	6	5	4	4	37	851
1970	1	1	1	1	1	1	1	7	5	-1	6	1	-10	-11	-7	6	5	6	6	4	3	4	34	238
1971	1	1	1	1	1	1	1	7	5	-3	4	4	-7	-10	-7	6	5	6	6	4	4	4	35	245
1972	1	1	1	1	1	1	1	7	5	-5	3	-8	-11	-12	-7	6	5	6	4	3	3	4	31	217
1973	1	1	1	1	1	1	1	7	6	-4	12	0	-9	-11	-7	6	5	6	6	4	3	4	34	238
1974	1	1	1	2	3	2	1	11	5	4	14	4	-8	-9	-7	6	6	6	6	4	4	4	36	396
1975	1	1	1	1	1	1	1	7	5	-5	6	12	-7	-9	-7	6	5	6	6	4	4	4	35	245
1976	1	1	1	1	1	1	1	7	2	-5	-6	-8	-8	-7	-6	6	5	4	4	4	4	4	31	217
1977	1	1	1	1	1	1	1	7	0	-5	-5	-5	-7	-8	-6	6	5	5	5	4	4	4	33	231
1978	1	1	1	1	1	1	1	7	15	7	15	8	-6	-10	-5	6	6	6	6	4	4	5	37	259
1979	1	1	1	1	1	1	1	7	5	-1	13	-3	-11	-10	-7	6	5	6	5	3	4	4	33	231
1980	1	1	1	1	2	1	1	8	5	1	7	7	-2	-9	-6	6	6	6	6	5	4	4	37	296
1981	1	1	1	1	1	1	1	7	3	-3	-6	-12	-12	-10	-6	6	5	4	3	3	4	4	29	203
1982	1	1	2	5	6	5	3	23	5	16	15	2	-4	-8	-4	6	6	6	6	5	4	5	38	874
1983	1	1	1	2	6	6	4	21	5	1	14	18	0	-5	-8	6	6	6	6	6	5	4	39	819
1984	1	1	1	1	1	1	1	7	5	-2	6	-1	-7	-9	-6	6	5	6	5	4	4	4	34	238
1985	1	1	1	1	1	1	1	7	4	-2	-2	-11	-11	-10	-6	6	5	5	3	3	4	4	30	210
1986	1	1	1	1	1	1	1	7	5	1	5	4	-8	-9	-5	6	6	6	6	4	4	5	37	259
1987	1	1	1	1	1	1	1	7	3	-4	-8	-8	-7	-5	-4	6	5	4	4	4	5	5	33	231
1988	1	1	1	1	1	1	1	7	2	-4	-6	-5	-5	-4	-5	6	5	4	5	5	5	5	35	245
1989	1	1	1	1	1	1	1	7	9	-2	-2	-4	-7	-8	-5	6	5	5	5	4	4	5	34	238
1990	1	1	1	1	1	1	1	7	3	-6	-9	-10	-9	-7	-6	6	4	4	4	4	4	4	30	210
1991	1	1	1	1	1	1	1	7	5	-3	-2	-7	-10	-8	-5	6	5	5	4	4	4	5	33	231
1992	1	1	1	1	1	1	1	7	6	-5	-10	-9	-11	-14	-9	6	5	4	4	3	3	4	29	203
1993	1	1	1	1	1	1	1	7	20	4	19	10	-5	-10	-6	6	6	6	6	5	4	4	37	259
1994	1	1	1	1	1	1	1	7	3	-7	-7	-9	-10	-9	-8	6	4	4	4	4	4	4	30	210

73 - year Average: 9

73 - year Average: 34 304.5
1929 - '34 Average: [illegible]

A2-194

C-032534

STUDY. 1[illegible]H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97
CP # 81, DON PEDRO RESERVOIR, EOP SURFACE ELEVATION (FT)
Project. /1995C06H-SWRCB-513/81/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 832'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	599	582	579	601	655	686	691	712	769	764	747	736
1923	729	728	732	744	758	764	766	768	776	767	751	740
1924	734	731	726	724	726	723	715	706	696	678	660	649
1925	642	642	644	649	675	694	707	721	740	728	708	695
1926	686	683	676	674	685	688	702	718	713	690	669	654
1927	644	643	649	661	697	712	725	725	745	733	715	702
1928	693	693	694	698	708	731	739	757	754	732	713	700
1929	691	684	678	677	683	685	685	689	699	684	669	658
1930	651	646	642	643	652	664	665	671	692	674	659	650
1931	644	642	641	644	649	647	634	609	575	536	526	531
1932	528	524	547	585	655	671	670	680	702	695	673	656
1933	644	634	623	621	631	634	625	613	645	622	581	565
1934	535	532	526	533	561	583	577	561	551	531	524	527
1935	524	524	527	554	593	619	658	671	708	696	677	671
1936	660	657	650	657	711	728	737	758	775	763	746	734
1937	727	720	714	718	751	772	777	788	804	790	774	764
1938	758	752	771	785	800	800	800	804	831	832	819	808
1939	800	799	799	800	800	800	801	801	795	780	766	759
1940	754	754	751	764	792	800	802	815	826	808	793	782
1941	778	774	778	792	800	800	800	809	832	829	815	805
1942	799	797	800	800	800	800	802	807	831	832	818	808
1943	800	800	800	800	800	800	802	819	829	819	804	794
1944	788	786	782	781	787	793	792	797	802	788	772	762
1945	755	756	760	765	789	800	802	805	827	819	804	793
1946	790	791	800	800	800	800	801	804	808	790	774	763
1947	755	755	758	761	768	771	765	768	760	743	729	721
1948	714	714	712	714	713	710	703	711	739	723	702	690
1949	680	672	665	664	670	682	687	695	701	676	648	632
1950	613	598	584	587	635	648	658	675	694	668	641	621
1951	604	685	745	769	786	798	794	789	791	772	758	747
1952	740	738	745	772	790	800	800	820	832	819	808	808
1953	800	795	793	800	800	800	800	801	809	801	787	777
1954	771	767	764	766	772	783	790	806	805	785	769	759
1955	751	746	745	751	757	758	751	754	760	743	729	721
1956	714	709	705	800	800	800	799	812	832	831	817	808
1957	800	798	794	793	798	800	798	802	822	805	791	781
1958	775	771	768	773	789	800	800	821	832	830	817	808
1959	800	794	789	793	800	800	799	795	788	772	759	752
1960	748	745	742	743	751	757	757	762	764	750	739	733
1961	729	726	727	728	730	730	721	709	700	683	668	659
1962	651	648	645	647	679	700	709	712	740	727	710	698
1963	690	685	680	686	713	724	732	746	773	765	750	739
1964	732	733	735	740	746	747	742	737	738	722	707	699
1965	694	695	736	772	789	798	802	804	822	819	808	799
1966	793	797	800	800	800	800	798	792	783	765	748	739
1967	733	730	741	758	773	796	800	815	832	832	820	808
1968	800	795	791	792	800	800	800	802	798	781	769	762
1969	756	756	759	800	800	800	800	823	832	832	819	808
1970	800	799	800	800	800	800	797	795	801	786	771	762
1971	755	756	763	778	791	800	799	797	802	789	776	768
1972	761	757	760	766	778	786	784	780	775	759	747	739
1973	734	733	735	748	774	792	792	801	814	796	781	771
1974	766	771	782	800	800	800	800	803	822	810	796	787
1975	782	780	777	777	788	800	800	808	832	823	809	800
1976	798	795	797	797	799	798	792	783	773	760	750	744
1977	740	738	735	734	734	730	721	706	692	672	655	647
1978	640	636	639	665	701	733	744	759	794	800	786	780
1979	775	771	767	777	796	800	801	820	828	812	798	788
1980	784	782	781	800	800	800	800	814	832	832	819	808
1981	800	797	794	795	798	800	802	804	801	787	776	768
1982	763	768	788	800	800	800	800	820	832	832	820	808
1983	800	800	800	800	800	800	800	817	832	832	832	808
1984	800	800	800	800	800	800	795	799	808	793	777	767
1985	763	764	770	776	784	789	788	785	779	764	752	745
1986	741	742	745	763	800	800	801	825	832	822	808	799
1987	794	788	783	781	783	785	782	778	774	760	749	743
1988	739	737	737	743	748	750	743	733	725	709	696	688
1989	682	678	679	682	686	700	713	728	736	721	708	701
1990	698	697	697	699	704	707	702	698	695	676	658	649
1991	641	637	633	632	631	641	637	657	671	654	641	633
1992	629	630	629	632	644	651	662	660	659	637	612	592
1993	577	567	566	632	666	702	707	722	755	750	734	723
1994	715	708	702	701	705	709	706	710	708	691	678	670

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	146	141	120	63	68	85	96
1923	68	66	64	56	65	81	92
1924	109	117	126	136	154	172	183
1925	138	125	111	92	104	124	137
1926	144	130	114	119	142	163	178
1927	120	107	107	87	99	117	130
1928	101	93	75	78	100	119	132
1929	147	147	143	133	148	163	174
1930	168	167	161	140	158	173	182
1931	185	198	223	257	296	306	301
1932	161	162	152	130	137	159	176
1933	198	207	219	187	210	251	277
1934	249	255	271	281	301	308	305
1935	213	176	161	124	136	155	161
1936	104	95	74	57	69	86	98
1937	60	55	44	28	42	58	68
1938	32	32	28	1	0	13	24
1939	32	31	31	37	52	66	73
1940	32	30	17	6	24	39	50
1941	32	32	23	0	3	17	27
1942	32	30	25	1	0	14	24
1943	32	30	13	3	13	28	38
1944	39	40	35	30	44	60	70
1945	32	30	27	5	13	28	39
1946	32	31	28	24	42	56	69
1947	61	67	64	72	89	103	111
1948	122	129	121	93	109	130	142
1949	150	145	137	131	156	184	200
1950	184	174	157	138	164	191	211
1951	34	38	43	41	60	74	85
1952	32	32	12	0	0	13	24
1953	32	32	31	23	31	45	55
1954	49	42	26	27	47	63	73
1955	74	81	78	72	89	103	111
1956	32	33	20	0	1	15	24
1957	32	34	30	10	27	41	51
1958	32	32	11	0	2	15	24
1959	52	33	37	44	60	73	80
1960	75	76	70	68	82	93	99
1961	102	111	123	132	149	164	173
1962	132	123	120	92	105	122	134
1963	108	100	86	59	67	82	93
1964	85	90	95	94	110	125	133
1965	34	30	28	10	13	24	33
1966	32	34	40	49	67	84	93
1967	36	32	17	0	0	12	24
1968	32	32	30	34	51	63	70
1969	32	32	9	0	0	13	24
1970	32	35	37	31	46	61	70
1971	32	33	35	30	43	58	64
1972	46	48	52	57	73	85	93
1973	40	40	31	18	36	51	61
1974	32	32	29	10	22	36	45
1975	32	32	24	0	9	23	32
1976	34	40	49	59	72	82	88
1977	102	111	126	140	160	177	185
1978	99	88	73	38	32	46	52
1979	32	31	12	4	20	34	44
1980	32	32	18	0	0	13	24
1981	32	30	28	31	45	56	64
1982	32	32	12	0	0	12	24
1983	32	32	15	0	0	0	24
1984	32	37	33	24	39	55	65
1985	43	44	47	53	68	80	87
1986	32	31	7	0	10	24	33
1987	47	50	54	58	72	83	89
1988	82	89	99	107	123	138	144
1989	132	119	104	96	111	124	131
1990	125	130	134	137	156	174	183
1991	191	196	175	161	178	191	199
1992	181	180	172	173	195	220	240
1993	130	125	110	77	82	98	109
1994	123	126	122	124	141	154	162

Reservoir Elevat[illegible]ble:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	1	1	1	1	1	1	1	7
1923	1	1	1	1	1	1	1	7
1924	1	1	1	1	1	1	1	7
1925	1	1	1	1	1	1	1	7
1926	1	1	1	1	1	1	1	7
1927	1	1	1	1	1	1	1	7
1928	1	1	1	1	1	1	1	7
1929	1	1	1	1	1	1	1	7
1930	1	1	1	1	1	1	1	7
1931	1	1	1	1	1	1	1	7
1932	1	1	1	1	1	1	1	7
1933	1	1	1	1	1	1	1	7
1934	1	1	1	1	1	1	1	7
1935	1	1	1	1	1	1	1	7
1936	1	1	1	1	1	1	1	7
1937	1	1	1	1	1	1	1	7
1938	1	1	1	5	6	3	1	18
1939	1	1	1	1	1	1	1	7
1940	1	1	2	4	1	1	1	11
1941	1	1	1	6	5	2	1	17
1942	1	1	1	5	6	3	1	18
1943	1	1	3	5	3	1	1	16
1944	1	1	1	1	1	1	1	7
1945	1	1	1	4	3	1	1	12
1946	1	1	1	1	1	1	1	7
1947	1	1	1	1	1	1	1	7
1948	1	1	1	1	1	1	1	7
1949	1	1	1	1	1	1	1	7
1950	1	1	1	1	1	1	1	7
1951	1	1	1	1	1	1	1	7
1952	1	1	3	6	6	3	1	21
1953	1	1	1	1	1	1	1	7
1954	1	1	1	1	1	1	1	7
1955	1	1	1	1	1	1	1	7
1956	1	1	1	6	5	2	1	17
1957	1	1	1	3	1	1	1	9
1958	1	1	3	6	5	2	1	19
1959	1	1	1	1	1	1	1	7
1960	1	1	1	1	1	1	1	7
1961	1	1	1	1	1	1	1	7
1962	1	1	1	1	1	1	1	7
1963	1	1	1	1	1	1	1	7
1964	1	1	1	1	1	1	1	7
1965	1	1	1	3	3	1	1	11
1966	1	1	1	1	1	1	1	7
1967	1	1	2	6	6	3	1	20
1968	1	1	1	1	1	1	1	7
1969	1	1	4	6	6	3	1	22
1970	1	1	1	1	1	1	1	7
1971	1	1	1	1	1	1	1	7
1972	1	1	1	1	1	1	1	7
1973	1	1	1	2	1	1	1	8
1974	1	1	1	3	1	1	1	9
1975	1	1	1	6	4	1	1	15
1976	1	1	1	1	1	1	1	7
1977	1	1	1	1	1	1	1	7
1978	1	1	1	1	1	1	1	7
1979	1	1	3	5	1	1	1	13
1980	1	1	2	6	6	3	1	20
1981	1	1	1	1	1	1	1	7
1982	1	1	3	6	6	3	1	21
1983	1	1	2	6	6	6	1	23
1984	1	1	1	1	1	1	1	7
1985	1	1	1	1	1	1	1	7
1986	1	1	4	6	3	1	1	17
1987	1	1	1	1	1	1	1	7
1988	1	1	1	1	1	1	1	7
1989	1	1	1	1	1	1	1	7
1990	1	1	1	1	1	1	1	7
1991	1	1	1	1	1	1	1	7
1992	1	1	1	1	1	1	1	7
1993	1	1	1	1	1	1	1	7
1994	1	1	1	1	1	1	1	7

73 - year Average: 10

Reservoir Change from Previous Month [fluctuation]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	31	5	21	57	-5	-17	-11
1923	6	2	2	8	-9	-16	-11
1924	-3	-8	-9	-10	-18	-18	-11
1925	19	13	14	19	-12	-20	-13
1926	3	14	16	-5	-23	-21	-15
1927	15	13	0	20	-12	-18	-13
1928	23	8	18	-3	-22	-19	-13
1929	2	0	4	10	-15	-15	-11
1930	12	1	6	21	-18	-15	-9
1931	-2	-13	-25	-34	-39	-10	5
1932	16	-1	10	22	-7	-22	-17
1933	3	-9	-12	32	-23	-41	-26
1934	22	-6	-16	-10	-20	-7	3
1935	26	37	15	37	-12	-19	-6
1936	17	9	21	17	-12	-17	-12
1937	21	5	11	16	-14	-16	-10
1938	0	0	4	27	1	-13	-11
1939	0	1	0	-6	-15	-14	-7
1940	8	2	13	11	-18	-15	-11
1941	0	0	9	23	-3	-14	-10
1942	0	2	5	24	1	-14	-10
1943	0	2	17	10	-10	-15	-10
1944	6	-1	5	5	-14	-16	-10
1945	11	2	3	22	-8	-15	-11
1946	0	1	3	4	-18	-16	-11
1947	3	-6	3	-8	-17	-14	-8
1948	-3	-7	8	28	-16	-21	-12
1949	12	5	8	6	-25	-28	-16
1950	13	10	17	19	-26	-27	-20
1951	12	-4	-5	2	-19	-14	-11
1952	10	0	20	12	0	-13	-11
1953	0	0	1	8	-8	-14	-10
1954	11	7	16	-1	-20	-16	-10
1955	1	-7	3	6	-17	-14	-8
1956	0	-1	13	20	-1	-14	-9
1957	2	-2	4	20	-17	-14	-10
1958	11	0	21	11	-2	-13	-9
1959	0	-1	-4	-7	-16	-13	-7
1960	6	0	5	2	-14	-11	-6
1961	0	-9	-12	-9	-17	-15	-9
1962	21	9	3	28	-13	-17	-12
1963	11	8	14	27	-8	-15	-11
1964	1	-5	-5	1	-16	-15	-8
1965	9	4	2	18	-3	-11	-9
1966	0	-2	-6	-9	-16	-17	-9
1967	23	4	15	17	0	-12	-12
1968	0	0	2	-4	-17	-12	-7
1969	0	0	23	9	0	-13	-11
1970	0	-3	-2	6	-15	-15	-9
1971	9	-1	-2	5	-13	-13	-8
1972	8	-2	-4	-5	-16	-12	-8
1973	18	0	9	13	-18	-15	-10
1974	0	0	3	19	-12	-14	-9
1975	12	0	8	24	-9	-14	-9
1976	-1	-6	-9	-10	-13	-10	-6
1977	-4	-9	-15	-14	-20	-17	-8
1978	32	11	15	35	6	-14	-6
1979	4	1	19	8	-16	-14	-10
1980	0	0	14	18	0	-13	-11
1981	2	2	2	-3	-14	-11	-8
1982	0	0	20	12	0	-12	-12
1983	0	0	17	15	0	0	-24
1984	0	-5	4	9	-15	-16	-10
1985	5	-1	-3	-6	-15	-12	-7
1986	0	1	24	7	-10	-14	-9
1987	2	-3	-4	-4	-14	-11	-6
1988	2	-7	-10	-8	-16	-13	-8
1989	14	13	15	8	-15	-13	-7
1990	3	-5	-4	-3	-19	-18	-9
1991	10	-4	20	14	-17	-13	-8
1992	7	1	8	-1	-22	-25	-20
1993	33	5	15	33	-5	-16	-11
1994	4	-3	4	-2	-17	-13	-8

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 8, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	6	6	6	5	2	3	34	238
1923	6	6	6	6	4	2	3	33	231
1924	5	4	4	4	2	2	3	24	168
1925	6	6	6	6	3	2	3	32	224
1926	6	6	6	5	1	1	3	28	196
1927	6	6	6	6	3	2	3	32	224
1928	6	6	6	5	1	2	3	29	203
1929	6	6	6	6	3	3	3	33	231
1930	6	6	6	6	2	3	4	33	231
1931	5	3	1	1	1	4	6	21	147
1932	6	5	6	6	4	1	2	30	210
1933	6	4	3	6	1	1	1	22	154
1934	6	4	2	4	2	4	6	28	196
1935	6	6	6	6	3	2	4	33	231
1936	6	6	6	6	3	2	3	32	224
1937	6	6	6	6	3	2	4	33	231
1938	6	6	6	6	6	3	3	36	648
1939	6	6	6	4	3	3	4	32	224
1940	6	6	6	6	2	3	3	32	352
1941	6	6	6	6	5	3	4	36	612
1942	6	6	6	6	6	3	4	37	666
1943	6	6	6	6	4	3	4	35	525
1944	6	5	6	6	3	2	4	32	224
1945	6	6	6	6	4	3	3	34	408
1946	6	6	6	6	2	2	3	31	217
1947	6	4	6	4	2	3	4	29	203
1948	5	4	6	6	2	1	3	27	189
1949	6	6	6	6	1	1	2	28	196
1950	6	6	6	6	1	1	2	28	196
1951	6	5	5	6	2	3	3	30	210
1952	6	6	6	6	6	3	3	36	756
1953	6	6	6	6	4	3	4	35	245
1954	6	6	6	5	2	2	4	31	217
1955	6	4	6	6	2	3	4	31	217
1956	6	5	6	6	5	3	4	35	595
1957	6	5	6	6	2	3	4	32	288
1958	6	6	6	6	5	3	4	36	684
1959	6	5	5	4	2	3	4	29	203
1960	6	6	6	6	3	3	4	34	238
1961	6	4	3	4	2	3	4	26	182
1962	6	6	6	6	3	2	3	32	224
1963	6	6	6	6	4	3	3	34	238
1964	6	5	5	6	2	3	4	31	217
1965	6	6	6	6	5	3	4	36	396
1966	6	5	4	4	2	2	4	27	189
1967	6	6	6	6	6	3	3	36	720
1968	6	6	6	5	2	3	4	32	224
1969	6	6	6	6	6	3	3	36	792
1970	6	5	5	6	3	3	4	32	224
1971	6	5	5	6	3	3	4	32	224
1972	6	5	5	5	2	3	4	30	210
1973	6	6	6	6	2	3	4	33	264
1974	6	6	6	6	3	3	4	34	306
1975	6	6	6	6	4	3	4	35	525
1976	5	4	4	4	3	4	4	28	196
1977	5	4	3	3	2	2	4	23	161
1978	6	6	6	6	6	3	4	37	259
1979	6	6	6	6	2	3	4	33	429
1980	6	6	6	6	6	3	3	36	720
1981	6	6	6	5	3	3	4	33	231
1982	6	6	6	6	6	3	3	36	756
1983	6	6	6	6	6	6	1	37	851
1984	6	5	6	6	3	2	4	32	224
1985	6	5	5	4	3	3	4	30	210
1986	6	6	6	6	4	3	4	35	595
1987	6	5	5	5	3	3	4	31	217
1988	6	4	4	4	2	3	4	27	189
1989	6	6	6	6	3	3	4	34	238
1990	6	5	5	5	2	2	4	29	203
1991	6	5	6	6	2	3	4	32	224
1992	6	6	6	5	1	1	2	27	189
1993	6	6	6	6	5	2	3	34	238
1994	6	5	6	5	2	3	4	31	217

73 - year Average: 32 314.2
1929 - '34 Average: 194.8

Prepared by Kevin Long

Study 513 - Reservoirs Elevations Fish Habitat Analysis.xls - Don Pedro

11/17/1997

A2-195

C-032535

C—032535

STUDY: 199 SWRCB-513 DWRSIM. recirc818-h, 05 Sep 97
CP # 20, LAKE McCLURE, EOP SURFACE ELEVATION (FT)
Project: /1995C06H-SWRCB-513/20/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation 867'

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 5, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	677	677	693	709	754	771	768	820	861	851	835	825
1923	808	808	808	808	808	808	814	836	838	825	807	795
1924	794	794	795	795	797	796	794	794	779	761	744	733
1925	730	736	742	748	773	781	795	817	820	801	781	767
1926	764	764	765	767	779	782	801	794	791	782	773	763
1927	760	761	765	766	772	775	769	799	810	800	794	793
1928	792	793	798	803	806	805	797	807	801	790	784	780
1929	778	776	776	775	778	780	777	779	777	777	780	773
1930	770	769	769	768	768	763	764	763	767	767	770	768
1931	765	765	766	766	768	767	766	766	749	726	707	692
1932	688	689	717	732	774	779	779	804	825	810	792	777
1933	773	771	771	774	774	775	774	779	797	778	761	749
1934	746	745	749	757	767	776	780	772	760	737	720	706
1935	702	709	717	740	749	758	794	825	844	827	809	796
1936	792	793	794	801	808	817	833	854	857	842	826	814
1937	808	808	808	808	808	820	825	859	865	849	833	821
1938	808	808	808	808	808	820	836	859	867	864	851	840
1939	808	808	808	808	808	814	824	821	806	786	769	758
1940	758	759	760	788	808	820	829	851	851	830	812	798
1941	794	794	808	808	808	820	825	859	867	860	846	836
1942	808	808	808	808	808	815	824	842	867	857	847	837
1943	808	808	808	808	808	820	834	852	853	837	821	809
1944	805	805	806	808	808	815	807	825	825	807	789	773
1945	770	777	784	789	808	820	825	841	852	837	822	809
1946	808	808	808	808	808	808	813	825	841	836	816	796
1947	779	785	795	800	805	809	811	822	812	794	776	766
1948	764	765	766	768	768	763	761	781	800	777	756	736
1949	730	730	731	733	734	743	750	771	767	734	705	680
1950	672	671	671	685	703	704	722	747	745	709	673	637
1951	627	734	801	808	808	814	814	816	809	783	759	740
1952	734	735	752	790	798	820	832	859	867	861	847	837
1953	808	808	808	808	808	806	806	800	805	785	763	745
1954	739	739	740	744	753	766	777	794	780	748	720	697
1955	690	688	693	704	707	705	695	723	734	706	678	657
1956	647	647	774	808	808	814	817	842	863	856	841	831
1957	808	808	808	808	808	811	804	814	822	799	779	763
1958	758	759	764	771	785	809	833	859	867	859	845	835
1959	808	808	808	808	808	810	815	813	801	778	761	752
1960	750	748	748	749	763	771	783	795	790	772	757	745
1961	742	742	746	746	749	750	753	753	742	718	697	682
1962	678	679	682	685	739	749	769	782	798	776	754	734
1963	730	730	731	743	782	783	785	807	820	804	784	769
1964	765	772	775	780	781	779	775	781	776	754	731	720
1965	714	719	779	808	808	810	817	832	847	837	824	813
1966	808	808	808	808	808	811	819	825	808	781	759	743
1967	737	739	769	783	788	812	829	859	867	867	855	840
1968	808	808	808	808	808	809	808	808	796	774	757	743
1969	738	743	753	808	808	820	840	859	867	865	851	840
1970	808	808	808	808	808	819	810	820	816	792	770	754
1971	749	752	764	774	779	781	775	782	793	768	745	726
1972	720	721	730	737	743	754	751	764	763	735	714	702
1973	699	702	713	732	764	779	779	824	833	812	793	779
1974	775	788	800	808	808	820	825	849	857	839	824	811
1975	807	807	808	808	808	820	813	837	865	850	835	825
1976	808	808	808	808	808	809	804	803	790	772	759	748
1977	746	745	743	743	742	737	723	705	689	651	626	626
1978	625	625	641	692	737	776	801	839	867	867	855	840
1979	808	808	808	808	808	820	820	850	851	832	816	804
1980	800	801	804	808	808	820	825	844	865	861	848	838
1981	808	807	807	808	808	810	815	824	817	799	783	774
1982	771	781	795	808	808	820	840	859	867	862	849	840
1983	808	808	808	808	808	820	827	859	867	867	863	840
1984	808	808	808	808	808	816	815	832	826	802	780	765
1985	762	767	771	774	777	781	793	803	794	772	755	742
1986	740	744	753	764	808	820	829	851	863	847	832	821
1987	808	807	807	807	808	810	814	814	803	786	773	764
1988	761	763	765	770	774	779	782	784	774	757	739	728
1989	725	724	727	728	732	753	773	782	777	759	742	731
1990	732	733	734	737	741	749	759	756	743	723	702	687
1991	682	681	680	679	678	705	707	731	748	730	713	698
1992	695	697	698	701	720	728	745	747	731	714	692	677
1993	672	674	682	744	764	788	796	835	855	847	833	822
1994	808	807	808	808	808	810	811	815	806	790	775	766

YEAR	Difference from Maximum Reservoir Elevation [DFMRE]							Reservoir Elevation Scoring								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Scoring								Largemouth Bass Reservoir Habitat Index
	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	96	99	47	6	16	32	42	1	1	1	4	2	1	1	11	17	-3	52	41	-10	-16	-10	6	5	6	6	4	2	4	33	363
1923	59	53	31	29	42	60	72	1	1	1	1	1	1	1	7	0	6	22	2	-13	-18	-12	6	6	6	6	3	2	3	32	224
1924	71	73	73	88	106	123	134	1	1	1	1	1	1	1	7	-1	-2	0	-15	-18	-17	-11	5	5	6	3	2	2	3	26	182
1925	86	72	50	47	66	86	100	1	1	1	1	1	1	1	7	8	14	22	3	-19	-20	-14	6	6	6	6	2	2	3	31	217
1926	85	66	73	76	85	94	104	1	1	1	1	1	1	1	7	3	19	-7	-3	-9	-9	-10	6	6	4	5	4	4	4	33	231
1927	92	98	68	57	67	73	74	1	1	1	1	1	1	1	7	3	-6	30	11	-10	-6	-1	6	4	6	6	4	4	5	35	245
1928	62	70	60	66	77	83	87	1	1	1	1	1	1	1	7	-1	-8	10	-6	-11	-6	-4	5	4	6	4	3	4	5	31	217
1929	87	90	88	90	90	87	94	1	1	1	1	1	1	1	7	2	-3	2	-2	0	3	-7	6	5	6	5	6	6	4	38	266
1930	104	103	104	100	100	97	99	1	1	1	1	1	1	1	7	-5	1	-1	4	0	3	-2	5	6	5	6	6	6	5	39	273
1931	100	101	101	118	141	160	175	1	1	1	1	1	1	1	7	-1	-1	0	-17	-23	-19	-15	5	5	6	2	1	2	3	24	168
1932	88	88	63	42	57	75	90	1	1	1	1	1	1	1	7	5	0	25	21	-15	-18	-15	6	6	6	6	3	2	3	32	224
1933	92	93	88	70	89	106	118	1	1	1	1	1	1	1	7	1	-1	5	18	-19	-17	-12	6	5	6	6	2	2	3	30	210
1934	91	87	95	107	130	147	161	1	1	1	1	1	1	1	7	9	4	-8	-12	-23	-17	-14	6	6	4	3	1	2	3	25	175
1935	109	73	42	23	40	58	71	1	1	1	1	1	1	1	7	9	36	31	19	-17	-18	-13	6	6	6	6	2	2	3	31	217
1936	50	34	13	10	25	41	53	1	1	3	3	1	1	1	11	9	16	21	3	-15	-16	-12	6	6	6	6	3	2	3	32	352
1937	47	42	8	2	18	34	46	1	1	4	5	2	1	1	15	12	5	34	6	-16	-16	-12	6	6	6	6	2	2	3	31	465
1938	47	31	8	0	3	16	27	1	1	4	6	5	2	1	20	12	16	23	8	-3	-13	-11	6	6	6	6	5	3	3	35	700
1939	53	43	46	61	81	98	109	1	1	1	1	1	1	1	7	6	10	-3	-15	-20	-17	-11	6	6	5	3	2	2	3	27	189
1940	47	38	16	16	37	55	69	1	1	2	2	1	1	1	9	12	9	22	0	-21	-18	-14	6	6	6	6	1	2	3	30	270
1941	47	42	8	0	7	21	31	1	1	4	6	4	1	1	18	12	5	34	8	-7	-14	-10	6	6	6	6	4	3	4	35	630
1942	52	43	25	0	10	20	30	1	1	1	6	3	1	1	14	7	9	18	25	-10	-10	-10	6	6	6	6	4	4	4	36	504
1943	47	33	15	14	30	46	58	1	1	2	3	1	1	1	10	12	14	18	1	-16	-16	-12	6	6	6	6	2	2	3	31	310
1944	52	60	42	42	60	78	94	1	1	1	1	1	1	1	7	7	-8	18	0	-18	-18	-16	6	4	6	6	2	2	2	28	196
1945	47	42	26	15	30	45	58	1	1	1	2	1	1	1	8	12	5	16	11	-15	-15	-13	6	6	6	6	3	3	3	33	264
1946	54	42	26	31	51	71	86	1	1	1	1	1	1	1	7	5	12	16	-5	-20	-20	-15	6	6	6	5	2	2	3	30	210
1947	58	56	45	55	73	91	101	1	1	1	1	1	1	1	7	4	2	11	-10	-18	-18	-10	6	6	6	4	2	2	4	30	210
1948	104	106	86	67	90	111	131	1	1	1	1	1	1	1	7	-3	-2	20	19	-23	-21	-20	5	5	6	6	1	1	2	26	182
1949	124	117	96	100	133	162	187	1	1	1	1	1	1	1	7	9	7	21	-4	-33	-29	-25	6	6	6	5	1	1	1	26	182
1950	163	145	120	122	158	194	230	1	1	1	1	1	1	1	7	1	18	25	-2	-36	-36	-36	6	6	6	5	1	1	1	26	182
1951	53	53	51	58	84	108	127	1	1	1	1	1	1	1	7	6	0	2	-7	-26	-24	-19	6	6	6	4	1	1	2	26	182
1952	47	35	8	0	6	20	30	1	1	4	6	4	1	1	18	22	12	27	8	-6	-14	-10	6	6	6	6	4	3	4	35	630
1953	61	61	67	62	82	104	122	1	1	1	1	1	1	1	7	-2	0	-6	5	-20	-22	-18	5	6	4	6	2	1	2	26	182
1954	101	90	73	87	119	147	170	1	1	1	1	1	1	1	7	13	11	17	-14	-32	-28	-23	6	6	6	3	1	1	1	24	168
1955	162	172	144	133	161	189	210	1	1	1	1	1	1	1	7	-2	-10	28	11	-28	-28	-21	5	4	6	6	1	1	1	24	168
1956	53	50	25	4	11	26	36	1	1	1	5	3	1	1	13	6	3	25	21	-7	-15	-10	6	6	6	6	4	3	4	35	455
1957	56	63	53	45	68	88	104	1	1	1	1	1	1	1	7	3	-7	10	8	-23	-20	-16	6	4	6	6	1	2	2	27	189
1958	58	34	8	0	8	22	32	1	1	4	6	4	1	1	18	24	24	26	8	-8	-14	-10	6	6	6	6	4	3	4	35	630
1959	57	52	54	66	89	106	115	1	1	1	1	1	1	1	7	2	5	-2	-12	-23	-17	-9	6	6	5	3	1	2	4	27	189
1960	96	84	72	77	95	110	122	1	1	1	1	1	1	1	7	8	12	12	-5	-18	-15	-12	6	6	6	5	2	3	3	31	217
1961	117	114	114	125	149	170	185	1	1	1	1	1	1	1	7	1	3	0	-11	-24	-21	-15	6	6	6	3	1	1	3	26	182
1962	118	98	85	69	91	113	133	1	1	1	1	1	1	1	7	10	20	13	16	-22	-22	-20	6	6	6	6	1	1	2	28	196
1963	84	82	60	47	63	83	98	1	1	1	1	1	1	1	7	1	2	22	13	-16	-20	-15	6	6	6	6	2	2	3	31	217
1964	88	92	86	91	113	136	147	1	1	1	1	1	1	1	7	-2	-4	6	-5	-22	-23	-11	5	5	6	5	1	1	3	26	182
1965	57	50	35	20	30	43	54	1	1	1	1	1	1	1	7	2	7	15	15	-10	-13	-11	6	6	6	6	4	3	3	34	238
1966	56	48	42	59	86	108	124	1	1	1	1	1	1	1	7	3	8	6	-17	-27	-22	-16	6	6	6	2	1	1	2	24	168
1967	55	38	8	0	0	12	27	1	1	4	6	6	3	1	22	24	17	30	8	0	-12	-15	6	6	6	6	6	3	3	36	792
1968	58	59	59	71	93	110	124	1	1	1	1	1	1	1	7	1	-1	0	-12	-22	-17	-14	6	5	6	3	1	2	3	26	182
1969	47	27	8	0	2	16	27	1	1	4	6	5	2	1	20	12	20	19	8	-2	-14	-11	6	6	6	6	5	3	3	35	700
1970	48	57	47	51	75	97	113	1	1	1	1	1	1	1	7	11	-9	10	-4	-24	-22	-16	6	4	6	5	1	1	2	25	175
1971	86	92	85	74	99	122	141	1	1	1	1	1	1	1	7	2	-6	7	11	-25	-23	-19	6	4	6	6	1	1	2	26	182
1972	113	116	103	104	132	153	165	1	1	1	1	1	1	1	7	11	-3	13	-1	-28	-21	-12	6	5	6	5	1	1	3	27	189
1973	88	88	43	34	55	74	88	1	1	1	1	1	1	1	7	15	0	45	9	-21	-19	-14	6	6	6	6	1	2	3	30	210
1974	47	42	18	10	28	43	56	1	1	2	3	1	1	1	10	12	5	24	8	-18	-15	-13	6	6	6	6	2	3	3	32	320
1975	47	54	30	2	17	32	42	1	1	1	5	2	1	1	12	12	-7	24	28	-15	-15	-10	6	4	6	6	3	3	4	32	384
1976	58	63	64	77	95	108	119	1	1	1	1	1	1	1	7	1	-5	-1	-13	-18	-13	-11	6	5	5	3	2	3	3	27	189
1977	130	144	162	178	216	241	241	1	1	1	1	1	1	1	7	-5	-14	-18	-16	-38	-25	0	5	3	2	2	1	1	6	20	140
1978	91	66	28	0	0	12	27	1	1	1	6	6	3	1	19	39	25	38	28	0	-12	-15	6	6	6	6	6	3	3	36	684
1979	47	47	17	16	35	51	63	1	1	2	2	1	1	1	9	12	0	30	1	-19	-16	-12	6	6	6	6	2	2	3	31	279
1980	47	42	23	2	6	19	29	1	1	1	5	4	2	1	15	12	5	19	21	-4	-13	-10	6	6	6	6	5	3	4	36	540
1981	57	52	43	50	68	84	93	1	1	1	1	1	1	1	7	2	5	9	-7	-18	-16	-9	6	6	6	4	2	2	4	30	210
1982	47	27	8	0	5	18	27	1	1	4	6	4	2	1	19	12	20	19	8	-5	-13	-9	6	6	6	6	5	3	4	36	684
1983	47	40	8	0	0	4	27	1	1	4	6	6	5	1	24	12	7	32	8	0	-4	-23	6	6	6	6	6	5	1	36	864
1984	51	52	35	41	65	87	102	1	1	1	1	1	1	1	7	8	-1	17	-6	-24	-22	-15	6	5	6	4	1	1	3	26	182
1985	86	74	64	73	95	112	125	1	1	1	1	1	1	1	7	4	12	10	-9	-22	-17	-13	6	6	6	4	1	2	3	28	196
1986	47	38	16	4	20	35	46	1	1	2	5	1	1	1	12	12	9	22	12	-16	-15	-11	6	6	6	6	2	3	3	32	384
1987	57	53	53	64	81	94	103	1	1	1	1	1	1	1	7	2	4	0	-11	-17	-13	-9	6	6	6	3	2	3	4	30	210
1988	88	85	83	93	110	128	139	1	1	1	1	1	1	1	7	5	3	2	-10	-17	-18	-11	6	6	6	4	2	2	3	29	203
1989	114	94	85	90	108	125	136	1	1	1	1	1	1	1	7	21	20	9	-5	-18	-17	-11	6	6	6	5	2	2	3	30	210
1990	118	108	111	124	144	165	180	1	1	1	1	1	1	1	7	8	10	-3	-13	-20	-21	-15	6	6	5	3	2	1	3	26	182
1991	162	160	136	119	137	154	169	1	1	1	1	1	1	1	7	27	2	24	17	-18	-17	-15	6	6	6	6	2	2	3	31	217
1992	139	122	120	136	153	175	190	1	1	1	1	1	1	1	7	8	17	2	-16	-17	-22	-15	6	6	6	2	2	1	3	26	182
1993	79	71	32	12	20	34	45	1	1	1	3	1	1	1	9	24	8	39	20	-8	-14	-11	6	6	6	6	4	3	3	34	306
1994	57	56	52	61	77	92	101	1	1	1	1	1	1	1	7	2	1	4	-9	-16	-15	-9	6	6	6	4	2	3	4	31	217
														73 - year Average:	9														73 - year Average:	30	294.0
																													1929 - '34 Average:		219.3

A2-196

C-032536

C—0 3 2 5 3 6

A2-197

STUDY 1: JH-SWRCB-513 DWRSIM recirc818-h, 05 Sep 97
CP # 18, MILLERTON LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06H-SWRCB-513/18/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 576'

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	465	465	489	514	516	540	540	564	566	537	459	459	36	36	12	10	39	117	117
1923	459	459	488	513	504	473	500	499	470	459	459	459	103	76	77	106	117	117	117
1924	459	459	472	485	466	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1925	459	459	470	481	486	459	466	464	459	459	459	459	117	110	112	117	117	117	117
1926	459	459	472	484	487	459	498	498	459	459	459	459	117	78	78	117	117	117	117
1927	459	460	483	505	529	521	512	514	519	459	459	459	55	64	62	57	117	117	117
1928	459	465	487	506	498	483	478	459	459	459	459	459	93	98	117	117	117	117	117
1929	459	459	470	483	465	459	461	459	459	459	459	459	117	115	117	117	117	117	117
1930	459	459	468	481	463	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1931	459	459	468	479	461	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1932	459	459	483	500	527	503	486	482	499	459	459	459	73	90	94	77	117	117	117
1933	459	459	467	481	475	459	467	465	459	459	459	459	117	109	111	117	117	117	117
1934	459	459	475	492	475	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1935	459	459	473	498	492	459	499	518	524	459	459	459	117	77	58	52	117	117	117
1936	459	459	474	494	539	529	538	557	530	459	459	459	47	38	19	46	117	117	117
1937	459	459	478	503	560	564	576	576	557	493	459	459	12	0	0	19	83	117	117
1938	459	459	518	558	560	542	529	467	572	568	503	459	34	47	109	4	8	73	117
1939	459	459	477	490	476	459	465	470	459	459	459	459	117	111	106	117	117	117	117
1940	459	459	471	514	515	506	493	501	469	459	459	459	70	83	75	107	117	117	117
1941	459	459	502	539	560	567	551	543	566	546	469	459	9	25	33	10	30	107	117
1942	459	459	494	524	526	522	520	532	568	532	459	459	54	56	44	8	44	117	117
1943	459	459	484	534	533	576	574	576	542	476	459	459	0	2	0	34	100	117	117
1944	459	459	475	487	487	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1945	459	466	489	500	548	548	538	536	540	488	459	459	28	38	40	36	88	117	117
1946	459	460	495	516	490	469	480	504	463	459	459	459	107	96	72	113	117	117	117
1947	459	462	491	512	505	468	470	463	459	459	459	459	108	106	113	117	117	117	117
1948	459	459	473	488	476	471	492	459	459	459	459	459	105	84	117	117	117	117	117
1949	459	459	470	483	476	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1950	459	459	474	493	496	459	459	462	459	459	459	459	117	117	114	117	117	117	117
1951	459	496	557	560	553	537	526	506	484	459	459	459	39	50	70	92	117	117	117
1952	459	459	494	531	545	548	552	526	576	567	502	459	28	24	50	0	9	74	117
1953	459	459	483	506	484	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1954	459	459	475	495	489	459	459	475	459	459	459	459	117	117	101	117	117	117	117
1955	459	459	481	503	493	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1956	459	459	559	560	560	576	568	529	555	529	459	459	0	8	47	21	47	117	117
1957	459	459	474	486	479	461	468	471	459	459	459	459	115	108	105	117	117	117	117
1958	459	459	486	512	524	530	554	568	574	543	474	459	46	22	8	2	33	102	117
1959	459	459	477	486	490	459	473	479	459	459	459	459	117	103	97	117	117	117	117
1960	459	459	459	463	471	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1961	459	459	468	473	459	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1962	459	459	464	470	522	494	471	493	503	459	459	459	82	105	83	73	117	117	117
1963	459	459	485	483	534	526	549	544	551	521	459	459	50	27	32	25	55	117	117
1964	459	476	504	515	504	481	472	459	459	459	459	459	95	104	117	117	117	117	117
1965	459	459	496	540	535	524	529	511	514	459	459	459	52	47	65	62	117	117	117
1966	459	473	514	529	500	459	473	480	459	459	459	459	117	103	96	117	117	117	117
1967	459	459	505	531	549	555	562	514	570	574	522	470	21	14	62	6	2	54	106
1968	459	463	488	495	491	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1969	459	459	475	557	524	521	467	469	576	576	524	463	55	109	107	0	0	52	113
1970	459	464	495	544	555	541	529	518	488	459	459	459	35	47	58	88	117	117	117
1971	459	460	498	520	510	468	462	459	459	459	459	459	108	114	117	117	117	117	117
1972	459	459	490	510	500	468	459	459	459	459	459	459	108	117	117	117	117	117	117
1973	459	459	483	512	532	523	500	528	538	462	459	459	53	76	48	38	114	117	117
1974	459	470	511	545	526	523	536	548	554	490	459	459	53	40	28	22	86	117	117
1975	459	459	481	494	503	477	483	479	515	459	459	459	99	93	97	61	117	117	117
1976	459	469	489	499	486	473	459	459	459	459	459	459	103	117	117	117	117	117	117
1977	459	459	459	459	459	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1978	459	459	475	524	556	552	510	498	566	559	508	463	24	66	78	10	17	68	113
1979	459	459	479	504	496	496	484	497	462	459	459	459	80	92	79	114	117	117	117
1980	459	459	476	555	560	558	566	550	561	567	514	459	18	10	26	15	9	62	117
1981	459	459	466	477	478	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1982	459	459	499	533	546	561	546	561	569	564	514	477	15	30	15	7	12	62	99
1983	459	506	560	560	513	484	467	467	483	576	571	568	92	109	109	93	0	5	8
1984	560	560	560	560	560	562	549	538	509	459	459	459	14	27	38	67	117	117	117
1985	459	459	477	505	497	466	486	483	459	459	459	459	110	90	93	117	117	117	117
1986	459	463	494	520	550	552	574	565	576	546	459	459	24	2	11	0	30	117	117
1987	459	459	459	462	459	459	459	468	459	459	459	459	117	117	108	117	117	117	117
1988	459	459	468	491	462	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1989	459	459	462	472	459	459	461	459	459	459	459	459	117	115	117	117	117	117	117
1990	459	459	460	484	459	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1991	459	459	459	463	459	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1992	459	459	459	461	459	459	459	459	459	459	459	459	117	117	117	117	117	117	117
1993	459	459	461	523	531	539	532	549	566	549	462	459	37	44	27	10	27	114	117
1994	459	459	468	471	459	459	459	459	459	459	459	459	117	117	117	117	117	117	117

Reservoir Elevation S[illegible]ble:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	1	1	3	3	1	1	1	11	24	0	24	2	-29	-78	0	6	6	6	6	1	1	6	32	352
1923	1	1	1	1	1	1	1	7	-31	27	-1	-29	-11	0	0	1	6	5	1	3	6	6	28	196
1924	1	1	1	1	1	1	1	7	-7	0	0	0	0	0	0	4	6	6	6	6	6	6	40	280
1925	1	1	1	1	1	1	1	7	-27	7	-2	-5	0	0	0	1	6	5	5	6	6	6	35	245
1926	1	1	1	1	1	1	1	7	-28	39	0	-39	0	0	0	1	6	6	1	6	6	6	32	224
1927	1	1	1	1	1	1	1	7	-8	-9	2	5	-60	0	0	4	4	6	6	1	6	6	33	231
1928	1	1	1	1	1	1	1	7	-15	-5	-19	0	0	0	0	3	5	2	6	6	6	6	34	238
1929	1	1	1	1	1	1	1	7	-6	2	-2	0	0	0	0	4	6	5	6	6	6	6	39	273
1930	1	1	1	1	1	1	1	7	-4	0	0	0	0	0	0	5	6	6	6	6	6	6	41	287
1931	1	1	1	1	1	1	1	7	-2	0	0	0	0	0	0	5	6	6	6	6	6	6	41	287
1932	1	1	1	1	1	1	1	7	-24	-17	-4	17	-40	0	0	1	2	5	6	1	6	6	27	189
1933	1	1	1	1	1	1	1	7	-16	8	-2	-6	0	0	0	2	6	5	4	6	6	6	35	245
1934	1	1	1	1	1	1	1	7	-16	0	0	0	0	0	0	2	6	6	6	6	6	6	38	266
1935	1	1	1	1	1	1	1	7	-33	40	19	6	-65	0	0	1	6	6	6	1	6	6	32	224
1936	1	1	2	1	1	1	1	8	-10	9	19	-27	-71	0	0	4	6	6	1	1	6	6	30	240
1937	3	6	6	2	1	1	1	20	4	12	0	-19	-64	-34	0	6	6	6	2	1	1	6	28	560
1938	1	1	1	5	4	1	1	14	-18	-13	-62	105	-4	-65	-44	2	3	1	6	5	1	1	19	266
1939	1	1	1	1	1	1	1	7	-17	6	5	-11	0	0	0	2	6	6	3	6	6	6	35	245
1940	1	1	1	1	1	1	1	7	-9	-13	8	-32	-10	0	0	4	3	6	1	4	6	6	30	210
1941	4	1	1	3	1	1	1	12	7	-16	-8	23	-20	-77	-10	6	2	4	6	2	1	4	25	300
1942	1	1	1	4	1	1	1	10	-4	-2	12	36	-36	-73	0	5	5	6	6	1	1	6	30	300
1943	6	5	6	1	1	1	1	21	43	-2	2	-34	-66	-17	0	6	5	6	1	1	2	6	27	567
1944	1	1	1	1	1	1	1	7	-28	0	0	0	0	0	0	1	6	6	6	6	6	6	37	259
1945	1	1	1	1	1	1	1	7	2	-10	-2	4	-52	-29	0	6	4	5	6	1	1	6	29	203
1946	1	1	1	1	1	1	1	7	-21	11	24	-41	-4	0	0	1	6	6	1	5	6	6	31	217
1947	1	1	1	1	1	1	1	7	-37	2	-7	-4	0	0	0	1	6	4	5	6	6	6	34	238
1948	1	1	1	1	1	1	1	7	-5	21	-33	0	0	0	0	5	6	1	6	6	6	6	36	252
1949	1	1	1	1	1	1	1	7	-17	0	0	0	0	0	0	2	6	6	6	6	6	6	38	266
1950	1	1	1	1	1	1	1	7	-37	0	3	-3	0	0	0	1	6	6	5	6	6	6	36	252
1951	1	1	1	1	1	1	1	7	-16	-11	-20	-22	-25	0	0	2	3	2	1	1	6	6	21	147
1952	1	1	1	6	4	1	1	15	3	4	-26	50	-9	-65	-43	6	6	1	6	4	1	1	25	375
1953	1	1	1	1	1	1	1	7	-25	0	0	0	0	0	0	1	6	6	6	6	6	6	37	259
1954	1	1	1	1	1	1	1	7	-30	0	16	-16	0	0	0	1	6	6	2	6	6	6	33	231
1955	1	1	1	1	1	1	1	7	-34	0	0	0	0	0	0	1	6	6	6	6	6	6	37	259
1956	6	4	1	1	1	1	1	15	16	-8	-39	26	-26	-70	0	6	4	1	6	1	1	6	25	375
1957	1	1	1	1	1	1	1	7	-18	7	3	-12	0	0	0	2	6	6	3	6	6	6	35	245
1958	1	1	4	5	1	1	1	14	6	24	14	6	-31	-69	-15	6	6	6	6	1	1	3	29	406
1959	1	1	1	1	1	1	1	7	-31	14	6	-20	0	0	0	1	6	6	2	6	6	6	33	231
1960	1	1	1	1	1	1	1	7	-12	0	0	0	0	0	0	3	6	6	6	6	6	6	39	273
1961	1	1	1	1	1	1	1	7	0	0	0	0	0	0	0	6	6	6	6	6	6	6	42	294
1962	1	1	1	1	1	1	1	7	-28	-23	22	10	-44	0	0	1	1	6	6	1	6	6	27	189
1963	1	1	1	1	1	1	1	7	-8	23	-5	7	-30	-62	0	4	6	5	6	1	1	6	29	203
1964	1	1	1	1	1	1	1	7	-23	-9	-13	0	0	0	0	1	4	3	6	6	6	6	32	224
1965	1	1	1	1	1	1	1	7	-11	5	-18	3	-55	0	0	3	6	2	6	1	6	6	30	210
1966	1	1	1	1	1	1	1	7	-41	14	7	-21	0	0	0	1	6	6	1	6	6	6	32	224
1967	1	3	1	4	5	1	1	16	6	7	-48	56	4	-52	-52	6	6	1	6	6	1	1	27	432
1968	1	1	1	1	1	1	1	7	-32	0	0	0	0	0	0	1	6	6	6	6	6	6	37	259
1969	1	1	1	6	6	1	1	17	-3	-54	2	107	0	-52	-61	5	1	6	6	6	1	1	26	442
1970	1	1	1	1	1	1	1	7	-14	-12	-11	-30	-29	0	0	3	3	3	1	1	6	6	23	161
1971	1	1	1	1	1	1	1	7	-42	-6	-3	0	0	0	0	1	4	5	6	6	6	6	34	238
1972	1	1	1	1	1	1	1	7	-32	-9	0	0	0	0	0	1	4	6	6	6	6	6	35	245
1973	1	1	1	1	1	1	1	7	-9	-23	28	10	-76	-3	0	4	1	6	6	1	5	6	29	203
1974	1	1	1	1	1	1	1	7	-3	13	12	6	-64	-31	0	5	6	6	6	1	1	6	31	217
1975	1	1	1	1	1	1	1	7	-26	6	-4	36	-56	0	0	1	6	5	6	1	6	6	31	217
1976	1	1	1	1	1	1	1	7	-13	-14	0	0	0	0	0	3	3	6	6	6	6	6	36	252
1977	1	1	1	1	1	1	1	7	0	0	0	0	0	0	0	6	6	6	6	6	6	6	42	294
1978	1	1	1	3	2	1	1	10	-4	-42	-12	68	-7	-51	-45	5	1	3	6	4	1	1	21	210
1979	1	1	1	1	1	1	1	7	0	-12	13	-35	-3	0	0	6	3	6	1	5	6	6	33	231
1980	2	3	1	2	4	1	1	14	-2	8	-16	11	6	-53	-55	5	6	2	6	6	1	1	27	378
1981	1	1	1	1	1	1	1	7	-17	0	0	0	0	0	0	2	6	6	6	6	6	6	38	266
1982	2	1	2	4	3	1	1	14	15	-15	15	8	-5	-50	-37	6	3	6	6	5	1	1	28	392
1983	1	1	1	1	6	4	4	18	-29	-17	0	16	93	-5	-3	1	2	6	6	6	5	5	31	558
1984	3	1	1	1	1	1	1	9	2	-13	-11	-29	-50	0	0	6	3	3	1	1	6	6	26	234
1985	1	1	1	1	1	1	1	7	-31	20	-3	-24	0	0	0	1	6	5	1	6	6	6	31	217
1986	1	5	3	6	1	1	1	18	2	22	-9	11	-30	-87	0	6	6	4	6	1	1	6	30	540
1987	1	1	1	1	1	1	1	7	0	0	9	-9	0	0	0	6	6	6	4	6	6	6	40	280
1988	1	1	1	1	1	1	1	7	-3	0	0	0	0	0	0	5	6	6	6	6	6	6	41	287
1989	1	1	1	1	1	1	1	7	0	2	-2	0	0	0	0	6	6	5	6	6	6	6	41	287
1990	1	1	1	1	1	1	1	7	0	0	0	0	0	0	0	6	6	6	6	6	6	6	42	294
1991	1	1	1	1	1	1	1	7	0	0	0	0	0	0	0	6	6	6	6	6	6	6	42	294
1992	1	1	1	1	1	1	1	7	0	0	0	0	0	0	0	6	6	6	6	6	6	6	42	294
1993	1	1	1	3	1	1	1	9	8	-7	17	17	-17	-87	-3	6	4	6	6	2	1	5	30	270
1994	1	1	1	1	1	1	1	7	0	0	0	0	0	0	0	6	6	6	6	6	6	6	42	294

73 - year Average (elevation score SUM): 9

73 - year Average (fluctuation score SUM): 33 — Product: 278.7
1929 - '34 Average: 257.8

STUDY 1995C06H-SWRCB-513 DWRSIM: recirc818-h, 05 Sep 97
CP # 12, SWP SAN LUIS RESERVOIR, EOP SURFACE ELEVATION (FT)
Project /1995C06H-SWRCB-513/12/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 544'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP	Elev. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluct. MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	422	446	481	524	539	542	539	532	511	483	419	434	2	5	12	33	81	125	110	5	4	3	1	1	1	1	16	3	-3	-7	-21	-48	-44	15	6	5	4	1	1	1	6	24	384
1923	465	465	490	504	515	522	524	510	479	455	420	413	22	20	34	65	89	124	131	1	1	1	1	1	1	1	7	7	2	-14	-31	-24	-35	-7	6	6	3	1	1	1	4	22	154
1924	430	444	474	520	540	540	531	518	503	469	436	426	4	13	26	41	75	108	118	5	3	1	1	1	1	1	13	0	-9	-13	-15	-34	-33	-10	6	4	3	3	1	1	4	22	286
1925	439	449	487	519	544	544	540	523	471	428	378	365	0	4	21	73	116	166	179	6	5	1	1	1	1	1	16	0	-4	-17	-52	-43	-50	-13	6	5	2	1	1	1	3	19	304
1926	393	413	427	479	518	528	529	508	470	458	437	414	16	15	36	74	86	107	130	2	2	1	1	1	1	1	9	10	1	-21	-38	-12	-21	-23	6	6	1	1	3	1	1	19	171
1927	442	474	508	536	544	544	543	535	506	475	428	435	0	1	9	38	69	116	109	6	5	4	1	1	1	1	19	0	-1	-8	-29	-31	-47	7	6	5	4	1	1	1	6	24	456
1928	464	494	509	523	535	540	539	522	484	456	417	403	4	5	22	60	88	127	141	5	4	1	1	1	1	1	14	5	-1	-17	-38	-28	-39	-14	6	5	2	1	1	1	3	19	266
1929	416	446	477	518	532	542	530	514	498	486	444	434	2	14	30	46	58	100	110	5	3	1	1	1	1	1	13	10	-12	-16	-16	-12	-42	-10	6	3	2	2	3	1	4	21	273
1930	440	443	485	533	544	544	532	509	474	484	441	419	0	12	35	70	60	103	125	6	3	1	1	1	1	1	14	0	-12	-23	-35	-10	-23	-22	6	3	1	1	4	1	1	17	238
1931	439	455	485	529	544	544	534	518	498	487	426	413	0	10	26	46	77	118	131	6	3	1	1	1	1	1	14	0	-10	-16	-20	-31	-41	-13	6	4	2	2	1	1	3	19	266
1932	423	425	471	525	542	542	539	528	494	453	409	401	2	5	16	50	91	135	143	5	4	2	1	1	1	1	15	0	-3	-11	-34	-41	-44	-8	6	5	3	1	1	1	4	21	315
1933	413	423	434	486	509	519	517	505	479	451	409	403	25	27	39	65	93	135	141	1	1	1	1	1	1	1	7	10	-2	-12	-26	-28	-42	-6	6	5	3	1	1	1	4	21	147
1934	414	421	465	514	528	534	523	499	469	435	387	373	10	21	45	75	109	157	171	3	1	1	1	1	1	1	9	6	-11	-24	-30	-34	-48	-14	6	3	1	1	1	1	3	16	144
1935	381	388	406	469	483	517	524	515	486	460	417	413	27	20	29	58	84	127	131	1	1	1	1	1	1	1	7	34	7	-9	-29	-26	-43	-4	6	6	4	1	1	1	5	24	168
1936	446	464	490	522	533	539	539	527	497	464	416	418	5	5	17	47	80	128	126	4	4	2	1	1	1	1	14	6	0	-12	-30	-33	-48	2	6	6	3	1	1	1	6	24	336
1937	433	449	476	521	537	544	544	542	517	465	412	401	0	0	2	27	79	132	143	6	6	5	1	1	1	1	21	7	0	-2	-25	-52	-53	-11	6	6	5	1	1	1	3	23	483
1938	434	467	499	515	529	537	542	544	535	514	487	497	7	2	0	9	30	57	47	4	5	6	4	1	1	1	22	8	5	2	-9	-21	-27	10	6	6	6	4	1	1	6	30	660
1939	505	513	518	531	543	544	534	510	476	464	437	419	0	10	34	68	80	107	125	6	3	1	1	1	1	1	14	1	-10	-24	-34	-12	-27	-18	6	4	1	1	3	1	2	18	252
1940	428	434	434	494	529	535	535	509	473	426	348	358	9	9	35	71	118	196	186	4	4	1	1	1	1	1	13	6	0	-26	-36	-47	-78	10	6	6	1	1	1	1	6	22	286
1941	402	436	469	520	535	539	538	529	508	465	429	449	5	8	15	36	79	115	95	4	4	2	1	1	1	1	14	4	-3	-7	-21	-43	-36	20	6	5	4	1	1	1	6	24	336
1942	474	484	489	504	515	520	518	512	494	450	426	443	24	26	32	50	94	118	101	1	1	1	1	1	1	1	7	5	-2	-6	-18	-44	-24	17	6	5	4	2	1	1	6	25	175
1943	475	485	492	508	519	530	529	526	501	464	415	421	14	15	18	43	80	129	123	3	2	2	1	1	1	1	11	11	-1	-3	-25	-37	-49	6	6	5	5	1	1	1	6	25	275
1944	456	487	500	515	529	536	527	506	470	457	423	408	8	17	38	74	87	121	136	4	2	1	1	1	1	1	11	7	-9	-21	-36	-13	-34	-15	6	4	1	1	3	1	3	19	209
1945	426	462	497	523	536	541	539	526	495	464	412	404	3	5	18	49	80	132	140	5	4	2	1	1	1	1	15	5	-2	-13	-31	-31	-52	-8	6	5	3	1	1	1	4	21	315
1946	436	469	500	515	526	532	528	510	475	452	419	405	12	16	34	69	92	125	139	3	2	1	1	1	1	1	10	6	-4	-18	-35	-23	-33	-14	6	5	2	1	1	1	3	19	190
1947	430	462	494	521	533	541	528	498	455	432	413	398	3	16	46	89	112	131	146	5	2	1	1	1	1	1	12	8	-13	-30	-43	-23	-19	-15	6	3	1	1	1	2	3	17	204
1948	420	440	452	502	514	534	537	521	491	450	412	408	10	7	23	53	94	132	136	3	4	1	1	1	1	1	12	20	3	-16	-30	-41	-38	-4	6	6	2	1	1	1	5	22	264
1949	434	460	484	516	529	538	522	498	455	435	407	394	6	22	46	89	109	137	150	4	1	1	1	1	1	1	10	9	-16	-24	-43	-20	-28	-13	6	2	1	1	2	1	3	16	160
1950	406	421	436	489	524	531	524	501	465	436	412	406	13	20	43	79	108	132	138	3	1	1	1	1	1	1	9	7	-7	-23	-36	-29	-24	-6	6	4	1	1	1	1	4	18	162
1951	437	466	500	527	537	543	537	519	481	449	426	421	1	7	25	63	95	118	123	5	4	1	1	1	1	1	14	6	-6	-18	-38	-32	-23	-5	6	4	2	1	1	1	5	20	280
1952	449	476	505	521	530	534	532	534	524	501	480	483	10	12	10	20	43	64	61	3	3	3	1	1	1	1	13	4	-2	2	-10	-23	-21	3	6	5	6	4	1	1	6	29	377
1953	491	500	505	519	529	535	528	519	506	473	439	456	9	16	25	38	71	105	88	4	2	1	1	1	1	1	11	6	-7	-9	-13	-33	-34	17	6	4	4	3	1	1	6	25	275
1954	487	505	514	529	539	544	540	525	485	453	423	409	0	4	19	59	91	121	135	6	5	2	1	1	1	1	17	5	-4	-15	-40	-32	-30	-14	6	5	3	1	1	1	3	20	340
1955	440	468	496	515	527	535	524	505	473	465	432	418	9	20	39	71	79	112	126	4	1	1	1	1	1	1	10	8	-11	-19	-32	-8	-33	-14	6	3	2	1	4	1	3	20	200
1956	434	466	504	528	541	544	541	533	509	466	427	437	0	3	11	35	78	117	107	6	5	3	1	1	1	1	18	3	-3	-8	-24	-43	-39	10	6	5	4	1	1	1	6	24	432
1957	464	487	492	506	519	526	520	505	475	454	432	423	18	24	39	69	90	112	121	2	1	1	1	1	1	1	8	7	-6	-15	-30	-21	-22	-9	6	4	3	1	1	1	4	20	160
1958	455	484	512	527	539	542	539	531	518	493	471	474	2	5	13	26	51	73	70	5	4	3	1	1	1	1	16	3	-3	-8	-13	-25	-22	3	6	5	4	3	1	1	6	26	416
1959	482	491	496	510	522	530	519	497	462	451	432	425	14	25	47	82	93	112	119	3	1	1	1	1	1	1	9	8	-11	-22	-35	-11	-19	-7	6	3	1	1	3	2	4	20	180
1960	437	451	463	513	544	544	529	507	466	438	378	371	0	15	37	78	106	166	173	6	2	1	1	1	1	1	13	0	-15	-22	-41	-28	-60	-7	6	3	1	1	1	1	4	17	221
1961	401	437	471	515	544	544	527	496	458	440	426	404	0	17	48	86	104	118	140	6	2	1	1	1	1	1	13	0	-17	-31	-38	-18	-14	-22	6	2	1	1	2	3	1	16	208
1962	416	439	472	513	543	544	533	505	461	420	336	344	0	11	39	83	124	208	200	6	3	1	1	1	1	1	14	1	-11	-28	-44	-41	-84	8	6	3	1	1	1	1	6	19	266
1963	382	416	445	489	522	529	530	525	499	481	443	457	15	14	19	45	63	101	87	2	3	2	1	1	1	1	11	7	1	-5	-26	-18	-38	14	6	6	5	1	2	1	6	27	297
1964	488	514	523	538	544	544	525	497	453	425	402	397	0	19	47	91	119	142	147	6	2	1	1	1	1	1	13	0	-19	-28	-44	-28	-23	-5	6	2	1	1	1	1	5	17	221
1965	404	437	470	518	530	538	540	529	499	466	423	437	6	4	15	45	78	121	107	4	5	2	1	1	1	1	15	8	2	-11	-30	-33	-43	14	6	6	3	1	1	1	6	24	360
1966	467	492	498	512	523	530	520	496	451	431	413	404	14	24	48	93	113	131	140	3	1	1	1	1	1	1	9	7	-10	-24	-45	-20	-18	-9	6	4	1	1	2	2	4	20	180
1967	436	467	501	517	527	532	529	532	523	504	484	486	12	15	12	21	40	60	58	3	2	3	1	1	1	1	12	5	-3	3	-9	-19	-20	2	6	5	6	4	2	2	6	31	372
1968	494	505	509	523	533	540	531	507	474	456	432	417	4	13	37	70	88	112	127	5	3	1	1	1	1	1	13	7	-9	-24	-33	-18	-24	-15	6	4	1	1	2	1	3	18	234
1969	453	486	512	526	541	544	544	544	537	522	500	505	0	0	0	7	22	44	39	6	6	6	4	1	1	1	25	3	0	0	-7	-15	-22	5	6	6	6	4	3	1	6	32	800
1970	512	521	525	539	544	544	541	523	490	462	413	405	0	3	21	54	82	131	139	6	5	1	1	1	1	1	16	0	-3	-18	-33	-28	-49	-8	6	5	2	1	1	1	4	20	320
1971	429	462	494	515	524	531	525	513	493	472	441	453	13	19	31	51	72	103	91	3	2	1	1	1	1	1	10	7	-6	-12	-20	-21	-31	12	6	4	3	2	1	1	6	23	230
1972	480	506	517	532	543	544	536	508	466	446	429	411	0	8	36	78	98	115	133	6	4	1	1	1	1	1	15	1	-8	-28	-42	-20	-17	-18	6	4	1	1	2	2	2	18	270
1973	444	474	503	522	533	539	539	527	495	460	420	418	5	5	17	49	84	124	126	4	4	2	1	1	1	1	14	6	0	-12	-32	-35	-40	-2	6	6	3	1	1	1	5	23	322
1974	451	480	505	520	532	538	533	525	499	470	452	463	6	11	19	45	74	92	81	4	3	2	1	1	1	1	13	4	-3	-8	-26	-29	-18	11	6	5	4	1	1	2	6	25	325
1975	474	483	488	502	516	520	519	510	485	447	427	437	24	25	34	59	97	117	107	1	1	1	1	1	1	1	7	4	-1	-9	-25	-38	-20	10	6	5	4	1	1	2	6	25	175
1976	465	485	491	506	520	531	520	497	473	469	446	428	13	24	47	71	75	98	116	3	1	1	1	1	1	1	9	11	-11	-23	-24	-4	-23	-18	6	3	1	1	5	1	2	19	171
1977	437	445	451	472	472	472	475	465	444	416	405	414	72	69	79	100	128	139	130	1	1	1	1	1	1	1	7	0	3	-10	-21	-28	-11	9	6	6	4	1	1	3	6	27	189
1978	433	432	481	530	544	544	544	544	523	463	409	429	0	0	0	21	81	135	115	6	6	6	1	1	1	1	22	0	0	0	-21	-60	-54	20	6	6	6	1	1	1	6	27	594
1979	462	465	489	503	517	524	526	514	487	459	416	409	20	18	30	57	85	128	135	1	2	1	1	1	1	1	8	7	2	-12	-27	-28	-43	-7	6	6	3	1	1	1	4	22	176
1980	447	481	508	525	541	544	544	540	519	479	442	457	0	0	4	25	65	102	87	6	6	5	1	1	1	1	21	3	0	-4	-21	-40	-37	15	6	6	5	1	1	1	6	26	546
1981	489	507	514	528	539	544	537	511	474	458	430	410	0	7	33	70	86	114	134	6	4	1	1	1	1	1	15	5	-7	-26	-37	-16	-28	-20	6	4	1	1	2	1	2	17	255
1982	436	469	503	524	535	540	544	544	525	490	460	470	4	0	0	19	54	84	74	5	6	6	2	1	1	1	22	5	4	0	-19	-35	-30	10	6	6	6	2	1	1	6	28	616
1983	494	507	513	527	540	544	544	544	537	524	514	521	0	0	0	7	20	30	23	6	6	6	4	1	1	1	25	4	0	0	-7	-13	-10	7	6	6	6	4	3	4	6	35	875
1984	536	544	544	544	544	544	541	524	492	464	412	431	0	3	20	52	80	132	113	6	5	1	1	1	1	1	16	0	-3	-17	-32	-28	-52	19	6	5	2	1	1	1	6	22	352
1985	464	492	498	513	525	533	521	495	452	433	417	401	11	23	49	92	111	127	143	3	1	1	1	1	1	1	9	8	-12	-26	-43	-19	-16	-16	6	3	1	1	2	2	2	17	153
1986	413	433	488	517	543	544	544	544	529	495	459	468	0	0	0	15	49	85	76	6	6	6	2	1	1	1	23	1	0	0	-15	-34	-36	9	6	6	6	3	1	1	6	29	667
1987	496	509	533	544	544	544	526	498	465	453	423	407	0	18	46	79	91	121	137	6	2	1	1	1	1	1	13	0	-18	-28	-33	-12	-30	-16	6	2	1	1	3	1	2	16	208
1988	419	424	460	510	514	514	506	491	475	466	440	433	30	38	53	69	78	104	111	1	1	1	1	1	1	1	7	0	-8	-15	-16	-9	-26	-7	6	4	3	2	4	1	4	24	168
1989	437	466	497	525	535	544	535	513	468	449	433	424	0	9	31	76	95	111	120	6	4	1	1	1	1	1	15	9	-9	-22	-45	-19	-16	-9	6	4	1	1	2	2	4	20	300
1990	448	461	474	519	540	544	532	509	482	452	407	388	0	12	35	62	92	137	156	6	3	1	1	1	1	1	14	4	-12	-23	-27	-30	-45	-19	6	3	1	1	1	1	2	15	210
1991	394	397	408	431	431	488	493	485	460	432	405	403	56	51	59	84	112	139	141	1	1	1	1	1	1	1	7	57	5	-8	-25	-28	-27	-2	6	6	4	1	1	1	5	24	168
1992	425	436	449	492	521	544	532	511	483	457	419	402	0	12	33	61	87	125	142	6	3	1	1	1	1	1	14	23	-12	-21	-28	-26	-38	-17	6	3	1	1	1	1	2	15	210
1993	413	406	450	508	537	541	538	530	510	482	409	410	3	6	14	34	82	135	134	5	4	3	1	1	1	1	16	4	-3	-8	-20	-48	-53	1	6	5	4	2	1	1	6	25	400
1994	446	476	489	503	517	526	514	489	462	459	448	438	18	30	55	82	85	96	108	2	1	1	1	1	1	1	8	9	-12	-25	-27	-3	-11	-12	6	3	1	1	5	3	3	22	176

73 - year Average: 13

73 - year Average: 22 298.3
1929 - '34 Average: 230.5

AZ-198

C-032538

C-032538

C-032539

STUDY: 1995C06F-SWRCB-519A DWRSIM: reckc818-h, 03 Sep 97
CP # 4, CVP SHASTA LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-519A/4/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 1067'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir El[illegible] Scoring Table:
If [DFMRE] <=[illegible] then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	989	993	999	1,003	1,019	1,038	1,060	1,067	1,062	1,047	1,031	1,024
1923	1,022	1,017	1,019	1,023	1,021	1,021	1,034	1,029	1,015	996	977	976
1924	977	977	977	978	985	986	974	961	942	920	902	886
1925	890	904	912	922	995	1,000	1,033	1,044	1,034	1,014	1,000	996
1926	995	995	993	992	1,020	1,023	1,038	1,031	1,005	985	964	957
1927	958	984	1,007	1,032	1,026	1,052	1,067	1,067	1,058	1,041	1,025	1,019
1928	1,017	1,017	1,020	1,026	1,044	1,046	1,066	1,063	1,042	1,016	994	988
1929	987	988	990	991	998	1,004	1,005	1,001	994	978	960	953
1930	951	951	982	992	1,009	1,031	1,041	1,040	1,020	1,000	985	982
1931	980	979	977	979	982	989	981	972	963	945	932	918
1932	913	913	928	939	947	972	975	983	976	962	948	941
1933	940	941	941	943	946	979	984	988	984	969	955	948
1934	947	946	955	972	990	1,001	999	994	985	953	930	915
1935	910	921	926	946	966	989	1,033	1,040	1,033	1,015	1,001	995
1936	992	988	986	1,010	1,032	1,043	1,052	1,050	1,043	1,022	1,002	997
1937	993	989	984	979	980	1,007	1,036	1,044	1,041	1,021	1,002	995
1938	992	1,013	1,020	1,036	1,030	1,024	1,049	1,067	1,067	1,058	1,045	1,036
1939	1,023	1,017	1,020	1,022	1,024	1,039	1,029	1,022	995	968	938	933
1940	928	922	933	965	1,017	1,025	1,059	1,064	1,054	1,033	1,015	1,013
1941	1,012	1,011	1,019	1,020	1,024	1,045	1,064	1,067	1,067	1,058	1,047	1,036
1942	1,023	1,017	1,020	1,023	1,028	1,042	1,067	1,067	1,067	1,058	1,045	1,036
1943	1,023	1,017	1,022	1,030	1,042	1,051	1,067	1,067	1,059	1,044	1,028	1,023
1944	1,021	1,017	1,015	1,014	1,023	1,033	1,038	1,038	1,017	993	971	963
1945	965	978	993	1,002	1,037	1,050	1,062	1,067	1,061	1,039	1,021	1,016
1946	1,015	1,017	1,018	1,033	1,039	1,050	1,062	1,064	1,051	1,032	1,015	1,011
1947	1,008	1,008	1,009	1,005	1,012	1,032	1,039	1,028	1,013	990	969	960
1948	967	971	974	1,001	1,000	1,012	1,053	1,067	1,066	1,050	1,033	1,033
1949	1,023	1,017	1,016	1,012	1,018	1,050	1,063	1,065	1,045	1,022	1,004	1,000
1950	997	994	992	1,000	1,015	1,033	1,048	1,047	1,034	1,013	995	993
1951	1,006	1,017	1,020	1,033	1,040	1,057	1,061	1,067	1,051	1,029	1,011	1,009
1952	1,007	1,012	1,019	1,032	1,038	1,048	1,058	1,067	1,067	1,058	1,046	1,036
1953	1,023	1,017	1,021	1,022	1,033	1,051	1,065	1,067	1,067	1,057	1,046	1,036
1954	1,023	1,017	1,021	1,030	1,035	1,051	1,067	1,064	1,053	1,034	1,019	1,018
1955	1,017	1,017	1,022	1,024	1,027	1,026	1,039	1,047	1,026	1,002	985	985
1956	983	987	1,017	1,017	1,019	1,048	1,067	1,067	1,067	1,058	1,047	1,036
1957	1,023	1,017	1,016	1,017	1,035	1,052	1,055	1,067	1,058	1,040	1,024	1,027
1958	1,023	1,017	1,021	1,029	1,067	1,024	1,053	1,067	1,067	1,058	1,047	1,036
1959	1,023	1,017	1,017	1,034	1,039	1,050	1,053	1,052	1,031	1,005	988	992
1960	990	988	986	993	1,022	1,050	1,057	1,065	1,046	1,025	1,006	1,002
1961	996	1,001	1,017	1,022	1,044	1,057	1,065	1,067	1,049	1,025	1,003	1,000
1962	997	1,000	1,012	1,014	1,035	1,051	1,060	1,062	1,048	1,026	1,008	1,005
1963	1,023	1,017	1,021	1,026	1,045	1,055	1,052	1,067	1,062	1,052	1,039	1,036
1964	1,023	1,017	1,018	1,033	1,034	1,033	1,027	1,022	1,005	986	960	960
1965	959	969	1,017	1,022	1,041	1,053	1,065	1,068	1,056	1,040	1,030	1,028
1966	1,023	1,017	1,021	1,037	1,049	1,055	1,067	1,065	1,045	1,025	1,008	1,005
1967	1,000	1,014	1,021	1,030	1,044	1,048	1,064	1,067	1,067	1,058	1,047	1,036
1968	1,023	1,017	1,019	1,025	1,034	1,054	1,053	1,055	1,036	1,013	1,004	1,003
1969	1,003	1,005	1,017	1,022	1,027	1,048	1,063	1,067	1,067	1,058	1,047	1,036
1970	1,023	1,017	1,020	1,017	1,025	1,052	1,052	1,052	1,039	1,018	1,004	1,002
1971	1,003	1,017	1,020	1,028	1,041	1,043	1,058	1,067	1,067	1,058	1,047	1,036
1972	1,023	1,017	1,022	1,033	1,045	1,056	1,064	1,066	1,047	1,025	1,010	1,011
1973	1,012	1,017	1,021	1,030	1,034	1,053	1,065	1,067	1,059	1,042	1,030	1,029
1974	1,023	1,017	1,018	1,017	1,036	1,025	1,058	1,067	1,067	1,058	1,047	1,036
1975	1,023	1,017	1,021	1,024	1,045	1,039	1,061	1,067	1,067	1,058	1,047	1,036
1976	1,023	1,017	1,018	1,017	1,012	1,017	1,024	1,021	996	974	969	971
1977	973	974	974	976	966	967	949	943	920	901	882	879
1978	868	867	912	1,017	1,031	1,047	1,067	1,067	1,064	1,054	1,045	1,036
1979	1,023	1,017	1,015	1,018	1,029	1,046	1,053	1,061	1,046	1,027	1,014	1,012
1980	1,012	1,015	1,017	1,029	1,019	1,046	1,059	1,064	1,055	1,045	1,034	1,035
1981	1,023	1,017	1,020	1,029	1,042	1,056	1,061	1,059	1,037	1,011	994	992
1982	993	1,017	1,018	1,033	1,029	1,046	1,051	1,067	1,067	1,058	1,047	1,036
1983	1,023	1,017	1,020	1,022	1,017	1,045	1,050	1,067	1,067	1,058	1,047	1,036
1984	1,023	1,017	1,018	1,034	1,047	1,056	1,061	1,067	1,058	1,041	1,035	1,036
1985	1,023	1,017	1,022	1,023	1,027	1,034	1,042	1,034	1,007	987	966	968
1986	970	974	988	1,011	1,017	1,029	1,048	1,050	1,039	1,023	1,007	1,010
1987	1,010	1,009	1,009	1,010	1,020	1,046	1,043	1,038	1,005	980	949	947
1988	943	945	976	999	1,001	1,004	1,007	1,008	990	959	944	942
1989	942	955	961	968	975	1,038	1,058	1,055	1,037	1,016	1,005	1,006
1990	1,008	1,007	1,004	1,010	1,010	1,018	1,007	1,014	999	979	963	959
1991	955	953	953	954	960	976	986	986	977	963	949	942
1992	941	940	941	944	963	1,004	1,012	1,006	991	979	966	960
1993	956	954	968	1,000	1,032	1,031	1,059	1,067	1,067	1,054	1,046	1,045
1994	1,043	1,017	1,019	1,020	1,026	1,027	1,025	1,025	996	975	952	950

YEAR	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP	Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	29	7	0	5	20	36	43	1	4	6	4	1	1	1	18
1923	46	33	38	52	71	90	91	1	1	1	1	1	1	1	7
1924	81	93	106	125	147	165	181	1	1	1	1	1	1	1	7
1925	67	34	23	33	53	67	71	1	1	1	1	1	1	1	7
1926	44	29	36	62	82	103	110	1	1	1	1	1	1	1	7
1927	15	0	0	9	26	42	48	2	6	6	4	1	1	1	21
1928	21	1	4	25	51	73	79	1	5	5	1	1	1	1	15
1929	63	62	66	73	89	107	114	1	1	1	1	1	1	1	7
1930	36	26	27	47	67	82	85	1	1	1	1	1	1	1	7
1931	78	86	95	104	122	135	149	1	1	1	1	1	1	1	7
1932	95	92	84	91	105	119	126	1	1	1	1	1	1	1	7
1933	88	83	79	83	98	112	119	1	1	1	1	1	1	1	7
1934	66	68	73	82	114	137	152	1	1	1	1	1	1	1	7
1935	78	34	27	34	52	66	72	1	1	1	1	1	1	1	7
1936	24	15	17	24	45	65	70	1	2	2	1	1	1	1	9
1937	60	31	23	26	46	65	72	1	1	1	1	1	1	1	7
1938	43	18	0	0	9	22	31	1	2	6	6	4	1	1	21
1939	28	38	45	72	99	129	134	1	1	1	1	1	1	1	7
1940	42	8	3	13	34	52	54	1	4	5	3	1	1	1	16
1941	22	3	0	0	9	20	31	1	5	6	6	4	1	1	24
1942	25	0	0	0	9	22	31	1	6	6	6	4	1	1	25
1943	16	0	0	8	23	39	44	2	6	6	4	1	1	1	21
1944	34	29	29	50	74	96	104	1	1	1	1	1	1	1	7
1945	17	5	0	6	28	46	51	2	4	6	4	1	1	1	19
1946	17	5	3	16	35	52	58	2	4	5	2	1	1	1	16
1947	35	28	39	54	77	98	107	1	1	1	1	1	1	1	7
1948	55	14	0	1	17	34	34	1	3	6	5	2	1	1	19
1949	17	4	2	22	45	63	67	2	5	5	1	1	1	1	16
1950	34	19	20	33	54	72	74	1	2	1	1	1	1	1	8
1951	10	6	0	16	38	56	58	3	4	6	2	1	1	1	18
1952	19	9	0	0	9	21	31	2	4	6	6	4	1	1	24
1953	16	2	0	0	10	21	31	2	5	6	6	3	1	1	24
1954	16	0	3	14	33	48	49	2	6	5	3	1	1	1	19
1955	41	28	20	41	65	82	82	1	1	1	1	1	1	1	7
1956	19	0	0	0	9	20	31	2	6	6	6	4	1	1	26
1957	15	12	0	9	27	43	40	2	3	6	4	1	1	1	18
1958	43	14	0	0	9	20	31	1	3	6	6	4	1	1	22
1959	17	14	15	36	62	79	75	2	3	2	1	1	1	1	11
1960	17	10	2	21	42	61	65	2	3	5	1	1	1	1	14
1961	10	2	0	18	42	64	67	3	5	6	2	1	1	1	19
1962	16	7	5	19	41	59	62	2	4	4	2	1	1	1	15
1963	12	15	0	5	15	28	31	3	2	6	4	2	1	1	19
1964	34	40	45	62	81	107	107	1	1	1	1	1	1	1	7
1965	14	2	1	11	27	37	39	3	5	5	3	1	1	1	19
1966	12	0	2	22	42	59	62	3	6	5	1	1	1	1	18
1967	19	3	0	0	9	20	31	2	5	6	6	4	1	1	25
1968	13	14	12	31	54	63	64	3	3	3	1	1	1	1	13
1969	19	4	0	0	9	20	31	2	5	6	6	4	1	1	25
1970	15	15	15	28	49	63	65	2	2	2	1	1	1	1	10
1971	24	9	0	0	9	20	31	1	4	6	6	4	1	1	23
1972	11	3	1	20	42	57	56	3	5	5	1	1	1	1	17
1973	14	2	0	8	25	37	38	3	5	6	4	1	1	1	21
1974	42	9	0	0	9	20	31	1	4	6	6	4	1	1	23
1975	28	6	0	0	9	20	31	1	4	6	6	4	1	1	23
1976	50	43	46	71	93	98	96	1	1	1	1	1	1	1	7
1977	100	118	124	147	166	185	188	1	1	1	1	1	1	1	7
1978	20	0	0	3	13	22	31	1	6	6	5	3	1	1	23
1979	21	14	6	21	40	53	55	1	3	4	1	1	1	1	12
1980	21	8	3	12	22	33	32	1	4	5	3	1	1	1	16
1981	11	6	8	30	58	73	75	3	4	4	1	1	1	1	15
1982	21	16	0	0	9	20	31	1	2	6	6	4	1	1	21
1983	22	17	0	0	9	20	31	1	2	6	6	4	1	1	21
1984	11	6	0	9	26	32	31	3	4	6	4	1	1	1	20
1985	33	25	33	60	80	101	99	1	1	1	1	1	1	1	7
1986	38	19	17	28	44	60	57	1	2	2	1	1	1	1	9
1987	21	24	29	62	87	118	120	1	1	1	1	1	1	1	7
1988	63	60	59	77	108	123	125	1	1	1	1	1	1	1	7
1989	29	9	12	30	51	62	61	1	4	3	1	1	1	1	12
1990	49	60	53	68	88	104	108	1	1	1	1	1	1	1	7
1991	91	81	81	90	104	118	125	1	1	1	1	1	1	1	7
1992	63	55	61	76	88	101	107	1	1	1	1	1	1	1	7
1993	38	8	0	0	13	21	22	1	4	6	6	3	1	1	22
1994	40	42	42	69	92	115	117	1	1	1	1	1	1	1	7
													73 - year Average:		14

YEAR	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	19	22	7	-5	-15	-16	-7	6	6	6	5	3	2	4	32	576
1923	0	13	-5	-14	-19	-19	-1	6	6	5	3	2	2	5	29	203
1924	1	-12	-13	-19	-22	-18	-16	6	3	3	2	1	2	2	19	133
1925	5	33	11	-10	-20	-14	-4	6	6	6	4	2	3	5	32	224
1926	3	15	-7	-28	-20	-21	-7	6	6	4	1	2	1	4	24	168
1927	26	15	0	-9	-17	-16	-6	6	6	6	4	2	2	4	30	630
1928	2	20	-3	-21	-26	-22	-6	6	6	5	1	1	1	4	24	360
1929	6	1	-4	-7	-16	-18	-7	6	6	5	4	2	2	4	29	203
1930	22	10	-1	-20	-20	-15	-3	6	6	5	2	2	3	5	29	203
1931	7	-8	-9	-9	-18	-13	-14	6	4	4	4	2	3	3	26	182
1932	25	3	8	-7	-14	-14	-7	6	6	6	4	3	3	4	32	224
1933	33	5	4	-4	-15	-14	-7	6	6	6	5	3	3	4	33	231
1934	11	-2	-5	-9	-32	-23	-15	6	5	5	4	1	1	3	25	175
1935	23	44	7	-7	-18	-14	-6	6	6	6	4	2	3	4	31	217
1936	11	9	-2	-7	-21	-20	-5	6	6	5	4	1	2	5	29	261
1937	27	29	8	-3	-20	-19	-7	6	6	6	5	2	2	4	31	217
1938	-6	25	18	0	-9	-13	-9	4	6	6	6	4	3	4	33	693
1939	15	-10	-7	-27	-27	-30	-5	6	4	4	1	1	1	5	22	154
1940	8	34	5	-10	-21	-18	-2	6	6	6	4	1	2	5	30	480
1941	21	19	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	816
1942	14	25	0	0	-9	-13	-9	6	6	6	6	4	3	4	35	875
1943	9	16	0	-8	-15	-16	-5	6	6	6	4	3	2	5	32	672
1944	10	5	0	-21	-24	-22	-8	6	6	6	1	1	1	4	25	175
1945	13	12	5	-6	-22	-18	-5	6	6	6	4	1	2	5	30	570
1946	11	12	2	-13	-19	-17	-4	6	6	6	3	2	2	5	30	480
1947	20	7	-11	-15	-23	-21	-9	6	6	3	3	1	1	4	24	168
1948	12	41	14	-1	-16	-17	0	6	6	6	5	2	2	6	33	627
1949	34	13	2	-20	-23	-18	-4	6	6	6	2	1	2	5	28	448
1950	18	15	-1	-13	-21	-18	-2	6	6	5	3	1	2	5	28	224
1951	17	4	6	-16	-22	-18	-2	6	6	6	2	1	2	5	28	504
1952	10	10	9	0	-9	-12	-10	6	6	6	6	4	3	4	35	840
1953	18	14	2	0	-10	-11	-10	6	6	6	6	4	3	4	35	840
1954	16	16	-3	-11	-19	-15	-1	6	6	5	3	2	3	5	30	570
1955	-1	13	8	-21	-24	-17	0	5	6	6	1	1	2	6	27	189
1956	29	19	0	0	-9	-11	-11	6	6	6	6	4	3	3	34	884
1957	17	3	12	-9	-18	-16	3	6	6	6	4	2	2	6	32	576
1958	-43	29	14	0	-9	-11	-11	1	6	6	6	4	3	3	29	638
1959	11	3	-1	-21	-26	-17	4	6	6	5	1	1	2	6	27	297
1960	28	7	8	-19	-21	-19	-4	6	6	6	2	1	2	5	28	392
1961	13	6	2	-18	-24	-22	-3	6	6	6	2	1	1	5	27	513
1962	16	9	2	-14	-22	-18	-3	6	6	6	3	1	2	5	29	435
1963	10	-3	15	-5	-10	-13	-3	6	5	6	5	4	3	5	34	646
1964	-1	-6	-5	-17	-19	-26	0	5	4	5	2	2	1	6	25	175
1965	12	12	1	-10	-16	-10	-2	6	6	6	4	2	4	5	33	627
1966	6	12	-2	-20	-20	-17	-3	6	6	5	2	2	2	5	28	504
1967	4	16	3	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1968	20	-1	2	-19	-23	-9	-1	6	5	6	2	1	4	5	29	377
1969	21	15	4	0	-9	-11	-11	6	6	6	6	4	3	3	34	850
1970	27	0	0	-13	-21	-14	-2	6	6	6	3	1	3	5	30	300
1971	2	15	9	0	-9	-11	-11	6	6	6	6	4	3	3	34	782
1972	11	8	2	-19	-22	-15	1	6	6	6	2	1	3	6	30	510
1973	19	12	2	-8	-17	-12	-1	6	6	6	4	2	3	5	32	672
1974	-11	33	9	0	-9	-11	-11	3	6	6	6	4	3	3	31	713
1975	-6	22	6	0	-9	-11	-11	4	6	6	6	4	3	3	32	736
1976	5	7	-3	-25	-22	-5	2	6	6	5	1	1	5	6	30	210
1977	1	-18	-6	-23	-19	-19	-3	6	2	4	1	2	2	5	22	154
1978	16	20	0	-3	-10	-9	-9	6	6	6	5	4	4	4	35	805
1979	17	7	8	-15	-19	-13	-2	6	6	6	3	2	3	5	31	372
1980	27	13	5	-9	-10	-11	1	6	6	6	4	4	3	6	35	560
1981	14	5	-2	-22	-26	-17	-2	6	6	5	1	1	2	5	26	390
1982	17	5	16	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1983	28	5	17	0	-9	-11	-11	6	6	6	6	4	3	3	34	714
1984	9	5	6	-9	-17	-6	1	6	6	6	4	2	4	6	34	680
1985	7	8	-8	-27	-20	-21	2	6	6	4	1	2	1	6	26	182
1986	12	19	2	-11	-16	-16	3	6	6	6	3	2	2	6	31	279
1987	26	-3	-5	-33	-25	-31	-2	6	5	5	1	1	1	5	24	168
1988	3	3	1	-18	-31	-15	-2	6	6	6	2	1	3	5	29	203
1989	63	20	-3	-18	-21	-11	1	6	6	5	2	1	3	6	29	348
1990	8	-11	7	-15	-20	-16	-4	6	3	6	3	2	2	5	27	189
1991	26	10	0	-9	-14	-14	-7	6	6	6	4	3	3	4	32	224
1992	21	8	-6	-15	-12	-13	-6	6	6	4	3	3	3	4	29	203
1993	-1	28	8	0	-13	-6	-1	5	6	6	6	3	4	5	35	770
1994	1	-2	0	-27	-23	-23	-2	6	5	6	1	1	1	5	25	175
													73 - year Average:		30	443.14
													1929 - '34 Average:			203.0

C — 0 3 2 5 3 9

STUDY [illegible]C06F-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CP # 6, SWP LAKE OROVILLE, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-519A/6/ELEVATION-EOP//1MON/OUTPUT/

73-year maximum March - September Reservoir Elevation = 900'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Sc[illegible]le:
If [DFMRE] <= 0', then 6, [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	833	833	835	844	850	858	893	900	900	871	866	867	42	7	0	0	29	34	33	1	4	6	6	1	1	1	20	8	35	7	0	-29	-5	1	6	6	6	6	1	5	6	36	720
1923	871	874	858	862	859	865	888	894	875	836	797	800	35	12	6	25	64	103	100	1	3	4	1	1	1	1	12	6	23	6	-19	-39	-39	3	6	6	6	2	1	1	6	28	336
1924	789	777	770	775	794	781	763	750	728	707	697	691	119	137	150	172	193	203	209	1	1	1	1	1	1	1	7	-13	-18	-13	-22	-21	-10	-6	3	2	3	1	1	4	4	18	126
1925	691	695	702	718	786	782	810	820	801	775	764	763	118	90	80	99	125	136	137	1	1	1	1	1	1	1	7	-4	28	10	-19	-26	-11	-1	5	6	6	2	1	3	5	28	196
1926	759	760	762	776	824	844	887	877	856	824	812	795	56	13	23	44	76	88	105	1	3	1	1	1	1	1	9	20	43	-10	-21	-32	-12	-17	6	6	4	1	1	3	2	23	207
1927	776	807	808	832	849	863	890	900	898	861	843	841	37	10	0	2	39	57	59	1	3	6	5	1	1	1	18	14	27	10	-2	-37	-18	-2	6	6	6	5	1	2	5	31	558
1928	838	848	849	861	871	849	878	870	849	799	745	738	51	22	30	51	101	155	162	1	1	1	1	1	1	1	7	-22	29	-8	-21	-50	-54	-7	1	6	4	1	1	1	4	18	126
1929	724	719	717	723	736	753	754	756	749	731	721	714	147	146	144	151	169	179	186	1	1	1	1	1	1	1	7	17	1	2	-7	-18	-10	-7	6	6	6	4	2	4	4	32	224
1930	704	701	762	790	818	850	864	870	853	812	772	770	50	36	30	47	88	128	130	1	1	1	1	1	1	1	7	32	14	6	-17	-41	-40	-2	6	6	6	2	1	1	5	27	189
1931	759	751	741	755	768	785	765	755	731	712	702	695	115	135	145	169	188	198	205	1	1	1	1	1	1	1	7	17	-20	-10	-24	-19	-10	-7	6	2	4	1	2	4	4	23	161
1932	689	684	689	714	736	772	775	803	782	761	752	746	128	125	97	118	139	148	154	1	1	1	1	1	1	1	7	36	3	28	-21	-21	-9	-6	6	6	6	1	1	4	4	28	196
1933	737	725	725	737	748	752	742	757	752	737	726	719	148	158	143	148	163	174	181	1	1	1	1	1	1	1	7	4	-10	15	-5	-15	-11	-7	6	4	6	5	3	3	4	31	217
1934	715	706	711	738	759	781	767	758	736	713	702	692	119	133	142	164	187	198	208	1	1	1	1	1	1	1	7	22	-14	-9	-22	-23	-11	-10	6	3	4	1	1	3	4	22	154
1935	678	683	689	717	741	770	856	867	853	829	821	805	130	44	33	47	71	79	95	1	1	1	1	1	1	1	7	29	86	11	-14	-24	-8	-16	6	6	6	3	1	4	2	28	196
1936	798	788	776	825	849	860	886	897	888	849	826	823	40	14	3	12	51	74	77	1	3	5	3	1	1	1	15	11	26	11	-9	-39	-23	-3	6	6	6	4	1	1	5	29	435
1937	815	804	800	803	820	843	869	882	859	834	821	815	57	31	18	41	66	79	85	1	1	2	1	1	1	1	8	23	26	13	-23	-25	-13	-6	6	6	6	1	1	3	4	27	216
1938	811	825	854	858	849	849	882	900	900	898	895	887	51	18	0	0	2	5	13	1	2	6	6	5	4	3	27	0	33	18	0	-2	-3	-8	6	6	6	6	5	5	4	38	1026
1939	874	864	854	845	837	833	816	809	773	706	653	648	67	84	91	127	194	247	252	1	1	1	1	1	1	1	7	-4	-17	-7	-36	-67	-53	-5	5	2	4	1	1	1	5	19	133
1940	637	626	629	703	812	849	879	886	867	826	818	805	51	21	14	33	74	82	95	1	1	3	1	1	1	1	9	37	30	7	-19	-41	-8	-13	6	6	6	2	1	4	3	28	252
1941	798	799	841	849	849	858	886	900	900	890	885	887	42	14	0	0	10	15	13	1	3	6	6	3	2	3	24	9	28	14	0	-10	-5	2	6	6	6	6	4	5	6	39	936
1942	874	874	849	849	850	867	882	900	900	878	874	875	33	18	0	0	22	26	25	1	2	6	6	1	1	1	18	17	15	18	0	-22	-4	1	6	6	6	6	1	5	6	36	648
1943	874	869	861	849	858	859	887	897	891	854	843	843	41	13	3	9	46	57	57	1	3	5	4	1	1	1	16	3	28	10	-6	-37	-11	0	6	6	6	4	1	3	6	32	512
1944	845	847	846	853	857	868	875	891	870	830	791	785	32	25	9	30	70	109	115	1	1	4	1	1	1	1	10	11	7	16	-21	-40	-39	6	6	6	6	1	1	1	4	26	260
1945	777	783	800	816	858	865	880	896	877	837	812	807	35	20	4	23	63	88	93	1	1	5	1	1	1	1	11	7	15	16	-19	-40	-25	-5	6	6	6	2	1	1	5	27	297
1946	807	815	849	864	868	868	887	896	874	834	792	789	32	13	4	26	66	108	111	1	3	5	1	1	1	1	13	0	19	9	-22	-40	-42	-3	6	6	6	1	1	1	5	26	338
1947	773	779	787	793	821	843	846	841	825	766	727	720	57	54	59	75	134	173	180	1	1	1	1	1	1	1	7	22	3	-5	-16	-59	-39	-7	6	6	5	2	1	1	4	25	175
1948	723	724	721	758	760	780	840	869	876	839	822	804	120	60	31	24	61	78	96	1	1	1	1	1	1	1	7	20	60	29	7	-37	-17	-18	6	6	6	6	1	2	2	29	203
1949	797	795	795	800	808	831	851	859	836	785	755	750	69	49	41	64	115	145	150	1	1	1	1	1	1	1	7	23	20	8	-23	-51	-30	-5	6	6	6	1	1	1	5	26	182
1950	735	728	727	759	808	841	873	892	878	840	821	820	59	27	8	22	60	79	80	1	1	4	1	1	1	1	10	35	32	19	-14	-38	-19	-1	6	6	6	3	1	2	5	29	290
1951	824	849	854	853	858	879	880	894	880	839	803	803	30	20	6	20	61	97	97	1	1	4	1	1	1	1	10	12	10	14	-14	-41	-36	0	6	6	6	3	1	1	6	29	290
1952	809	814	848	849	852	862	894	900	900	900	899	887	38	6	0	0	0	1	13	1	4	6	6	6	5	3	31	10	32	6	0	0	-1	-12	6	6	6	6	6	5	3	38	1178
1953	874	874	858	850	867	867	883	900	900	867	863	865	33	17	0	0	33	37	35	1	2	6	6	1	1	1	18	0	16	17	0	-33	-4	2	6	6	6	6	1	5	6	36	648
1954	867	871	874	858	857	859	883	874	858	814	766	761	41	17	26	42	86	134	139	1	2	1	1	1	1	1	8	2	24	-9	-16	-44	-48	-5	6	6	4	2	1	1	5	25	200
1955	762	764	772	785	794	807	816	828	802	740	709	705	93	84	72	96	160	191	195	1	1	1	1	1	1	1	7	13	9	12	-26	-62	-31	-4	6	6	6	1	1	1	5	26	182
1956	696	693	845	849	849	864	892	900	900	871	867	871	36	8	0	0	29	33	29	1	4	6	6	1	1	1	20	15	28	8	0	-29	-4	4	6	6	6	6	1	5	6	36	720
1957	869	874	874	871	853	863	857	876	860	821	782	787	37	43	24	40	79	118	113	1	1	1	1	1	1	1	7	10	-6	19	-16	-39	-39	5	6	4	6	2	1	1	6	26	182
1958	789	793	815	836	849	849	879	900	900	898	894	887	51	21	0	0	2	6	13	1	1	6	6	5	4	3	26	0	30	21	0	-2	-4	-7	6	6	6	6	5	5	4	38	988
1959	874	874	874	862	852	867	867	870	849	800	748	752	33	33	30	51	100	152	148	1	1	1	1	1	1	1	7	15	0	3	-21	-49	-52	4	6	6	6	1	1	1	6	27	189
1960	743	731	726	741	803	847	845	851	832	783	770	764	53	55	49	68	117	130	136	1	1	1	1	1	1	1	7	44	-2	6	-19	-49	-13	-6	6	5	6	2	1	3	4	27	189
1961	753	756	785	776	806	828	826	831	811	748	704	700	72	74	69	89	152	196	200	1	1	1	1	1	1	1	7	22	-2	5	-20	-63	-44	-4	6	5	6	2	1	1	5	26	182
1962	684	681	690	705	770	806	827	830	813	753	731	710	94	73	70	87	147	169	190	1	1	1	1	1	1	1	7	36	21	3	-17	-60	-22	-21	6	6	6	2	1	1	1	23	161
1963	785	798	830	853	867	858	876	900	891	855	837	838	42	24	0	9	45	63	62	1	1	6	4	1	1	1	15	-9	18	24	-9	-36	-18	1	4	6	6	4	1	2	6	29	435
1964	839	850	853	863	872	874	879	879	864	823	773	742	26	21	21	36	77	127	158	1	1	1	1	1	1	1	7	2	5	0	-15	-41	-50	-31	6	6	6	3	1	1	1	24	168
1965	727	728	849	849	863	870	887	889	891	855	847	848	30	13	11	9	45	53	52	1	3	3	4	1	1	1	14	7	17	2	2	-36	-8	1	6	6	6	6	1	4	6	35	490
1966	852	859	860	864	870	874	894	886	866	825	778	771	26	6	14	34	75	122	129	1	4	3	1	1	1	1	12	4	20	-8	-20	-41	-47	-7	6	6	4	2	1	1	4	24	288
1967	757	768	808	849	860	853	879	900	900	896	887	47	21	0	0	0	4	13	1	1	6	6	6	5	3	3	28	-7	26	21	0	0	-4	-9	4	6	6	6	6	5	4	37	1036
1968	874	874	873	858	861	866	856	860	841	790	756	753	34	44	40	59	110	144	147	1	1	1	1	1	1	1	7	5	-10	4	-19	-51	-34	-3	6	4	6	2	1	1	5	25	175
1969	755	760	783	849	849	865	895	900	900	895	893	874	35	5	0	0	5	7	26	1	4	6	6	4	4	1	26	16	30	5	0	-5	-2	-19	6	6	6	6	5	5	2	36	936
1970	874	874	850	849	849	874	864	868	852	810	777	779	26	36	34	48	90	123	121	1	1	1	1	1	1	1	7	25	-10	2	-14	-42	-33	2	6	4	6	3	1	1	6	27	189
1971	781	808	839	864	874	874	892	900	900	869	846	848	26	8	0	0	31	54	52	1	4	6	6	1	1	1	20	0	18	8	0	-31	-23	2	6	6	6	6	1	1	6	32	640
1972	853	859	865	869	867	874	882	886	866	826	780	781	26	18	14	34	74	120	119	1	2	3	1	1	1	1	10	7	8	4	-20	-40	-46	1	6	6	6	2	1	1	6	28	280
1973	777	792	819	849	849	860	882	900	870	830	814	810	40	18	0	30	70	86	90	1	2	6	1	1	1	1	13	11	22	18	-30	-40	-16	-4	6	6	6	1	1	2	5	27	351
1974	814	849	850	854	864	849	883	900	900	887	886	886	51	17	0	0	13	14	14	1	2	6	6	3	3	3	24	-15	34	17	0	-13	-1	0	3	6	6	6	3	5	6	35	840
1975	874	874	874	874	855	852	881	900	900	874	873	874	48	19	0	0	26	27	26	1	2	6	6	1	1	1	18	-3	29	19	0	-26	-1	1	5	6	6	6	1	5	6	35	630
1976	873	874	874	874	874	874	867	860	838	792	765	765	26	33	40	62	108	135	135	1	1	1	1	1	1	1	7	0	-7	-7	-22	-46	-27	0	6	4	4	1	1	1	6	23	161
1977	756	748	732	728	713	707	668	657	628	605	595	592	193	232	243	272	295	305	308	1	1	1	1	1	1	1	7	-6	-39	-11	-29	-23	-10	-3	4	1	3	1	1	4	5	19	133
1978	581	581	618	745	798	859	878	897	892	871	862	869	41	22	3	8	29	38	31	1	1	5	4	1	1	1	14	61	19	19	-5	-21	-9	7	6	6	6	5	1	4	6	34	476
1979	872	874	874	871	853	863	876	894	864	825	813	810	37	24	6	36	75	87	90	1	1	4	1	1	1	1	10	10	13	18	-30	-39	-12	-3	6	6	6	1	1	3	5	28	280
1980	817	821	829	850	849	865	881	893	888	870	863	862	35	19	7	12	30	37	38	1	2	4	3	1	1	1	13	16	16	12	-5	-18	-7	-1	6	6	6	5	2	4	5	34	442
1981	861	862	870	880	868	865	869	867	845	797	758	758	35	31	33	55	103	142	142	1	1	1	1	1	1	1	7	-3	4	-2	-22	-48	-39	0	5	6	5	1	1	1	6	25	175
1982	783	845	849	859	862	859	884	900	900	887	884	887	41	16	0	0	13	16	13	1	2	6	6	3	2	3	23	-3	25	16	0	-13	-3	3	5	6	6	6	3	5	6	37	851
1983	873	862	858	853	849	849	877	900	900	900	899	887	51	23	0	0	0	1	13	1	1	6	6	6	5	3	28	0	28	23	0	0	-1	-12	6	6	6	6	6	5	3	38	1064
1984	874	860	849	869	869	871	881	890	873	835	822	823	29	19	10	27	65	78	77	1	2	3	1	1	1	1	10	2	10	9	-17	-38	-13	1	6	6	6	2	1	3	6	30	300
1985	827	841	851	857	870	871	886	875	853	809	758	739	29	14	25	47	91	142	161	1	3	1	1	1	1	1	9	1	15	-11	-22	-44	-51	-19	6	6	3	1	1	1	2	20	180
1986	729	725	732	768	849	849	871	875	871	843	830	841	51	29	25	29	57	70	59	1	1	1	1	1	1	1	7	0	22	4	-4	-28	-13	11	6	6	6	5	1	3	6	33	231
1987	843	849	847	848	859	867	856	846	819	758	713	708	33	44	54	81	142	187	192	1	1	1	1	1	1	1	7	8	-11	-10	-27	-61	-45	-5	6	3	4	1	1	1	5	21	147
1988	695	698	737	765	768	768	767	760	738	718	705	703	132	133	140	162	182	195	197	1	1	1	1	1	1	1	7	0	-1	-7	-22	-20	-13	-2	6	5	4	1	2	3	5	26	182
1989	694	713	723	730	730	843	868	863	845	800	791	788	57	32	37	55	100	109	112	1	1	1	1	1	1	1	7	113	25	-5	-18	-45	-9	-3	6	6	5	2	1	4	5	29	203
1990	794	795	778	792	799	824	804	804	779	730	717	711	76	96	96	121	170	183	189	1	1	1	1	1	1	1	7	25	-20	0	-25	-49	-13	-6	6	2	6	1	1	3	4	23	161
1991	693	685	669	667	654	706	717	732	717	698	691	690	194	183	168	183	202	209	210	1	1	1	1	1	1	1	7	52	11	15	-15	-19	-7	-1	6	6	6	3	2	4	5	32	224
1992	686	683	684	687	719	749	764	754	726	701	689	683	151	136	148	174	199	211	217	1	1	1	1	1	1	1	7	30	15	-10	-28	-25	-12	-6	6	6	4	1	1	3	4	25	175
1993	675	669	687	756	806	861	894	900	900	873	869	868	39	6	0	0	27	31	32	1	4	6	6	1	1	1	20	53	33	6	0	-27	-4	-1	6	6	6	6	1	5	5	35	700
1994	873	874	874	871	862	874	867	864	842	799	752	746	26	33	36	58	101	148	154	1	1	1	1	1	1	1	7	12	-7	-3	-22	-43	-47	-8	6	4	5	1	1	1	4	22	154

73 - year Average: 12

73 - year Average: 29 374.04
1929 - '34 Average: 190.2

STUDY 1995C06F-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CP # 8, CVP FOLSOM L, EOP SURFACE ELEVATION (FT)
Project. /1995C06F-SWRCB-519A/8/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 466'

Reservoir Elevation Sco ...le:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Difference from Maximum Reservoir Elevation [DFMRE]							Reservoir Elevation Sco...le:								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Scoring Table:								Largemouth Bass Reservoir Habitat Index =
													MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	414	409	414	414	424	428	443	466	466	463	449	434	38	23	0	0	3	17	32	1	1	6	6	5	2	1	22	4	15	23	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1923	425	423	424	424	419	421	449	466	451	428	414	410	45	17	0	15	38	52	56	1	2	6	2	1	1	1	14	2	28	17	-15	-23	-14	-4	6	6	6	3	1	3	5	30	420
1924	405	399	393	383	380	361	351	353	334	334	337	334	105	115	113	132	132	129	132	1	1	1	1	1	1	1	7	-19	-10	2	-19	0	3	-3	2	4	6	2	6	6	5	31	217
1925	349	363	380	390	424	409	440	464	444	424	410	405	57	26	2	22	42	56	61	1	1	5	1	1	1	1	11	-15	31	24	-20	-20	-14	-5	3	6	6	2	2	3	5	27	297
1926	398	393	391	384	406	406	439	436	402	341	335	348	60	27	30	64	125	131	118	1	1	1	1	1	1	1	7	0	33	-3	-34	-61	-6	13	6	6	5	1	1	4	6	29	203
1927	356	398	419	424	424	437	449	466	461	452	447	434	29	17	0	5	14	19	32	1	2	6	4	3	2	1	19	13	12	17	-5	-9	-5	-13	6	6	6	5	4	5	3	35	665
1928	425	424	424	424	424	437	449	454	435	409	399	399	29	17	12	31	57	67	67	1	2	3	1	1	1	1	10	13	12	5	-19	-26	-10	0	6	6	6	2	1	4	6	31	310
1929	386	378	373	360	365	376	388	399	392	376	382	384	90	78	67	74	90	84	82	1	1	1	1	1	1	1	7	11	12	11	-7	-16	6	2	6	6	6	4	2	6	6	36	252
1930	372	367	397	411	422	437	443	442	416	387	356	361	29	23	24	50	79	110	105	1	1	1	1	1	1	1	7	15	6	-1	-26	-29	-31	5	6	6	5	1	1	1	6	26	182
1931	351	362	372	385	392	403	390	392	338	334	335	334	63	76	74	128	132	131	132	1	1	1	1	1	1	1	7	11	-13	2	-54	-4	1	-1	6	3	6	1	5	6	5	32	224
1932	334	334	380	402	424	426	429	450	429	385	384	387	40	37	16	37	81	82	79	1	1	2	1	1	1	1	8	2	3	21	-21	-44	-1	3	6	6	6	1	1	5	6	31	248
1933	368	336	349	352	339	366	337	372	358	334	351	346	100	129	94	110	132	115	120	1	1	1	1	1	1	1	7	27	-29	35	-16	-22	17	-5	6	1	6	2	1	6	5	27	189
1934	335	334	375	402	420	427	415	415	349	333	323	334	39	51	51	117	133	143	132	1	1	1	1	1	1	1	7	7	-12	0	-66	-16	-10	11	6	3	6	1	2	4	6	28	196
1935	334	361	378	402	416	418	449	454	453	437	423	417	48	17	12	13	29	43	49	1	2	3	3	1	1	1	12	2	31	5	-1	-16	-14	-6	6	6	6	5	2	3	4	32	384
1936	414	408	402	424	424	437	449	461	456	447	441	434	29	17	5	10	19	25	32	1	2	4	3	2	1	1	14	13	12	12	-5	-9	-6	-7	6	6	6	5	4	4	4	35	490
1937	425	417	411	404	424	437	449	466	455	443	436	433	29	17	0	11	23	30	33	1	2	6	3	1	1	1	15	13	12	17	-11	-12	-7	-3	6	6	6	3	3	4	5	33	495
1938	425	422	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1939	426	420	415	409	402	409	412	416	381	334	334	335	57	54	50	85	132	132	131	1	1	1	1	1	1	1	7	7	3	4	-35	-47	0	1	6	6	6	1	1	6	6	32	224
1940	334	334	334	419	424	437	449	461	448	430	421	422	29	17	5	18	36	45	44	1	2	4	2	1	1	1	12	13	12	12	-13	-18	-9	1	6	6	6	3	2	4	6	33	396
1941	417	412	424	424	424	437	449	466	458	455	449	434	29	17	0	8	11	17	32	1	2	6	4	3	2	1	19	13	12	17	-8	-3	-6	-15	6	6	6	4	5	4	3	34	646
1942	426	422	424	424	424	430	449	466	466	463	449	434	36	17	0	0	3	17	32	1	2	6	6	5	2	1	23	6	19	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1943	425	424	423	422	422	434	449	459	451	445	441	434	32	17	7	15	21	25	32	1	2	4	2	1	1	1	12	12	15	10	-5	-6	-4	-7	6	6	6	4	4	5	4	35	420
1944	425	419	413	405	407	419	420	433	410	384	357	367	47	46	33	56	82	109	99	1	1	1	1	1	1	1	7	12	1	13	-23	-26	-27	10	6	6	6	1	1	1	6	27	189
1945	360	390	411	424	424	437	448	465	454	442	435	433	29	18	1	12	24	31	33	1	2	5	3	1	1	1	14	13	11	17	-11	-12	-7	-2	6	6	6	3	3	4	5	33	462
1946	426	424	424	424	424	437	449	466	447	432	426	425	29	17	0	19	34	40	41	1	2	6	2	1	1	1	14	13	12	17	-19	-15	-6	-1	6	6	6	2	3	4	5	32	448
1947	421	422	421	413	419	437	445	442	412	374	335	334	29	21	24	54	92	131	132	1	1	1	1	1	1	1	7	18	8	-3	-30	-38	-39	-1	6	6	5	1	1	1	5	26	175
1948	352	370	375	401	396	390	429	455	455	447	441	434	76	37	11	11	19	25	32	1	1	3	3	2	1	1	12	-6	39	26	0	-8	-6	-7	4	6	6	6	4	4	4	34	408
1949	425	419	416	406	400	422	443	460	439	422	412	410	44	23	6	27	44	54	56	1	1	4	1	1	1	1	10	22	21	17	-21	-17	-10	-2	6	6	6	1	2	4	5	30	300
1950	403	400	395	423	424	437	449	466	455	443	439	434	29	17	0	11	23	27	32	1	2	6	3	1	1	1	15	13	12	17	-11	-12	-4	-5	6	6	6	3	3	5	5	34	510
1951	428	393	388	388	388	426	446	466	450	434	428	428	40	20	0	16	32	38	38	1	1	6	2	1	1	1	13	38	20	20	-16	-16	-6	0	6	6	6	2	2	4	6	32	416
1952	422	424	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1953	428	423	424	424	424	430	446	458	464	463	449	434	36	20	8	2	3	17	32	1	1	4	5	5	2	1	19	6	16	12	6	-1	-14	-15	6	6	6	6	5	3	3	35	665
1954	425	423	421	422	424	437	449	452	435	414	410	413	29	17	14	31	52	56	53	1	2	3	1	1	1	1	10	13	12	3	-17	-21	-4	3	6	6	6	2	1	5	6	32	320
1955	407	404	412	420	420	410	420	438	417	393	370	362	58	46	28	49	73	96	104	1	1	1	1	1	1	1	7	-10	10	18	-21	-24	-23	-8	4	6	6	1	1	1	4	23	161
1956	336	357	420	402	406	425	441	466	466	463	449	434	41	25	0	0	3	17	32	1	1	6	6	5	2	1	22	19	16	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1957	428	422	417	412	424	437	430	456	447	433	428	427	29	36	10	19	33	38	39	1	1	3	2	1	1	1	10	13	-7	26	-9	-14	-5	-1	6	4	6	4	3	5	5	33	330
1958	423	418	419	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1959	425	419	412	417	424	425	431	433	408	382	360	374	41	35	33	58	84	106	92	1	1	1	1	1	1	1	7	1	6	2	-25	-26	-22	14	6	6	6	1	1	1	6	27	189
1960	368	360	354	375	420	437	447	446	425	402	389	391	29	19	20	41	64	77	75	1	2	1	1	1	1	1	8	17	10	-1	-21	-23	-13	2	6	6	5	1	1	3	6	28	224
1961	389	392	395	394	402	410	416	424	408	389	378	379	56	50	42	58	77	88	87	1	1	1	1	1	1	1	7	8	6	8	-16	-19	-11	1	6	6	6	2	2	3	6	31	217
1962	380	382	389	390	424	431	445	453	443	425	415	412	35	21	13	23	41	51	54	1	1	3	1	1	1	1	9	7	14	8	-10	-18	-10	-3	6	6	6	4	2	4	5	33	297
1963	441	424	424	424	419	430	449	466	459	453	448	434	36	17	0	7	13	18	32	1	2	6	4	3	2	1	19	11	19	17	-7	-6	-5	-14	6	6	6	4	4	5	3	34	646
1964	427	424	424	424	418	410	421	435	410	361	334	335	56	45	31	56	105	132	131	1	1	1	1	1	1	1	7	-8	11	14	-25	-49	-27	1	4	6	6	1	1	1	6	25	175
1965	335	367	393	392	395	414	449	463	453	446	443	434	52	17	3	13	20	23	32	1	2	5	3	1	1	1	14	19	35	14	-10	-7	-3	-9	6	6	6	4	4	5	4	35	490
1966	426	424	424	424	422	430	448	448	423	400	387	388	36	18	18	43	66	79	78	1	2	2	1	1	1	1	9	8	18	0	-25	-23	-13	1	6	6	6	1	1	3	6	29	261
1967	389	402	424	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1968	427	424	423	424	424	437	436	437	412	386	386	390	29	30	29	54	80	80	78	1	1	1	1	1	1	1	7	13	-1	1	-25	-26	0	4	6	5	6	1	1	6	6	31	217
1969	396	404	417	424	424	437	449	466	466	463	449	434	29	17	0	0	3	17	32	1	2	6	6	5	2	1	23	13	12	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1970	427	424	423	393	396	426	427	437	425	408	405	409	40	39	29	41	58	61	57	1	1	1	1	1	1	1	7	30	1	10	-12	-17	-3	4	6	6	6	3	2	5	6	34	238
1971	403	416	424	424	423	437	441	460	460	458	449	434	29	25	6	6	8	17	32	1	1	4	4	4	2	1	17	14	4	19	0	-2	-9	-15	6	6	6	6	5	4	3	36	612
1972	425	422	424	424	424	437	441	448	427	405	396	401	29	25	18	39	61	70	65	1	1	2	1	1	1	1	8	13	4	7	-21	-22	-9	5	6	6	6	1	1	4	6	30	240
1973	401	406	420	424	424	437	449	466	452	435	429	430	29	17	0	14	31	37	36	1	2	6	3	1	1	1	15	13	12	17	-14	-17	-6	1	6	6	6	3	2	4	6	33	495
1974	423	423	422	409	417	433	449	466	463	463	449	434	33	17	0	3	3	17	32	1	2	6	5	5	2	1	22	16	16	17	-3	0	-14	-15	6	6	6	5	6	3	3	35	770
1975	426	419	417	415	424	437	441	466	466	463	449	434	29	25	0	0	3	17	32	1	1	6	6	5	2	1	22	13	4	25	0	-3	-14	-15	6	6	6	6	5	3	3	35	770
1976	431	423	419	410	402	392	397	402	369	334	335	335	74	69	64	97	132	131	131	1	1	1	1	1	1	1	7	-10	5	5	-33	-35	1	0	4	6	6	1	1	6	6	30	210
1977	334	334	330	325	321	323	333	341	334	319	305	291	143	133	125	132	147	161	175	1	1	1	1	1	1	1	7	2	10	8	-7	-15	-14	-14	6	6	6	4	3	3	3	31	217
1978	286	304	358	424	424	437	449	466	459	453	444	434	29	17	0	7	13	22	32	1	2	6	4	3	1	1	18	13	12	17	-7	-6	-9	-10	6	6	6	4	4	4	4	34	612
1979	423	417	411	418	424	437	446	466	447	429	421	419	29	20	0	19	37	45	47	1	1	6	2	1	1	1	13	13	9	20	-19	-18	-8	-2	6	6	6	2	2	4	5	31	403
1980	416	414	414	405	399	430	449	464	453	453	449	434	36	17	2	13	13	17	32	1	2	5	3	3	2	1	17	31	19	15	-11	0	-4	-15	6	6	6	3	6	5	3	35	595
1981	425	419	415	413	412	422	430	432	406	383	371	377	44	36	34	60	83	95	89	1	1	1	1	1	1	1	7	10	8	2	-26	-23	-12	6	6	6	6	1	1	3	6	29	203
1982	386	420	392	396	388	424	449	466	466	463	449	434	42	17	0	0	3	17	32	1	2	6	6	5	2	1	23	36	25	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1983	438	415	417	418	418	433	449	466	466	463	449	434	33	17	0	0	3	17	32	1	2	6	6	5	2	1	23	15	16	17	0	-3	-14	-15	6	6	6	6	5	3	3	35	805
1984	435	392	388	388	392	424	439	462	449	437	431	430	42	27	4	17	29	35	36	1	1	5	2	1	1	1	12	32	15	23	-13	-12	-6	-1	6	6	6	3	3	4	5	33	396
1985	424	424	424	420	422	428	443	443	409	364	334	343	38	23	23	57	102	132	123	1	1	1	1	1	1	1	7	6	15	0	-34	-45	-30	9	6	6	6	1	1	1	6	27	189
1986	340	369	399	424	396	424	449	464	458	453	448	434	42	17	2	8	13	18	32	1	2	5	4	3	2	1	18	28	25	15	-6	-5	-5	-14	6	6	6	4	5	5	3	35	630
1987	427	420	413	405	404	410	412	415	382	334	321	334	56	54	51	84	132	145	132	1	1	1	1	1	1	1	7	6	2	3	-33	-48	-13	13	6	6	6	1	1	3	6	29	203
1988	334	334	369	396	389	387	390	389	350	321	305	372	79	76	77	116	145	161	94	1	1	1	1	1	1	1	7	-2	3	-1	-39	-29	-16	67	5	6	5	1	1	2	6	26	182
1989	358	378	393	403	396	437	449	453	431	408	403	407	29	17	13	35	58	63	59	1	2	3	1	1	1	1	10	41	12	4	-22	-23	-5	4	6	6	6	1	1	5	6	31	310
1990	404	403	399	399	397	409	410	413	380	334	343	344	57	56	53	86	132	123	122	1	1	1	1	1	1	1	7	12	1	3	-33	-46	9	1	6	6	6	1	1	6	6	32	224
1991	334	334	335	332	332	383	407	425	414	409	404	404	83	59	41	52	57	62	62	1	1	1	1	1	1	1	7	51	24	18	-11	-5	-5	0	6	6	6	3	5	6	6	37	259
1992	387	385	375	361	389	407	409	408	374	334	323	317	59	57	58	92	132	143	149	1	1	1	1	1	1	1	7	18	2	-1	-34	-40	-11	-6	6	6	5	1	1	3	4	26	182
1993	316	315	357	424	427	434	449	466	466	456	449	434	32	17	0	0	10	17	32	1	2	6	6	3	2	1	21	7	15	17	0	-10	-7	-15	6	6	6	6	4	4	3	35	735
1994	423	413	407	395	390	388	394	400	374	334	334	332	78	72	66	92	132	132	134	1	1	1	1	1	1	1	7	-2	6	6	-26	-40	0	-2	5	6	6	1	1	6	5	30	210

73 - year Average: 13

73 - year Average: 32 416.75
1929 - '34 Average: 215.2

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C—0 3 2 5 4 1

C-032542

STUDY: 1995C VRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CP # 10, NEW MELONES RESERVOIR, EOP SURFACE ELEVATION (FT)
Project /1995C06F-SWRCB-519A/10/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 1088'

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevatio g Table:
If [DFMRE] <= 0', lse
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP	Elev. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	939	941	945	949	962	971	970	998	1022	1015	1005	999	126	117	118	90	66	73	83	1	1	1	1	1	1	1	7	9	-1	28	24	-7	-10	-6	6	5	6	6	4	4	4	35	245
1923	998	1000	1006	1013	1018	1021	1023	1038	1040	1033	1021	1016	70	67	65	50	48	55	67	1	1	1	1	1	1	1	7	3	2	15	2	-7	-12	-5	6	6	6	6	4	3	5	36	252
1924	1015	1016	1019	1021	1023	1023	1018	1010	999	990	983	980	65	65	70	78	89	98	105	1	1	1	1	1	1	1	7	0	-5	-8	-11	-9	-7	-3	6	5	4	3	4	4	5	31	217
1925	979	981	983	986	1000	1008	1010	1023	1026	1020	1011	1006	88	80	78	65	62	68	77	1	1	1	1	1	1	1	7	8	2	13	3	-6	-9	-5	6	6	6	6	4	4	5	37	259
1926	1005	1006	1007	1009	1015	1019	1021	1016	1005	994	984	978	73	69	67	72	83	94	104	1	1	1	1	1	1	1	7	4	2	-5	-11	-11	-10	-6	6	6	5	3	3	4	4	31	217
1927	977	979	986	992	1005	1012	1019	1031	1037	1028	1017	1013	83	76	69	57	51	60	71	1	1	1	1	1	1	1	7	7	7	12	6	-9	-11	-4	6	6	6	6	4	3	5	36	252
1928	1012	1017	1020	1022	1027	1045	1046	1054	1047	1035	1027	1022	61	43	42	34	41	53	61	1	1	1	1	1	1	1	7	18	1	8	-7	-12	-8	-5	6	6	6	4	3	4	5	34	238
1929	1021	1023	1025	1026	1028	1029	1026	1023	1014	1005	998	994	60	59	62	65	74	83	90	1	1	1	1	1	1	1	7	1	-3	-3	-9	-9	-7	-4	6	5	5	4	4	4	5	33	231
1930	994	995	996	999	1002	1008	1008	1004	1000	989	980	973	86	80	80	84	88	99	108	1	1	1	1	1	1	1	7	6	0	-4	-4	-11	-9	-7	6	6	5	5	3	4	4	33	231
1931	972	975	977	979	981	982	978	969	957	945	938	933	107	106	110	119	131	143	150	1	1	1	1	1	1	1	7	1	-4	-9	-12	-12	-7	-5	6	5	4	3	3	4	5	30	210
1932	931	933	939	942	955	961	959	978	991	982	971	964	133	127	129	110	97	106	117	1	1	1	1	1	1	1	7	6	-2	19	13	-9	-11	-7	6	5	6	6	4	3	4	34	238
1933	963	964	967	968	970	971	965	960	957	944	934	928	118	117	123	128	131	144	154	1	1	1	1	1	1	1	7	1	-6	-5	-3	-13	-10	-6	6	4	5	5	3	4	4	31	217
1934	927	929	932	935	939	945	939	928	913	896	883	875	149	143	149	160	175	192	205	1	1	1	1	1	1	1	7	6	-6	-11	-15	-17	-13	-8	6	4	3	3	2	3	4	25	175
1935	871	871	873	878	883	891	905	934	946	935	921	911	205	197	183	154	142	153	167	1	1	1	1	1	1	1	7	8	14	29	12	-11	-14	-10	6	6	6	6	3	3	4	34	238
1936	908	911	915	926	947	957	967	987	994	982	968	961	141	131	121	101	94	106	120	1	1	1	1	1	1	1	7	10	10	20	7	-12	-14	-7	6	6	6	6	3	3	4	34	238
1937	960	962	964	967	978	991	990	1008	1011	1001	991	984	110	97	98	80	77	87	97	1	1	1	1	1	1	1	7	13	-1	18	3	-10	-10	-7	6	5	6	6	4	4	4	35	245
1938	982	984	995	1003	1020	1041	1055	1083	1088	1087	1079	1075	68	47	33	5	0	1	9	1	1	1	4	6	5	4	22	21	14	28	5	-1	-8	-4	6	6	6	6	5	4	5	38	836
1939	1050	1050	1050	1050	1050	1052	1050	1043	1033	1024	1017	1012	38	36	38	45	55	64	71	1	1	1	1	1	1	1	7	2	-2	-7	-10	-9	-7	-5	6	5	4	4	4	4	5	32	224
1940	1011	1011	1012	1022	1036	1052	1059	1074	1074	1065	1056	1051	52	36	29	14	14	23	32	1	1	1	3	3	1	1	11	16	7	15	0	-9	-9	-5	6	6	6	6	4	4	5	37	407
1941	1050	1050	1050	1050	1050	1055	1056	1073	1081	1076	1068	1063	38	33	32	15	7	12	20	1	1	1	2	4	3	1	13	5	1	17	8	-5	-8	-5	6	6	6	6	5	4	5	38	494
1942	1050	1050	1050	1050	1050	1055	1060	1076	1088	1087	1078	1074	38	33	28	12	0	1	10	1	1	1	3	6	5	3	20	5	5	16	12	-1	-9	-4	6	6	6	6	5	4	5	38	760
1943	1050	1050	1050	1050	1050	1055	1066	1075	1080	1074	1065	1060	38	33	22	13	8	14	23	1	1	1	3	4	3	1	14	5	11	9	5	-6	-9	-5	6	6	6	6	4	4	5	37	518
1944	1050	1050	1050	1050	1050	1053	1049	1049	1045	1035	1027	1021	38	35	39	39	43	53	61	1	1	1	1	1	1	1	7	3	-4	0	-4	-10	-8	-6	6	5	6	5	4	4	4	34	238
1945	1021	1025	1028	1032	1045	1052	1052	1063	1071	1065	1056	1051	43	36	36	25	17	23	32	1	1	1	1	2	1	1	8	7	0	11	8	-6	-9	-5	6	6	6	6	4	4	5	37	296
1946	1050	1050	1050	1050	1050	1054	1060	1071	1070	1061	1052	1048	38	34	28	17	18	27	36	1	1	1	2	2	1	1	9	4	6	11	-1	-9	-9	-4	6	6	6	5	4	4	5	36	324
1947	1048	1050	1050	1050	1050	1054	1050	1045	1036	1025	1018	1014	38	34	38	43	52	63	70	1	1	1	1	1	1	1	7	4	-4	-5	-9	-11	-7	-4	6	5	5	4	3	4	5	32	224
1948	1014	1015	1016	1017	1019	1021	1021	1025	1034	1025	1017	1013	69	67	67	63	54	63	71	1	1	1	1	1	1	1	7	2	0	4	9	-9	-8	-4	6	6	6	6	4	4	5	37	259
1949	1012	1014	1016	1017	1019	1023	1023	1027	1023	1012	1005	1001	69	65	65	61	65	76	83	1	1	1	1	1	1	1	7	4	0	4	-4	-11	-7	-4	6	6	6	5	3	4	5	35	245
1950	999	999	1000	1005	1012	1018	1020	1034	1038	1029	1022	1018	76	70	68	54	50	59	66	1	1	1	1	1	1	1	7	6	2	14	4	-9	-7	-4	6	6	6	6	4	4	5	37	259
1951	1016	1043	1050	1050	1050	1055	1058	1064	1060	1050	1041	1036	38	33	30	24	28	38	47	1	1	1	1	1	1	1	7	5	3	6	-4	-10	-9	-5	6	6	6	5	4	4	5	36	252
1952	1035	1037	1042	1050	1050	1055	1062	1088	1088	1088	1080	1075	38	33	26	0	0	0	8	1	1	1	6	6	6	4	25	5	7	26	0	0	-8	-5	6	6	6	6	6	4	5	39	975
1953	1050	1050	1050	1050	1050	1054	1054	1054	1061	1056	1049	1045	38	34	34	34	27	32	39	1	1	1	1	1	1	1	7	4	0	0	7	-5	-7	-4	6	6	6	6	5	4	5	38	266
1954	1044	1046	1048	1050	1050	1055	1059	1068	1063	1054	1047	1042	38	33	29	20	25	34	41	1	1	1	1	1	1	1	7	5	4	9	-5	-9	-7	-5	6	6	6	5	4	4	5	36	252
1955	1041	1043	1045	1049	1050	1052	1048	1044	1041	1031	1023	1018	38	36	40	44	47	57	65	1	1	1	1	1	1	1	7	2	-4	-4	-3	-10	-8	-5	6	5	5	5	4	4	5	34	238
1956	1017	1019	1043	1050	1050	1055	1059	1076	1088	1084	1075	1071	38	33	29	12	0	4	13	1	1	1	3	6	5	3	20	5	4	17	12	-4	-9	-4	6	6	6	6	5	4	5	38	760
1957	1050	1050	1050	1050	1050	1055	1053	1058	1061	1053	1046	1040	38	33	35	30	27	35	42	1	1	1	1	1	1	1	7	5	-2	5	3	-8	-7	-6	6	5	6	6	4	4	4	35	245
1958	1037	1039	1040	1046	1050	1055	1066	1088	1088	1084	1076	1071	38	33	22	0	0	4	12	1	1	1	6	6	5	3	23	5	11	22	0	-4	-8	-5	6	6	6	6	5	4	5	38	874
1959	1050	1050	1050	1050	1050	1053	1050	1041	1032	1022	1015	1011	38	35	38	47	56	66	73	1	1	1	1	1	1	1	7	3	-3	-9	-9	-10	-7	-4	6	5	4	4	4	4	5	32	224
1960	1010	1012	1013	1015	1019	1025	1023	1017	1009	998	991	983	69	63	65	71	79	90	97	1	1	1	1	1	1	1	7	6	-2	-6	-8	-11	-7	-8	6	5	4	4	3	4	4	30	210
1961	978	982	985	986	989	991	987	980	968	956	949	944	99	97	101	108	120	132	139	1	1	1	1	1	1	1	7	2	-4	-7	-12	-12	-7	-5	6	5	4	3	3	4	5	30	210
1962	943	944	946	947	957	962	964	970	973	962	953	946	131	126	124	118	115	126	135	1	1	1	1	1	1	1	7	5	2	6	3	-11	-9	-7	6	6	6	6	3	4	4	35	245
1963	945	947	950	957	974	980	979	1003	1011	1003	993	987	114	108	109	85	77	85	95	1	1	1	1	1	1	1	7	6	-1	24	8	-8	-10	-6	6	5	6	6	4	4	4	35	245
1964	986	990	993	997	1000	1002	998	994	986	972	963	956	88	86	90	94	102	116	125	1	1	1	1	1	1	1	7	2	-4	-4	-8	-14	-9	-7	6	5	5	4	3	4	4	31	217
1965	954	957	986	1007	1018	1025	1034	1047	1057	1052	1043	1039	70	63	54	41	31	36	45	1	1	1	1	1	1	1	7	7	9	13	10	-5	-9	-4	6	6	6	6	5	4	5	38	266
1966	1037	1041	1045	1050	1050	1053	1052	1055	1045	1034	1027	1021	38	35	36	33	43	54	61	1	1	1	1	1	1	1	7	3	-1	3	-10	-11	-7	-6	6	5	6	4	3	4	4	32	224
1967	1020	1021	1030	1039	1048	1055	1062	1084	1088	1088	1080	1075	42	33	26	4	0	0	8	1	1	1	5	6	6	4	24	9	7	22	4	0	-8	-5	6	6	6	6	6	4	5	39	936
1968	1050	1050	1050	1050	1050	1054	1051	1048	1039	1029	1021	1015	38	34	37	40	49	59	67	1	1	1	1	1	1	1	7	4	-3	-3	-9	-10	-8	-6	6	5	5	4	4	4	4	32	224
1969	1015	1018	1020	1048	1050	1055	1071	1088	1088	1087	1078	1072	38	33	17	0	0	1	10	1	1	2	6	6	5	3	24	5	16	17	0	-1	-9	-6	6	6	6	6	5	4	4	37	888
1970	1050	1050	1050	1050	1050	1055	1054	1060	1061	1051	1042	1037	38	33	34	28	27	37	46	1	1	1	1	1	1	1	7	5	-1	6	1	-10	-9	-5	6	5	6	6	4	4	5	36	252
1971	1036	1040	1048	1050	1050	1055	1055	1061	1065	1059	1052	1048	38	33	33	27	23	29	36	1	1	1	1	1	1	1	7	5	0	6	4	-6	-7	-4	6	6	6	6	4	4	5	37	259
1972	1047	1050	1050	1050	1050	1055	1051	1055	1047	1036	1029	1024	38	33	37	33	41	52	59	1	1	1	1	1	1	1	7	5	-4	4	-8	-11	-7	-5	6	5	6	4	3	4	5	33	231
1973	1024	1026	1029	1040	1050	1055	1055	1069	1072	1062	1052	1048	38	33	33	19	16	26	36	1	1	1	2	2	1	1	9	5	0	14	3	-10	-10	-4	6	6	6	6	4	4	5	37	333
1974	1047	1050	1050	1050	1050	1055	1064	1080	1086	1079	1069	1065	38	33	24	8	2	9	19	1	1	1	4	5	4	2	18	5	9	16	6	-7	-10	-4	6	6	6	6	4	4	5	37	666
1975	1050	1050	1050	1050	1050	1055	1055	1063	1077	1071	1062	1057	38	33	33	25	11	17	26	1	1	1	1	3	2	1	10	5	0	8	14	-6	-9	-5	6	6	6	6	4	4	5	37	370
1976	1050	1050	1050	1050	1050	1051	1046	1039	1028	1019	1013	1008	38	37	42	49	60	69	75	1	1	1	1	1	1	1	7	1	-5	-7	-11	-9	-6	-5	6	5	4	3	4	4	5	31	217
1977	1007	1008	1009	1009	1009	1008	1003	997	989	977	970	965	79	80	85	91	99	111	118	1	1	1	1	1	1	1	7	-1	-5	-6	-8	-12	-7	-5	5	5	4	4	3	4	5	30	210
1978	962	962	964	973	983	1000	1006	1020	1030	1028	1018	1015	105	88	82	68	58	60	70	1	1	1	1	1	1	1	7	17	6	14	10	-2	-10	-3	6	6	6	6	5	4	5	38	266
1979	1014	1016	1019	1026	1037	1050	1050	1064	1061	1051	1041	1036	51	38	38	24	27	37	47	1	1	1	1	1	1	1	7	13	0	14	-3	-10	-10	-5	6	6	6	5	4	4	5	36	252
1980	1036	1038	1040	1050	1050	1055	1061	1070	1080	1080	1071	1066	38	33	27	18	8	8	17	1	1	1	2	4	4	2	15	5	6	9	10	0	-9	-5	6	6	6	6	6	4	5	39	585
1981	1050	1050	1050	1050	1050	1053	1051	1045	1033	1022	1016	1012	38	35	37	43	55	66	72	1	1	1	1	1	1	1	7	3	-2	-6	-12	-11	-6	-4	6	5	4	3	3	4	5	30	210
1982	1012	1018	1032	1050	1050	1055	1071	1088	1088	1087	1079	1075	38	33	17	0	0	1	9	1	1	2	6	6	5	4	25	5	16	17	0	-1	-8	-4	6	6	6	6	5	4	5	38	950
1983	1050	1050	1050	1050	1050	1055	1061	1077	1088	1088	1083	1075	38	33	27	11	0	0	5	1	1	1	3	6	6	4	22	5	6	16	11	0	-5	-8	6	6	6	6	6	5	4	39	858
1984	1050	1050	1050	1050	1050	1055	1055	1061	1060	1053	1046	1042	38	33	33	27	28	35	42	1	1	1	1	1	1	1	7	5	0	6	-1	-7	-7	-4	6	6	6	5	4	4	5	36	252
1985	1042	1046	1050	1050	1050	1054	1052	1050	1040	1030	1024	1020	38	34	36	38	48	58	64	1	1	1	1	1	1	1	7	4	-2	-2	-10	-10	-6	-4	6	5	5	4	4	4	5	33	231
1986	1020	1022	1025	1033	1050	1055	1060	1068	1074	1066	1058	1056	38	33	28	20	14	22	30	1	1	1	1	3	1	1	9	5	5	8	6	-8	-8	-2	6	6	6	6	4	4	5	37	333
1987	1050	1050	1050	1050	1050	1052	1047	1038	1027	1019	1015	1012	38	36	41	50	61	69	73	1	1	1	1	1	1	1	7	2	-5	-9	-11	-8	-4	-3	6	5	4	3	4	5	5	32	224
1988	1010	1010	1010	1011	1012	1014	1009	1002	994	986	982	977	76	74	79	86	94	102	106	1	1	1	1	1	1	1	7	2	-5	-7	-8	-8	-4	-5	6	5	4	4	4	5	5	33	231
1989	975	974	975	975	977	988	986	981	973	961	955	952	111	100	102	107	115	127	133	1	1	1	1	1	1	1	7	11	-2	-5	-8	-12	-6	-3	6	5	5	4	3	4	5	32	224
1990	953	956	959	961	964	968	961	949	937	925	919	912	124	120	127	139	151	163	169	1	1	1	1	1	1	1	7	4	-7	-12	-12	-12	-6	-7	6	4	3	3	3	4	4	27	189
1991	909	910	914	914	915	922	917	911	895	876	866	861	173	166	171	177	193	212	222	1	1	1	1	1	1	1	7	7	-5	-6	-16	-19	-10	-5	6	5	4	2	2	4	5	28	196
1992	861	862	867	870	878	886	878	860	841	823	813	805	210	202	210	228	247	265	275	1	1	1	1	1	1	1	7	8	-8	-18	-19	-18	-10	-8	6	4	2	2	2	4	4	24	168
1993	806	810	815	832	924	969	977	989	997	987	975	971	164	119	111	99	91	101	113	1	1	1	1	1	1	1	7	45	8	12	8	-10	-12	-4	6	6	6	6	4	3	5	36	252
1994	969	970	973	973	973	978	974	970	960	948	941	938	115	110	114	118	128	140	147	1	1	1	1	1	1	1	7	5	-4	-4	-10	-12	-7	-3	6	5	5	4	3	4	5	32	224

73 - year Average: 10

73 - year Average: 34 338.64
1929 - '34 Average: 217.0

A2-202

C—032542

STUDY 1: ___F-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CP # 81, DON PEDRO RESERVOIR, EOP SURFACE ELEVATION (FT)
Project. /1995C06F-SWRCB-519A/81/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 832'

Reservoir Elevation Sc[illegible]ble:
If [DFMRE] <= 0', then [illegible]
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	599	582	580	601	658	690	699	725	782	779	763	752
1923	746	745	749	761	778	784	788	792	801	795	780	770
1924	764	762	757	755	758	754	749	744	736	724	710	701
1925	698	699	699	703	725	741	755	768	786	777	761	751
1926	745	742	738	737	746	751	765	778	775	761	746	736
1927	732	731	736	742	770	785	795	797	815	808	793	783
1928	777	777	778	781	789	800	802	819	819	804	789	779
1929	773	768	765	764	767	769	770	775	782	773	764	757
1930	754	751	748	749	754	761	764	768	782	773	764	758
1931	756	755	754	756	759	757	751	742	731	718	705	697
1932	694	691	700	716	750	764	765	772	790	785	770	760
1933	753	746	741	740	746	749	747	744	761	750	736	727
1934	720	719	717	720	730	738	737	733	730	715	700	692
1935	688	688	689	700	720	733	754	764	791	779	764	752
1936	746	744	739	744	781	796	802	820	832	823	808	798
1937	792	786	782	785	800	800	802	816	832	819	805	795
1938	789	784	800	800	800	800	800	804	831	832	819	808
1939	800	799	799	800	800	800	802	804	800	787	774	766
1940	764	764	761	774	800	800	802	816	829	814	799	789
1941	784	781	783	796	800	800	800	812	832	831	817	808
1942	800	796	800	800	800	800	802	807	831	832	818	808
1943	800	800	800	800	800	800	802	822	832	824	810	799
1944	794	792	788	787	793	800	802	809	816	803	788	778
1945	773	774	778	783	800	800	802	807	831	825	810	799
1946	796	797	800	800	800	800	802	806	812	796	780	769
1947	763	763	765	769	776	781	778	783	777	764	750	743
1948	740	739	738	739	740	741	737	747	772	762	744	734
1949	728	722	717	716	723	733	740	749	756	739	720	707
1950	700	694	688	694	713	725	734	747	763	748	730	719
1951	713	760	800	800	800	800	798	794	798	783	769	759
1952	752	750	757	782	800	800	800	820	832	832	819	808
1953	800	795	793	800	800	800	802	804	814	810	796	787
1954	782	778	775	777	785	797	802	820	820	806	790	780
1955	775	771	769	775	782	785	782	786	792	780	768	761
1956	756	752	800	800	800	800	802	818	832	832	818	808
1957	800	798	793	793	799	800	800	807	828	815	801	792
1958	787	783	780	785	800	800	800	821	832	832	819	808
1959	800	794	789	793	800	800	802	800	794	782	770	764
1960	761	758	755	756	764	769	771	777	780	770	760	754
1961	751	749	749	751	753	752	746	738	731	719	707	700
1962	697	694	692	694	718	737	748	753	779	771	757	747
1963	742	737	734	738	763	775	783	797	822	817	803	795
1964	789	790	791	796	800	800	797	795	797	786	775	769
1965	766	767	798	800	800	800	802	807	828	828	817	807
1966	800	800	800	800	800	800	800	796	789	774	759	750
1967	745	742	753	769	787	800	800	817	832	832	820	808
1968	800	795	791	792	800	800	802	805	803	791	779	771
1969	767	767	770	800	800	800	800	823	832	832	819	808
1970	800	799	800	800	800	800	799	799	807	795	780	771
1971	766	768	772	788	800	800	801	801	807	799	787	778
1972	773	769	772	779	792	800	800	798	795	783	772	768
1973	783	782	784	775	800	800	802	812	827	812	798	788
1974	783	787	798	800	800	800	800	806	828	819	805	796
1975	791	789	786	786	796	800	802	812	832	825	812	803
1976	800	800	799	799	800	799	794	788	778	767	758	752
1977	749	747	743	743	742	738	729	717	703	689	674	665
1978	661	656	659	685	718	750	762	778	815	822	809	803
1979	799	795	792	800	800	800	802	822	832	818	803	794
1980	789	788	787	800	800	800	800	817	832	832	819	808
1981	800	797	794	795	799	800	802	806	805	793	782	775
1982	771	777	796	800	800	800	800	820	832	832	820	808
1983	800	800	800	800	800	800	800	819	832	832	832	808
1984	800	800	800	800	800	800	797	802	813	801	786	775
1985	772	773	779	786	794	800	801	800	796	784	773	766
1986	764	764	768	774	800	800	802	827	832	825	811	802
1987	796	791	786	784	788	788	786	784	780	770	760	754
1988	751	750	750	755	760	762	757	749	742	730	718	711
1989	707	704	705	707	711	725	737	753	760	749	738	733
1990	731	731	731	733	736	739	737	735	733	720	707	699
1991	695	692	689	688	688	695	694	711	722	712	702	696
1992	695	695	694	697	706	711	714	722	722	707	694	685
1993	680	675	674	705	734	762	769	783	813	812	798	789
1994	783	777	773	772	775	778	777	782	780	770	761	755

YEAR	Difference from Maximum Reservoir Elevation [DFMRE]							Reservoir Elevation Score								Reservoir Change from Previous Month [fluctuation]							Reservoir Fluctuation Score								Largemouth Bass Reservoir Habitat Index
	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	MAR	APR	MAY	JUN	JUL	AUG	SEP	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	142	133	107	50	53	69	80	1	1	1	1	1	1	1	7	34	9	26	57	-3	-16	-11	6	6	6	6	5	2	3	34	238
1923	48	44	40	31	37	52	62	1	1	1	1	1	1	1	7	8	4	4	9	-6	-15	-10	6	6	6	6	4	3	4	35	245
1924	78	83	88	96	108	122	131	1	1	1	1	1	1	1	7	-2	-5	-5	-8	-12	-14	-9	5	5	5	4	3	3	4	29	203
1925	91	77	64	46	55	71	81	1	1	1	1	1	1	1	7	16	14	13	18	-9	-16	-10	6	6	6	6	4	2	4	34	238
1926	81	67	54	57	71	86	96	1	1	1	1	1	1	1	7	5	14	13	-3	-14	-15	-10	6	6	6	5	3	3	4	33	231
1927	47	37	35	17	24	39	49	1	1	1	2	1	1	1	8	15	10	2	18	-7	-15	-10	6	6	6	6	4	3	4	35	280
1928	32	30	13	13	28	43	53	1	1	3	3	1	1	1	11	11	2	17	0	-15	-15	-10	6	6	6	6	3	3	4	34	374
1929	63	62	57	50	59	68	75	1	1	1	1	1	1	1	7	2	1	5	7	-9	-9	-7	6	6	6	6	4	4	4	36	252
1930	71	68	64	50	59	68	74	1	1	1	1	1	1	1	7	7	3	4	14	-9	-9	-6	6	6	6	6	4	4	4	36	252
1931	75	81	90	101	114	127	135	1	1	1	1	1	1	1	7	-2	-6	-9	-11	-13	-13	-8	5	4	4	3	3	3	4	26	182
1932	68	67	60	42	47	62	72	1	1	1	1	1	1	1	7	14	1	7	18	-5	-15	-10	6	6	6	6	5	3	4	36	252
1933	83	85	88	71	82	96	105	1	1	1	1	1	1	1	7	3	-2	-3	17	-11	-14	-9	6	5	5	5	4	3	4	32	224
1934	94	95	99	102	117	132	140	1	1	1	1	1	1	1	7	8	-1	-4	-3	-15	-15	-8	6	5	5	5	3	3	4	31	217
1935	99	78	68	41	53	68	80	1	1	1	1	1	1	1	7	13	21	10	27	-12	-15	-12	6	6	6	6	3	3	3	33	231
1936	36	30	12	0	9	24	34	1	1	3	6	4	1	1	17	15	6	18	12	-9	-15	-10	6	6	6	6	4	3	4	35	595
1937	32	30	16	0	13	27	37	1	1	2	6	3	1	1	15	0	2	14	16	-13	-14	-10	6	6	6	6	3	3	4	34	510
1938	32	32	28	1	0	13	24	1	1	1	5	6	3	1	18	0	0	4	27	1	-13	-11	6	6	6	6	6	3	3	36	648
1939	32	30	28	32	45	58	66	1	1	1	1	1	1	1	7	0	2	2	-4	-13	-13	-8	6	6	6	5	3	3	4	33	231
1940	32	30	16	3	18	33	43	1	1	2	5	2	1	1	13	0	2	14	13	-15	-15	-10	6	6	6	6	3	3	4	34	442
1941	32	32	20	0	1	15	24	1	1	1	6	5	2	1	17	0	0	12	20	-1	-14	-9	6	6	6	6	5	3	4	36	612
1942	32	30	25	1	0	14	24	1	1	1	5	6	3	1	18	0	2	5	24	1	-14	-10	6	6	6	6	6	3	4	37	666
1943	32	30	10	0	8	22	33	1	1	3	6	4	1	1	17	0	2	20	10	-8	-14	-11	6	6	6	6	4	3	3	34	578
1944	32	30	23	16	29	44	54	1	1	1	2	1	1	1	8	7	2	7	7	-13	-15	-10	6	6	6	6	3	3	4	34	272
1945	32	30	25	1	7	22	33	1	1	1	5	4	1	1	14	0	2	5	24	-8	-15	-11	6	6	6	6	4	3	3	34	476
1946	32	30	26	20	36	52	63	1	1	1	1	1	1	1	7	0	2	4	6	-16	-16	-11	6	6	6	6	2	2	3	31	217
1947	51	54	49	55	68	82	89	1	1	1	1	1	1	1	7	5	-3	5	-6	-13	-14	-7	6	5	6	4	3	3	4	31	217
1948	91	95	85	60	70	88	98	1	1	1	1	1	1	1	7	1	-4	10	25	-10	-18	-10	6	5	6	6	4	2	4	33	231
1949	99	92	83	76	93	112	125	1	1	1	1	1	1	1	7	10	7	9	7	-17	-19	-13	6	6	6	6	2	2	3	31	217
1950	107	98	85	69	84	102	113	1	1	1	1	1	1	1	7	12	9	13	16	-15	-18	-11	6	6	6	6	3	2	3	32	224
1951	32	34	38	34	49	63	73	1	1	1	1	1	1	1	7	0	-2	-4	4	-15	-14	-10	6	5	5	6	3	3	4	32	224
1952	32	32	12	0	0	13	24	1	1	3	6	6	3	1	21	0	0	20	12	0	-13	-11	6	6	6	6	6	3	3	36	756
1953	32	30	28	18	22	36	45	1	1	1	2	1	1	1	8	0	2	2	10	-4	-14	-9	6	6	6	6	5	3	4	36	288
1954	35	30	12	12	26	42	52	1	1	3	3	1	1	1	11	12	5	18	0	-14	-16	-10	6	6	6	6	3	2	4	33	363
1955	47	50	46	40	52	64	71	1	1	1	1	1	1	1	7	3	-3	4	6	-12	-12	-7	6	5	6	6	3	3	4	33	231
1956	32	30	14	0	0	14	24	1	1	3	6	6	3	1	21	0	2	16	14	0	-14	-10	6	6	6	6	6	3	4	37	777
1957	32	32	25	4	17	31	40	1	1	1	5	2	1	1	12	1	0	7	21	-13	-14	-9	6	6	6	6	3	3	4	34	408
1958	32	32	11	0	0	13	24	1	1	3	6	6	3	1	21	0	0	21	11	0	-13	-11	6	6	6	6	6	3	3	36	756
1959	32	30	32	38	50	62	68	1	1	1	1	1	1	1	7	0	2	-2	-6	-12	-12	-6	6	6	5	4	3	3	4	31	217
1960	63	61	55	52	62	72	78	1	1	1	1	1	1	1	7	5	2	6	3	-10	-10	-6	6	6	6	6	4	4	4	36	252
1961	80	86	94	101	113	125	132	1	1	1	1	1	1	1	7	-1	-6	-8	-7	-12	-12	-7	5	4	4	4	3	3	4	27	189
1962	95	84	79	53	61	75	85	1	1	1	1	1	1	1	7	19	11	5	26	-8	-14	-10	6	6	6	6	4	3	4	35	245
1963	57	49	35	10	15	29	37	1	1	1	3	2	1	1	10	12	8	14	25	-5	-14	-8	6	6	6	6	5	3	4	36	360
1964	32	35	37	35	46	57	63	1	1	1	1	1	1	1	7	0	-3	-2	2	-11	-11	-6	6	5	5	6	3	3	4	32	224
1965	32	30	25	4	4	15	25	1	1	1	5	5	2	1	16	0	2	5	21	0	-11	-10	6	6	6	6	3	3	4	37	592
1966	32	32	36	43	58	73	82	1	1	1	1	1	1	1	7	0	0	-4	-7	-15	-15	-9	6	6	5	4	3	3	4	31	217
1967	32	32	15	0	0	12	24	1	1	2	6	6	3	1	20	13	0	17	15	0	-12	-12	6	6	6	6	6	3	3	36	720
1968	32	30	27	29	41	53	61	1	1	1	1	1	1	1	7	0	2	3	-2	-12	-12	-8	6	6	6	5	3	3	4	33	231
1969	32	32	9	0	0	13	24	1	1	4	6	6	3	1	22	0	0	23	9	0	-13	-11	6	6	6	6	6	3	3	36	792
1970	32	33	33	25	37	52	61	1	1	1	1	1	1	1	7	0	-1	0	8	-12	-15	-9	6	5	6	6	3	3	4	33	231
1971	32	31	31	25	33	45	54	1	1	1	1	1	1	1	7	0	1	0	6	-8	-12	-9	6	6	6	6	4	3	4	35	245
1972	32	32	34	37	49	60	66	1	1	1	1	1	1	1	7	8	0	-2	-3	-12	-11	-6	6	6	5	5	3	3	4	32	224
1973	32	30	20	5	20	34	44	1	1	1	4	1	1	1	10	0	2	10	15	-15	-14	-10	6	6	6	6	3	3	4	34	340
1974	32	32	26	4	13	27	36	1	1	1	5	3	1	1	13	0	0	6	22	-9	-14	-9	6	6	6	6	4	3	4	35	455
1975	32	30	20	0	7	20	29	1	1	1	6	4	1	1	15	2	2	10	20	-7	-13	-9	6	6	6	6	4	3	4	35	525
1976	33	38	44	54	65	74	80	1	1	1	1	1	1	1	7	-1	-5	-6	-10	-11	-9	-6	5	5	4	4	3	4	4	29	203
1977	94	103	115	129	143	158	167	1	1	1	1	1	1	1	7	-4	-9	-12	-14	-14	-15	-9	5	4	3	3	3	3	4	25	175
1978	82	70	54	17	10	23	29	1	1	1	2	3	1	1	10	32	12	16	37	7	-13	-6	6	6	6	6	6	3	4	37	370
1979	32	30	10	0	14	29	38	1	1	3	6	3	1	1	16	0	2	20	10	-14	-15	-9	6	6	6	6	3	3	4	34	544
1980	32	32	15	0	0	13	24	1	1	2	6	6	3	1	20	0	0	17	15	0	-13	-11	6	6	6	6	6	3	3	36	720
1981	32	30	26	27	39	50	57	1	1	1	1	1	1	1	7	1	2	4	-1	-12	-11	-7	6	6	6	5	3	3	4	33	231
1982	32	32	12	0	0	12	24	1	1	3	6	6	3	1	21	0	0	20	12	0	-12	-12	6	6	6	6	6	3	3	36	756
1983	32	32	13	0	0	0	24	1	1	3	6	6	6	1	24	0	0	19	13	0	0	-24	6	6	6	6	6	6	1	37	888
1984	32	35	30	19	31	46	57	1	1	1	2	1	1	1	8	0	-3	5	11	-12	-15	-11	6	5	6	6	3	3	3	32	256
1985	32	31	32	36	48	59	66	1	1	1	1	1	1	1	7	6	1	-1	-4	-12	-11	-7	6	6	5	5	3	3	4	32	224
1986	32	30	5	0	7	21	30	1	1	4	6	4	1	1	18	0	2	25	5	-7	-14	-9	6	6	6	6	4	3	4	35	630
1987	44	46	48	52	62	72	78	1	1	1	1	1	1	1	7	2	-2	-2	-4	-10	-10	-6	6	5	5	5	4	4	4	33	231
1988	70	75	83	90	102	114	121	1	1	1	1	1	1	1	7	2	-5	-8	-7	-12	-12	-7	6	5	4	4	3	3	4	29	203
1989	107	95	79	72	83	94	99	1	1	1	1	1	1	1	7	14	12	16	7	-11	-11	-5	6	6	6	6	3	3	5	35	245
1990	93	95	97	99	112	125	133	1	1	1	1	1	1	1	7	3	-2	-2	-2	-13	-13	-8	6	5	5	5	3	3	4	31	217
1991	137	138	121	110	120	130	136	1	1	1	1	1	1	1	7	7	-1	17	11	-10	-10	-6	6	5	6	6	4	4	4	35	245
1992	121	118	110	110	125	138	147	1	1	1	1	1	1	1	7	5	3	8	0	-16	-13	-9	6	6	6	6	3	3	4	34	238
1993	70	63	49	19	20	34	43	1	1	1	2	1	1	1	8	28	7	14	30	-1	-14	-9	6	6	6	6	5	3	4	36	288
1994	54	55	50	52	62	71	77	1	1	1	1	1	1	1	7	3	-1	5	-2	-10	-9	-6	6	5	6	5	4	4	4	34	238
73 - year Average:															11								73 - year Average:							34	360.53
																							1929 - '34 Average:								229.8

A2-203

C-032543

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STUDY 195 SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CP # 20, LAKE [illegible]CLURE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-519A/20/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation 867'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	680	680	696	712	759	779	789	845	867	860	846	836
1923	808	808	808	808	808	813	826	853	859	849	834	825
1924	808	808	808	808	808	807	807	807	794	776	763	752
1925	752	758	763	787	792	801	818	840	845	832	816	803
1926	802	802	803	805	808	814	834	832	831	827	820	812
1927	808	808	808	808	808	815	817	847	859	854	850	840
1928	808	808	808	808	808	809	806	819	817	810	806	802
1929	802	801	801	800	802	804	804	807	807	809	812	806
1930	805	804	803	803	803	799	802	803	807	810	813	811
1931	808	808	808	808	808	808	808	808	796	778	765	755
1932	753	754	773	784	808	817	824	848	867	857	843	832
1933	808	807	806	808	808	811	814	821	836	824	809	801
1934	800	799	802	807	808	816	823	818	809	793	779	770
1935	769	773	778	795	808	816	840	859	867	854	839	828
1936	808	808	808	808	808	820	840	859	865	853	838	827
1937	808	808	808	808	808	820	834	859	867	853	838	827
1938	808	808	808	808	808	820	840	859	867	867	855	840
1939	808	808	808	808	808	816	831	831	820	802	786	775
1940	777	778	779	805	808	820	837	859	861	845	829	816
1941	808	808	808	808	808	820	834	859	867	863	850	840
1942	808	808	808	808	808	820	838	859	867	860	851	840
1943	808	808	808	808	808	820	840	859	864	853	838	828
1944	808	808	808	808	808	817	812	833	835	822	804	790
1945	788	795	801	805	808	820	833	856	867	856	842	831
1946	808	808	808	808	808	818	835	856	855	839	823	810
1947	808	808	808	808	808	815	821	833	826	810	795	786
1948	785	786	787	789	791	790	794	817	834	820	801	787
1949	784	784	785	786	790	798	807	827	826	805	785	770
1950	767	786	766	774	787	790	805	825	826	806	786	771
1951	768	808	808	808	808	819	825	832	830	811	791	775
1952	772	773	786	808	808	820	840	859	867	864	852	840
1953	808	808	808	808	808	809	813	811	818	804	784	769
1954	766	766	766	769	779	793	808	825	816	795	774	758
1955	755	753	757	764	769	771	771	794	804	788	770	761
1956	758	758	808	808	808	819	832	859	867	863	850	840
1957	808	808	808	808	808	813	810	824	834	817	799	784
1958	781	781	786	793	808	820	840	859	867	862	850	840
1959	808	808	808	808	808	813	820	821	812	792	775	768
1960	767	766	766	766	778	786	801	814	811	796	782	772
1961	771	771	773	774	777	777	782	783	775	757	740	728
1962	727	727	729	732	774	784	805	820	834	821	803	789
1963	787	787	788	796	808	814	823	848	861	852	837	826
1964	808	808	808	808	808	808	809	817	815	799	782	773
1965	770	774	808	808	808	815	831	854	867	861	850	840
1966	808	808	808	808	808	814	825	833	820	798	777	764
1967	761	763	788	801	808	820	840	859	867	867	856	840
1968	808	808	808	808	808	812	815	818	808	789	773	762
1969	769	763	771	808	808	820	840	859	867	867	854	840
1970	808	808	808	808	808	820	818	833	833	816	797	783
1971	780	783	793	802	808	812	811	821	831	816	798	784
1972	781	781	789	794	800	811	811	824	824	808	793	786
1973	786	788	794	807	808	820	828	859	867	852	838	828
1974	808	808	808	808	808	820	833	859	867	854	839	829
1975	808	808	808	808	808	820	823	855	867	856	842	832
1976	808	808	808	808	808	809	806	806	794	777	764	754
1977	753	751	750	750	749	745	732	716	703	672	637	626
1978	626	626	641	693	741	782	815	859	867	867	856	840
1979	808	808	808	808	808	820	828	859	863	849	834	823
1980	808	808	808	808	808	820	835	859	867	867	855	840
1981	808	807	807	808	808	813	822	834	830	815	801	793
1982	791	800	808	808	808	820	840	859	867	865	854	840
1983	808	808	808	808	808	820	836	859	867	867	864	840
1984	808	808	808	808	808	820	825	846	844	828	809	796
1985	795	798	802	804	808	814	827	839	833	818	804	795
1986	795	797	803	808	808	820	839	859	867	855	841	830
1987	808	807	807	807	808	810	817	819	809	793	780	771
1988	770	771	773	779	783	789	793	796	788	771	757	745
1989	743	743	745	746	751	769	790	800	796	780	766	757
1990	759	760	760	763	768	773	782	780	772	755	737	725
1991	723	722	721	721	720	741	748	770	785	771	757	746
1992	745	746	747	749	764	770	786	790	778	765	749	738
1993	736	737	743	789	808	820	837	859	867	861	848	837
1994	808	807	808	808	808	810	814	820	812	797	783	774

Difference from Maximum Reservoir Elevation [DFMRE]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	88	78	22	0	7	21	31
1923	54	41	14	8	18	33	42
1924	60	60	60	73	91	104	115
1925	66	49	27	22	35	51	64
1926	53	33	35	36	40	47	55
1927	52	50	20	8	13	17	27
1928	58	61	48	50	57	61	65
1929	63	63	60	60	58	55	61
1930	68	65	64	60	57	54	56
1931	59	59	59	71	89	102	112
1932	50	43	19	0	10	24	35
1933	56	53	46	31	43	58	66
1934	51	44	49	58	74	88	97
1935	51	27	8	0	13	28	39
1936	47	27	8	2	14	29	40
1937	47	33	8	0	14	29	40
1938	47	27	8	0	0	12	27
1939	51	36	36	47	65	81	92
1940	47	30	8	6	22	38	51
1941	47	33	8	0	4	17	27
1942	47	29	8	0	7	16	27
1943	47	27	8	3	14	29	39
1944	50	55	34	32	45	63	77
1945	47	34	11	0	11	25	36
1946	49	32	11	12	28	44	57
1947	52	46	34	41	57	72	81
1948	77	73	50	33	47	66	80
1949	69	60	40	41	62	82	97
1950	77	62	42	41	61	81	96
1951	48	42	35	37	56	76	92
1952	47	27	8	0	3	15	27
1953	58	54	56	49	63	83	98
1954	74	59	42	51	72	93	109
1955	96	96	73	63	79	97	106
1956	48	35	8	0	4	17	27
1957	54	57	43	33	50	68	83
1958	47	27	8	0	5	17	27
1959	54	47	46	55	75	92	99
1960	81	66	53	56	71	85	95
1961	90	85	84	92	110	127	139
1962	83	62	47	33	46	64	78
1963	53	44	19	6	15	30	41
1964	59	58	50	52	68	85	94
1965	52	36	13	0	6	17	27
1966	53	42	34	47	69	90	103
1967	47	27	8	0	0	11	27
1968	55	52	49	59	78	94	105
1969	47	27	8	0	0	13	27
1970	47	49	34	34	51	70	84
1971	55	56	46	36	51	69	83
1972	56	56	43	43	59	74	81
1973	47	39	8	0	15	29	39
1974	47	34	8	0	13	28	38
1975	47	44	12	0	11	25	35
1976	58	61	61	73	90	103	113
1977	122	135	151	164	195	230	241
1978	85	52	8	0	0	11	27
1979	47	39	8	4	18	33	44
1980	47	32	8	0	0	12	27
1981	54	45	33	37	52	66	74
1982	47	27	8	0	2	13	27
1983	47	31	8	0	0	3	27
1984	47	42	21	23	39	58	71
1985	53	40	28	34	49	63	72
1986	47	28	8	0	12	26	37
1987	57	50	48	58	74	87	96
1988	78	74	71	79	96	110	122
1989	98	77	67	71	87	101	110
1990	94	85	87	95	112	130	142
1991	126	119	97	82	96	110	121
1992	97	81	77	89	102	118	129
1993	47	30	8	0	6	19	30
1994	57	53	47	55	70	84	93

Reservoir Elevation [illegible] Table:
If [DFMRE] <= 0', th[illegible]
If [DFMRE] <= 5', then [illegible] else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM
1922	1	1	1	6	4	1	1	15
1923	1	1	3	4	2	1	1	13
1924	1	1	1	1	1	1	1	7
1925	1	1	1	1	1	1	1	7
1926	1	1	1	1	1	1	1	7
1927	1	1	1	4	3	2	1	13
1928	1	1	1	1	1	1	1	7
1929	1	1	1	1	1	1	1	7
1930	1	1	1	1	1	1	1	7
1931	1	1	1	1	1	1	1	7
1932	1	1	2	6	3	1	1	15
1933	1	1	1	1	1	1	1	7
1934	1	1	1	1	1	1	1	7
1935	1	1	4	6	3	1	1	17
1936	1	1	4	5	3	1	1	16
1937	1	1	4	6	3	1	1	17
1938	1	1	4	6	6	3	1	22
1939	1	1	1	1	1	1	1	7
1940	1	1	4	4	1	1	1	13
1941	1	1	4	6	5	2	1	20
1942	1	1	4	6	4	2	1	19
1943	1	1	4	5	3	1	1	16
1944	1	1	1	1	1	1	1	7
1945	1	1	3	6	3	1	1	16
1946	1	1	3	3	1	1	1	11
1947	1	1	1	1	1	1	1	7
1948	1	1	1	1	1	1	1	7
1949	1	1	1	1	1	1	1	7
1950	1	1	1	1	1	1	1	7
1951	1	1	1	1	1	1	1	7
1952	1	1	4	6	5	2	1	20
1953	1	1	1	1	1	1	1	7
1954	1	1	1	1	1	1	1	7
1955	1	1	1	1	1	1	1	7
1956	1	1	4	6	5	2	1	20
1957	1	1	1	1	1	1	1	7
1958	1	1	4	6	4	2	1	19
1959	1	1	1	1	1	1	1	7
1960	1	1	1	1	1	1	1	7
1961	1	1	1	1	1	1	1	7
1962	1	1	1	1	1	1	1	7
1963	1	1	2	4	2	1	1	12
1964	1	1	1	1	1	1	1	7
1965	1	1	3	6	4	2	1	18
1966	1	1	1	1	1	1	1	7
1967	1	1	4	6	6	3	1	22
1968	1	1	1	1	1	1	1	7
1969	1	1	4	6	6	3	1	22
1970	1	1	1	1	1	1	1	7
1971	1	1	1	1	1	1	1	7
1972	1	1	1	1	1	1	1	7
1973	1	1	4	6	2	1	1	16
1974	1	1	4	6	3	1	1	17
1975	1	1	3	6	3	1	1	16
1976	1	1	1	1	1	1	1	7
1977	1	1	1	1	1	1	1	7
1978	1	1	4	6	6	3	1	22
1979	1	1	4	5	2	1	1	15
1980	1	1	4	6	6	3	1	22
1981	1	1	1	1	1	1	1	7
1982	1	1	4	6	5	3	1	21
1983	1	1	4	6	6	5	1	24
1984	1	1	1	1	1	1	1	7
1985	1	1	1	1	1	1	1	7
1986	1	1	4	6	3	1	1	17
1987	1	1	1	1	1	1	1	7
1988	1	1	1	1	1	1	1	7
1989	1	1	1	1	1	1	1	7
1990	1	1	1	1	1	1	1	7
1991	1	1	1	1	1	1	1	7
1992	1	1	1	1	1	1	1	7
1993	1	1	4	6	4	2	1	19
1994	1	1	1	1	1	1	1	7

73 - year Average: 11

Reservoir Change from Previous Month [fluctuation]

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	20	10	56	22	-7	-14	-10
1923	5	13	27	6	-10	-15	-9
1924	-1	0	0	-13	-18	-13	-11
1925	9	17	22	5	-13	-16	-13
1926	6	20	-2	-1	-4	-7	-8
1927	7	2	30	12	-5	-4	-10
1928	1	-3	13	-2	-7	-4	-4
1929	2	0	3	0	2	3	-6
1930	-4	3	1	4	3	3	-2
1931	0	0	0	-12	-18	-13	-10
1932	9	7	24	19	-10	-14	-11
1933	3	3	7	15	-12	-15	-8
1934	8	7	-5	-9	-16	-14	-9
1935	10	24	19	8	-13	-15	-11
1936	12	20	19	6	-12	-15	-11
1937	12	14	25	8	-14	-15	-11
1938	12	20	19	8	0	-12	-15
1939	8	15	0	-11	-18	-16	-11
1940	12	17	22	2	-16	-16	-13
1941	12	14	25	8	-4	-13	-10
1942	12	18	21	8	-7	-9	-11
1943	12	20	19	5	-11	-15	-10
1944	9	-5	21	2	-13	-18	-14
1945	12	13	23	11	-11	-14	-11
1946	10	17	21	-1	-16	-16	-13
1947	7	6	12	-7	-16	-15	-9
1948	-1	4	23	17	-14	-19	-14
1949	8	9	20	-1	-21	-20	-15
1950	3	15	20	1	-20	-20	-15
1951	11	6	7	-2	-19	-20	-16
1952	12	20	19	8	-3	-12	-12
1953	1	4	-2	7	-14	-20	-15
1954	14	15	17	-9	-21	-21	-16
1955	2	0	23	10	-16	-18	-9
1956	11	13	27	8	-4	-13	-10
1957	5	-3	14	10	-17	-18	-15
1958	12	20	19	8	-5	-12	-10
1959	5	7	1	-9	-20	-17	-7
1960	8	15	13	-3	-15	-14	-10
1961	0	5	1	-8	-18	-17	-12
1962	10	21	15	14	-13	-18	-14
1963	6	9	25	13	-9	-15	-11
1964	0	1	8	-2	-16	-17	-9
1965	7	16	23	13	-6	-11	-10
1966	6	11	8	-13	-22	-21	-13
1967	12	20	19	8	0	-11	-16
1968	4	3	3	-10	-19	-16	-11
1969	12	20	19	8	0	-13	-14
1970	12	-2	15	0	-17	-19	-14
1971	4	-1	10	10	-15	-18	-14
1972	11	0	13	0	-16	-15	-7
1973	12	8	31	8	-15	-14	-10
1974	12	13	26	8	-13	-15	-10
1975	12	3	32	12	-11	-14	-10
1976	1	-3	0	-12	-17	-13	-10
1977	-4	-13	-16	-13	-31	-35	-11
1978	41	33	44	8	0	-11	-16
1979	12	8	31	4	-14	-15	-11
1980	12	15	24	8	0	-12	-15
1981	5	9	12	-4	-15	-14	-8
1982	12	20	19	8	-2	-11	-14
1983	12	16	23	8	0	-3	-24
1984	12	5	21	-2	-16	-19	-13
1985	6	13	12	-6	-15	-14	-9
1986	12	19	20	8	-12	-14	-11
1987	2	7	2	-10	-16	-13	-9
1988	6	4	3	-8	-17	-14	-12
1989	18	21	10	-4	-16	-14	-9
1990	7	9	-2	-8	-17	-18	-12
1991	21	7	22	15	-14	-14	-11
1992	6	16	4	-12	-13	-16	-11
1993	12	17	22	8	-6	-13	-11
1994	2	4	6	-8	-15	-14	-9

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	6	6	6	6	4	3	4	35	525
1923	6	6	6	6	4	3	4	35	455
1924	5	6	6	3	2	3	3	28	196
1925	6	6	6	6	3	2	3	32	224
1926	6	6	5	5	5	4	4	35	245
1927	6	6	6	6	5	5	4	38	494
1928	6	5	6	5	4	5	5	36	252
1929	6	6	6	6	6	6	4	40	280
1930	5	6	6	6	6	6	5	40	280
1931	6	6	6	3	2	3	4	30	210
1932	6	6	6	6	4	3	3	34	510
1933	6	6	6	6	3	3	4	34	238
1934	6	6	5	4	2	3	4	30	210
1935	6	6	6	6	3	3	3	33	561
1936	6	6	6	6	3	3	3	33	528
1937	6	6	6	6	3	3	3	33	561
1938	6	6	6	6	6	3	3	36	792
1939	6	6	6	3	2	2	3	28	196
1940	6	6	6	6	2	2	3	31	403
1941	6	6	6	6	5	3	4	36	720
1942	6	6	6	6	4	4	3	35	665
1943	6	6	6	6	3	3	4	34	544
1944	6	5	6	6	3	2	3	31	217
1945	6	6	6	6	3	3	3	33	528
1946	6	6	6	5	2	2	3	30	330
1947	6	6	6	4	2	3	4	31	217
1948	5	6	6	6	3	2	3	31	217
1949	6	6	6	5	1	2	3	29	203
1950	6	6	6	6	2	2	3	31	217
1951	6	6	6	5	2	2	2	29	203
1952	6	6	6	6	5	3	3	35	700
1953	6	6	5	6	3	2	3	31	217
1954	6	6	6	4	1	1	2	26	182
1955	6	6	6	6	2	2	4	32	224
1956	6	6	6	6	5	3	4	36	720
1957	6	5	6	6	2	2	3	30	210
1958	6	6	6	6	5	3	4	36	684
1959	6	6	6	4	2	2	4	30	210
1960	6	6	6	5	3	3	4	33	231
1961	6	6	6	4	2	2	3	29	203
1962	6	6	6	6	3	2	3	32	224
1963	6	6	6	6	4	3	3	34	408
1964	6	6	6	5	2	2	4	31	217
1965	6	6	6	6	4	3	4	35	630
1966	6	6	6	3	1	1	3	26	182
1967	6	6	6	6	6	3	2	35	770
1968	6	6	6	4	2	2	3	29	203
1969	6	6	6	6	6	3	3	36	792
1970	6	5	6	6	2	2	3	30	210
1971	6	5	6	6	3	2	3	31	217
1972	6	6	6	6	2	3	4	33	231
1973	6	6	6	6	3	3	4	34	544
1974	6	6	6	6	3	3	4	34	578
1975	6	6	6	6	3	3	4	34	544
1976	6	5	6	3	2	3	4	29	203
1977	5	3	2	3	1	1	3	18	126
1978	6	6	6	6	6	3	2	35	770
1979	6	6	6	6	3	3	3	33	495
1980	6	6	6	6	6	3	3	36	792
1981	6	6	6	5	3	3	4	33	231
1982	6	6	6	6	5	3	3	35	735
1983	6	6	6	6	6	5	1	36	864
1984	6	6	6	5	2	2	3	30	210
1985	6	6	6	4	3	3	4	32	224
1986	6	6	6	6	3	3	3	33	561
1987	6	6	6	4	2	3	4	31	217
1988	6	6	6	4	2	3	3	30	210
1989	6	6	6	5	2	3	4	32	224
1990	6	6	5	4	2	2	3	28	196
1991	6	6	6	6	3	3	3	33	231
1992	6	6	6	3	3	2	3	29	203
1993	6	6	6	6	4	3	3	34	646
1994	6	6	6	4	3	3	4	32	224

73 - year Average: 32 382.4
1929 - '34 Average: 288.0

A2-204

C-032544

C-032544

STUDY 1. JF-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CP # 18. CVP MILLERTON LAKE, EOP SURFACE ELEVATION (FT)
Project: /1995C06F-SWRCB-519A/18/ELEVATION-EOP//1MON/OUTPUT/

73 year maximum March - September Reservoir Elevation = 576'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	491	506	527	547	549	566	559	576	576	562	518	491
1923	485	495	520	537	531	517	541	549	540	526	463	470
1924	483	494	508	522	516	503	506	511	505	478	464	468
1925	465	474	490	503	508	493	514	532	522	499	483	475
1926	477	490	505	519	522	508	549	563	535	494	473	485
1927	491	506	528	545	560	561	560	569	576	543	492	482
1928	482	503	525	542	540	543	551	554	522	477	465	477
1929	485	499	513	523	517	513	531	531	527	506	466	477
1930	480	496	507	518	514	510	525	534	518	489	466	482
1931	487	501	513	522	517	508	510	516	508	482	466	466
1932	487	476	503	520	543	531	524	532	552	518	492	477
1933	477	489	501	516	512	501	520	537	526	509	466	467
1934	470	480	500	517	511	503	516	527	523	498	477	486
1935	490	500	515	535	532	509	542	563	574	538	469	479
1936	486	502	518	533	560	558	564	576	563	521	472	478
1937	488	497	516	535	560	570	576	576	576	538	484	469
1938	472	486	533	560	560	542	529	467	572	576	532	520
1939	513	514	529	538	532	524	542	560	539	504	473	495
1940	495	504	517	550	550	552	548	561	553	512	466	471
1941	481	494	528	556	560	573	573	569	576	569	527	506
1942	497	507	532	552	549	553	554	562	576	555	509	477
1943	477	494	518	557	556	576	574	576	562	526	491	476
1944	479	491	508	521	524	507	516	517	501	494	490	480
1945	481	503	523	533	560	568	565	571	576	554	511	491
1946	485	502	531	548	528	524	536	559	546	510	478	480
1947	481	500	526	543	541	530	545	556	535	497	473	481
1948	488	503	518	529	523	530	556	551	541	483	480	484
1949	490	500	513	526	524	511	522	538	521	482	477	489
1950	492	503	519	538	541	524	534	551	539	506	476	482
1951	490	533	560	560	554	546	552	546	514	463	463	481
1952	488	500	530	559	560	567	559	526	576	571	525	508
1953	501	514	533	549	538	532	541	536	518	497	478	481
1954	488	497	514	532	532	527	537	560	544	507	465	483
1955	489	502	522	540	537	520	534	545	537	504	481	487
1956	491	499	560	560	560	576	576	561	576	566	524	505
1957	496	504	517	527	525	529	546	561	562	526	471	481
1958	488	501	525	545	554	565	576	576	576	557	516	498
1959	492	507	523	530	536	528	550	566	551	500	470	475
1960	474	475	480	490	503	498	515	525	509	496	483	481
1961	481	491	505	511	510	511	526	539	527	488	467	467
1962	468	471	484	492	538	529	527	555	569	540	489	476
1963	479	491	501	518	558	558	576	576	576	564	520	503
1964	490	517	542	551	547	544	553	561	551	508	476	484
1965	481	496	529	560	556	554	559	551	561	540	512	496
1966	487	513	546	558	541	526	545	564	550	506	486	486
1967	490	502	539	559	560	571	565	514	570	576	539	522
1968	515	521	539	545	545	539	550	554	539	506	478	482
1969	480	496	513	560	524	521	467	469	576	576	538	513
1970	498	516	540	560	560	554	554	555	544	517	476	477
1971	482	502	534	551	548	533	541	544	520	498	491	478
1972	479	491	519	536	532	524	537	543	540	497	481	481
1973	489	501	523	545	560	560	550	575	576	542	483	477
1974	487	510	545	560	544	550	559	570	573	537	490	473
1975	476	494	515	528	535	526	533	536	567	525	476	482
1976	489	511	531	541	539	544	547	542	519	492	479	494
1977	490	496	500	503	501	464	465	464	462	466	461	462
1978	462	462	484	532	560	552	510	498	576	576	548	539
1979	528	535	549	560	555	562	560	571	563	521	477	482
1980	489	488	508	560	560	558	566	550	576	576	542	513
1981	503	512	520	528	531	533	547	553	543	510	477	488
1982	491	504	536	560	560	576	546	561	576	576	546	541
1983	531	558	560	560	513	484	467	467	483	564	572	576
1984	560	560	560	560	560	568	570	570	557	530	487	483
1985	482	492	511	536	533	526	551	563	539	501	483	483
1986	490	508	534	554	560	552	574	565	576	558	503	479
1987	480	489	492	495	496	511	530	551	539	503	473	480
1988	482	495	507	526	516	527	539	547	527	498	483	486
1989	486	497	505	515	512	516	537	552	540	502	478	484
1990	489	495	502	510	510	517	532	544	525	508	479	483
1991	480	486	492	499	493	489	501	508	512	506	480	486
1992	485	490	494	498	498	490	493	494	480	470	465	466
1993	467	468	476	536	543	556	558	576	576	571	522	499
1994	490	497	507	512	508	520	534	548	528	498	478	484

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir Elevation Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	DFMRE MAR	APR	MAY	JUN	JUL	AUG	SEP	Elev. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Fluctuation MAR	APR	MAY	JUN	JUL	AUG	SEP	Fluct. Score MAR	APR	MAY	JUN	JUL	AUG	SEP	SUM	Product
1922	10	17	0	0	14	58	85	3	2	6	6	3	1	1	22	17	-7	17	0	-14	-44	-27	6	4	6	6	3	1	1	27	594
1923	59	35	27	36	50	113	106	1	1	1	1	1	1	1	7	-14	24	8	-9	-14	-63	7	3	6	6	4	3	1	6	29	203
1924	73	70	65	71	98	112	108	1	1	1	1	1	1	1	7	-13	3	5	-6	-27	-14	4	3	6	6	4	1	3	6	29	203
1925	83	62	44	54	77	93	101	1	1	1	1	1	1	1	7	-15	21	18	-10	-23	-16	-8	3	6	6	4	1	2	4	26	182
1926	68	27	13	41	82	103	91	1	1	3	1	1	1	1	9	-14	41	14	-28	-41	-21	12	3	6	6	1	1	1	6	24	216
1927	15	16	7	0	33	84	94	2	2	4	6	1	1	1	17	1	-1	9	7	-33	-51	-10	6	5	6	6	1	1	4	29	493
1928	33	25	22	54	99	111	99	1	1	1	1	1	1	1	7	3	8	3	-32	-45	-12	12	6	6	6	1	1	3	6	29	203
1929	63	45	45	49	70	110	99	1	1	1	1	1	1	1	7	-4	18	0	-4	-21	-40	11	5	6	6	5	1	1	6	30	210
1930	66	51	42	58	87	110	94	1	1	1	1	1	1	1	7	-4	15	9	-16	-29	-23	16	5	6	6	2	1	1	6	27	189
1931	68	66	60	68	94	110	110	1	1	1	1	1	1	1	7	-9	2	6	-8	-26	-16	0	4	6	6	4	1	2	6	29	203
1932	45	52	44	24	58	84	99	1	1	1	1	1	1	1	7	-12	-7	8	20	-34	-26	-15	3	4	6	6	1	1	3	24	168
1933	75	56	39	50	67	110	109	1	1	1	1	1	1	1	7	-11	19	17	-11	-17	-43	1	3	6	6	3	2	1	6	27	189
1934	73	60	49	53	78	99	90	1	1	1	1	1	1	1	7	-8	13	11	-4	-25	-21	9	4	6	6	5	1	1	6	29	203
1935	67	34	13	2	38	107	97	1	1	3	5	1	1	1	13	-23	33	21	11	-36	-69	10	1	6	6	6	1	1	6	27	351
1936	18	12	0	13	55	104	98	2	3	6	3	1	1	1	17	-2	6	12	-13	-42	-49	6	5	6	6	3	1	1	6	28	476
1937	6	0	0	0	38	92	107	4	6	6	6	1	1	1	25	10	6	0	0	-38	-54	-15	6	6	6	6	1	1	3	29	725
1938	34	47	109	4	0	44	56	1	1	1	5	6	1	1	16	-18	-13	-62	105	4	-44	-12	2	3	1	6	6	1	3	22	352
1939	52	34	16	37	72	103	81	1	1	2	1	1	1	1	8	-8	18	18	-21	-35	-31	22	4	6	6	1	1	1	6	25	200
1940	24	28	15	23	64	110	105	1	1	2	1	1	1	1	8	2	-4	13	-8	-41	-46	5	6	5	6	4	1	1	6	29	232
1941	3	3	7	0	7	49	70	5	5	4	6	4	1	1	26	13	0	-4	7	-7	-42	-21	6	6	5	6	4	1	1	29	754
1942	23	22	14	0	21	67	99	1	1	3	6	1	1	1	14	4	1	8	14	-21	-46	-32	6	6	6	6	1	1	1	27	378
1943	0	2	0	14	50	85	100	6	5	6	3	1	1	1	23	20	-2	2	-14	-36	-35	-15	6	5	6	3	1	1	3	25	575
1944	69	60	59	75	82	86	96	1	1	1	1	1	1	1	7	-17	9	1	-16	-7	-4	-10	2	6	6	2	4	5	4	29	203
1945	8	11	5	0	22	65	85	4	3	4	6	1	1	1	20	8	-3	6	5	-22	-43	-20	6	5	6	6	1	1	2	27	540
1946	52	40	17	30	66	98	96	1	1	2	1	1	1	1	8	-4	12	23	-13	-36	-32	2	5	6	6	3	1	1	6	28	224
1947	46	31	20	41	79	103	95	1	1	1	1	1	1	1	7	-11	15	11	-21	-38	-24	8	3	6	6	1	1	1	6	24	168
1948	46	20	25	35	93	96	92	1	1	1	1	1	1	1	7	7	26	-5	-10	-58	-3	4	6	6	5	4	1	5	6	33	231
1949	65	54	38	55	94	99	87	1	1	1	1	1	1	1	7	-13	11	16	-17	-39	-5	12	3	6	6	2	1	5	6	29	203
1950	52	42	25	37	70	100	94	1	1	1	1	1	1	1	7	-17	10	17	-12	-33	-30	6	2	6	6	3	1	1	6	25	175
1951	30	24	30	62	113	113	95	1	1	1	1	1	1	1	7	-8	6	-6	-32	-51	0	18	4	6	4	1	1	6	6	28	196
1952	9	17	50	0	5	51	68	4	2	1	6	4	1	1	19	7	-8	-33	50	-5	-46	-17	6	4	1	6	5	1	2	25	475
1953	44	35	40	58	79	98	95	1	1	1	1	1	1	1	7	-6	9	-5	-18	-21	-19	3	4	6	5	2	1	2	6	26	182
1954	49	39	16	32	69	111	93	1	1	2	1	1	1	1	8	-5	10	23	-16	-37	-42	18	5	6	6	2	1	1	6	27	216
1955	56	42	31	39	72	95	89	1	1	1	1	1	1	1	7	-17	14	11	-8	-33	-23	6	2	6	6	4	1	1	6	26	182
1956	0	0	15	0	10	52	71	6	6	2	6	3	1	1	25	16	0	-15	15	-10	-42	-19	6	6	3	6	4	1	2	28	700
1957	47	30	15	14	50	105	95	1	1	2	3	1	1	1	10	4	17	15	1	-36	-55	10	6	6	6	6	1	1	6	32	320
1958	11	0	0	0	19	60	78	3	6	6	6	2	1	1	25	11	11	0	0	-19	-41	-18	6	6	6	6	2	1	2	29	725
1959	48	26	10	25	76	106	101	1	1	3	1	1	1	1	9	-8	22	16	-15	-51	-30	5	4	6	6	3	1	1	6	27	243
1960	78	61	51	67	80	93	95	1	1	1	1	1	1	1	7	-5	17	10	-16	-13	-13	-2	5	6	6	2	3	3	5	30	210
1961	65	50	37	49	90	109	109	1	1	1	1	1	1	1	7	1	15	13	-12	-41	-19	0	6	6	6	3	1	2	6	30	210
1962	47	49	21	7	36	87	100	1	1	1	4	1	1	1	10	-9	-2	28	14	-29	-51	-13	4	5	6	6	1	1	3	26	260
1963	18	0	0	0	12	56	73	2	6	6	6	3	1	1	25	0	18	0	0	-12	-44	-17	6	6	6	6	3	1	2	30	750
1964	32	23	15	25	68	100	92	1	1	2	1	1	1	1	8	-3	9	8	-10	-43	-32	8	5	6	6	4	1	1	6	29	232
1965	22	17	25	15	36	64	80	1	2	1	2	1	1	1	9	-2	5	-8	10	-21	-28	-16	5	6	4	6	1	1	2	25	225
1966	50	31	12	26	70	90	90	1	1	3	1	1	1	1	9	-15	19	19	-14	-44	-20	0	3	6	6	3	1	2	6	27	243
1967	5	11	62	6	0	37	54	4	3	1	4	6	1	1	20	11	-6	-51	56	6	-37	-17	6	4	1	6	6	1	2	26	520
1968	37	26	22	37	70	98	94	1	1	1	1	1	1	1	7	-6	11	4	-15	-33	-28	4	4	6	6	3	1	1	6	27	189
1969	55	109	107	0	0	38	63	1	1	1	6	6	1	1	17	-3	-54	2	107	0	-38	-25	5	1	6	6	6	1	1	26	442
1970	22	22	21	32	59	100	99	1	1	1	1	1	1	1	7	-6	0	1	-11	-27	-41	1	4	6	6	3	1	1	6	27	189
1971	43	35	32	56	78	85	98	1	1	1	1	1	1	1	7	-15	8	3	-24	-22	-7	-13	3	6	6	1	1	4	3	24	168
1972	52	39	33	36	79	95	95	1	1	1	1	1	1	1	7	-8	13	6	-3	-43	-16	0	4	6	6	5	1	2	6	30	210
1973	16	26	1	0	34	93	99	2	1	5	6	1	1	1	17	0	-10	25	1	-34	-59	-6	6	4	6	6	1	1	4	28	476
1974	26	17	6	3	39	86	103	1	2	4	5	1	1	1	15	6	9	11	3	-36	-47	-17	6	6	6	6	1	1	2	28	420
1975	50	43	40	9	51	100	94	1	1	1	4	1	1	1	10	-9	7	3	31	-42	-49	6	4	6	6	6	1	1	6	30	300
1976	32	29	34	57	84	97	82	1	1	1	1	1	1	1	7	5	3	-5	-23	-27	-13	15	6	6	5	1	1	3	6	28	196
1977	112	111	112	114	110	115	114	1	1	1	1	1	1	1	7	-37	1	-1	-2	4	-5	1	1	6	5	5	6	5	6	34	238
1978	24	66	78	0	0	28	37	1	1	1	6	6	1	1	17	-8	-42	-12	78	0	-28	-9	4	1	3	6	6	1	4	25	425
1979	14	16	5	13	55	99	94	3	2	4	3	1	1	1	15	7	-2	11	-8	-42	-44	5	6	5	6	4	1	1	6	29	435
1980	18	10	26	0	0	34	63	2	3	1	6	6	1	1	20	-2	8	-16	26	0	-34	-29	5	6	2	6	6	1	1	27	540
1981	43	29	23	33	66	99	88	1	1	1	1	1	1	1	7	2	14	6	-10	-33	-33	11	6	6	6	4	1	1	6	30	210
1982	0	30	15	0	0	30	35	6	1	2	6	6	1	1	23	16	-30	15	15	0	-30	-5	6	1	6	6	6	1	5	31	713
1983	92	109	109	93	12	4	0	1	1	1	1	3	5	6	18	-29	-17	0	16	81	8	4	1	2	6	6	6	6	6	33	594
1984	8	6	6	19	46	89	93	4	4	4	2	1	1	1	17	8	2	0	-13	-27	-43	-4	6	6	6	3	1	1	5	28	476
1985	50	25	13	37	75	93	93	1	1	3	1	1	1	1	9	-7	25	12	-24	-38	-18	0	4	6	6	1	1	2	6	26	234
1986	24	2	11	0	18	73	97	1	5	3	6	2	1	1	19	2	22	-9	11	-18	-55	-24	6	6	4	6	2	1	1	26	494
1987	65	46	25	37	73	103	96	1	1	1	1	1	1	1	7	15	19	21	-12	-36	-30	7	6	6	6	3	1	1	6	29	203
1988	49	37	29	49	78	93	90	1	1	1	1	1	1	1	7	11	12	8	-20	-29	-15	3	6	6	6	2	1	3	6	30	210
1989	60	39	24	36	74	98	92	1	1	1	1	1	1	1	7	4	21	15	-12	-38	-24	6	6	6	6	3	1	1	6	29	203
1990	59	44	32	51	68	97	93	1	1	1	1	1	1	1	7	7	15	12	-19	-17	-29	4	6	6	6	2	2	1	6	29	203
1991	87	75	68	64	70	96	90	1	1	1	1	1	1	1	7	-4	12	7	4	-6	-26	6	5	6	6	6	4	1	6	34	238
1992	86	83	82	96	106	111	110	1	1	1	1	1	1	1	7	-9	3	1	-14	-10	-5	1	4	6	6	3	4	5	6	34	238
1993	20	18	0	0	5	54	77	1	2	6	6	4	1	1	21	13	2	18	0	-5	-49	-23	6	6	6	6	5	1	1	31	651
1994	56	42	28	48	78	98	92	1	1	1	1	1	1	1	7	12	14	14	-20	-30	-20	6	6	6	6	2	1	2	6	29	203

73 - year Average: 12

73 - year Average: 28 329.2
1929 - '34 Average: 193.7

A2-205

STUDY: 1995C06F-SWRCB-519A DWRSIM: recirc818-h, 03 Sep 97
CP # 12, SWP SAN LUIS RESERVIOR, EOP SURFACE ELEVATION (FT)
Project. /1995C06F-SWRCB-519A/12/ELEVATION-EOP//1MON/OUTPUT/

73 - year maximum March - September Reservoir Elevation = 544'

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	419	441	476	521	539	544	544	520	503	464	415	424
1923	457	486	491	506	517	524	526	492	456	438	418	405
1924	428	438	445	494	524	524	523	498	465	428	388	383
1925	382	394	440	472	520	530	539	509	476	438	390	385
1926	401	414	426	479	521	532	538	506	481	461	394	383
1927	411	450	489	534	544	544	543	508	474	452	411	423
1928	457	487	497	512	526	531	532	493	454	433	415	401
1929	413	437	464	511	537	543	537	517	488	451	414	409
1930	409	415	465	517	530	541	535	496	468	461	447	425
1931	430	435	436	478	493	494	495	475	456	421	373	371
1932	380	383	447	505	536	536	536	513	494	465	413	399
1933	420	428	433	481	504	511	520	501	468	428	378	374
1934	383	383	434	490	506	506	506	477	456	433	398	388
1935	384	407	426	489	498	532	538	513	476	428	357	356
1936	395	415	445	497	538	541	543	519	485	455	417	410
1937	430	445	470	519	537	544	544	541	511	463	412	401
1938	433	467	500	516	531	541	544	544	537	502	466	482
1939	511	521	526	539	544	544	537	501	472	482	443	421
1940	424	422	417	483	526	532	533	500	456	431	353	350
1941	389	422	460	513	534	538	535	532	517	465	421	441
1942	474	489	495	510	522	527	524	499	491	452	416	434
1943	467	484	490	505	517	529	532	524	495	464	416	418
1944	453	485	503	518	532	539	527	493	463	450	431	410
1945	418	456	492	519	535	541	534	501	464	443	406	394
1946	432	465	495	510	521	528	517	480	443	423	406	392
1947	418	452	486	517	531	540	529	490	458	447	421	409
1948	412	420	420	472	489	511	528	483	447	418	351	361
1949	387	413	445	493	516	544	531	491	455	433	402	389
1950	402	415	424	478	519	530	530	491	459	442	410	401
1951	426	458	495	524	534	540	535	496	452	425	400	392
1952	419	450	481	518	531	536	540	543	535	507	487	498
1953	505	514	518	532	542	544	537	497	472	450	406	425
1954	458	486	493	508	520	527	529	488	447	424	403	396
1955	417	450	480	524	535	542	528	492	465	456	426	418
1956	430	443	484	520	534	544	543	519	498	466	422	433
1957	460	486	496	510	524	530	531	493	462	445	423	413
1958	446	477	506	522	534	538	539	539	530	492	472	486
1959	496	505	509	522	535	541	529	489	455	440	428	419
1960	431	444	456	499	540	544	527	485	454	438	382	364
1961	380	415	454	501	536	544	526	485	455	445	421	404
1962	410	415	454	488	529	535	530	486	442	413	332	342
1963	386	421	452	497	525	531	534	505	479	448	422	437
1964	467	496	509	524	535	543	522	478	438	418	401	400
1965	404	435	471	522	534	541	543	512	479	460	421	428
1966	459	488	499	514	524	531	518	475	433	411	392	382
1967	396	433	472	514	528	533	538	541	534	522	500	505
1968	512	523	527	540	544	544	543	502	486	449	425	410
1969	422	453	487	523	536	544	544	544	537	514	484	499
1970	517	526	530	544	544	544	543	509	469	448	417	409
1971	429	462	495	518	528	534	535	492	461	437	415	428
1972	458	485	505	521	533	540	530	489	455	441	430	411
1973	435	467	499	525	536	542	541	514	482	459	417	415
1974	447	477	502	518	530	535	533	502	470	438	421	434
1975	464	483	488	502	518	521	519	480	454	430	416	428
1976	456	483	491	505	520	532	521	488	472	473	442	424
1977	426	434	436	454	454	454	468	456	439	418	409	422
1978	428	444	493	536	544	544	544	544	526	469	413	433
1979	466	488	492	507	521	528	529	503	473	459	416	410
1980	446	480	507	524	540	544	544	540	522	488	446	462
1981	494	517	523	537	544	544	544	504	468	451	427	404
1982	416	452	486	523	537	543	544	544	531	494	460	470
1983	495	514	520	536	544	544	544	544	537	527	514	521
1984	536	544	544	544	544	544	543	507	471	450	408	403
1985	440	473	496	511	524	531	519	475	435	416	399	397
1986	401	406	446	499	529	544	544	544	531	488	457	465
1987	495	508	534	544	544	544	536	496	468	458	437	414
1988	421	418	457	506	519	519	516	494	482	461	422	417
1989	414	431	453	492	492	527	533	492	461	452	386	394
1990	416	428	460	503	523	528	527	494	479	459	401	382
1991	383	390	390	405	406	468	484	467	455	432	414	415
1992	418	431	446	489	525	544	544	519	502	468	423	415
1993	415	422	489	519	530	534	530	505	488	450	405	410
1994	446	476	488	502	516	526	516	478	454	451	447	433

Difference from Maximum Reservoir Elevation [DFMRE]

Reservoir El[illegible] Scoring Table:
If [DFMRE] <= 0', then 6, else
If [DFMRE] <= 5', then 5, else
If [DFMRE] <= 10', then 4, else
If [DFMRE] <= 15', then 3, else
If [DFMRE] <= 20', then 2, else 1

YEAR	DFMRE MAR	DFMRE APR	DFMRE MAY	DFMRE JUN	DFMRE JUL	DFMRE AUG	DFMRE SEP	Score MAR	Score APR	Score MAY	Score JUN	Score JUL	Score AUG	Score SEP	SUM
1922	0	0	24	41	80	129	120	6	6	1	1	1	1	1	17
1923	20	18	52	88	106	126	139	1	2	1	1	1	1	1	8
1924	20	21	46	79	116	156	161	1	1	1	1	1	1	1	7
1925	14	5	35	68	106	154	159	3	4	1	1	1	1	1	12
1926	12	6	38	63	83	150	161	3	4	1	1	1	1	1	12
1927	0	1	36	70	92	133	121	6	5	1	1	1	1	1	16
1928	13	12	51	90	111	129	143	3	3	1	1	1	1	1	11
1929	1	7	27	56	93	130	135	5	4	1	1	1	1	1	14
1930	3	9	48	76	83	97	119	5	4	1	1	1	1	1	14
1931	50	49	69	88	123	171	173	1	1	1	1	1	1	1	7
1932	8	8	31	50	79	131	145	4	4	1	1	1	1	1	13
1933	33	24	43	76	116	166	170	1	1	1	1	1	1	1	7
1934	38	38	67	88	111	146	156	1	1	1	1	1	1	1	7
1935	12	6	31	68	116	187	188	3	4	1	1	1	1	1	12
1936	3	1	25	59	89	127	134	5	5	1	1	1	1	1	15
1937	0	0	3	33	81	132	143	6	6	5	1	1	1	1	21
1938	3	0	0	7	42	78	62	5	6	6	4	1	1	1	24
1939	0	7	43	72	82	101	123	6	4	1	1	1	1	1	15
1940	12	11	44	88	113	191	194	3	3	1	1	1	1	1	11
1941	6	9	12	27	79	123	103	4	4	3	1	1	1	1	15
1942	17	20	45	53	92	128	110	2	1	1	1	1	1	1	8
1943	15	12	20	49	80	128	126	2	3	1	1	1	1	1	10
1944	5	17	51	81	94	113	134	4	2	1	1	1	1	1	11
1945	3	10	43	80	101	138	150	5	3	1	1	1	1	1	13
1946	16	27	64	101	121	138	152	2	1	1	1	1	1	1	8
1947	4	15	54	86	97	123	135	5	2	1	1	1	1	1	12
1948	33	16	61	97	126	193	183	1	2	1	1	1	1	1	8
1949	0	13	53	89	111	142	155	6	3	1	1	1	1	1	14
1950	14	14	53	85	102	134	143	3	3	1	1	1	1	1	11
1951	4	9	48	92	119	144	152	5	4	1	1	1	1	1	14
1952	8	4	1	9	37	57	46	4	5	5	4	1	1	1	21
1953	0	7	47	72	94	138	119	6	4	1	1	1	1	1	15
1954	17	15	56	97	120	141	148	2	2	1	1	1	1	1	9
1955	2	16	52	79	88	118	126	5	2	1	1	1	1	1	12
1956	0	1	25	46	78	122	111	6	5	1	1	1	1	1	16
1957	14	13	51	82	99	121	131	3	3	1	1	1	1	1	11
1958	6	5	5	14	52	72	58	4	4	4	3	1	1	1	18
1959	3	15	55	89	104	116	125	5	2	1	1	1	1	1	12
1960	0	17	59	90	106	162	180	6	2	1	1	1	1	1	13
1961	0	18	59	89	99	123	140	6	2	1	1	1	1	1	13
1962	9	14	58	102	131	212	202	4	3	1	1	1	1	1	12
1963	13	10	39	65	96	122	107	3	3	1	1	1	1	1	11
1964	1	22	66	106	126	143	144	5	1	1	1	1	1	1	11
1965	3	1	32	65	84	123	116	5	5	1	1	1	1	1	15
1966	13	26	69	111	133	152	162	3	1	1	1	1	1	1	9
1967	11	6	3	10	22	44	39	3	4	5	3	1	1	1	18
1968	0	1	42	78	95	119	134	6	5	1	1	1	1	1	16
1969	0	0	0	7	30	60	45	6	6	6	4	1	1	1	25
1970	0	1	35	75	96	127	135	6	5	1	1	1	1	1	16
1971	10	9	52	83	107	129	116	3	4	1	1	1	1	1	12
1972	4	14	55	89	103	114	133	5	3	1	1	1	1	1	13
1973	2	3	30	62	85	127	129	5	5	1	1	1	1	1	15
1974	9	11	42	74	106	123	110	4	3	1	1	1	1	1	12
1975	23	25	64	90	114	128	116	1	1	1	1	1	1	1	7
1976	12	23	56	72	71	102	120	3	1	1	1	1	1	1	9
1977	90	76	88	105	126	135	122	1	1	1	1	1	1	1	7
1978	0	0	0	18	75	131	111	6	6	6	2	1	1	1	23
1979	16	15	41	71	85	128	134	2	2	1	1	1	1	1	9
1980	0	0	4	22	56	98	82	6	6	5	1	1	1	1	21
1981	0	0	40	76	93	117	140	6	6	1	1	1	1	1	17
1982	1	0	0	13	50	84	74	5	6	6	3	1	1	1	23
1983	0	0	0	7	17	30	23	6	6	6	4	2	1	1	26
1984	0	1	37	73	94	136	141	6	5	1	1	1	1	1	16
1985	13	25	69	109	128	145	147	3	1	1	1	1	1	1	9
1986	0	0	0	13	56	87	79	6	6	6	3	1	1	1	24
1987	0	8	48	76	86	107	130	6	4	1	1	1	1	1	15
1988	25	28	50	62	83	122	127	1	1	1	1	1	1	1	7
1989	17	11	52	83	92	158	150	2	3	1	1	1	1	1	10
1990	16	17	50	65	85	143	162	2	2	1	1	1	1	1	9
1991	76	60	77	89	112	130	129	1	1	1	1	1	1	1	7
1992	0	0	25	42	76	121	129	6	6	1	1	1	1	1	17
1993	10	14	39	56	94	139	134	3	3	1	1	1	1	1	11
1994	18	28	66	90	93	97	111	2	1	1	1	1	1	1	8

73 - year Average: 13

Reservoir Change from Previous Month [fluctuation]

Reservoir Fluctuation Scoring Table:
If [fluctuation] >= 0', then 6, else
If [fluctuation] >= -5', then 5, else
If [fluctuation] >= -10', then 4, else
If [fluctuation] >= -15', then 3, else
If [fluctuation] >= -20', then 2, else 1

Largemouth Bass Reservoir Habitat Index

YEAR	Fluct. MAR	Fluct. APR	Fluct. MAY	Fluct. JUN	Fluct. JUL	Fluct. AUG	Fluct. SEP	Score MAR	Score APR	Score MAY	Score JUN	Score JUL	Score AUG	Score SEP	SUM	Product
1922	5	0	-24	-17	-39	-49	9	6	6	1	2	1	1	6	23	391
1923	7	2	-34	-36	-18	-20	-13	6	6	1	1	2	2	3	21	168
1924	0	-1	-25	-33	-37	-40	-5	6	5	1	1	1	1	5	20	140
1925	10	9	-30	-33	-38	-48	-5	6	6	1	1	1	1	5	21	252
1926	11	6	-32	-25	-20	-67	-11	6	6	1	1	2	1	3	20	240
1927	0	-1	-35	-34	-22	-41	12	6	5	1	1	1	1	6	21	336
1928	6	1	-39	-39	-21	-18	-14	6	6	1	1	1	2	3	20	220
1929	6	-6	-20	-29	-37	-37	-5	6	4	2	1	1	1	5	20	280
1930	11	-6	-39	-28	-7	-14	-22	6	4	1	1	4	3	1	20	280
1931	1	1	-20	-19	-35	-48	-2	6	6	2	2	1	1	5	23	161
1932	0	0	-23	-19	-29	-52	-14	6	6	1	2	1	1	3	20	260
1933	7	9	-19	-33	-40	-50	-4	6	6	2	1	1	1	5	22	154
1934	0	0	-29	-21	-23	-35	-10	6	6	1	1	1	1	4	20	140
1935	34	6	-25	-37	-48	-71	-1	6	6	1	1	1	1	5	21	252
1936	5	2	-24	-34	-30	-38	-7	6	6	1	1	1	1	4	20	300
1937	7	0	-3	-30	-48	-51	-11	6	6	5	1	1	1	3	23	483
1938	10	3	0	-7	-35	-36	16	6	6	6	4	1	1	6	30	720
1939	0	-7	-36	-29	-10	-19	-22	6	4	1	1	4	2	1	19	285
1940	6	1	-33	-44	-25	-78	-3	6	6	1	1	1	1	5	21	231
1941	4	-3	-3	-15	-52	-44	20	6	5	5	3	1	1	6	27	405
1942	5	-3	-25	-8	-39	-36	18	6	5	1	4	1	1	6	24	192
1943	12	3	-8	-29	-31	-48	2	6	6	4	1	1	1	6	25	250
1944	7	-12	-34	-30	-13	-19	-21	6	3	1	1	3	2	1	17	187
1945	6	-7	-33	-37	-21	-37	-12	6	4	1	1	1	1	3	17	221
1946	7	-11	-37	-37	-20	-17	-14	6	3	1	1	2	2	3	18	144
1947	9	-11	-39	-32	-11	-26	-12	6	3	1	1	3	1	3	18	216
1948	22	17	-45	-36	-29	-67	10	6	6	1	1	1	1	6	22	176
1949	28	-13	-40	-36	-22	-31	-13	6	3	1	1	1	1	3	16	224
1950	11	0	-39	-32	-17	-32	-9	6	6	1	1	2	1	4	21	231
1951	6	-5	-39	-44	-27	-25	-8	6	5	1	1	1	1	4	19	266
1952	5	4	3	-8	-28	-20	11	6	6	6	4	1	2	6	31	651
1953	2	-7	-40	-25	-22	-44	19	6	4	1	1	1	1	6	20	300
1954	7	2	-41	-41	-23	-21	-7	6	6	1	1	1	1	4	20	180
1955	7	-14	-36	-27	-9	-30	-8	6	3	1	1	4	1	4	20	240
1956	10	-1	-24	-21	-32	-44	11	6	5	1	1	1	1	6	21	336
1957	6	1	-38	-31	-17	-22	-10	6	6	1	1	2	1	4	21	231
1958	4	1	0	-9	-38	-20	14	6	6	6	4	1	2	6	31	558
1959	6	-12	-40	-34	-15	-12	-9	6	3	1	1	3	3	4	21	252
1960	4	-17	-42	-31	-16	-56	-18	6	2	1	1	2	1	2	15	195
1961	8	-18	-41	-30	-10	-24	-17	6	2	1	1	4	1	2	17	221
1962	6	-5	-44	-44	-29	-81	10	6	5	1	1	1	1	6	21	252
1963	6	3	-29	-26	-31	-26	15	6	6	1	1	1	1	6	22	242
1964	8	-21	-44	-40	-20	-17	-1	6	1	1	1	2	2	5	18	198
1965	7	2	-31	-33	-19	-39	7	6	6	1	1	2	1	6	23	345
1966	7	-13	-43	-42	-22	-19	-10	6	3	1	1	1	2	4	18	162
1967	5	5	3	-7	-12	-22	5	6	6	6	4	3	1	6	32	576
1968	0	-1	-41	-36	-17	-24	-15	6	5	1	1	2	1	3	19	304
1969	8	0	0	-7	-23	-30	15	6	6	6	4	1	1	6	30	750
1970	0	-1	-34	-40	-21	-31	-8	6	5	1	1	1	1	4	19	304
1971	6	1	-43	-31	-24	-22	13	6	6	1	1	1	1	6	22	264
1972	7	-10	-41	-34	-14	-11	-19	6	4	1	1	3	3	2	20	260
1973	6	-1	-27	-32	-23	-42	-2	6	5	1	1	1	1	5	20	300
1974	5	-2	-31	-32	-32	-17	13	6	5	1	1	1	2	6	22	264
1975	5	-2	-39	-26	-24	-14	12	6	5	1	1	1	3	6	23	161
1976	12	-11	-33	-16	1	-31	-18	6	3	1	2	6	1	2	21	189
1977	0	14	-12	-17	-21	-9	13	6	6	3	2	1	4	6	28	196
1978	0	0	0	-18	-57	-56	20	6	6	6	2	1	1	6	28	644
1979	7	1	-26	-30	-14	-43	-6	6	6	1	1	3	1	4	22	198
1980	4	0	-4	-18	-34	-42	16	6	6	5	2	1	1	6	27	567
1981	0	0	-40	-36	-17	-24	-23	6	6	1	1	2	1	1	18	306
1982	6	1	0	-13	-37	-34	10	6	6	6	3	1	1	6	29	667
1983	0	0	0	-7	-10	-13	7	6	6	6	4	4	3	6	35	910
1984	0	-1	-36	-36	-21	-42	-5	6	5	1	1	1	1	5	20	320
1985	7	-12	-44	-40	-19	-17	-2	6	3	1	1	2	2	5	20	180
1986	15	0	0	-13	-43	-31	8	6	6	6	3	1	1	6	29	696
1987	0	-8	-40	-28	-10	-21	-23	6	4	1	1	4	1	1	18	270
1988	0	-3	-22	-12	-21	-39	-5	6	5	1	3	1	1	5	22	154
1989	35	6	-41	-31	-9	-66	8	6	6	1	1	4	1	6	25	250
1990	5	-1	-33	-15	-20	-58	-19	6	5	1	3	2	1	2	20	180
1991	63	16	-17	-12	-23	-18	1	6	6	2	3	1	2	6	26	182
1992	19	0	-25	-17	-34	-45	-8	6	6	1	2	1	1	4	21	357
1993	4	-4	-25	-17	-38	-45	5	6	5	1	2	1	1	6	22	242
1994	10	-10	-38	-24	-3	-4	-14	6	4	1	1	5	5	3	25	200

73 - year Average: 22 302.2
1929 - '34 Average: 212.5

A2-206

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Appendix 3
Data Used in the Water Rights Calculations for Delta Outflow Alternatives 3 and 4

Annotated Table of Contents

Pages A3-4 to A3-13 present data files for equations presented on pages IV-15 to IV-21 of Volume 1. All but one of the tables in Appendix 3 are in units of TAF.

Alternative 3 - Supplemental Water for Vernalis Objective (Add(3)).....A3-4

Alternative 3 - Supplemental Water for Delta Outflow (SW(3)).....A3-5

Alternative 3 - Monthly Imports from the Trinity River.....A3-6

Alternative 4 - Obligation of Parties Other than Friant to Meet Vernalis Objective (SW(sj)).....A3-7

Alternative 4 - Modified Exchange Contractor Delivery (Excm).....A3-8

Alternative 4 - Friant Kern Canal Diversion to Export (EX(f)).....A3-9

Alternative 4 - Modified Friant Kern Canal Diversion to Export (EX(F)).....A3-10

Alternative 4 - Millerton Lake Releases from Storage (SR(F)).....A3-11

Alternative 4 - Obligation of Friant to Meet Vernalis Objective (FO).....A3-12

Alternative 4 - Supplemental Water to Meet Delta Outflow (SW(4)).....A3-13

Pages A3-14 to A3-16 contain the cumulative direct diversion (DD) tables used in allocating the Vernalis and the Delta outflow objective. The base data in these tables comes from reports of permit and license filed by individual water right holders. Irrigated acreage was considered to be the most reliable data source. Consumptive use factors obtained from the DWR were applied to the acreage to obtain depletion and diversion amounts for each water right. In some cases reported use was used in lieu of acreage. Friant direct diversion was calculated directly from DWRSIM output.

San Joaquin Basin - Cumulative Direct Diversion.....A3-14

Major Central Valley Water Right Cumulative Direct Diversion by Priority Group.....A3-16

Alternative 3 - Friant Direct Diversion.....A3-17

Pages A3-18 to A3-22 present data obtained from the USBR and used to calculate inbasin obligations. Each contractor was classified by depletion Study Area (DSA), and the priority of their water right(s) determined for assignment of priority group. Contractors with no identifiable basis in right are designated as WRX, those with identifiable rights as WR, and those without rights receiving CVP project water under contract with the USBR as WS. The period 1982 to 1989 (excluding 1983, an abnormally wet year) was chosen as the reference period for the analysis, as it represents a period of full delivery unaffected by cutbacks arising from biological opinions.

Annual CVP Deliveries To Sacramento Valley Contractors (1982-1989), AF.....A3-18

The inbasin obligation (IO) for a priority group is the sum of the 1982-1989 average monthly depletions for all contractors within the group. When deficiency conditions are in effect (see A3-27) the inbasin obligation is calculated as percentage reduction in base and/or project supply, or the average depletion, whichever is less.

Sacramento Valley Inbasin Obligations (without deficiencies).....A3-23

Sacramento Valley Inbasin Obligations (with deficiencies imposed).....A3-24

Alternative 4 - USBR San Joaquin Inbasin Obligation - Group 8 (IO(F8)).....A3-25

Alternative 4 - USBR San Joaquin Inbasin Obligation - Group 9 (IO(F9)).....A3-26

Deficiency Periods (percent of supply).....A3-27

Pages A3-28 to A3-34 present diversion to storage for each priority group. Cumulative tables were generated for the allocation calculations.

Alternative 3 - Priority Group 1 Diversion to Storage.....A3-28

Alternative 4 - Priority Group 1 Diversion to Storage.....A3-29

Alternative 3 and 4 - Priority Group 2 Diversion to Storage.....A3-30

Alternative 3 and 4 - Priority Group 4 Diversion to Storage.....A3-31

Alternative 3 and 4 - Priority Group 5 Diversion to Storage.....A3-32

Alternative 3 and 4 - Priority Group 6 Diversion to Storage.....A3-33

Alternative 3 - Priority Group 8 Diversion to Storage.....A3-34

The following four worksheets present the allocation calculations in which water right and priority group cutoff numbers were determined for Alternatives 3 and 4. Some abbreviations: Direct Diversion (DD), New Melones (NM), Vernalis (Vern), Delta Outflow (DO), San Joaquin (SJ), Inbasin Obligation (IO), Friant Obligation for Vernalis to be met at New Melones (FOv).

Alternative 3 - Allocation of "Add Water" for Vernalis Objective.....A3-35

Alternative 3 - Allocation of Supplemental Water for Delta Outflow.....A3-60

Alternative 4 - Allocation of Supplemental Water for Vernalis Objective.....A3-73

Alternative 4 - Allocation of Supplemental Water for delta Outflow.....A3-98

Pages A3-111 to A3-142 contain the data input tables given to DWR for modeling of Alternatives 3 and 4. The resulting DWRSIM study numbers are 506 and 507.

Alternative 3 - Sixteen Tables Submitted to the DWR in the April 18, 1997 revised modeling request, used as input data for DWRSIM Study 506.....A3-111

Alternative 4 - Sixteen Tables Submitted to the DWR in the April 18, 1997 revised modeling request, used as input data for DWRSIM Study 507.....A3-127

Important tables derived from the allocation process. Water right cutoff number and priority group number refer to Tables II-6 and II-5 respectively in the EIR. The diversion curtailment frequency on pages V-15 to V-17 are derived from these tables.

Alternative 3 - Water Right Cutoff Number for Vernalis Objective.....A3-143

Alternative 4 - Water Right Cutoff Number for Vernalis Objective.....A3-144

Alternative 3 - Priority Group Curtailed for Delta Outflow Objective.....A3-145

Alternative 4 - Priority Group Curtailed for Delta Outflow Objective.....A3-146

In allocating Delta outflow, a priority group is not invoked until no water is available for the entire group. The following tables represent the amount of water which is not allocated and is presumed to be a SWP/CVP obligation.

Alternative 3 - Unallocated Water (additional project obligation).....A3-147

Alternative 4 - Unallocated Water (additional project obligation).....A3-148

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Alternative 3 - Supplemental Water for Vernalis Objective (Add(3)) (TAF)

Add Water from Don Pedro and Lake McClure (CP 677 Downstream Flow) + New Melones Release for Vernalis Pulse and X2 Flow

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	6	0	0	0	0	0	29	108	0	0	0	0	143
1923	0	0	0	0	0	52	52	109	0	0	0	0	213
1924	0	0	0	0	0	0	18	43	0	0	0	0	61
1925	27	0	0	0	0	0	23	70	0	0	0	0	120
1926	27	0	0	0	0	32	34	88	8	0	0	0	189
1927	27	0	0	0	0	0	24	113	90	0	0	0	254
1928	0	0	0	0	0	0	39	91	2	0	0	0	132
1929	27	0	0	0	0	0	0	23	0	0	0	0	50
1930	27	0	0	0	0	0	15	20	0	0	0	0	62
1931	0	0	0	0	0	0	23	45	0	0	0	0	68
1932	0	0	0	0	0	0	0	68	32	0	0	0	100
1933	0	0	0	0	0	0	31	57	23	0	0	0	111
1934	27	0	0	0	0	0	10	42	0	0	0	0	79
1935	27	0	0	0	0	0	0	0	0	0	0	0	27
1936	0	0	0	0	0	0	0	49	13	0	0	0	62
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	45	12	0	0	0	57
1940	23	0	0	0	0	0	0	62	91	0	0	0	176
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	11	0	0	0	0	11
1943	0	0	0	0	0	0	0	0	46	0	0	0	46
1944	0	0	0	0	0	0	0	25	0	0	0	0	25
1945	14	0	0	0	0	0	0	11	0	0	0	0	25
1946	0	0	0	0	0	0	26	11	18	0	0	0	55
1947	0	0	0	0	0	23	85	62	19	0	0	0	189
1948	27	0	0	0	12	0	21	59	27	0	0	0	146
1949	27	0	0	0	0	0	59	46	4	0	0	0	136
1950	26	0	0	0	0	0	56	100	5	0	0	0	187
1951	25	0	0	0	0	0	107	143	33	0	0	0	308
1952	8	0	0	0	0	0	0	0	0	0	0	0	8
1953	0	0	0	0	0	0	67	95	49	0	0	0	211
1954	23	0	0	0	21	0	3	82	0	0	0	0	129
1955	25	0	0	0	36	33	31	44	9	0	0	0	178
1956	27	0	0	0	0	0	95	0	0	0	0	0	122
1957	0	0	0	0	0	0	77	86	44	0	0	0	207
1958	18	0	0	0	0	0	0	0	0	0	0	0	18
1959	0	0	0	0	0	0	35	67	23	0	0	0	125
1960	28	0	0	0	0	0	9	14	0	0	0	0	51
1961	27	0	0	0	0	0	17	39	0	0	0	0	83
1962	0	0	0	0	0	0	0	85	8	0	0	0	93
1963	27	0	0	0	0	44	0	62	53	0	0	0	186
1964	0	0	0	0	21	33	37	58	20	0	0	0	169
1965	27	0	0	0	0	0	14	137	33	0	0	0	211
1966	0	0	0	0	0	0	92	68	11	0	0	0	171
1967	19	0	0	0	0	0	0	0	0	0	0	0	19
1968	0	0	0	0	0	0	78	59	17	0	0	0	154
1969	21	0	0	0	0	0	0	0	0	0	0	0	21
1970	0	0	0	0	0	0	80	129	32	0	0	0	241
1971	11	0	0	0	0	0	83	102	51	0	0	0	247
1972	25	0	0	0	37	29	101	74	27	0	0	0	293
1973	27	0	0	0	0	0	0	16	0	0	0	0	43
1974	0	0	0	0	0	0	0	31	52	0	0	0	83
1975	0	0	0	0	0	0	0	79	0	0	0	0	79
1976	0	0	0	0	0	0	8	33	0	0	0	0	41
1977	0	0	0	0	0	0	30	45	0	0	0	0	75
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	2	68	21	0	0	0	91
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	51	53	17	0	0	0	121
1982	19	0	0	0	0	0	0	0	0	0	0	0	19
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	99	143	29	0	0	0	271
1985	12	0	0	0	0	0	21	54	14	0	0	0	101
1986	20	0	0	0	0	0	0	0	0	0	0	0	20
1987	0	0	0	0	0	0	0	26	0	0	0	0	26
1988	28	0	0	0	0	0	14	34	0	0	0	0	76
1989	0	0	0	0	0	0	21	23	0	0	0	0	44
1990	0	0	0	0	0	0	14	39	0	0	0	0	53
1991	0	0	0	0	0	0	0	13	0	0	0	0	13
1992	0	0	0	0	0	0	0	26	0	0	0	0	26
1993	0	0	0	0	35	34	165	85	0	0	0	0	319
1994	0	0	0	0	0	0	3	16	0	0	0	0	19
AVG:	10	0	0	0	2	4	26	48	13	0	0	0	103
MIN.	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	28	0	0	0	37	52	165	143	91	0	0	0	319

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Alternative 3 - Supplemental Water for Delta Outflow (SW(3)) (TAF)

SW(3) = (Total Storage Release (3 Reservoirs) + Trinity River Imports) - Total Exports (Banks + Tracy + Contra Costa + N. Bay)
Negative numbers set to zero and adjusted for surplus delta conditions. IO(n) set to zero.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	349	183	0	532
1923	0	0	0	0	0	0	0	0	330	556	299	0	1185
1924	0	0	0	0	0	0	159	319	555	473	222	0	1728
1925	0	0	0	0	0	0	0	0	353	512	236	0	1101
1926	0	0	0	0	0	0	0	95	685	733	386	0	1899
1927	0	0	0	0	0	0	0	0	0	477	276	0	753
1928	0	0	0	0	0	0	0	0	521	827	413	0	1761
1929	0	0	0	0	0	0	0	0	199	504	257	0	960
1930	0	0	0	0	0	0	0	0	536	563	237	0	1336
1931	0	0	0	0	0	0	156	157	425	424	290	0	1452
1932	0	0	0	0	0	0	0	0	137	436	196	0	769
1933	0	0	0	0	0	0	0	0	136	438	281	0	855
1934	0	0	0	0	0	0	0	85	479	450	226	0	1240
1935	0	0	0	0	0	0	0	0	0	520	233	0	753
1936	0	0	0	0	0	0	0	0	9	620	345	0	974
1937	0	0	0	0	0	0	0	0	154	651	344	0	1149
1938	0	0	0	0	0	0	0	0	0	6	58	0	64
1939	0	0	0	0	0	0	122	85	730	602	320	0	1859
1940	0	0	0	0	0	0	0	0	269	686	346	0	1301
1941	0	0	0	0	0	0	0	0	0	233	119	0	352
1942	0	0	0	0	0	0	0	0	0	190	112	0	302
1943	0	0	0	0	0	0	0	0	0	510	244	0	754
1944	0	0	0	0	0	0	0	0	494	630	328	0	1452
1945	0	0	0	0	0	0	0	0	154	641	291	0	1086
1946	0	0	0	0	0	0	0	0	397	555	244	0	1196
1947	0	0	0	0	0	0	0	134	459	708	330	0	1631
1948	0	0	0	0	0	0	0	0	0	410	299	0	709
1949	0	0	0	0	0	0	0	0	561	644	288	0	1493
1950	0	0	0	0	0	0	0	0	196	508	172	0	876
1951	0	0	0	0	0	0	0	0	392	703	210	0	1305
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	174	59	0	233
1954	0	0	0	0	0	0	0	51	250	708	153	0	1162
1955	0	0	0	0	0	0	0	0	524	659	319	0	1502
1956	0	0	0	0	0	0	0	0	0	128	0	0	128
1957	0	0	0	0	0	0	0	0	112	544	168	0	824
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	654	708	288	0	1650
1960	0	0	0	0	0	0	0	0	608	664	339	0	1611
1961	0	0	0	0	0	0	0	0	552	719	372	0	1643
1962	0	0	0	0	0	0	0	0	242	654	283	0	1179
1963	0	0	0	0	0	0	0	0	0	380	101	0	481
1964	0	0	0	0	0	0	0	0	401	677	324	0	1402
1965	0	0	0	0	0	0	0	0	0	374	0	0	374
1966	0	0	0	0	0	0	0	39	607	666	274	0	1586
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	580	641	0	0	1221
1969	0	0	0	0	0	0	0	0	0	27	0	0	27
1970	0	0	0	0	0	0	0	0	301	536	113	0	950
1971	0	0	0	0	0	0	0	0	0	133	25	0	158
1972	0	0	0	0	0	0	0	0	615	677	201	0	1493
1973	0	0	0	0	0	0	0	0	421	598	119	0	1138
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	75	0	0	75
1976	0	0	0	0	0	0	0	79	690	489	34	0	1292
1977	0	0	0	0	189	0	311	116	516	420	126	0	1678
1978	41	0	0	0	0	0	0	0	0	443	189	0	673
1979	0	0	0	0	0	0	0	0	636	520	101	0	1257
1980	0	0	0	0	0	0	0	0	0	223	75	0	298
1981	0	0	0	0	0	0	0	0	699	639	206	0	1544
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	191	495	0	0	686
1985	0	0	0	0	0	0	0	275	763	655	261	0	1954
1986	0	0	0	0	0	0	0	0	41	582	163	0	786
1987	0	0	0	0	0	0	0	228	971	666	369	0	2234
1988	0	0	0	0	0	0	0	12	505	608	332	0	1457
1989	0	0	0	0	0	0	0	31	527	579	166	0	1303
1990	0	0	0	0	0	0	70	0	427	614	282	0	1393
1991	0	0	0	0	75	0	0	0	192	307	121	0	695
1992	0	0	0	0	0	0	0	143	500	418	269	0	1330
1993	0	0	0	0	0	0	0	0	0	367	7	0	374
1994	0	0	0	0	0	0	0	0	685	455	177	0	1317
AVG:	1	0	0	0	4	0	11	25	293	463	189	0	985
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	41	0	0	0	189	0	311	319	971	827	413	0	2234

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Alternative 3 - Monthly Imports From the Trinity River (TAF)

(CP 3 Downstream Flow + CP 3 Diversions) - (CP 3 Local Inflow) Negative numbers set to zero.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	174	100	69	46	42	81	95	122	117	121	59	48	1074
1923	64	56	46	31	28	50	21	91	88	90	53	27	645
1924	41	33	23	15	14	19	21	45	73	68	53	26	431
1925	41	11	23	15	14	20	21	45	88	90	60	48	476
1926	63	33	23	15	14	50	66	91	87	68	53	26	589
1927	41	33	23	31	28	81	96	122	118	121	90	70	854
1928	87	78	69	46	42	81	96	122	117	90	59	48	935
1929	64	56	46	31	28	50	21	45	73	68	53	26	561
1930	40	33	23	15	14	20	21	45	87	68	53	27	446
1931	40	33	23	15	14	20	21	45	74	68	53	26	432
1932	41	33	16	10	8	0	3	8	68	68	53	26	334
1933	40	33	23	7	7	0	0	40	73	68	53	26	370
1934	41	33	23	15	14	20	21	45	73	68	53	26	432
1935	41	33	23	15	14	20	0	45	73	68	53	26	411
1936	41	33	23	15	14	20	21	45	74	69	53	26	434
1937	40	33	23	15	14	20	21	45	89	90	59	26	475
1938	41	33	46	31	42	81	96	122	195	201	90	71	1049
1939	87	78	69	46	42	81	95	92	87	90	59	48	874
1940	40	33	23	15	28	81	96	122	117	121	90	71	837
1941	87	78	46	46	42	91	173	203	195	201	201	200	1563
1942	143	100	189	146	119	112	96	123	195	201	121	70	1615
1943	87	78	69	46	42	81	96	122	118	121	90	70	1020
1944	87	78	46	30	27	50	65	91	87	90	53	26	730
1945	40	33	23	15	27	50	65	92	88	90	60	48	631
1946	40	33	23	30	27	50	65	121	117	120	89	48	763
1947	63	55	46	30	27	50	65	90	88	90	54	25	683
1948	40	33	23	15	27	50	21	91	88	90	60	48	586
1949	63	55	46	30	28	19	65	91	87	90	60	48	682
1950	63	55	46	31	27	50	65	90	87	90	59	26	689
1951	40	55	46	46	41	81	95	122	117	121	90	70	924
1952	63	55	46	46	41	81	95	121	195	121	90	70	1024
1953	86	77	69	52	55	111	95	122	195	201	90	71	1224
1954	86	78	69	46	41	111	98	201	195	200	90	71	1286
1955	86	78	69	46	41	80	65	90	87	90	59	48	839
1956	63	55	46	46	41	80	95	122	194	201	90	70	1103
1957	86	77	69	46	41	81	95	122	117	121	90	70	1015
1958	87	77	69	46	149	202	195	201	195	201	160	169	1751
1959	132	100	69	46	41	81	95	122	120	120	90	71	1087
1960	86	77	46	31	27	81	65	122	117	121	59	48	880
1961	63	55	46	30	27	81	65	122	117	121	60	48	835
1962	63	55	46	30	28	50	65	91	87	90	60	48	713
1963	63	55	46	46	41	81	95	122	117	121	90	71	948
1964	87	78	69	46	41	81	65	91	88	90	59	48	843
1965	63	55	23	46	41	81	95	121	118	121	91	71	926
1966	86	78	69	46	41	81	95	121	120	121	90	70	1018
1967	86	77	69	46	41	81	96	122	118	201	90	70	1097
1968	86	77	69	46	41	111	95	122	117	121	91	71	1047
1969	86	78	46	46	41	81	95	121	195	201	90	71	1151
1970	86	77	69	169	193	200	172	122	123	121	90	70	1492
1971	86	78	69	46	41	111	95	122	195	201	90	70	1204
1972	86	77	69	46	41	80	95	121	126	120	90	70	1021
1973	86	78	69	46	41	81	95	121	117	120	90	70	1014
1974	86	146	203	203	191	194	195	201	194	201	120	157	2091
1975	125	100	69	46	41	81	95	121	194	200	120	69	1261
1976	86	77	69	46	41	80	95	120	87	89	59	48	897
1977	63	55	45	15	13	19	20	45	72	67	52	26	492
1978	40	33	23	15	27	50	65	121	116	120	89	70	769
1979	86	78	69	31	28	50	65	91	117	90	59	48	812
1980	63	55	46	31	41	81	95	122	117	121	90	70	932
1981	86	78	46	31	41	81	95	122	88	90	59	48	865
1982	63	33	46	46	41	81	95	122	195	121	90	70	1003
1983	86	78	69	97	131	202	196	202	195	201	201	199	1857
1984	220	187	169	200	89	112	95	122	117	121	90	70	1592
1985	86	78	69	46	41	81	95	122	88	90	59	48	903
1986	63	55	46	31	28	81	95	122	117	121	90	70	919
1987	86	78	69	31	28	50	65	122	88	90	59	48	814
1988	63	55	46	31	28	50	65	91	88	90	59	48	714
1989	40	33	23	15	14	19	65	91	88	90	59	48	585
1990	63	55	46	15	28	19	21	45	88	68	53	26	527
1991	40	33	23	15	14	19	21	45	73	68	53	26	430
1992	40	33	23	15	14	19	21	45	73	68	53	26	430
1993	40	33	23	15	14	19	21	91	117	121	90	70	654
1994	86	78	46	31	28	50	65	91	88	68	53	26	710
AVG:	72	62	52	41	40	69	75	104	116	115	77	58	881
MIN:	40	11	16	7	7	0	0	8	68	67	52	25	334
MAX:	220	187	203	203	193	202	196	203	195	201	201	200	2091

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Alternative 4 - Obligation of Parties Other than Friant to Meet Vernalis Objective (SW(sj)) **(TAF)**

SW(sj) = Add(3) + SR(F) - (EX(F) + IO(Fn)), negatives set to 0, compared to Add(3), whichever is less. IO (Fn) set to zero.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	7	0	0	0	0	0	7
1923	0	0	0	0	0	52	0	39	0	0	0	0	91
1924	0	0	0	0	0	0	7	27	0	0	0	0	34
1925	27	0	0	0	0	0	0	7	0	0	0	0	34
1926	10	0	0	0	0	32	0	18	8	0	0	0	68
1927	0	0	0	0	0	0	0	0	3	0	0	0	3
1928	0	0	0	0	0	0	5	74	2	0	0	0	81
1929	8	0	0	0	0	0	0	20	0	0	0	0	28
1930	24	0	0	0	0	0	0	0	0	0	0	0	24
1931	0	0	0	0	0	0	17	25	0	0	0	0	42
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	23	0	0	0	23
1934	16	0	0	0	0	0	0	0	0	0	0	0	16
1935	17	0	0	0	0	0	0	0	0	0	0	0	17
1936	0	0	0	0	0	0	0	0	10	0	0	0	10
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	12	0	0	0	12
1940	21	0	0	0	0	0	0	0	91	0	0	0	112
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	31	0	0	0	31
1944	0	0	0	0	0	0	0	21	0	0	0	0	21
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	18	0	0	0	18
1947	0	0	0	0	0	23	25	7	19	0	0	0	74
1948	12	0	0	0	1	0	0	59	27	0	0	0	99
1949	12	0	0	0	0	0	22	0	4	0	0	0	38
1950	13	0	0	0	0	0	17	31	5	0	0	0	66
1951	0	0	0	0	0	0	78	143	33	0	0	0	254
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	33	95	49	0	0	0	177
1954	1	0	0	0	0	0	0	0	0	0	0	0	1
1955	11	0	0	0	7	33	0	0	9	0	0	0	60
1956	18	0	0	0	0	0	20	0	0	0	0	0	38
1957	0	0	0	0	0	0	8	17	14	0	0	0	39
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	23	0	0	0	23
1960	28	0	0	0	0	0	0	0	0	0	0	0	28
1961	26	0	0	0	0	0	0	0	0	0	0	0	26
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	42	0	0	2	0	0	0	44
1964	0	0	0	0	18	33	0	19	20	0	0	0	90
1965	27	0	0	0	0	0	0	99	0	0	0	0	126
1966	0	0	0	0	0	0	20	0	11	0	0	0	31
1967	9	0	0	0	0	0	0	0	0	0	0	0	9
1968	0	0	0	0	0	0	31	35	17	0	0	0	83
1969	21	0	0	0	0	0	0	0	0	0	0	0	21
1970	0	0	0	0	0	0	78	120	32	0	0	0	230
1971	0	0	0	0	0	0	51	88	51	0	0	0	190
1972	15	0	0	0	9	29	54	47	27	0	0	0	181
1973	2	0	0	0	0	0	0	0	0	0	0	0	2
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	33	0	0	0	0	33
1977	0	0	0	0	0	0	26	45	0	0	0	0	71
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	19	17	0	0	0	36
1982	10	0	0	0	0	0	0	0	0	0	0	0	10
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	57	112	29	0	0	0	198
1985	0	0	0	0	0	0	0	0	14	0	0	0	14
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	23	0	0	0	0	0	0	0	0	0	0	0	23
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	22	0	0	0	0	22
1993	0	0	0	0	0	0	85	0	0	0	0	0	85
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG:	5	0	0	0	0	3	9	17	8	0	0	0	42
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	28	0	0	0	18	52	85	143	91	0	0	0	254

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Alternative 4 - Modified Exchange Contractor Delivery (Excm) (TAF)

Deliveries Capped at 840 TAF/Yr and Adjusted Inflow to Millerton Lake
Adjusted Millerton Inflow = CP 18 Local Inflow - CP 605 Diversion - CP 606 Diversion

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	34	12	3	6	34	78	98	108	129	140	135	64	840
1923	35	12	3	6	39	82	102	112	134	145	104	66	840
1924	37	13	3	6	30	18	51	59	52	55	52	52	428
1925	28	9	3	4	30	85	107	119	141	135	112	69	840
1926	37	13	3	6	30	79	99	111	108	93	69	65	713
1927	32	11	3	5	38	79	99	109	130	140	130	64	840
1928	37	13	3	6	40	85	106	117	113	69	66	62	717
1929	37	13	3	6	30	53	83	92	110	82	55	54	618
1930	29	11	3	4	33	74	105	102	101	78	57	69	666
1931	37	13	3	6	30	34	48	62	60	62	60	52	467
1932	28	9	3	4	33	80	99	110	132	142	136	64	840
1933	35	12	3	5	30	63	79	88	106	109	89	33	652
1934	28	9	3	4	30	74	80	84	73	84	77	54	600
1935	31	11	3	5	31	74	105	118	141	152	99	69	840
1936	35	12	3	7	35	80	100	110	132	142	120	65	840
1937	35	12	3	6	28	76	101	112	135	145	123	65	840
1938	34	12	3	6	38	78	97	108	129	139	134	63	840
1939	37	13	3	6	40	85	106	117	103	97	93	69	769
1940	37	13	3	6	33	85	106	119	142	128	93	69	834
1941	34	12	3	6	38	78	97	108	129	139	134	63	840
1942	34	12	3	6	38	78	97	108	129	139	134	63	840
1943	34	12	3	6	38	78	97	108	129	139	134	63	840
1944	36	13	3	6	32	82	103	114	136	138	110	67	840
1945	34	12	3	6	30	79	98	109	130	140	135	64	840
1946	36	13	3	6	40	82	103	113	135	127	116	67	840
1947	37	13	3	6	34	82	106	119	99	86	71	68	724
1948	37	13	3	6	30	65	97	124	148	110	88	72	793
1949	38	13	3	7	33	81	106	119	142	98	86	69	795
1950	37	13	3	6	36	85	106	118	140	107	107	69	827
1951	37	13	3	6	41	85	106	117	140	118	104	69	839
1952	34	12	3	6	38	78	97	108	129	139	134	63	840
1953	36	13	3	6	40	84	102	108	138	133	109	68	840
1954	37	13	3	6	41	85	106	117	140	101	83	69	801
1955	37	13	3	6	41	85	102	117	140	107	84	69	804
1956	34	12	3	6	38	78	97	108	129	139	134	63	840
1957	37	13	3	6	36	85	105	117	139	123	106	69	840
1958	34	12	3	6	37	78	98	108	129	139	134	63	840
1959	37	13	3	6	41	85	106	117	123	56	35	54	676
1960	29	13	3	6	30	73	97	98	93	91	98	69	700
1961	27	13	3	6	32	43	92	98	86	31	40	41	512
1962	12	12	3	6	31	81	101	114	136	145	132	66	840
1963	34	12	3	6	38	78	97	108	129	139	134	63	840
1964	37	13	3	6	41	68	92	107	134	99	111	69	780
1965	19	12	3	6	38	80	99	110	131	141	137	65	840
1966	37	13	3	6	41	85	106	117	124	92	71	47	742
1967	34	12	3	6	38	78	97	108	129	139	134	63	840
1968	37	13	3	6	41	79	99	86	96	103	98	69	730
1969	20	12	3	6	38	80	99	109	131	141	137	65	840
1970	36	13	3	6	40	83	103	114	136	134	106	67	840
1971	35	12	3	6	39	80	100	110	132	136	123	65	840
1972	37	13	3	6	41	85	93	96	120	87	84	46	711
1973	35	12	3	6	39	81	101	111	133	144	109	66	840
1974	34	12	3	6	38	78	97	108	129	139	134	63	840
1975	36	13	3	6	35	83	103	115	136	134	111	67	840
1976	37	13	3	6	31	65	58	36	57	49	68	53	476
1977	22	9	3	4	11	3	4	2	54	58	48	26	244
1978	0	5	1	3	40	82	103	114	136	147	142	67	840
1979	35	12	3	6	33	81	102	113	135	128	125	66	840
1980	34	12	3	6	35	78	98	108	129	140	134	64	840
1981	37	13	3	6	41	85	106	117	105	92	89	69	763
1982	34	12	3	6	38	78	97	108	129	139	134	63	840
1983	34	12	3	6	38	78	97	108	129	139	134	63	840
1984	34	12	3	6	38	79	98	108	130	140	128	64	840
1985	37	13	3	6	40	85	106	117	98	69	73	69	716
1986	35	12	3	6	33	80	100	111	132	143	120	65	840
1987	37	13	3	6	33	77	107	119	90	94	103	47	729
1988	31	13	3	6	34	68	85	94	89	92	61	47	623
1989	27	11	3	5	30	63	95	106	105	97	103	46	691
1990	33	12	3	5	33	74	92	92	52	112	64	43	615
1991	19	11	3	5	15	26	84	94	112	122	83	52	626
1992	23	11	3	5	25	52	53	48	23	45	37	26	351
1993	31	1	3	5	39	82	102	113	135	145	118	66	840
1994	37	13	3	6	36	75	94	104	104	96	94	61	723
AVG:	33	12	3	6	35	75	95	105	118	115	102	61	759
MIN:	0	1	1	3	11	3	4	2	23	31	35	26	244
MAX:	38	13	3	7	41	85	107	124	148	152	142	72	840

STUDY: 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 4 - Friant Kern Canal Diversion to Export (EX(f)) (TAF)

CP 602 Diversion x Percent of Monthly FKC Deliveries Outside of the Kings River Basin (About 88%)

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	44	21	4	9	93	36	152	154	199	210	231	135	1288
1923	78	30	26	33	102	118	78	148	168	164	193	56	1193
1924	32	19	4	0	56	41	36	40	38	71	63	36	435
1925	33	16	3	0	51	85	73	86	154	134	107	81	822
1926	47	17	4	0	56	84	43	94	159	138	83	36	760
1927	48	25	3	5	77	130	152	179	175	205	215	102	1316
1928	61	22	1	2	78	76	92	98	161	121	70	29	812
1929	26	2	3	7	54	40	36	70	90	96	108	25	557
1930	25	0	3	6	54	54	46	52	103	108	76	25	552
1931	24	0	4	6	50	38	38	39	46	74	73	40	432
1932	31	16	3	2	65	135	164	179	172	204	157	101	1228
1933	43	14	3	0	58	86	62	73	128	112	137	21	737
1934	33	16	3	0	67	67	37	39	50	93	91	25	521
1935	31	14	4	0	81	120	92	183	170	210	212	52	1169
1936	26	2	4	10	56	135	162	165	201	207	181	74	1222
1937	41	23	4	0	40	135	128	155	206	216	208	99	1255
1938	45	19	4	13	87	40	56	72	166	213	249	139	1103
1939	90	51	26	36	85	81	45	46	130	133	120	33	876
1940	41	18	4	3	117	134	165	159	175	180	147	47	1188
1941	27	15	4	14	95	131	176	192	143	210	241	139	1387
1942	83	31	26	42	111	134	163	203	208	222	224	131	1578
1943	59	25	3	0	128	35	152	139	214	195	179	105	1234
1944	49	19	4	0	55	113	78	114	145	105	88	95	865
1945	70	31	21	30	63	119	170	170	174	194	224	130	1395
1946	89	43	21	48	155	104	118	107	166	167	141	75	1235
1947	56	19	3	8	86	90	60	66	128	132	91	39	777
1948	26	1	4	9	61	31	45	139	170	191	71	61	807
1949	33	16	4	0	56	86	95	88	153	136	71	46	783
1950	43	19	4	0	72	108	90	87	146	142	128	58	896
1951	72	51	0	54	173	122	92	135	175	160	81	43	1158
1952	36	18	4	27	114	131	113	141	174	218	243	138	1358
1953	91	45	21	41	109	71	57	94	139	129	110	60	966
1954	41	21	4	0	74	85	98	94	151	148	129	29	875
1955	33	16	4	5	83	95	43	92	136	143	101	49	801
1956	34	16	22	54	109	42	172	182	140	210	237	138	1357
1957	93	45	24	28	75	58	47	67	157	185	180	38	997
1958	37	19	4	9	92	124	168	196	179	223	223	133	1405
1959	87	37	22	28	68	99	49	53	135	145	78	33	835
1960	28	13	0	0	36	58	39	50	93	74	92	60	543
1961	23	0	1	5	32	29	36	41	84	86	66	31	433
1962	10	6	0	6	30	132	160	124	174	199	212	96	1149
1963	54	22	4	0	52	71	80	177	174	201	244	137	1215
1964	72	18	0	12	61	53	42	53	121	159	136	53	780
1965	22	0	4	48	175	134	138	184	175	196	179	135	1389
1966	83	31	17	54	154	113	63	53	129	154	89	37	978
1967	29	13	5	43	113	126	161	77	174	212	249	161	1363
1968	93	56	24	42	81	68	43	50	105	133	119	52	865
1969	23	0	3	15	23	50	0	159	167	208	249	176	1073
1970	79	24	2	0	116	118	95	115	133	154	154	54	1045
1971	24	0	4	36	109	111	83	99	159	148	106	101	982
1972	46	15	4	9	83	93	39	54	80	148	87	38	695
1973	41	22	4	7	92	135	179	193	175	204	210	69	1331
1974	37	20	1	52	178	134	166	191	205	220	211	98	1512
1975	47	18	4	2	59	108	136	209	171	204	177	70	1204
1976	46	24	0	0	53	39	37	44	91	67	71	42	513
1977	26	2	0	3	13	58	0	0	50	46	45	27	270
1978	0	5	0	5	105	37	56	110	170	215	249	139	1089
1979	113	61	22	52	155	133	172	182	204	196	177	51	1520
1980	42	22	1	0	70	67	110	148	180	212	249	161	1263
1981	82	31	25	27	72	59	68	83	98	132	122	39	839
1982	33	16	4	36	121	130	80	163	193	222	249	136	1383
1983	112	50	8	38	0	39	0	0	125	211	173	116	872
1984	72	37	5	20	135	106	128	138	169	170	187	80	1248
1985	66	25	4	1	93	85	68	78	137	121	85	67	831
1986	46	24	3	16	42	64	88	186	190	223	231	106	1219
1987	68	31	25	24	49	29	38	40	87	133	125	25	674
1988	23	0	2	5	77	34	37	49	110	110	71	33	551
1989	22	0	1	4	43	56	48	45	99	145	115	25	602
1990	26	13	2	0	33	39	38	40	75	102	98	26	493
1991	23	1	0	4	26	76	55	74	92	118	107	30	605
1992	21	0	0	4	26	54	38	40	31	43	36	19	312
1993	35	3	0	0	131	134	171	209	156	209	242	138	1428
1994	86	34	25	26	56	31	39	48	123	117	100	44	730
AVG:	48	20	7	15	79	85	87	108	143	159	149	74	975
MIN:	0	0	0	0	0	29	0	0	31	43	36	19	270
MAX:	113	61	26	54	178	135	179	209	214	223	249	176	1578

STUDY: 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 4 - Modified Friant Kern Canal Diversion to Export (EX(F)) (TAF)

EX(F) = EX(f) - Excm, negative values set to zero.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	10	9	1	4	59	0	55	46	70	70	96	71	491
1923	42	17	23	28	62	37	0	36	34	19	89	0	387
1924	0	6	1	0	26	23	0	0	0	16	11	0	82
1925	5	7	0	0	21	1	0	0	13	0	0	12	58
1926	10	4	1	0	26	5	0	0	51	45	14	0	155
1927	16	14	0	1	39	51	54	70	45	65	85	38	476
1928	24	9	0	0	38	0	0	0	48	52	4	0	174
1929	0	0	0	1	24	0	0	0	0	14	53	0	92
1930	0	0	0	2	21	0	0	0	2	30	19	0	74
1931	0	0	1	0	20	4	0	0	0	12	13	0	50
1932	3	7	0	0	32	55	65	69	39	62	21	37	391
1933	8	2	0	0	28	23	0	0	22	3	48	0	134
1934	5	7	0	0	37	0	0	0	0	9	14	0	71
1935	0	3	1	0	50	46	0	65	28	58	113	0	364
1936	0	0	1	3	22	55	63	55	69	65	61	9	401
1937	7	11	1	0	12	59	28	43	71	72	85	34	420
1938	11	7	2	7	49	0	0	0	38	74	115	76	378
1939	53	38	23	30	45	0	0	0	27	36	27	0	280
1940	4	5	1	0	84	49	59	40	33	52	54	0	380
1941	0	3	2	8	58	53	78	85	15	71	107	76	554
1942	49	20	23	37	73	56	66	96	79	83	89	67	738
1943	25	13	0	0	90	0	55	31	85	57	45	42	443
1944	14	6	1	0	23	31	0	0	9	0	0	29	111
1945	36	19	18	24	32	41	72	61	44	53	89	66	555
1946	53	30	18	42	116	22	16	0	31	41	25	9	402
1947	19	6	0	2	52	8	0	0	29	46	20	0	182
1948	0	0	1	3	31	0	0	15	22	81	0	0	152
1949	0	3	1	0	23	5	0	0	11	38	0	0	80
1950	6	6	1	0	36	23	0	0	6	35	21	0	134
1951	35	38	0	48	132	37	0	18	35	42	0	0	385
1952	2	6	2	22	76	53	16	34	46	79	109	75	518
1953	54	33	18	35	69	0	0	0	1	0	0	0	211
1954	4	8	1	0	33	0	0	0	11	47	46	0	151
1955	0	3	1	0	42	10	0	0	0	36	17	0	109
1956	0	4	20	49	71	0	75	74	11	71	103	75	553
1957	57	32	21	22	39	0	0	0	17	61	74	0	324
1958	3	7	1	4	55	46	70	88	50	84	88	70	565
1959	50	24	19	22	27	14	0	0	12	89	43	0	300
1960	0	0	0	0	6	0	0	0	0	0	0	0	6
1961	0	0	0	0	0	0	0	0	0	55	26	0	81
1962	0	0	0	1	0	51	58	10	38	53	80	30	321
1963	20	10	1	0	14	0	0	70	46	62	110	74	406
1964	35	5	0	6	20	0	0	0	0	60	25	0	151
1965	3	0	1	42	136	54	39	74	44	55	42	70	562
1966	46	18	14	48	113	28	0	0	5	62	18	0	353
1967	0	1	3	38	75	48	63	0	46	73	115	97	558
1968	56	43	21	36	40	0	0	0	9	30	21	0	255
1969	3	0	0	10	0	0	0	50	36	66	112	111	389
1970	43	11	0	0	76	36	0	2	0	20	48	0	236
1971	0	0	2	31	71	31	0	0	28	12	0	36	209
1972	9	2	1	3	42	8	0	0	0	61	3	0	128
1973	5	10	1	2	53	54	79	82	42	60	101	4	491
1974	3	8	0	46	140	56	69	84	76	81	77	35	674
1975	11	5	1	0	24	25	33	94	35	70	67	3	368
1976	9	11	0	0	22	0	0	8	34	18	3	0	104
1977	4	0	0	0	2	55	0	0	0	0	0	1	62
1978	0	0	0	2	66	0	0	0	34	67	107	72	348
1979	77	49	19	47	123	52	71	69	69	68	52	0	695
1980	8	10	0	0	35	0	13	40	51	72	114	97	442
1981	45	18	22	21	31	0	0	0	0	40	33	0	211
1982	0	4	2	31	83	52	0	56	64	83	115	72	561
1983	78	38	5	32	0	0	0	0	0	72	39	53	318
1984	38	25	3	14	97	27	30	29	39	30	59	16	408
1985	29	12	1	0	53	0	0	0	39	52	12	0	199
1986	11	12	0	11	9	0	0	75	58	79	111	41	407
1987	31	18	22	18	16	0	0	0	0	39	22	0	166
1988	0	0	0	0	43	0	0	0	21	18	10	0	93
1989	0	0	0	0	13	0	0	0	0	48	12	0	73
1990	0	1	0	0	0	0	0	0	23	0	34	0	58
1991	4	0	0	0	11	50	0	0	0	0	24	0	89
1992	0	0	0	0	1	2	0	0	8	0	0	0	11
1993	4	2	0	0	92	52	69	96	21	64	124	72	596
1994	49	21	22	20	20	0	0	0	19	21	6	0	179
AVG:	17	10	5	12	45	20	18	24	27	46	48	23	295
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	6
MAX:	78	49	23	49	140	59	79	96	85	89	124	111	738

STUDY: 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 4 - Millerton Lake Releases from Storage (SR(F)) **(TAF)**

SR(F) = CP18 Downstream Flow - CP18 Local Inflow

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	-14	-43	-71	-75	-8	-85	33	-93	-5	71	169	77	-44
1923	13	-26	-76	-59	22	47	-89	-34	29	48	165	-16	24
1924	-29	-27	-42	-44	21	37	-11	-16	16	64	29	-10	-12
1925	11	-20	-37	-36	-17	43	-63	-63	32	65	37	18	-30
1926	-7	-30	-43	-41	-13	44	-147	-70	120	124	46	-28	-45
1927	-14	-44	-69	-65	-76	-9	3	-50	-42	154	163	22	-27
1928	-1	-56	-69	-63	8	-14	-34	-17	118	121	24	-27	-10
1929	-19	-38	-40	-34	19	13	-61	-3	9	62	97	-27	-22
1930	-3	-38	-34	-34	10	13	-51	-36	53	80	49	-39	-30
1931	-10	-41	-33	-31	16	26	-6	-20	20	64	34	-3	16
1932	-2	-20	-69	-54	-83	46	21	-29	-87	126	71	33	-47
1933	-1	-27	-33	-45	11	33	-60	-62	36	50	104	-3	3
1934	-6	-23	-51	-53	18	22	-39	-42	13	71	49	-24	-65
1935	-10	-28	-45	-69	11	75	-117	-98	-62	163	197	-26	-9
1936	-16	-45	-47	-51	-115	5	-29	-69	66	165	129	-16	-23
1937	-23	-25	-57	-64	-107	-51	-39	-4	-2	172	163	31	-6
1938	-8	-32	-145	-114	0	76	49	169	-365	-30	198	38	-164
1939	23	-4	-51	-34	22	27	-68	-83	86	112	76	-55	51
1940	2	-27	-41	-121	-5	-7	13	-62	34	147	114	-13	34
1941	-24	-31	-108	-113	-19	-71	2	15	-44	34	177	62	-120
1942	25	-30	-81	-79	10	-20	-5	-39	-82	103	165	82	49
1943	-1	-41	-71	-151	4	-107	8	-14	70	143	103	34	-23
1944	-8	-28	-50	-40	-10	53	-30	-4	43	16	8	21	-29
1945	-4	-57	-63	-35	-114	-43	13	-33	-35	109	155	54	-53
1946	13	-46	-93	-65	73	15	-47	-101	56	123	79	-7	0
1947	-2	-49	-81	-66	9	42	-60	-55	86	118	55	-22	-25
1948	-15	-43	-45	-38	20	-25	-108	21	36	175	5	-11	-28
1949	-15	-30	-38	-42	5	44	-37	-61	56	106	10	-31	-33
1950	-7	-34	-48	-59	-22	63	-39	-69	45	107	72	-16	-7
1951	-19	-133	-117	-1	29	32	-29	24	113	124	-2	-42	-21
1952	-16	-34	-94	-120	-6	-37	37	131	-229	24	192	51	-101
1953	20	-40	-65	-63	42	22	-34	14	60	59	43	-7	51
1954	-18	-26	-50	-61	0	17	-40	-100	65	125	100	-41	-29
1955	-14	-37	-63	-67	13	60	-52	-46	29	103	57	-16	-33
1956	-9	-24	-224	-1	0	-88	0	74	-85	51	169	58	-79
1957	25	-24	-43	-31	4	-12	-69	-69	-13	146	147	-24	37
1958	-18	-35	-75	-76	-40	-57	-61	-2	-7	92	156	49	-74
1959	16	-44	-50	-24	-25	28	-84	-84	71	171	71	-14	32
1960	4	-4	-13	-22	-38	15	-51	-36	49	31	31	2	-32
1961	-1	-25	-39	-18	3	-4	-52	-52	44	116	40	-2	10
1962	-2	-8	-31	-18	-149	34	5	-118	-70	125	161	27	-44
1963	-9	-28	-28	-53	-157	-2	-95	-4	-5	58	175	49	-99
1964	37	-79	-93	-35	17	10	-42	-39	43	147	80	-19	27
1965	5	-39	-100	-131	19	9	-27	36	-52	85	94	45	-56
1966	21	-72	-122	-55	74	54	-72	-92	64	151	52	-3	0
1967	-10	-34	-125	-87	-4	-61	34	200	-236	-40	170	60	-133
1968	22	-21	-66	-23	-3	25	-47	-24	61	108	69	-12	89
1969	5	-40	-52	-183	145	10	143	-6	-386	-6	175	83	-112
1970	43	-54	-88	-86	0	25	-2	-7	44	92	108	-5	70
1971	-11	-54	-102	-69	12	57	-32	-14	82	64	17	26	-24
1972	-1	-29	-83	-61	14	27	-47	-27	6	139	36	-1	-27
1973	-20	-33	-69	-84	-66	-2	44	-128	-12	159	181	11	-19
1974	-24	-65	-124	-68	69	-25	-43	-58	-25	164	145	35	-19
1975	-7	-44	-62	-42	-26	31	-25	-14	-142	169	136	-16	-42
1976	-18	-63	-67	-40	8	-21	-15	17	81	76	26	-37	-53
1977	9	-17	-11	-8	3	89	-4	2	0	-10	7	-3	57
1978	0	-2	-48	-143	-119	37	151	30	-314	-6	137	31	-246
1979	41	-30	-56	-50	22	-34	7	-61	40	165	119	-13	150
1980	-18	0	-55	-198	0	8	-43	72	-135	-6	158	100	-117
1981	30	-28	-26	-28	-9	-9	-55	-34	42	110	83	-27	49
1982	-9	-37	-106	-104	0	-88	147	-71	-87	-6	143	18	-200
1983	36	-105	-19	-1	182	77	39	-2	-40	-290	-45	-28	-196
1984	83	-1	0	-1	0	-43	-12	-2	57	107	127	7	322
1985	1	-25	-55	-84	9	25	-98	-62	100	123	45	-3	-24
1986	-17	-50	-88	-81	14	-8	-112	40	-63	89	197	59	-20
1987	-4	-19	-10	-9	-2	-46	-65	-87	44	117	73	-17	-25
1988	-5	-33	-36	-60	34	-38	-48	-35	74	86	34	-8	-35
1989	-2	-28	-25	-28	10	-16	-75	-62	43	124	58	-16	-17
1990	-12	-19	-19	-23	0	-24	-53	-48	66	51	73	-12	-20
1991	7	-15	-16	-18	16	9	-33	-24	-15	13	66	-16	-26
1992	1	-13	-10	-13	-4	26	-9	-4	29	20	8	-3	28
1993	-4	2	-24	-176	-27	-60	-11	-98	-5	21	205	68	-109
1994	24	-20	-30	-13	12	-41	-50	-59	75	90	46	-17	17
AVG:	0	-34	-60	-59	-3	4	-27	-27	-3	85	95	7	-24
MIN:	-29	-133	-224	-198	-157	-107	-147	-128	-386	-290	-45	-55	-246
MAX:	83	2	0	-1	182	89	151	200	120	175	205	100	322

STUDY: 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 4 - Obligation of Friant to Meet Vernalis Objective (FO) **(TAF)**

FO = Add(Alt3) - SJO

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	6	0	0	0	0	0	22	108	0	0	0	0	136
1923	0	0	0	0	0	0	52	70	0	0	0	0	122
1924	0	0	0	0	0	0	11	16	0	0	0	0	27
1925	0	0	0	0	0	0	23	63	0	0	0	0	86
1926	17	0	0	0	0	0	34	70	0	0	0	0	121
1927	27	0	0	0	0	0	24	113	87	0	0	0	251
1928	0	0	0	0	0	0	34	17	0	0	0	0	51
1929	19	0	0	0	0	0	0	3	0	0	0	0	22
1930	3	0	0	0	0	0	15	20	0	0	0	0	38
1931	0	0	0	0	0	0	6	20	0	0	0	0	26
1932	0	0	0	0	0	0	0	68	32	0	0	0	100
1933	0	0	0	0	0	0	31	57	0	0	0	0	88
1934	11	0	0	0	0	0	10	42	0	0	0	0	63
1935	10	0	0	0	0	0	0	0	0	0	0	0	10
1936	0	0	0	0	0	0	0	49	3	0	0	0	52
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	45	0	0	0	0	45
1940	2	0	0	0	0	0	0	62	0	0	0	0	64
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	11	0	0	0	0	11
1943	0	0	0	0	0	0	0	0	15	0	0	0	15
1944	0	0	0	0	0	0	0	4	0	0	0	0	4
1945	14	0	0	0	0	0	0	11	0	0	0	0	25
1946	0	0	0	0	0	0	26	11	0	0	0	0	37
1947	0	0	0	0	0	0	60	55	0	0	0	0	115
1948	15	0	0	0	11	0	21	0	0	0	0	0	47
1949	15	0	0	0	0	0	37	46	0	0	0	0	98
1950	13	0	0	0	0	0	39	69	0	0	0	0	121
1951	25	0	0	0	0	0	29	0	0	0	0	0	54
1952	8	0	0	0	0	0	0	0	0	0	0	0	8
1953	0	0	0	0	0	0	34	0	0	0	0	0	34
1954	22	0	0	0	21	0	3	82	0	0	0	0	128
1955	14	0	0	0	29	0	31	44	0	0	0	0	118
1956	9	0	0	0	0	0	75	0	0	0	0	0	84
1957	0	0	0	0	0	0	69	69	30	0	0	0	168
1958	18	0	0	0	0	0	0	0	0	0	0	0	18
1959	0	0	0	0	0	0	35	67	0	0	0	0	102
1960	0	0	0	0	0	0	9	14	0	0	0	0	23
1961	1	0	0	0	0	0	17	39	0	0	0	0	57
1962	0	0	0	0	0	0	0	85	8	0	0	0	93
1963	27	0	0	0	0	2	0	62	51	0	0	0	142
1964	0	0	0	0	3	0	37	39	0	0	0	0	79
1965	0	0	0	0	0	0	14	38	33	0	0	0	85
1966	0	0	0	0	0	0	72	68	0	0	0	0	140
1967	10	0	0	0	0	0	0	0	0	0	0	0	10
1968	0	0	0	0	0	0	47	24	0	0	0	0	71
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	2	9	0	0	0	0	11
1971	11	0	0	0	0	0	32	14	0	0	0	0	57
1972	10	0	0	0	28	0	47	27	0	0	0	0	112
1973	25	0	0	0	0	0	0	16	0	0	0	0	41
1974	0	0	0	0	0	0	0	31	52	0	0	0	83
1975	0	0	0	0	0	0	0	79	0	0	0	0	79
1976	0	0	0	0	0	0	8	0	0	0	0	0	8
1977	0	0	0	0	0	0	4	0	0	0	0	0	4
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	2	68	21	0	0	0	91
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	51	34	0	0	0	0	85
1982	9	0	0	0	0	0	0	0	0	0	0	0	9
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	42	31	0	0	0	0	73
1985	12	0	0	0	0	0	21	54	0	0	0	0	87
1986	20	0	0	0	0	0	0	0	0	0	0	0	20
1987	0	0	0	0	0	0	0	26	0	0	0	0	26
1988	5	0	0	0	0	0	14	34	0	0	0	0	53
1989	0	0	0	0	0	0	21	23	0	0	0	0	44
1990	0	0	0	0	0	0	14	39	0	0	0	0	53
1991	0	0	0	0	0	0	0	13	0	0	0	0	13
1992	0	0	0	0	0	0	0	4	0	0	0	0	4
1993	0	0	0	0	35	34	80	85	0	0	0	0	234
1994	0	0	0	0	0	0	3	16	0	0	0	0	19
AVG:	5	0	0	0	2	0	17	31	5	0	0	0	60
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	27	0	0	0	35	34	80	113	87	0	0	0	251

STUDY: 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 4 - Supplemental Water to Meet Delta Outflow (SW(4)) (TAF)

SW(4) = SW(3) + SR(Friant) - (EX(F) IO(Fn)) + FO
Negative numbers set to zero and adjusted for surplus Delta conditions. IO(Fn) set to zero.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	350	256	6	612
1923	0	0	0	0	0	0	0	0	325	585	375	0	1285
1924	0	0	0	0	0	14	159	319	571	521	240	0	1824
1925	6	0	0	0	0	0	0	0	372	577	273	6	1234
1926	0	0	0	0	0	0	0	95	754	812	418	0	2078
1927	0	0	0	0	0	0	0	0	0	566	354	0	920
1928	0	0	0	0	0	0	0	0	591	896	433	0	1920
1929	0	0	0	0	0	0	0	0	208	552	301	0	1061
1930	0	0	0	0	0	0	0	0	587	613	267	0	1467
1931	0	0	0	0	0	22	156	157	445	476	311	0	1566
1932	0	0	0	0	0	0	0	0	43	500	246	0	789
1933	0	0	0	0	0	0	0	0	150	485	337	0	973
1934	0	0	0	0	0	22	0	85	492	512	262	0	1373
1935	0	0	0	0	0	0	0	0	0	625	317	0	942
1936	0	0	0	0	0	0	0	0	9	720	413	0	1142
1937	0	0	0	0	0	0	0	0	81	751	422	0	1254
1938	0	0	0	0	0	0	0	0	0	0	141	0	141
1939	0	0	0	0	0	0	54	47	789	678	369	0	1936
1940	0	0	0	0	0	0	0	0	270	781	406	0	1458
1941	0	0	0	0	0	0	0	0	0	196	189	0	385
1942	0	0	0	0	0	0	0	0	0	210	188	0	398
1943	0	0	0	0	0	0	0	0	0	596	302	0	898
1944	0	0	0	0	0	0	0	0	528	646	336	0	1510
1945	0	0	0	0	0	0	0	0	75	697	357	0	1129
1946	0	0	0	0	0	0	0	0	422	637	298	0	1358
1947	0	0	0	0	0	0	0	134	516	780	366	0	1796
1948	0	0	0	0	0	0	0	0	0	504	304	0	808
1949	0	0	0	0	0	0	0	0	606	712	298	0	1616
1950	0	0	0	0	0	0	0	0	235	580	223	0	1038
1951	0	0	0	0	0	0	0	0	470	785	208	0	1463
1952	0	0	0	0	0	0	0	0	0	0	83	0	83
1953	0	0	0	0	0	0	0	0	0	233	102	0	335
1954	0	0	0	0	0	0	0	33	304	786	207	0	1329
1955	0	0	0	0	0	0	0	0	553	726	359	0	1638
1956	0	0	0	0	0	0	0	0	0	108	66	0	174
1957	0	0	0	0	0	0	0	0	112	629	241	0	982
1958	0	0	0	0	0	0	0	0	0	8	68	0	76
1959	0	0	0	0	0	14	0	0	713	790	316	0	1834
1960	4	0	0	0	0	0	0	0	657	695	370	2	1728
1961	0	0	0	0	0	0	0	0	596	780	386	0	1762
1962	0	0	0	0	0	0	0	0	142	726	364	0	1231
1963	0	0	0	0	0	0	0	0	0	376	166	0	542
1964	0	0	0	0	0	0	0	0	444	764	379	0	1587
1965	2	0	0	0	0	0	0	0	0	404	52	0	457
1966	0	0	0	0	0	0	0	15	666	755	308	0	1744
1967	0	0	0	0	0	0	0	0	0	0	55	0	55
1968	0	0	0	0	0	0	0	0	632	719	48	0	1400
1969	2	0	0	0	0	0	0	0	0	0	63	0	64
1970	0	0	0	0	0	0	0	0	345	608	173	0	1126
1971	0	0	0	0	0	0	0	0	0	185	42	0	227
1972	0	0	0	0	0	0	0	0	621	755	234	0	1610
1973	0	0	0	0	0	0	0	0	367	697	199	7	1270
1974	0	0	0	0	0	0	0	0	0	83	68	0	152
1975	0	0	0	0	0	0	0	0	0	174	69	0	243
1976	0	0	0	0	0	0	0	88	737	547	57	0	1429
1977	5	0	0	0	190	34	311	118	516	410	133	0	1717
1978	41	0	0	0	0	0	0	0	0	370	219	0	630
1979	0	0	0	0	0	0	0	0	628	617	168	0	1413
1980	0	0	0	0	0	0	0	0	0	145	119	0	264
1981	0	0	0	0	0	0	0	0	741	709	256	0	1706
1982	0	0	0	0	0	0	0	0	0	0	28	0	28
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	209	572	68	0	849
1985	0	0	0	0	0	0	0	267	824	726	294	0	2111
1986	0	0	0	0	0	0	0	0	0	592	249	0	841
1987	0	0	0	0	0	0	0	167	1015	744	420	0	2346
1988	0	0	0	0	0	0	0	11	558	676	356	0	1600
1989	0	0	0	0	0	0	0	0	570	655	212	0	1438
1990	0	0	0	0	0	0	31	0	470	665	321	0	1487
1991	3	0	0	0	80	0	0	0	177	320	163	0	743
1992	1	0	0	0	0	0	0	143	521	438	277	0	1380
1993	0	0	0	0	0	0	0	0	0	324	88	0	412
1994	0	0	0	0	0	0	0	0	741	524	217	0	1481
AVG:	1	0	0	0	4	1	10	23	307	512	237	0	1095
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	41	0	0	0	190	34	311	319	1015	896	433	7	2346

San Joaquin Basin - Cummulative Direct Diversion, TAF

Priority Group	Right Number	Appl Id	File Date	DSA	Last Name (Company)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1	A014858B	07/18/88	39	U S BUREAU OF RECLAMATION (New Melones Lk)												
1	2	A027586	11/17/82	49	U S FISH & WILDLIFE SERVICE (Merced NWR)	0	0	0	0	0	0	0	0	0	0	0	0
1	3	A027546	09/30/82	49	NEW STONE WATER DISTRICT	0	0	0	0	0	0	0	0	0	0	0	0
1	4	A026875	06/16/81	49	MENEFEE RIVER RANCH COMPANY	0	0	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.1	0	0
1	5	A026757	03/19/81	49	MENEFEE HILL RANCH COMPANY	0	0	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.1	0	0
1	6	A023031	04/18/68	49	GRAVELY FORD WATER DISTRICT	0	0	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.1	0	0
1	7	A022980	02/07/68	40	PINE MOUNTAIN LAKE ASSOCIATION	0	0	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.1	0	0
1	8	A019304	03/11/60	39	U S BUREAU OF RECLAMATION (New Melones Lk)												
1	9	A019149	12/23/59	39	CALAVERAS COUNTY WATER DIST												
1	10	A018774	06/08/59	49	EL NIDO IRRIGATION DISTRICT	0	0	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.1	0	0
1	11	A018733	05/22/59	45	U S BUREAU OF RECLAMATION (Hidden Lake)												
1	12	A018714	05/15/59	43	U S BUREAU OF RECLAMATION (Eastman Lk)												
1	13	A017966	01/29/58	49	MCMULLIN RECL DISTRICT #2075	0	0	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.1	0	0
1	14	A016604	09/15/55	49	GALLO CATTLE COMPANY, A PARTNERSHIP	0	0	0.2	0.4	0.6	0.6	0.6	0.6	0.3	0.1	0	0
1	15	A016329	04/21/55	49	JOSEPH GALLO FARMS	0	0	0.5	1.1	1.3	1.4	1.4	1.3	1.0	0.3	0	0
1	16	A016186	12/23/54	41	MERCED IRRIGATION DISTRICT												
1	17	A016136	11/15/54	49	MENEFEE RIVER RANCH COMPANY	0	0	0.5	1.1	1.3	1.4	1.4	1.3	1.0	0.3	0	0
1	18	A015628	12/02/53	49	GALLO BEAR CREEK RANCH	0	0	0.5	1.6	2.2	2.6	2.6	2.4	1.4	0.5	0	0
1	19	A014858A	06/16/52	39	U S BUREAU OF RECLAMATION (New Melones Lk)	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
1	20	A014582	11/19/51	49	CA DEPT OF FISH & GAME (Los Banos Wildlife Are	0	0	0.8	2.1	3.2	3.7	3.8	3.5	1.9	0.6	0	0
1	21	A014127	01/16/51	40	TURLOCK I D & MODESTO I D												
1	22	A013628	03/10/50	49	BROCCHINI	0	0	0.8	2.1	3.2	3.7	3.8	3.5	1.9	0.6	0	0
1	23	A013541	01/13/50	49	WEAVER	0	0	0.8	2.1	3.2	3.7	3.8	3.5	1.9	0.6	0	0
2	24	A013175	06/27/49	49	CHOWCHILLA WATER DISTRICT	0	0	6.3	7.6	8.7	9.2	9.3	3.5	1.9	0.6	0	0
2	25	A013091	05/13/49	39	CALAVERAS COUNTY WATER DIST												
2	26	A013093A	05/13/49	39	CALAVERAS COUNTY WATER DIST												
2	27	A012912	01/25/49	39	CALAVERAS COUNTY WATER DIST												
2	28	A012910	01/25/49	39	CALAVERAS COUNTY WATER DIST												
2	29	A012635	08/06/48	49	W P RODUNER CATTLE & FARMING CO	0	0	6.4	7.8	9.1	9.7	9.8	4.0	2.0	0.7	0	0.
2	30	A012490	04/28/48	49	OAKDALE I D & SOUTH SAN JOAQUIN I D												
2	31	A011792B	03/24/47	39	CALAVERAS COUNTY WATER DIST												
2	32	A011687	01/08/47	49	U S FISH & WILDLIFE SERVICE (San Luis NWR)	0	0	6.4	7.8	9.1	9.7	9.8	4.0	2.0	0.7	0	0
2	33	A011688	01/08/47	49	U S FISH & WILDLIFE SERVICE (San Luis NWR)	0	0	6.4	7.8	9.1	9.7	9.8	4.0	2.0	0.7	0	0
2	34	A011653	12/10/46	49	W P RODUNER CATTLE & FARMING CO	0	0	6.4	7.8	9.1	9.7	9.8	4.0	2.0	0.7	0	0
2	35	A011105	07/13/45	49	OAKDALE I D & SOUTH SAN JOAQUIN I D												
2	36	A011047	05/09/45	49	CHOWCHILLA WATER DISTRICT	0	0	6.6	8.2	9.8	10.4	10.5	4.7	2.5	0.8	0	0
2	37	A011003A	03/09/45	49	TRIANGLE T RANCH INCORPORATED	0	0	6.6	8.2	9.8	10.4	10.5	4.7	2.5	0.8	0	0
2	38	A010978	02/10/45	49	OAKDALE I D & SOUTH SAN JOAQUIN I D												
3	39	A010872	08/30/44	49	OAKDALE I D & SOUTH SAN JOAQUIN I D												
3	40	A010572	12/11/42	49	MERCED IRRIGATION DISTRICT	0	0	6.6	8.2	9.8	10.4	10.5	4.7	2.5	0.8	0	0
3	41	A009997	09/06/40	49	TURLOCK I D & MODESTO I D	0	0	6.6	8.2	9.8	10.4	10.5	4.7	2.5	0.8	0	0
3	42	A009834	02/21/40	49	BROCCHINI	0	0	6.6	8.3	9.9	10.6	10.7	4.8	2.5	0.8	0	0
3	43	A009666	07/17/39	49	OAKDALE IRRIGATION DIST	0	0	6.6	8.3	10.0	10.7	10.8	4.9	2.6	0.9	0	0
3	44	A008892	02/03/37	49	OAKDALE IRRIGATION DIST	0	0	6.6	8.3	10.2	10.9	11.1	5.2	2.7	0.9	0	0
3	45	A008238	02/11/35	49	EL NIDO IRRIGATION DISTRICT	0.3	0.6	7.8	9.0	10.2	10.9	11.1	5.2	2.7	0.9	0	0

C-032560

C-032560

San Joaquin Basin - Cummulative Direct Diversion, TAF

Priority Group	Right umber	Appl Id	File Date	DSA	Last Name (Company)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
3	46	A007012	07/20/31	49	STEVINSON WATER DIST	0.3	0.6	7.8	9.0	10.2	10.9	11.1	5.2	2.7	0.9	0	0
3	47	A006963	05/19/31	49	BROCCHINI	0.3	0.6	7.8	9.1	10.4	11.2	11.3	5.4	2.8	0.9	0	0
3	48	A006807	09/27/30	49	EL NIDO IRRIGATION DISTRICT	0.3	0.6	8.0	9.3	10.4	11.2	11.3	5.4	2.8	0.9	0	0
3	49	A006711	06/25/30	49	TURLOCK I D & MODESTO I D	0.3	0.6	8.0	9.3	10.4	11.2	11.3	5.4	2.8	0.9	0	0
4	50	A006130	12/04/28	39	PACIFIC GAS & ELECTRIC COMPANY												
4	51	A006114	11/09/28	49	W P RODUNER CATTLE & FARMING CO	0.3	0.6	8.0	9.3	10.5	11.2	11.3	5.4	2.8	0.9	0	0
4	52	A006111	11/05/28	49	STEVINSON WATER DIST	0.3	0.6	8.0	9.3	10.5	11.2	11.3	5.4	2.8	0.9	0	0
4	53	A005724	10/17/27	49	STEVINSON WATER DIST	0.3	0.6	8.5	10.3	12.3	13.8	14.0	7.6	3.7	1.2	0	0
4	54	A005638	07/30/27	46	U S BUREAU OF RECLAMATION (Friant)												
4	55	A005648A	07/30/27	49	OAKDALE I D & SOUTH SAN JOAQUIN I D												
5	56	A005386	03/21/27	49	BANK OF AMERICA NT & SA	0.3	0.6	8.7	10.6	12.9	14.5	14.9	8.3	4 0	1.3	0	0
5	57	A005316	12/24/26	49	MCMULLIN RECL DISTRICT #2075	0.3	0.6	9.0	11.2	14.0	16.1	16.5	9.7	4.5	1.5	0	0
5	58	A004460	02/14/25	49	RIVER JUNCTION RECL DIST NO 2064	0.3	0.6	9.5	12.2	15.9	18.7	19.2	11.9	5.4	1.5	0	0
5	59	A004237	09/26/24	49	TWIN OAKS IRRIGATION COMPANY	0.3	0.6	9.7	12.6	16.8	19.9	20.4	12.9	5.8	1.6	0	0
5	60	A003648	09/24/23	49	TURLOCK I D & MODESTO I D	0.3	0.6	9.7	12.6	16.8	19.9	20.4	12.9	5.8	1.6	0	0
5	61	A003091	10/19/22	49	OAKDALE IRRIGATION DIST												
6	62	A002524	08/29/21	49	SOUTH SAN JOAQUIN IRRIGATION DIST												
6	63	A001987	08/27/20	49	WEST STANISLAUS IRRIGATION DIST	0.3	0.6	12.3	17.8	26.6	33.3	34.6	24.5	10.4	3.2	0	0
6	64	A001885	06/28/20	49	STEVINSON WATER DIST	0.3	0.6	12.5	18.2	27.5	34.5	35.9	25.6	10.9	3.3	0	0
6	65	A001476	10/10/19	49	EL SOLYO WATER DISTRICT	0.3	0.6	12.8	18.9	28.8	36.3	37.8	27.1	11.5	3.5	0	0
6	66	A001465	09/26/19	46	U S BUREAU OF RECLAMATION (Friant)												
7	67	A001233	04/08/19	40	TURLOCK I D & MODESTO I D												
7	68	A001224	03/26/19	49	MERCED IRRIGATION DISTRICT	0.3	0.6	12.8	18.9	28.8	36.3	37.8	27.1	11 5	3.5	0	0
7	69	A001195	02/26/19	49	CODDINGTON	0.3	0.6	13.1	19.4	29.7	37.5	39.1	28.2	11.9	3.7	0	0

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Major Central Valley Water Right Cumulative Direct Diversion by Priority Group, TAF

Priority Group	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1	0.0	0.1	1.8	7.8	13.7	20.1	20.1	14.8	7.0	3.7	1.5	1.0	91.7
2	0.0	0.2	2.5	10.9	19.0	27.9	26.9	19.7	9.1	5.0	1.8	1.2	124.1
3	0.0	0.2	3.6	17.6	25.9	37.4	36.8	26.8	10.3	5.4	1.9	1.3	167.1
4	0.0	0.2	4.2	19.9	29.9	43.5	43.4	31.4	12.2	6.2	2.2	1.4	194.6
5	0.0	0.5	9.9	39.9	68.7	107.7	119.6	81.6	39.7	22.9	5.6	3.4	499.5
6	0.0	0.6	12.0	46.4	92.7	146.3	163.1	112.6	56.6	33.4	7.1	3.4	674.3
7	0.0	0.6	12.2	47.7	95.0	149.2	166.2	115.3	57.6	33.7	7.1	3.4	688.1
8	0.0	0.6	12.3	49.6	98.6	154.9	172.6	119.9	60.1	35.2	7.1	3.4	714.3

Major Water Right Holder Consumptive Use of Applied Water by DSA, TAF

DSA	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
12	0	0	0	1.0	1.1	1.4	0.9	0.7	0.1	0.1	0	0	5.2
15	0	0	0.1	1.7	2.7	3.6	4.0	3.2	1.2	0.4	0	0	16.9
49	0	0	5.0	10.5	16.3	22.2	21.1	17.2	6.9	2.0	0	0	101.1
59	0	0	0	0.1	0.3	0.4	0.4	0.3	0.2	0	0	0	1.8
65	0	0	0	0.7	1.3	1.9	2.2	1.6	0.6	0.1	0	0	8.5
69	0	0	0.1	9.6	13.8	17.4	16.9	12.7	1.5	0.3	0	0	72.4
70	0	0	0	0.2	0.2	0.8	0.8	0.2	0	0	0	0	2.2
55	0	0.6	7.1	25.8	62.9	107.2	126.4	83.9	49.6	32.3	7.1	3.4	506.3
Total	0	0.6	12.3	49.6	98.6	154.9	172.6	119.9	60.1	35.2	7.1	3.4	714.3

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Alternative 3 - Friant Direct Diversion (TAF)

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	53	24	4	10	102	62	195	236	309	249	149	117	1510
1923	83	33	29	37	88	129	100	198	213	198	108	83	1299
1924	37	21	4	0	39	18	42	46	52	54	52	45	410
1925	33	17	3	0	56	92	93	117	188	135	112	90	936
1926	54	19	4	0	61	87	53	128	109	92	69	45	721
1927	58	28	3	6	84	191	200	238	266	159	140	126	1499
1928	72	25	1	2	76	122	120	135	113	69	66	37	838
1929	31	3	3	8	39	53	42	95	129	81	55	32	571
1930	29	1	3	7	47	74	56	69	102	78	57	32	555
1931	28	1	4	7	37	34	44	45	60	62	60	55	437
1932	36	18	3	2	71	134	200	237	267	183	150	114	1415
1933	50	16	3	0	52	97	78	99	150	108	89	32	774
1934	39	18	3	0	52	83	43	45	73	84	77	32	549
1935	37	16	4	0	77	103	119	243	269	157	101	78	1204
1936	31	3	4	11	62	180	204	247	239	151	126	109	1367
1937	50	26	4	0	44	175	177	245	310	155	131	113	1430
1938	52	21	5	14	94	0	80	0	271	303	154	161	1155
1939	86	56	29	40	70	94	57	60	104	96	93	41	826
1940	49	20	4	3	127	190	211	213	225	127	93	70	1332
1941	32	17	5	15	104	167	246	244	248	285	150	139	1652
1942	75	35	29	47	110	188	223	290	306	228	146	108	1785
1943	76	28	3	0	134	44	214	219	239	152	150	119	1378
1944	57	21	4	0	60	118	101	154	165	143	114	108	1045
1945	84	35	23	33	69	167	217	226	260	181	156	134	1585
1946	100	47	23	53	95	142	157	144	185	130	120	111	1307
1947	66	22	3	9	84	97	76	90	99	85	71	48	750
1948	30	2	4	10	47	44	55	162	209	110	88	81	842
1949	39	18	4	0	55	87	124	120	164	97	87	59	854
1950	53	22	4	0	79	100	116	119	164	106	107	76	946
1951	89	58	0	61	158	148	121	154	150	118	104	54	1215
1952	44	20	5	30	124	167	149	99	280	293	153	149	1513
1953	90	50	24	45	76	87	72	110	141	134	111	79	1019
1954	50	24	4	0	80	114	128	127	153	101	83	37	901
1955	40	18	4	5	77	88	52	125	168	106	84	64	831
1956	42	18	25	61	118	97	251	173	244	268	156	142	1595
1957	95	50	27	31	77	85	59	93	229	124	106	57	1033
1958	45	22	4	10	100	170	235	287	288	242	154	144	1701
1959	89	41	25	31	75	122	62	72	124	56	35	42	774
1960	30	15	0	0	40	73	48	65	93	91	98	75	628
1961	27	1	1	5	33	40	42	49	86	31	40	41	396
1962	12	8	0	7	33	152	209	166	259	172	138	112	1268
1963	63	25	4	0	57	108	107	236	260	243	155	150	1408
1964	57	20	0	13	49	68	52	72	135	99	110	79	754
1965	20	1	4	53	170	182	182	205	265	210	159	149	1600
1966	85	35	19	60	92	116	81	72	125	92	71	46	894
1967	34	15	6	48	123	183	162	0	277	302	185	170	1505
1968	89	62	27	46	89	79	54	66	96	102	98	67	875
1969	21	1	3	17	0	51	0	238	274	299	178	167	1249
1970	62	27	2	0	125	151	126	157	149	138	108	81	1126
1971	28	1	5	40	106	111	109	135	147	145	131	111	1069
1972	53	17	4	10	76	114	48	72	120	86	84	46	730
1973	49	25	4	8	100	187	205	256	268	152	115	90	1459
1974	44	23	1	57	123	190	206	276	308	166	152	108	1654
1975	54	20	4	2	65	131	185	277	269	138	113	105	1363
1976	55	27	0	0	49	55	45	35	57	49	68	52	492
1977	22	3	0	3	11	3	1	2	57	56	48	35	241
1978	0	5	0	5	115	21	0	163	277	308	194	170	1258
1979	100	68	25	59	146	176	226	261	255	133	131	77	1657
1980	51	24	1	0	76	95	200	164	290	317	184	130	1532
1981	70	35	28	30	79	83	90	114	105	92	89	48	863
1982	41	18	5	40	131	161	0	249	304	335	201	177	1662
1983	98	55	9	43	0	0	0	2	223	326	249	172	1177
1984	2	41	6	23	146	161	172	183	187	153	138	110	1322
1985	77	28	4	1	92	100	90	107	99	68	73	89	828
1986	55	27	3	18	30	93	149	236	299	245	126	96	1377
1987	81	34	28	27	54	37	47	46	90	94	103	32	673
1988	27	1	2	6	50	51	45	64	89	91	61	41	528
1989	26	1	1	4	38	89	61	57	105	96	103	32	613
1990	31	15	2	0	36	58	46	47	52	112	63	33	495
1991	19	2	0	4	12	108	69	101	143	148	83	38	727
1992	23	1	0	4	29	52	45	46	24	45	36	25	330
1993	41	1	0	0	143	178	256	280	262	297	123	132	1713
1994	87	38	28	29	48	39	48	61	104	96	94	57	729
AVG:	51	22	8	17	76	105	112	141	184	151	112	86	1065
MIN:	0	1	0	0	0	0	0	0	24	31	35	25	241
MAX:	100	68	29	61	170	191	256	290	310	335	249	177	1785

Annual CVP Deliveries To Sacramento Valley Contractors, af

Contractor	Contract	Status	1982	1983	1984	1985	1986	1987	1988	1989	7 Year Average
Alexander, Tom	7754A	WRX	0	0	0	0	0	0	22	22	6
Corning Water District	6575	WS	21,199	20,002	27,355	26,389	23,563	24,872	26,128	22,142	24,521
Freeman, Frank	2212A	WRX	16	16	16	0	16	16	16	16	14
Kirkwood Water District	W0056	WS	251	435	471	373	529	514	676	654	495
McLane, Robert	4446A	WRX	47	31	40	43	43	43	47	47	44
Nature Conservancy	3774A	WRX	0	0	0	0	0	0	0	41	6
Penner, Roger	0960A	WRX	180	180	180	180	180	180	180	180	180
Proberta Water District	7311	WS	4,759	6,138	6,312	5,685	5,453	5,122	6,583	5,498	5,630
Ramos, Mildred	2368A	WRX	16	16	16	16	16	16	16	16	16
Thomes Creek Water District	5271A	WS	6,956	3,552	6,273	8,292	8,227	8,445	7,708	5,167	7,295
Total DSA 10			**33,424**	**30,370**	**40,663**	**40,978**	**38,027**	**39,208**	**41,376**	**33,783**	**38,208**
4-M Water District (from Colusa Co.)	W0183	WS	3,021	2,481	3,510	3,273	2,136	2,572	2,578	2,609	2,814
Colusa County Water District	0304A	WS	21,974	19,135	31,904	37,945	42,325	61,582	61,169	53,927	44,404
Colusa Co. Water Dist (from Colusa Co.)	W0220	WS	0	0	0	0	1,491	1,491	2,058	5,965	1,572
Colusa Drain MWC	W0693	WR	0	0	0	0	0	0	38,707	48,915	12,517
Cortina Water District (from Colusa Co.)	W0206	WS	1,510	1,046	1,431	1,733	1,447	1,954	1,814	1,628	1,645
Davis Water District	6001A	WS	4,727	2,138	4,804	5,373	5,328	4,478	6,061	6,396	5,310
Dunnigan Water District	0399A	WS	296	6,156	14,887	13,058	11,261	14,913	15,530	13,813	11,965
Glen Colusa I.D.	0855A	WR	750,289	595,538	830,464	802,252	787,250	771,641	720,359	765,668	775,418
Glenn Valley Water District	W0219	WS	892	440	841	375	771	817	1,261	1,197	879
Glide Water District	W0040	WS	11,647	5,706	13,366	13,704	13,237	13,225	13,526	12,873	13,083
Holthouse Water District (from Colusa Co.)	W0224	WS	1,441	1,083	1,937	2,293	1,829	2,470	2,510	1,510	1,999
Kanawha Water District	0466A	WS	33,578	26,212	39,646	41,699	36,288	37,378	38,781	38,632	38,000
La Grande Water District	W0022	WS	5,237	4,220	5,000	5,000	5,715	5,000	5,000	5,000	5,136
La Grande Water Dist. (from Colusa Co.)	W0190	WS	2,301	0	1,388	1,899	550	1,293	1,817	786	1,433
Maxwell I.D.	6078A	WR	4,610	1,813	2,683	174	0	0	150	0	1,088
Myers-Marsh MWC (from Colusa Co.)	W0225	WS	209	49	304	684	652	414	365	440	438
Orland-Artois Water District	8382A	WS	46,968	48,379	74,407	73,364	69,590	77,675	84,127	67,573	70,529
Princeton-Codora-Glen I.D.	0849A	WR	53,879	37,017	55,033	61,978	52,257	56,476	51,942	53,032	54,942
Provident I.D.	0856A	WR	41,928	39,155	37,928	48,159	43,996	32,787	34,058	34,595	39,064
Westside Water District	8222	WS	24,572	22,012	25,000	25,000	24,681	29,511	25,000	24,604	25,481
Westside Water Dist. (from Colusa Co.)	W0182	WS	0	0	11,306	8,296	10,000	10,000	11,574	9,053	8,604
Total DSA 12			**1,009,079**	**812,580**	**1,155,839**	**1,146,259**	**1,110,804**	**1,125,677**	**1,118,387**	**1,148,216**	**1,116,323**
A & F Boeger Corp.	1053A	WR	2,294	1,464	2,591	1,276	2,220	2,373	1,724	1,365	1,978
Anderson, Ray	1726A	WRX	190	190	190	188	190	188	188	192	189
Andreotti, Arthur	1898A	WR	2,817	367	1,115	1,929	1,541	2,839	3,065	1,712	2,145

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Annual CVP Deliveries To Sacramento Valley Contractors, af

Contractor	Contract	Status	1982	1983	1984	1985	1986	1987	1988	1989	7 Year Average
Baber, Jack	1604A	WR	2,750	2,227	3,648	2,382	1,023	467	940	1,721	1,847
Beckley, Ralph	8118A	WR	260	140	0	260	0	65	0	277	123
Broomieside Farms (Reynen)	1286A	WR	11,019	5,044	7,603	9,263	8,311	8,812	6,022	7,339	8,338
Buchholz, Bruce	0889A	WRX	200	200	200	200	200	179	0	179	165
Butler, Leslie	2365A	WRX	340	217	392	347	347	347	347	404	361
Butte Creek Farms #1	2851A	WRX	36	36	36	36	36	36	36	36	36
Butte Creek Farms #2	5206A	WRX	95	95	95	95	95	95	95	95	95
Butte Creek Farms #3	7744A	WRX	640	89	640	640	640	640	640	640	640
Cannell, Fred et al.	5210A	WRX	524	490	746	839	781	709	798	515	702
Carter, Jane F.	4617A	WR	740	545	129	975	874	741	643	1,029	733
Chesney, Carson	0930A	WRX	0	0	0	0	0	0	0	0	0
Churkin, Michael	7227A	WRX	0	0	130	130	130	130	130	133	112
Clauss, John	2045A	WR	2,094	1,959	1,747	1,740	1,643	2,367	2,033	1,558	1,883
Colusa Irrigation Co.	1086A	WRX	405	202	213	303	468	720	367	535	430
Colusa Properties, Inc.	2042A	WR	1,937	1,168	465	598	365	502	389	550	687
Cribari, Emile	5215A	WRX	35	35	35	35	35	35	35	35	35
Davis, Grover	1851A	WRX	0	0	0	0	0	0	0	0	0
Drew, Jerry	2250A	WRX	28	0	0	0	0	0	0	0	4
Driver, Gary	8595A	WR	30	30	30	30	30	30	30	30	30
Driver, John	2398A	WRX	16	16	16	16	16	0	0	16	11
Driver, John & Clare	1314A	WRX	230	189	189	101	101	101	101	230	150
Eggleston, Ronald	7339A	WRX	0	0	0	0	0	0	0	0	0
Ehrke, Allen	8330A	WR	311	0	311	345	311	276	345	311	316
Fargo & Haggerty	W0117	WRX	2,607	864	3,642	1,701	2,975	2,836	2,523	2,617	2,700
Fedora, Sibley	2916A	WR	210	208	210	208	12	210	0	220	153
Fory, David	7691A	WRX	1,873	1,210	1,369	1,876	1,300	1,888	2,014	1,472	1,685
Gillaspy, Fay	8117A	WR	203	147	0	203	177	0	203	187	139
Giusti, Frank	4076A	WR	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610
Green Island Farms	W0001	WRX	820	0	820	529	0	0	0	487	379
Griffin, Joseph	2895A	WR	1,995	1,456	2,631	1,914	1,886	1,362	1,895	1,586	1,896
Hale & Marks	7572A	WRX	130	130	130	130	130	130	130	130	130
Hale & Marks	1638A	WRX	67	67	67	67	67	67	67	67	67
Henle, John	0932A	WR	93	70	103	36	46	278	170	172	128
Hiatt, Glen	0880A	WR	1,450	1,344	1,864	1,309	1,411	1,527	1,639	620	1,403
Hollins, Mariette	2993A	WR	1,527	1,291	1,578	1,465	1,496	1,420	1,422	1,531	1,491
Howald Farms	1042A	WRX	1,507	1,676	1,634	1,904	2,004	2,015	1,615	1,308	1,712
Kary, Carol	2520A	WRX	624	366	915	685	468	1,212	949	577	776
Lamb Family Trust	2486A	WR	303	0	173	0	0	260	0	0	105

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Annual CVP Deliveries To Sacramento Valley Contractors, af

Contractor	Contract	Status	1982	1983	1984	1985	1986	1987	1988	1989	7 Year Average
Lockett & O.Brien	4105A	WR	321	366	742	685	468	952	949	577	671
Locvich, Paul	1945A	WRX	0	0	0	116	0	0	0	0	17
Lonon, Michael et al.	8658A	WRX	916	667	1,155	0	0	223	533	888	531
Martin, Andrew	1827A	WRX	0	0	0	0	0	0	0	0	0
Mayfair Farms	1976A	WRX	280	280	280	280	280	280	280	280	280
McLaughlin, Jack	2514A	WRX	0	0	0	0	0	0	0	0	0
Meridian Farms Water Co.	0838A	WR	21,907	24,340	26,426	29,212	23,645	27,774	26,107	25,367	25,777
Mirbach/Harff	7556A	WRX	68	0	134	0	0	0	0	0	29
ML Farms (Wakida)	5200A	WR	515	155	515	355	355	515	426	426	444
Munson, James	7049A	WR	139	137	139	139	139	139	139	139	139
M&T, Inc.	0940A	WR	3,909	228	1,309	5,070	5,718	6,743	7,115	9,007	5,553
Nelson, Thomas	1954A	WR	0	136	0	136	79	0	95	126	62
Odysseus Farms	1664A	WRX	309	147	678	349	274	529	684	472	471
Oji Brothers Farm	3753A	WR	969	1,402	1,443	1,695	1,444	2,478	1,553	1,468	1,579
Oji, Masanobu	2427A	WR	1,415	1,244	1,263	1,509	2,172	1,350	1,112	274	1,299
Olive Percy Davis Trust	2146A	WR	29,032	22,444	28,034	29,664	27,525	24,082	23,960	24,158	26,636
Pelger Mutual Water Co.	2073A	WR	4,525	1,760	3,520	3,490	4,172	3,656	4,160	2,271	3,685
Pires, Lawrence	7744A	WRX	1,200	649	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Premier Farmland Partners III	0931A	WR	3,756	3,236	5,479	3,046	609	5,122	3,693	3,763	3,638
Quad H Ranches	2153A	WR	500	500	500	500	500	500	500	0	429
Reclamation District #1004	0890A	WR	57,078	47,873	68,605	71,783	61,467	58,154	73,307	56,547	63,849
Reclamation District #108	0876A	WR	174,836	93,855	144,557	138,512	124,479	135,408	126,842	110,056	136,384
Reische, Laverne	1150A	WRX	483	483	520	462	493	509	520	520	501
Ritchey, Addie	1426A	WR	171	171	170	0	0	156	181	0	97
River Garden Farms Co.	0878A	WR	18,398	6,307	17,696	24,477	19,192	21,650	13,168	17,716	18,900
Roberts Ditch Irrigation Co.	0935A	WRX	2,838	1,096	2,261	2,065	1,579	2,237	2,000	2,221	2,172
Sartain Mutual Water Co.	2401A	WR	3,659	348	4,524	4,554	2,440	3,047	4,054	2,914	3,599
Seaver, Charles	3296A	WR	131	138	0	63	0	131	66	66	65
Spence, Ruth	4829A	WR	254	215	378	308	561	359	373	549	397
Stegeman Station Ranch, Inc.	5211A	WRX	0	0	0	0	0	636	274	655	224
Steidlmayer, Francis	0874A	WRX	616	0	1,224	608	608	608	1,248	1,248	880
Sutter Mutual Water Co.	0815A	WR	236,747	150,333	209,727	204,854	200,171	197,985	189,366	198,790	205,377
Swinford Tract Irrigation Co.	2145A	WRX	225	61	177	180	129	156	193	195	179
Tarke, James (Hulbert & Tarke)	1949A	WR	1,263	1,227	1,372	1,618	1,191	1,258	416	1,104	1,175
Thompson, Meryle	7206A	WRX	180	0	180	180	180	0	180	102	143
Tisdale Irrigation & Drainage Co.	2781A	WR	7,507	7,018	8,640	5,434	6,053	9,163	8,612	7,803	7,602
Tuttle, Charles	7296A	WR	0	0	0	0	0	0	0	0	0
Wakida, Masaru	1415A	WRX	325	325	325	246	0	287	325	325	262

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Annual CVP Deliveries To Sacramento Valley Contractors, af

Contractor	Contract	Status	1982	1983	1984	1985	1986	1987	1988	1989	7 Year Average
Wells, Joyce	2896A	WRX	1,188	790	991	1,060	1,082	1,209	967	1,022	1,074
Westfall, Ralph	3591A	WRX	148	148	148	148	148	148	148	148	148
Young, Russell	2552A	WRX	10	10	10	10	10	0	0	10	7
Total DSA 15			**617,828**	**393,231**	**571,589**	**569,373**	**521,302**	**545,111**	**526,911**	**503,893**	**550,858**
Anderson Cottonwood I.D.	3346A	WR	146,035	135,919	152,872	151,435	139,539	158,825	144,943	121,033	144,955
Bella Vista Water District	0851A	WS	6,065	5,840	6,775	7,896	14,555	14,342	13,754	9,289	10,382
City of Redding	2871A	WR	7,712	6,383	9,831	11,465	9,616	13,337	12,144	10,942	10,721
City of Redding (Buckeye)	5272A	WS	1,423	1,429	1,609	1,321	1,901	2,245	2,167	2,017	1,812
City of Shasta Lake	2X	WS	0	0	0	0	0	0	0	0	0
Clear Creek CSD	0489A	WS	6,065	5,840	6,775	7,896	7,850	9,637	8,289	9,409	7,989
Daniel, Harry	4348A	WR	11	15	15	20	0	0	0	0	7
Diamond Lands, Corp.	8106A	WRX	425	425	425	425	425	425	425	425	425
Driscoll Strawberries, Inc.	4736A	WRX	820	820	820	820	820	820	820	820	820
Gjermann, Hal	4010A	WRX	12	12	12	12	12	12	12	12	12
High-Low Nursery	W0006	WRX	113	113	156	170	0	0	113	125	97
J.B. Unlimited, Inc.	2519A	WRX	0	0	0	408	0	0	0	0	58
Keswick CSD (CSA #25)	1307A	WS	55	62	74	91	140	156	129	114	108
Lake Calif. Property Owners Assoc.	4961A	WR	790	790	790	790	790	790	790	790	790
Leviathan, Inc.	7308A	WRX	0	700	700	700	700	700	700	700	600
Micke, Daniel	7995A	WRX	100	103	103	103	103	0	0	0	58
Mountain Gate CSD	6998A	WS	286	350	350	350	350	350	350	350	341
Riverview Golf & Country Club	8286A	WRX	280	280	280	280	280	280	280	280	280
Shasta County Water Agency	3367A	WS	125	143	201	277	269	606	620	598	385
Shasta CSD	0862A	WS	446	480	542	575	602	688	658	585	585
Shasta Dam Area PUD	4X	WS	1,516	1,543	1,601	1,515	1,573	1,840	1,432	1,964	1,634
Total DSA 58			**172,279**	**161,247**	**183,931**	**186,549**	**179,525**	**205,053**	**187,626**	**159,453**	**182,059**
Amen, Henry	1779A	WRX	660	188	660	304	0	415	660	660	480
City of West Sacramento	W0187	WR	0	0	0	0	0	0	0	3,521	503
Conaway Conservancy	7422A	WR	25,031	11,013	26,181	29,168	18,917	37,409	33,236	36,426	29,481
Deseret Farms (LDS Church)	2149A	WR	796	538	1,498	1,224	1,931	699	787	777	1,102
Driver, Clare et al.	0939A	WRX	176	180	180	180	180	180	180	180	179
Giovannetti, B.E.	0991A	WRX	0	520	0	520	434	520	520	520	359
Hershey Land Co.	7972A	WR	1,417	706	541	1,067	678	1,536	1,098	1,680	1,145
Kaiser Development Co.	4217A	WRX	526	526	0	0	0	0	0	0	75
Knaggs, Layton	2148A	WR	96	209	513	623	758	793	76	103	423
Riverby, Ltd.	0934A	WRX	500	500	102	365	271	0	452	466	308

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C—032567

Annual CVP Deliveries To Sacramento Valley Contractors, af

Contractor	Contract	Status	1982	1983	1984	1985	1986	1987	1988	1989	7 Year Average
Russell, Della	8322A	WR	430	106	430	278	337	127	198	192	285
Russell, Della	1616A	WRX	120	0	120	0	103	103	0	103	78
Wallace Construction, Inc.	4604A	WR	675	292	2,207	974	2,208	687	198	1,123	1,153
Williams Co., G.W.	2973A	WRX	0	0	0	0	0	0	0	0	0
Wilson Ranch Partnership	4520A	WR	330	412	675	624	428	0	0	0	294
Wilson, Neil	0906A	WRX	0	0	0	0	0	0	0	0	0
Total DSA 65			**30,757**	**15,190**	**33,107**	**35,327**	**26,245**	**42,469**	**37,405**	**45,751**	**35,866**
Feather Water District	0171A	WS	18,629	13,824	21,111	15,396	18,677	21,851	19,408	18,252	19,046
Jaeger, William	W0002	WRX	777	366	574	504	504	504	574	574	573
Morehead, Joseph	5789A	WRX	0	0	0	0	0	0	0	0	0
Total DSA 69			**19,406**	**14,190**	**21,685**	**15,900**	**19,181**	**22,355**	**19,982**	**18,826**	**19,619**
Chilton, Barbara	2065A	WRX	0	0	0	0	0	0	0	0	0
County of Sacramento	2404A	WR	750	435	750	750	750	750	714	660	732
ELH Sutter Properties	1364A	WRX	127	127	127	317	317	317	381	444	290
Furlan, Antonio	1595A	WR	427	159	0	263	189	376	269	0	218
Furlan, Emile	1175A	WR	920	660	354	920	920	283	585	778	680
Heidrick Family Trust	1176A	WR	0	0	0	0	0	0	0	0	0
Lauppe, Burton	1289A	WRX	432	468	468	540	540	360	360	540	463
Leal, Robert	8574A	WRX	625	630	0	630	630	630	0	630	449
Leiser, Wayne	4178A	WR	0	60	0	0	0	0	68	68	19
MCM Properties	7827A	WR	1,035	507	916	318	0	1,008	234	439	564
Natomas Central Mutual Water Co.	0885A	WR	105,202	63,573	107,048	90,583	76,938	81,171	84,717	79,974	89,376
Pleasant Grove-Verona MWC	5520A	WRX	15,781	9,510	13,230	12,387	12,878	14,056	15,866	15,106	14,186
Richter Brothers	4362A	WR	2,384	2,218	2,608	1,903	2,241	2,608	2,575	2,608	2,418
Univ. of CA (Natomas Central MWC)	7941A	WR	556	163	486	724	508	410	408	400	499
Verona Farming Co.	W0054	WRX	265	300	138	300	277	277	157	14	204
Willey, Edwin	3556A	WRX	0	0	0	0	0	0	0	0	0
Total DSA 70			**128,504**	**78,810**	**126,125**	**109,635**	**96,188**	**102,246**	**106,334**	**101,661**	**110,099**
Sacramento River Basin Totals			**2,011,277**	**1,505,618**	**2,132,939**	**2,104,021**	**1,991,272**	**2,082,119**	**2,038,021**	**2,011,583**	**2,053,033**

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Sacramento Valley Inbasin Obligations, TAF (without deficiencies)

Priority Group	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Sacramento River (USBR)													
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	72.5	70.8	0.0	0.0	0.0	0.0	143.2
4	9.5	7.5	6.9	29.5	59.9	69.0	75.5	73.2	53.8	40.8	23.9	11.6	461.2
5	9.5	7.5	6.9	30.7	61.9	71.0	77.6	74.9	54.9	41.2	23.9	11.6	471.7
6	9.5	7.5	6.9	33.9	66.8	76.1	82.8	79.0	57.6	42.4	23.9	11.6	498.0
7	9.5	7.5	6.9	46.9	87.3	96.9	104.2	96.1	68.7	47.1	23.9	11.6	606.5
8	9.5	7.5	6.9	99.2	169.2	180.4	190.2	164.6	113.2	65.9	23.9	11.6	1,042.1
9	9.5	7.5	6.9	185.3	304.3	318.2	332.0	277.6	186.7	96.9	23.9	11.6	1,760.4
Feather River (DWR)													
1	0.0	0.0	0.1	0.2	0.5	1.0	0.8	0.6	0.3	0.0	0.0	0.0	3.7
2	0.0	0.0	0.1	0.2	0.5	1.0	0.8	0.6	0.3	0.0	0.0	0.0	3.7
3	0.0	0.0	0.1	0.2	0.5	1.0	0.8	0.6	0.3	0.0	0.0	0.0	3.7
4	0.0	0.0	0.2	0.3	0.5	1.0	0.9	0.6	0.3	0.0	0.0	0.0	4.1
5	0.0	0.0	0.2	0.3	0.5	1.0	0.9	0.6	0.3	0.0	0.0	0.0	4.1
6	0.1	0.0	0.5	0.8	3.4	3.6	3.5	2.9	1.2	0.2	0.2	0.1	16.6
7	0.1	0.0	0.5	0.8	3.4	3.6	3.5	2.9	1.2	0.2	0.2	0.1	16.6
8	0.1	0.0	0.6	1.2	4.7	5.1	5.3	4.0	2.0	0.3	0.3	0.1	23.9
9	1.4	0.0	5.9	36.1	128.9	124.4	137.0	119.9	43.7	29.6	16.5	9.2	652.7
American River (USBR)													
1	0.7	0.7	0.8	1.2	1.8	2.3	2.8	2.7	2.2	1.6	1.0	0.8	18.7
2	2.9	2.7	3.3	4.7	7.0	8.8	10.6	10.3	8.3	6.3	3.9	3.1	71.9
3	2.9	2.7	3.3	4.7	7.0	8.8	10.6	10.3	8.3	6.3	3.9	3.1	71.9
4	2.9	2.7	3.3	4.7	7.0	8.8	10.6	10.3	8.3	6.3	3.9	3.1	71.9
5	2.9	2.7	3.3	4.7	7.0	8.8	10.6	10.3	8.3	6.3	3.9	3.1	71.9
6	4.0	3.8	4.6	6.7	9.9	12.4	15.0	14.6	11.8	8.9	5.5	4.3	101.5
7	4.0	3.8	4.6	6.7	9.9	12.4	15.0	14.6	11.8	8.9	5.5	4.3	101.5
8	4.0	3.8	4.6	6.7	9.9	12.4	15.0	14.6	11.8	8.9	5.5	4.3	101.5
9	5.7	5.4	6.6	9.5	14.1	17.7	21.4	20.8	16.8	12.7	7.8	6.2	144.7
Total Sacramento Valley Project Inbasin Obligations													
1	0.7	0.7	1.0	1.5	2.3	3.3	3.6	3.2	2.5	1.6	1.0	0.8	22.4
2	2.9	2.7	3.4	5.0	7.5	9.8	11.5	10.9	8.7	6.3	3.9	3.1	75.6
3	2.9	2.7	3.4	5.0	7.5	9.8	83.9	81.7	8.7	6.3	3.9	3.1	218.8
4	12.3	10.2	10.4	34.5	67.4	78.8	87.1	84.2	62.5	47.1	27.8	14.7	537.1
5	12.3	10.2	10.4	35.8	69.4	80.9	89.2	85.8	63.6	47.6	27.8	14.7	547.7
6	13.6	11.4	12.0	41.4	80.1	92.1	101.3	96.5	70.5	51.5	29.5	16.1	616.0
7	13.6	11.4	12.0	54.4	100.5	112.9	122.7	113.6	81.6	56.2	29.5	16.1	724.5
8	13.6	11.4	12.1	107.0	183.8	198.0	210.5	183.2	127.0	75.0	29.6	16.1	1,167.5
9	16.6	13.0	19.3	231.0	447.2	460.3	490.3	418.3	247.2	139.2	48.2	27.1	2,557.8

Sacramento Valley Inbasin Obligations, TAF (with deficiencies imposed)

Priority Group	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Sacramento 25% base/50% project +Feather 25% base													
1	0.0	0.0	0.0	0.2	0.5	0.8	0.8	0.6	0.3	0.0	0.0	0.0	3.2
2	0.0	0.0	0.0	0.2	0.5	0.8	0.8	0.6	0.3	0.0	0.0	0.0	3.2
3	0.0	0.0	0.0	0.2	0.5	0.8	60.0	54.2	0.3	0.0	0.0	0.0	116.0
4	4.2	3.7	3.0	25.9	48.3	58.9	62.3	56.2	31.1	23.6	14.2	8.1	339.6
5	4.2	3.7	3.0	27.0	50.2	61.0	64.4	57.8	32.2	23.8	14.2	8.1	349.8
6	4.3	3.7	3.2	30.3	58.0	68.6	71.9	64.0	35.0	24.2	14.3	8.2	385.6
7	4.3	3.7	3.2	43.3	78.4	89.3	88.1	75.2	46.1	26.6	14.3	8.2	480.8
8	4.3	3.7	3.3	94.5	161.6	174.4	168.7	137.4	90.7	37.0	14.4	8.2	898.3
9	5.2	3.7	7.5	211.6	411.8	430.8	441.1	366.1	188.6	97.4	26.8	16.7	2,207.4
Sacramento 0% base/50% project + Feather 0% base													
1	0.0	0.0	0.1	0.2	0.5	1.0	0.8	0.6	0.3	0.0	0.0	0.0	3.7
2	0.0	0.0	0.1	0.2	0.5	1.0	0.8	0.6	0.3	0.0	0.0	0.0	3.7
3	0.0	0.0	0.1	0.2	0.5	1.0	60.5	53.4	0.3	0.0	0.0	0.0	116.1
4	4.2	3.7	3.0	26.5	48.7	59.6	63.2	55.6	31.5	23.6	14.2	8.1	342.0
5	4.2	3.7	3.0	27.7	50.7	61.7	65.3	57.2	32.6	24.0	14.2	8.1	352.3
6	4.3	3.7	3.2	31.1	58.4	69.3	72.9	63.4	35.8	24.3	14.3	8.2	388.9
7	4.3	3.7	3.2	44.1	78.8	90.1	92.4	78.1	46.9	27.3	14.3	8.2	491.5
8	4.3	3.7	3.3	96.6	162.1	175.1	178.3	143.0	92.3	39.9	14.4	8.2	921.4
9	5.6	3.7	8.6	217.7	421.3	432.2	451.8	371.8	207.4	100.3	30.7	17.3	2,268.5
Sacramento 25% base/50% project + Feather 50% base													
1	0.0	0.0	0.0	0.1	0.5	0.5	0.6	0.5	0.2	0.0	0.0	0.0	2.5
2	0.0	0.0	0.0	0.1	0.5	0.5	0.6	0.5	0.2	0.0	0.0	0.0	2.5
3	0.0	0.0	0.0	0.1	0.5	0.5	59.7	54.1	0.2	0.0	0.0	0.0	115.2
4	4.2	3.7	3.0	25.9	48.3	58.7	62.0	56.1	31.1	23.6	14.2	8.1	338.9
5	4.2	3.7	3.0	27.0	50.2	60.7	64.1	57.7	32.1	23.8	14.2	8.1	349.0
6	4.3	3.7	3.1	30.3	57.4	67.9	71.5	63.8	34.8	24.2	14.3	8.2	383.4
7	4.3	3.7	3.1	43.2	77.3	89.1	87.1	74.5	45.7	26.6	14.3	8.2	477.2
8	4.3	3.7	3.2	94.5	161.0	173.8	168.3	137.1	90.4	37.0	14.4	8.2	895.9
9	5.1	3.7	6.0	203.0	386.2	406.6	415.5	341.5	177.9	92.1	25.8	15.7	2,079.1
Sacramento 0% base/0% project + Feather 25% base													
1	0.0	0.0	0.0	0.2	0.5	0.8	0.8	0.6	0.3	0.0	0.0	0.0	3.2
2	0.0	0.0	0.0	0.2	0.5	0.8	0.8	0.6	0.3	0.0	0.0	0.0	3.2
3	0.0	0.0	0.0	0.2	0.5	0.8	73.3	71.3	0.3	0.0	0.0	0.0	146.5
4	9.5	7.5	7.0	29.7	60.5	69.8	76.5	73.8	54.1	40.8	23.9	11.7	464.8
5	9.5	7.5	7.0	31.0	62.4	71.8	78.6	75.5	55.1	41.3	23.9	11.7	475.3
6	9.5	7.5	7.2	34.7	70.2	79.5	86.3	82.0	58.7	42.6	24.0	11.8	513.9
7	9.5	7.5	7.1	47.7	90.7	100.2	107.7	99.0	69.8	47.3	24.0	11.8	622.4
8	9.6	7.5	7.3	100.3	173.9	185.3	195.5	168.7	115.2	66.1	24.2	11.8	1,065.3
9	10.4	7.5	11.5	217.5	433.1	442.4	469.0	397.5	226.4	126.6	36.5	20.3	2,398.6
Sacramento 0% base/50% project + Feather 25% base													
1	0.0	0.0	0.0	0.2	0.5	0.8	0.8	0.6	0.3	0.0	0.0	0.0	3.2
2	0.0	0.0	0.0	0.2	0.5	0.8	0.8	0.6	0.3	0.0	0.0	0.0	3.2
3	0.0	0.0	0.0	0.2	0.5	0.8	60.5	53.4	0.3	0.0	0.0	0.0	115.6
4	4.2	3.7	2.9	26.5	48.7	59.4	63.2	55.6	31.4	23.6	14.2	8.1	341.5
5	4.2	3.7	2.9	27.7	50.7	61.4	65.3	57.2	32.5	24.0	14.2	8.1	351.8
6	4.3	3.7	3.0	31.1	58.4	69.0	72.8	63.4	35.7	24.3	14.3	8.2	388.3
7	4.3	3.7	3.0	44.1	78.8	89.8	92.4	78.1	46.8	27.3	14.3	8.2	490.8
8	4.3	3.7	3.1	96.6	162.1	174.9	178.3	143.0	92.2	39.9	14.4	8.2	920.7
9	5.2	3.7	7.3	213.7	421.3	432.0	451.8	371.8	203.4	100.3	26.8	16.7	2,254.0

STUDY: 1995C06F-SWRCB-469 DWRSIM. 8.18, 27 Nov 96

Alternative 4 - USBR San Joaquin Inbasin Obligation - Group 8 (IO(F8)) (TAF)

Total Madera Canal Depletions + FKC Inbasin Deliveries

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	8	2	0	1	8	23	69	71	96	101	81	56	516
1923	18	2	3	4	8	54	19	43	68	76	73	23	391
1924	4	2	0	0	5	13	4	3	27	44	16	7	125
1925	4	1	0	0	4	45	17	25	61	61	39	26	284
1926	6	1	0	0	5	43	8	28	63	72	29	7	262
1927	9	2	0	1	6	57	47	50	79	99	80	43	473
1928	10	2	0	0	6	41	24	30	65	63	19	6	266
1929	4	0	0	1	4	24	4	20	43	44	41	5	190
1930	3	0	0	1	4	30	8	12	47	46	28	5	185
1931	3	0	0	1	4	21	4	3	31	47	19	12	145
1932	4	1	0	0	5	43	52	50	84	96	59	43	439
1933	6	1	0	0	5	41	13	21	53	43	52	9	244
1934	5	1	0	0	5	35	4	3	33	57	33	5	180
1935	5	1	0	0	7	54	23	51	86	101	79	23	431
1936	4	0	0	1	5	48	37	71	96	100	69	31	461
1937	7	2	0	0	3	37	43	78	94	102	79	42	487
1938	6	2	1	1	7	9	66	47	92	78	94	56	458
1939	17	4	3	4	7	37	10	9	54	69	45	6	266
1940	8	1	0	0	9	52	54	45	76	88	55	20	411
1941	4	1	1	1	8	34	66	61	91	101	79	58	503
1942	17	3	3	5	9	50	53	75	86	101	81	56	538
1943	15	2	0	0	10	7	63	69	88	92	68	45	458
1944	7	2	0	0	4	53	20	33	58	50	31	32	290
1945	12	3	2	3	5	44	56	48	74	89	81	55	471
1946	23	3	2	5	13	49	34	31	68	80	53	32	393
1947	9	2	0	1	7	44	13	19	53	66	33	7	254
1948	3	0	0	1	5	11	8	40	69	87	21	17	262
1949	5	1	0	0	5	42	25	26	61	63	23	11	262
1950	8	2	0	0	6	52	23	26	58	66	47	16	304
1951	15	6	0	6	14	55	25	39	81	75	20	9	345
1952	7	1	1	3	9	34	66	80	92	92	92	58	535
1953	18	4	3	4	9	36	13	28	56	60	41	16	286
1954	7	2	0	0	6	43	26	28	61	72	49	6	300
1955	5	1	0	0	7	49	7	27	56	62	36	12	264
1956	6	1	3	6	9	48	71	59	90	101	80	58	532
1957	25	4	3	3	6	25	10	20	62	79	68	16	320
1958	7	2	0	1	7	43	60	81	95	103	81	56	536
1959	17	3	3	3	6	48	10	13	55	75	26	7	265
1960	4	1	0	0	3	28	6	11	45	44	34	16	193
1961	3	0	0	0	3	10	4	5	42	56	13	8	144
1962	1	1	0	1	2	51	49	36	73	90	80	40	425
1963	8	2	0	0	4	34	23	50	74	92	79	58	425
1964	20	1	0	1	5	24	8	13	51	79	51	23	277
1965	3	0	0	5	14	54	39	51	78	92	68	56	461
1966	22	3	2	6	12	53	15	13	54	81	32	7	300
1967	4	1	1	5	9	52	34	74	90	78	97	65	510
1968	18	5	3	4	7	33	8	11	48	71	44	13	266
1969	3	0	0	2	2	11	0	69	94	79	95	70	425
1970	23	2	0	0	9	54	27	34	55	70	58	23	355
1971	3	0	1	4	9	52	22	30	64	56	39	35	315
1972	6	1	0	1	7	45	7	13	42	72	30	7	232
1973	7	2	0	1	7	49	64	54	81	98	79	30	471
1974	6	2	0	5	14	52	36	73	90	101	79	42	501
1975	6	1	0	0	5	51	43	59	85	95	67	31	444
1976	8	2	0	0	4	15	6	8	43	53	21	8	168
1977	4	0	0	0	1	32	0	4	7	7	9	6	70
1978	0	0	0	0	9	20	29	75	94	81	76	58	442
1979	27	6	3	6	13	40	56	68	83	94	67	22	484
1980	7	2	0	0	6	33	79	79	96	91	86	65	544
1981	16	3	3	3	6	22	18	24	45	64	46	7	258
1982	6	1	1	4	10	29	22	74	97	99	87	57	487
1983	20	4	1	4	0	8	0	0	86	101	65	48	339
1984	12	3	1	2	11	50	39	39	68	84	71	34	414
1985	12	2	0	0	8	37	18	23	56	65	30	19	271
1986	8	2	0	2	3	26	54	81	95	103	85	46	505
1987	12	2	3	3	4	7	7	3	43	71	47	5	207
1988	3	0	0	1	6	15	6	11	49	62	22	6	181
1989	3	0	0	0	4	30	10	8	45	70	42	5	218
1990	4	1	0	0	3	17	6	4	39	55	36	5	170
1991	3	0	0	0	2	37	12	22	44	40	39	6	206
1992	3	0	0	0	2	22	6	4	19	20	8	4	89
1993	5	0	0	0	11	41	76	61	92	101	79	58	523
1994	23	3	3	3	5	7	7	9	51	63	36	10	220
AVG:	9	2	1	2	6	36	27	36	66	75	53	27	341
MIN:	0	0	0	0	0	7	0	0	7	7	8	4	70
MAX:	27	6	3	6	14	57	79	81	97	103	97	70	544

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Alternative 4 - USBR San Joaquin Inbasin Obligation - Group 9 (IO(F9)) (TAF)

Modified Exchange Contractor Deliveries (Excm) X Basin Efficiency X Nonrecoverable loss factor (BE = 0.807; NRL = 10%)

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	30	11	2	5	30	70	87	96	115	124	120	56	746
1923	31	11	3	5	35	72	90	100	119	129	92	59	746
1924	33	12	3	5	27	16	45	52	46	49	46	46	380
1925	25	8	3	4	27	75	95	105	126	119	99	61	746
1926	33	12	3	5	27	70	88	99	96	83	61	58	633
1927	28	10	2	4	34	70	88	97	116	125	116	57	746
1928	33	12	3	5	36	75	94	104	100	61	59	55	636
1929	33	12	3	5	27	47	74	82	98	73	49	48	549
1930	26	10	3	4	29	66	93	91	90	69	51	61	591
1931	33	12	3	5	27	30	43	55	53	55	53	46	415
1932	25	8	3	4	29	71	88	97	118	126	121	57	746
1933	31	11	3	4	27	56	70	78	94	97	79	29	579
1934	25	8	3	4	27	66	71	75	65	75	68	48	533
1935	28	10	3	4	28	65	93	105	126	135	88	61	746
1936	31	11	3	6	31	71	89	98	117	126	106	58	746
1937	31	11	3	5	25	68	89	99	119	129	109	58	746
1938	30	11	2	5	33	69	86	95	114	123	119	56	746
1939	33	12	3	5	36	75	94	104	91	86	83	61	683
1940	33	12	3	5	29	75	94	106	126	114	83	61	740
1941	30	11	2	5	33	69	86	95	114	123	119	56	746
1942	30	11	2	5	33	69	86	95	114	123	119	56	746
1943	30	11	2	5	33	69	86	95	114	123	119	56	746
1944	32	11	3	5	28	73	91	101	121	123	98	59	746
1945	30	11	2	5	27	70	87	97	116	125	120	57	746
1946	32	11	3	5	35	73	91	101	120	113	103	59	746
1947	33	12	3	5	30	73	94	106	88	76	63	60	643
1948	33	12	3	5	27	58	86	110	131	98	78	64	704
1949	34	12	3	6	29	72	94	106	126	87	76	61	706
1950	33	12	3	5	32	75	94	105	124	95	95	61	734
1951	33	12	3	5	36	75	94	104	124	105	92	61	745
1952	30	11	2	5	33	69	86	95	114	123	119	56	746
1953	32	11	3	5	36	74	91	96	122	118	97	60	746
1954	33	12	3	5	36	75	94	104	124	90	74	61	711
1955	33	12	3	5	36	75	91	104	124	95	75	61	714
1956	30	11	2	5	33	69	86	95	114	123	119	56	746
1957	33	11	3	5	32	75	94	104	124	110	95	61	746
1958	30	11	2	5	33	69	87	96	114	123	119	56	746
1959	33	12	3	5	36	75	94	104	109	50	31	48	600
1960	26	12	3	5	27	65	86	87	83	81	87	61	621
1961	24	12	3	5	28	38	82	87	76	28	36	36	455
1962	11	11	3	5	27	72	90	101	121	129	117	59	746
1963	30	11	2	5	33	69	86	95	114	123	119	56	746
1964	33	12	3	5	36	60	82	95	119	88	99	61	692
1965	17	11	2	5	34	71	88	97	116	126	121	57	746
1966	33	12	3	5	36	75	94	104	110	82	63	42	659
1967	30	11	2	5	33	69	86	95	114	123	119	56	746
1968	33	12	3	5	36	70	88	76	85	91	87	61	648
1969	17	11	2	5	34	71	88	97	116	125	121	57	746
1970	32	11	3	5	35	73	91	101	121	119	94	60	746
1971	31	11	3	5	34	71	89	98	117	121	109	58	746
1972	33	12	3	5	36	75	83	85	107	77	75	41	631
1973	31	11	3	5	35	72	90	99	118	128	97	58	746
1974	30	11	2	5	33	69	86	95	114	123	119	56	746
1975	32	11	3	5	31	73	91	102	121	119	98	59	746
1976	33	12	3	5	28	58	51	32	51	43	60	47	423
1977	20	8	3	4	10	3	4	2	48	51	43	23	217
1978	0	4	1	3	35	73	91	102	121	131	126	59	746
1979	31	11	3	5	29	72	90	100	120	114	111	59	746
1980	30	11	2	5	31	69	87	96	114	124	119	56	746
1981	33	12	3	5	36	75	94	104	93	82	79	61	677
1982	30	11	2	5	33	69	86	95	114	123	119	56	746
1983	30	11	2	5	33	69	86	95	114	123	119	56	746
1984	30	11	2	5	34	70	87	96	115	124	114	57	746
1985	33	12	3	5	36	75	94	104	87	61	65	61	636
1986	31	11	3	5	29	71	89	99	117	127	106	58	746
1987	33	12	3	5	29	68	95	106	80	83	91	42	647
1988	28	12	3	5	30	60	75	83	79	82	54	42	553
1989	24	10	3	4	27	56	84	94	93	86	91	41	613
1990	29	11	3	4	29	66	82	82	46	99	57	38	546
1991	17	10	3	4	13	23	75	83	99	108	74	46	556
1992	20	10	3	4	22	46	47	43	20	40	33	23	312
1993	27	1	3	4	35	73	91	100	120	129	104	59	746
1994	33	12	3	5	32	67	83	92	92	85	83	54	642
AVG:	29	11	3	5	31	66	85	93	105	102	91	54	673
MIN:	0	1	1	3	10	3	4	2	20	28	31	23	217
MAX:	34	12	3	6	36	75	95	110	131	135	126	64	746

Deficiency Periods (percent of supply)

Year	Period	Sacramento Base	Sacramento Project	Feather Base
1924	Jan-Feb	0	0	0
	Mar-Dec	25	50	25
1925	Jan-Feb	25	50	25
	Mar-Dec	0	0	0
1929	Jan-Feb	0	0	0
	Mar-Dec	25	50	25
1930	Jan-Feb	25	50	25
	Mar-Dec	0	50	0
1931	Jan-Feb	0	50	0
	Mar-Dec	25	50	25
1932	Jan-Feb	25	50	25
	Mar-Dec	0	50	0
1933	Jan-Feb	0	50	0
	Mar-Dec	25	50	25
1934	Jan-Feb	25	50	25
	Mar-Dec	25	50	50
1935	Jan-Feb	25	50	50
	Mar-Dec	0	0	0
1939	Jan-Feb	0	0	0
	Mar-Dec	0	0	25
1940	Jan-Feb	0	0	25
	Mar-Dec	0	0	0
1976	Jan-Feb	0	0	0
	Mar-Dec	25	50	25
1977	Jan-Feb	25	50	25
	Mar-Dec	25	50	50
1978	Jan-Feb	25	50	50
	Mar-Dec	0	0	0
1987	Jan-Feb	0	0	0
	Mar-Dec	0	50	0
1988	Jan-Feb	0	50	0
	Mar-Dec	0	50	25
1989	Jan-Feb	0	50	25
	Mar-Dec	0	50	0
1990	Jan-Feb	0	50	0
	Mar-Dec	0	50	0
1991	Jan-Feb	0	50	0
	Mar-Dec	25	50	25
1992	Jan-Feb	25	50	25
	Mar-Dec	25	50	25
1993	Jan-Feb	25	50	25
	Mar-Dec	0	0	0
1994	Jan-Feb	0	0	0
	Mar-Dec	25	50	25

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Alternative 3 - Priority Group 1 Diversion to Storage (TAF)

McClure+Don Pedro+New Melones+Hensley+Eastman+New Bullards+Spaulding+Hell Hole+French Mdws+Camp Far West
Increased storage shown as a positive value; releases from storage set to zero.
Corrected for months in which diversion to storage has been curtailed to meet Vernalis objective.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	25	156	167	635	455	339	982	824	0	0	0	3583
1923	5	46	158	202	230	147	327	458	171	0	0	0	1744
1924	0	15	37	40	62	17	69	13	0	0	0	0	253
1925	5	51	113	96	759	373	460	568	249	0	0	0	2674
1926	0	9	32	34	312	116	457	121	0	0	0	0	1082
1927	2	84	118	164	670	307	374	354	261	0	0	0	2334
1928	7	78	83	78	156	623	136	338	4	0	0	0	1504
1929	0	19	35	29	93	83	93	225	78	10	15	0	680
1930	0	13	183	85	131	251	212	168	168	14	17	0	1242
1931	5	31	21	48	52	80	77	26	0	0	0	0	340
1932	1	25	322	274	629	325	244	719	485	0	0	0	3023
1933	4	15	37	49	83	108	107	173	367	0	0	0	943
1934	2	21	103	112	178	282	100	14	0	0	0	0	812
1935	3	48	81	281	277	275	814	714	486	0	0	0	2979
1936	4	24	38	206	755	350	513	620	258	0	0	0	2767
1937	2	19	46	76	396	261	319	830	304	0	0	0	2253
1938	10	38	427	112	298	471	445	603	524	5	2	0	2935
1939	2	6	10	31	23	195	285	37	0	0	0	0	589
1940	0	4	30	610	708	495	339	493	107	0	0	0	2785
1941	1	29	165	304	276	245	235	706	372	0	0	0	2333
1942	0	21	171	206	96	151	334	479	543	3	0	0	2004
1943	0	36	29	190	23	312	341	475	144	0	0	0	1550
1944	0	16	24	32	139	217	83	457	123	0	0	0	1091
1945	2	121	127	125	585	187	283	601	429	0	0	0	2460
1946	4	67	349	88	25	189	355	456	71	0	0	0	1603
1947	0	49	73	62	151	240	122	128	10	0	0	0	836
1948	10	10	27	96	33	44	281	527	456	1	0	0	1485
1949	0	12	46	34	113	255	301	401	90	0	0	0	1253
1950	0	5	28	184	362	248	384	463	193	0	0	0	1867
1951	6	1145	1078	137	65	138	36	53	15	0	0	0	2673
1952	4	42	262	522	472	262	427	856	323	0	0	0	3170
1953	0	8	37	258	7	60	229	178	195	1	0	0	973
1954	3	16	45	77	166	370	395	449	21	0	0	0	1542
1955	0	12	70	167	104	39	59	362	158	0	0	0	972
1956	0	24	1618	459	152	163	124	642	361	0	0	0	3543
1957	9	23	30	46	178	191	122	328	288	0	0	0	1216
1958	3	18	65	178	556	276	444	976	373	0	0	0	2889
1959	0	23	6	73	106	121	136	53	7	0	0	0	525
1960	0	0	23	46	375	363	259	230	50	0	0	0	1347
1961	0	36	50	35	78	88	120	124	15	0	0	0	546
1962	0	20	48	47	714	316	497	340	394	0	0	0	2376
1963	167	22	38	159	680	163	365	638	393	0	0	0	2624
1964	4	94	53	100	84	17	96	175	49	0	0	0	672
1965	0	72	1424	270	135	121	383	345	278	0	0	0	3029
1966	0	75	80	69	61	145	234	136	0	0	0	0	800
1967	0	80	380	430	279	419	298	838	620	45	1	0	3390
1968	9	26	29	32	249	85	101	94	8	0	0	0	633
1969	3	69	149	1213	213	245	388	908	205	0	1	0	3394
1970	8	7	111	607	14	165	24	111	81	0	0	0	1128
1971	0	87	229	281	194	204	195	241	128	0	0	0	1559
1972	3	18	155	142	183	291	131	158	22	0	0	0	1104
1973	1	46	148	436	437	231	214	693	264	0	0	0	2470
1974	11	349	220	398	101	431	150	518	274	0	0	0	2452
1975	0	27	42	50	204	293	140	619	444	0	0	0	1819
1976	5	46	37	21	48	80	52	33	0	0	0	0	322
1977	18	14	13	10	5	4	18	21	0	0	0	0	103
1978	0	5	206	722	576	860	528	783	598	83	0	0	4361
1979	0	35	44	213	160	320	224	797	141	0	0	0	1934
1980	12	42	50	885	199	167	190	587	324	0	0	0	2456
1981	0	3	15	38	69	132	136	121	0	0	0	0	515
1982	6	467	719	301	478	165	425	516	217	0	0	0	3294
1983	31	19	75	0	114	476	128	780	422	0	0	2	2047
1984	9	248	290	10	17	146	8	184	92	0	0	0	1004
1985	9	102	134	110	143	177	259	128	6	0	0	0	1069
1986	0	45	140	283	1503	245	188	536	163	0	0	0	3103
1987	0	25	28	19	83	174	153	21	0	0	0	0	503
1988	0	9	90	127	95	105	89	30	0	0	0	0	545
1989	0	77	36	38	96	830	359	219	91	0	0	0	1747
1990	32	29	38	69	91	199	187	23	39	0	0	0	708
1991	0	8	25	1	5	408	146	349	166	0	0	0	1108
1992	7	16	37	45	264	189	255	62	0	1	0	0	876
1993	15	26	57	529	724	617	76	189	369	0	0	0	2603
1994	1	7	33	9	46	82	21	53	1	0	0	0	254
AVG:	6	62	158	187	257	245	239	379	196	2	0	0	1731
MIN:	0	0	6	0	5	4	8	13	0	0	0	0	103
MAX:	167	1145	1618	1213	1503	860	814	981.5	824	83	17	2	4361

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Alternative 4 - Priority Group 1 Diversion to Storage (TAF)

McClure+Don Pedro+New Melones+Hensley+Eastman+New Bullards+Spaulding+Hell Hole+French Mdws+Camp Far West
Increased storage shown as a positive value; releases from storage set to zero.
Corrected for months in which diversion to storage has been curtailed to meet Vernalis objective.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	25	156	167	635	455	334	1089	824	0	0	0	3685
1923	5	46	158	202	230	184	375	550	171	0	0	0	1921
1924	0	15	37	40	62	17	76	13	0	0	0	0	260
1925	5	51	113	96	759	373	483	568	249	0	0	0	2697
1926	0	9	32	34	312	116	484	191	0	0	0	0	1178
1927	5	84	118	164	670	307	398	466	350	0	0	0	2562
1928	7	78	83	78	156	623	173	425	4	0	0	0	1627
1929	2	19	35	29	93	83	93	228	78	10	15	0	685
1930	3	13	183	85	131	251	223	183	168	14	17	0	1271
1931	5	31	21	48	52	80	77	26	0	0	0	0	340
1932	1	25	322	274	629	325	244	786	516	0	0	0	3122
1933	4	15	37	49	83	108	131	218	367	0	0	0	1012
1934	6	21	103	112	178	282	108	14	0	0	0	0	824
1935	3	48	81	281	277	275	814	714	486	0	0	0	2979
1936	4	24	38	206	755	350	513	668	258	0	0	0	2816
1937	2	19	46	76	396	261	319	830	304	0	0	0	2253
1938	10	38	427	112	298	471	445	603	524	5	2	0	2935
1939	2	6	10	31	23	195	285	63	0	0	0	0	615
1940	0	4	30	610	708	495	339	554	107	0	0	0	2847
1941	1	29	165	304	276	245	235	706	372	0	0	0	2333
1942	0	21	171	206	96	151	334	489	543	3	0	0	2014
1943	0	36	29	190	23	312	341	475	189	0	0	0	1595
1944	0	16	24	32	139	217	83	461	123	0	0	0	1095
1945	2	121	127	125	585	187	283	611	429	0	0	0	2470
1946	4	67	349	88	25	189	380	466	71	0	0	0	1639
1947	0	49	73	62	151	240	137	183	10	0	0	0	906
1948	18	10	27	96	33	44	301	572	456	1	0	0	1558
1949	2	12	46	34	113	255	337	446	90	0	0	0	1335
1950	0	5	28	184	362	248	439	463	192	0	0	0	1921
1951	6	1145	1078	137	65	138	63	53	15	0	0	0	2700
1952	4	42	262	522	472	262	427	856	323	0	0	0	3170
1953	0	8	37	258	7	60	253	178	195	1	0	0	997
1954	3	16	45	77	187	370	398	530	21	0	0	0	1647
1955	0	12	70	167	104	41	61	398	158	0	0	0	1011
1956	5	24	1618	459	152	163	207	642	361	0	0	0	3631
1957	9	23	30	46	178	191	123	395	318	0	0	0	1314
1958	3	18	65	178	556	276	444	976	373	0	0	0	2889
1959	0	23	6	73	106	121	170	68	7	0	0	0	574
1960	0	0	23	46	375	363	261	238	50	0	0	0	1356
1961	0	36	50	35	78	88	134	140	15	0	0	0	576
1962	0	20	48	47	714	316	497	424	401	0	0	0	2467
1963	168	22	38	159	680	163	365	699	393	0	0	0	2687
1964	4	94	53	100	84	37	109	206	49	0	0	0	736
1965	0	72	1424	270	135	121	397	481	310	0	0	0	3210
1966	0	75	80	69	61	145	305	198	0	0	0	0	933
1967	2	80	380	430	279	419	298	838	620	45	1	0	3392
1968	9	26	29	32	249	85	118	120	8	0	0	0	676
1969	3	69	149	1213	213	245	388	908	205	0	1	0	3394
1970	8	7	111	607	14	165	24	111	81	0	0	0	1128
1971	0	87	229	281	194	204	178	241	128	0	0	0	1542
1972	3	18	155	142	183	291	131	185	22	0	0	0	1130
1973	10	46	148	436	437	231	214	708	264	0	0	0	2494
1974	11	349	220	398	101	431	150	548	325	0	0	0	2533
1975	0	27	42	50	204	293	140	696	444	0	0	0	1896
1976	5	46	37	21	48	80	52	33	0	0	0	0	322
1977	18	14	13	10	5	4	18	21	0	0	0	0	103
1978	0	5	206	722	576	860	528	783	598	83	0	0	4361
1979	0	35	44	213	160	320	226	864	161	0	0	0	2023
1980	12	42	50	885	199	167	190	587	324	0	0	0	2456
1981	0	3	15	38	69	132	186	155	0	0	0	0	598
1982	6	467	719	301	478	165	425	516	217	0	0	0	3294
1983	31	19	75	0	114	476	128	780	422	0	0	2	2047
1984	9	248	290	10	17	146	8	213	92	0	0	0	1033
1985	11	102	134	110	143	177	279	180	6	0	0	0	1142
1986	14	45	140	283	1503	245	188	536	163	0	0	0	3117
1987	0	25	28	19	83	174	153	36	0	0	0	0	518
1988	0	9	90	127	95	105	99	51	0	0	0	0	576
1989	0	77	36	38	96	830	376	241	91	0	0	0	1785
1990	32	29	38	69	91	199	199	61	39	0	0	0	757
1991	0	8	25	1	5	408	146	358	166	0	0	0	1117
1992	7	16	37	45	264	189	255	66	0	1	0	0	880
1993	15	26	57	529	759	651	197	273	369	0	0	0	2876
1994	1	7	33	9	46	82	24	66	1	0	0	0	269
AVG:	7	62	158	187	258	246	251	407	200	2	0	0	1779
MIN:	0	0	6	0	5	4	8	13	0	0	0	0	103
MAX:	168	1145	1618	1213	1503	860	814	1089	824	83	17	2	4361

STUDY: 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 3 and 4 - Priority Group 2 Diversion to Storage (TAF)

Lake Valley+Loon Lake+Ice House
Increased storage shown as a positive value; releases from storage set to zero.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	8	13	45	19	0	0	0	85
1923	0	0	0	0	0	10	18	37	21	0	0	0	86
1924	0	0	0	0	0	3	18	17	8	0	0	0	46
1925	0	0	0	4	10	10	27	40	12	0	0	0	103
1926	0	0	0	0	0	10	22	40	6	0	0	0	78
1927	0	0	0	0	0	9	24	34	16	0	0	0	83
1928	0	0	0	0	0	11	15	36	18	0	0	0	80
1929	0	0	0	0	0	5	16	43	18	0	0	0	82
1930	0	0	1	0	0	8	21	33	18	0	0	0	81
1931	0	0	0	0	0	7	22	10	7	0	0	0	46
1932	0	0	0	1	3	13	27	38	21	0	0	0	103
1933	0	0	0	0	0	5	19	34	25	0	0	0	83
1934	0	0	0	0	0	18	16	26	12	0	0	0	72
1935	0	0	0	0	7	2	27	39	12	0	0	0	87
1936	0	0	0	0	2	16	17	39	7	0	0	0	81
1937	0	0	0	0	0	5	24	47	9	0	0	0	85
1938	0	0	5	0	0	10	20	42	2	0	0	0	79
1939	0	0	0	0	0	9	24	23	8	0	0	0	64
1940	0	0	0	1	0	13	17	35	4	0	0	0	70
1941	0	0	0	0	0	13	18	40	2	0	0	0	73
1942	0	0	0	1	0	8	22	24	14	0	0	0	69
1943	0	0	0	0	0	12	24	30	2	0	0	0	68
1944	0	0	0	0	0	5	14	38	14	0	0	0	71
1945	0	0	1	2	8	9	20	37	13	0	0	0	90
1946	0	0	0	0	1	11	21	37	3	0	0	0	73
1947	0	0	0	0	1	13	20	25	13	0	0	0	72
1948	0	0	0	0	0	6	12	39	16	0	0	0	73
1949	0	0	0	0	0	8	24	39	10	0	0	0	81
1950	0	0	0	0	0	9	24	37	11	0	0	0	81
1951	0	25	9	3	2	6	15	27	16	0	0	0	103
1952	0	0	6	2	0	3	20	43	8	0	0	0	82
1953	0	0	0	1	0	5	20	30	21	0	0	0	77
1954	0	0	0	0	9	19	17	24	12	0	0	0	81
1955	0	0	0	0	0	5	15	40	22	0	0	0	82
1956	0	0	20	0	0	4	16	36	12	0	0	0	88
1957	0	0	0	0	0	8	21	36	17	0	0	0	82
1958	0	0	0	0	1	4	20	51	5	0	0	0	81
1959	0	0	0	0	0	8	24	25	12	0	0	0	69
1960	0	0	0	0	0	14	16	30	22	0	0	0	82
1961	0	0	0	10	0	4	20	25	20	0	0	0	79
1962	0	0	0	0	0	4	30	25	22	0	0	0	81
1963	1	0	0	2	15	4	16	33	22	0	0	0	93
1964	0	0	0	10	0	3	20	26	20	0	0	0	79
1965	0	0	36	1	2	5	15	28	14	0	0	0	101
1966	0	0	0	0	0	12	19	28	13	0	0	0	72
1967	0	0	0	0	1	12	6	38	16	0	0	0	73
1968	0	10	7	0	6	4	14	22	15	0	0	0	78
1969	0	0	16	0	0	6	20	36	10	0	0	0	88
1970	0	0	5	22	0	0	10	33	15	0	0	0	85
1971	0	5	3	0	0	5	13	32	20	0	0	0	78
1972	0	0	0	0	0	15	20	34	16	0	0	0	85
1973	0	0	1	1	0	7	23	41	11	0	0	0	84
1974	0	10	0	6	0	5	15	44	8	0	0	0	88
1975	0	0	0	0	0	4	8	43	26	0	0	0	81
1976	0	0	0	0	0	7	18	16	7	0	0	0	48
1977	0	0	0	0	1	3	12	21	16	0	0	0	53
1978	0	0	3	9	4	14	22	36	13	0	0	0	101
1979	0	1	5	0	6	7	21	43	0	0	0	0	83
1980	0	0	0	26	1	1	14	25	10	0	0	0	77
1981	0	0	0	0	0	9	24	25	10	0	0	0	68
1982	0	23	8	0	12	2	16	19	0	0	0	0	80
1983	1	1	1	0	1	14	15	32	9	0	0	0	74
1984	0	23	1	0	0	2	15	31	0	0	0	0	72
1985	0	0	0	0	0	6	25	19	12	0	0	0	62
1986	0	0	0	6	17	12	10	21	2	0	0	0	68
1987	0	0	0	0	0	8	18	21	5	0	0	0	52
1988	0	0	0	0	1	10	20	18	8	0	0	0	57
1989	0	0	0	0	0	16	28	18	12	0	0	0	74
1990	3	0	0	0	0	10	23	21	13	0	0	0	70
1991	0	0	0	0	0	12	9	21	7	0	0	0	49
1992	0	0	0	0	1	9	33	17	10	3	0	0	73
AVG:	0	1	2	2	2	8	19	32	12	0	0	0	77
MIN:	0	0	0	0	0	0	6	10	0	0	0	0	46
MAX:	3	25	36	26	17	19	33	51	26	3	0	0	103

C-032576

C-032576

STUDY: 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 3 and 4 - Priority Group 4 Diversion to Storage (TAF)

Stumpy Meadows (Lake Edson)
Increased storage shown as a positive value; releases from storage set to zero.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	3	3	0	0	0	0	6
1923	0	0	2	2	1	2	0	0	0	0	0	0	7
1924	0	0	0	0	1	0	0	0	0	0	0	0	1
1925	0	0	0	0	5	4	5	1	0	0	0	0	15
1926	0	0	0	0	1	3	3	0	0	0	0	0	7
1927	0	0	0	1	5	5	0	0	0	0	0	0	11
1928	0	0	0	0	0	7	0	0	0	0	0	0	7
1929	0	0	0	0	0	1	2	1	0	0	0	0	4
1930	0	0	0	0	1	4	4	0	0	0	0	0	9
1931	0	0	0	0	0	1	0	0	0	0	0	0	1
1932	0	0	0	0	1	5	6	3	0	0	0	0	15
1933	0	0	0	0	0	0	3	3	0	0	0	0	6
1934	0	0	0	1	2	1	0	0	0	0	0	0	4
1935	0	0	0	0	0	1	10	3	0	0	0	0	14
1936	0	0	0	1	4	6	1	0	0	0	0	0	12
1937	0	0	0	0	1	3	3	0	0	0	0	0	7
1938	0	0	2	0	1	4	0	0	0	0	0	0	7
1939	0	0	0	0	0	2	2	0	0	0	0	0	4
1940	0	0	0	4	7	2	0	0	0	0	0	0	13
1941	0	0	1	1	4	2	0	0	0	0	0	0	8
1942	0	0	1	5	2	0	0	0	0	0	0	0	8
1943	0	1	3	2	0	0	0	0	0	0	0	0	6
1944	0	0	0	0	0	1	3	3	0	0	0	0	7
1945	0	1	1	1	6	0	0	0	0	0	0	0	9
1946	0	0	4	1	0	0	0	0	0	0	0	0	5
1947	0	1	1	0	2	3	0	0	0	0	0	0	7
1948	0	0	0	0	0	0	7	2	0	0	0	0	9
1949	0	0	0	0	0	0	8	0	0	0	0	0	8
1950	0	0	0	1	3	4	0	0	0	0	0	0	8
1951	0	6	0	0	0	0	0	0	0	0	0	0	6
1952	0	0	1	0	2	2	1	0	0	0	0	0	6
1953	0	0	0	1	1	2	0	0	0	0	0	0	4
1954	0	0	0	0	1	5	0	0	0	0	0	0	6
1955	0	0	0	0	1	2	3	2	0	0	0	0	8
1956	0	0	8	0	0	0	0	0	0	0	0	0	8
1957	0	0	0	0	2	5	0	0	0	0	0	0	7
1958	0	0	0	0	5	3	0	0	0	0	0	0	8
1959	0	0	0	1	2	3	1	0	0	0	0	0	7
1960	0	0	0	0	2	6	2	0	0	0	0	0	10
1961	0	0	0	0	0	1	0	0	0	0	0	0	1
1962	0	0	0	0	3	1	4	1	0	0	0	0	9
1963	1	0	0	3	5	1	2	0	0	0	0	0	12
1964	0	1	0	0	0	1	1	1	0	0	0	0	4
1965	0	0	6	0	0	0	0	0	0	0	0	0	6
1966	0	0	0	0	0	2	2	0	0	0	0	0	4
1967	0	0	2	2	2	1	0	0	0	0	0	0	7
1968	0	0	0	1	3	0	0	0	0	0	0	0	4
1969	0	0	0	6	0	0	0	0	0	0	0	0	6
1970	0	0	3	2	0	0	0	0	0	0	0	0	5
1971	0	0	1	1	1	3	0	0	0	0	0	0	6
1972	0	0	0	1	1	3	0	0	0	0	0	0	5
1973	0	0	1	4	2	0	0	0	0	0	0	0	7
1974	0	2	3	2	0	0	0	0	0	0	0	0	7
1975	0	0	0	0	1	3	0	0	0	0	0	0	4
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	1	6	2	5	4	1	0	0	0	0	19
1979	0	0	0	1	1	2	2	0	0	0	0	0	6
1980	0	0	0	6	0	0	0	0	0	0	0	0	6
1981	0	0	0	0	1	2	1	0	0	0	0	0	4
1982	0	2	3	3	1	0	0	0	0	0	0	0	9
1983	0	2	2	0	0	0	0	0	0	0	0	0	4
1984	0	3	0	0	0	0	0	0	0	0	0	0	3
1985	0	1	1	0	0	1	2	0	0	0	0	0	5
1986	0	0	1	2	3	0	0	0	0	0	0	0	6
1987	0	0	0	0	1	2	0	0	0	0	0	0	3
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	7	3	0	0	0	0	0	0	10
1990	0	0	0	0	0	2	1	0	0	0	0	0	3
1991	0	0	0	0	0	2	2	0	0	0	0	0	4
1992	0	0	0	0	1	1	0	0	0	0	0	0	2
AVG	0	0	1	1	1	2	1	0	0	0	0	0	7
MIN	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX	1	6	8	6	7	7	10	3	0	0	0	0	19

STUDY. 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 3 and 4 - Priority Group 5 Diversion to Storage (TAF)

Fordyce Lake
Increased storage shown as a positive value; releases from storage set to zero.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	1	36	0	0	0	0	37
1923	0	0	0	0	0	0	10	30	0	0	0	0	40
1924	0	0	0	0	0	0	5	1	0	0	0	0	6
1925	0	0	1	0	5	0	14	27	0	0	0	0	47
1926	0	0	0	0	3	0	16	16	0	0	0	0	35
1927	0	5	0	0	5	2	26	6	0	0	0	0	44
1928	0	0	0	0	0	9	25	4	0	0	0	0	38
1929	0	0	0	0	0	0	2	10	2	0	0	0	14
1930	0	0	6	0	0	2	11	21	0	0	0	0	40
1931	0	0	0	0	0	2	5	3	0	0	0	0	10
1932	0	0	2	0	1	2	2	25	16	0	0	0	48
1933	0	0	0	0	0	0	2	6	16	0	0	0	24
1934	0	0	0	0	0	4	6	1	0	0	0	0	11
1935	0	1	0	1	0	1	5	30	9	0	0	0	47
1936	0	0	0	1	1	0	12	26	0	0	0	0	40
1937	0	0	0	0	0	0	1	28	11	0	0	0	40
1938	0	0	4	0	0	5	13	17	0	0	0	0	39
1939	0	0	0	0	0	0	7	3	0	0	0	0	10
1940	0	0	0	6	3	12	25	1	0	0	0	0	47
1941	0	0	0	0	1	1	8	27	0	0	0	0	37
1942	0	0	1	0	1	0	13	18	0	0	0	0	33
1943	0	0	0	1	0	10	22	0	0	0	0	0	33
1944	0	0	0	0	0	0	1	19	9	0	0	0	29
1945	0	0	0	0	2	0	4	29	7	0	0	0	42
1946	0	0	0	0	0	0	8	31	0	0	0	0	39
1947	0	0	0	0	0	1	6	8	0	0	0	0	15
1948	0	0	0	2	0	0	4	21	19	0	0	0	46
1949	0	0	0	0	0	0	5	25	4	0	0	0	34
1950	0	0	0	2	1	0	6	30	3	0	0	0	42
1951	0	11	11	2	4	0	0	0	0	0	0	0	28
1952	0	0	0	0	0	0	7	30	0	0	0	0	37
1953	0	0	0	2	0	0	4	19	13	0	0	0	38
1954	0	0	0	0	0	1	15	22	0	0	0	0	38
1955	0	0	0	0	0	0	2	13	10	0	0	0	25
1956	0	0	16	8	0	1	10	5	0	0	0	0	40
1957	0	0	0	0	1	1	2	27	8	0	0	0	39
1958	0	0	0	0	3	0	5	31	0	0	0	0	39
1959	0	0	0	0	0	0	6	7	0	0	0	0	13
1960	0	0	0	0	4	3	9	16	3	0	0	0	35
1961	0	0	0	0	1	1	4	9	2	0	0	0	17
1962	0	0	0	0	3	0	6	23	14	0	0	0	46
1963	4	0	0	0	6	0	15	14	0	0	0	0	39
1964	0	0	0	0	0	0	2	16	8	0	0	0	26
1965	0	0	19	8	1	0	12	0	0	0	0	0	40
1966	0	0	0	0	0	0	7	21	0	0	0	0	28
1967	0	0	0	0	1	3	0	30	11	0	0	0	45
1968	0	0	0	0	0	5	7	15	0	0	0	0	27
1969	0	0	0	0	0	0	10	34	0	0	0	0	44
1970	0	0	0	21	0	0	0	19	0	0	0	0	40
1971	0	0	0	1	0	0	4	26	11	0	0	0	42
1972	0	0	0	0	0	4	3	32	0	0	0	0	39
1973	0	0	2	0	0	0	7	33	0	0	0	0	42
1974	0	10	0	7	0	0	1	29	0	0	0	0	47
1975	0	0	0	0	0	0	0	27	15	0	0	0	42
1976	0	0	0	0	0	0	2	5	0	0	0	0	7
1977	0	0	0	0	0	0	3	4	0	0	0	0	7
1978	0	0	2	2	0	4	7	32	0	0	0	0	47
1979	0	0	0	0	0	0	2	33	0	0	0	0	35
1980	0	1	0	17	4	0	13	9	0	0	0	0	44
1981	0	0	0	0	0	0	7	10	0	0	0	0	17
1982	0	20	18	0	11	0	3	0	0	0	0	0	52
1983	0	0	0	0	0	2	1	29	5	0	0	0	37
1984	0	15	0	0	0	0	5	5	0	0	0	0	25
1985	0	0	0	0	0	0	11	19	0	0	0	0	30
1986	0	0	0	3	19	20	2	0	0	0	0	0	44
1987	0	0	0	0	0	0	11	2	0	0	0	0	13
1988	0	0	1	0	1	3	6	3	0	0	0	0	14
1989	0	1	0	0	1	10	21	15	0	0	0	0	48
1990	0	0	0	0	0	2	10	11	0	0	0	0	23
1991	0	0	0	0	0	1	5	15	5	0	0	0	26
1992	0	0	0	0	2	3	12	0	0	0	0	0	17
AVG:	0	1	1	1	1	2	7	17	3	0	0	0	33
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	6
MAX:	4	20	19	21	19	20	26	36	19	0	0	0	52

STUDY: 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 3 and 4 - Priority Group 6 Diversion to Storage (TAF)

Rollins+Combie+Scotts Flat+Bowman+Jackson Meadows
Increased storage shown as a positive value; releases from storage set to zero.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	12	9	13	2	3	57	28	0	0	0	124
1923	0	0	2	1	1	1	20	38	13	0	0	0	76
1924	0	0	0	0	1	8	11	5	0	0	0	0	25
1925	0	0	4	15	63	2	23	33	6	0	0	0	146
1926	0	0	0	0	36	2	29	14	0	0	0	0	81
1927	1	27	22	15	9	14	26	54	26	0	0	0	194
1928	0	5	0	0	1	32	19	33	0	0	0	0	90
1929	0	0	0	0	3	12	10	44	10	0	0	0	79
1930	0	0	23	8	2	7	22	11	6	0	0	0	79
1931	0	0	0	0	1	3	13	12	0	0	0	0	29
1932	0	0	13	10	22	7	24	50	24	0	0	0	150
1933	0	0	0	0	0	7	6	34	36	0	0	0	83
1934	0	0	4	0	1	15	14	0	0	0	0	0	34
1935	0	6	3	1	1	1	8	45	19	0	0	0	84
1936	0	0	0	16	7	10	29	50	16	0	0	0	128
1937	0	0	0	0	23	4	9	52	11	0	0	0	99
1938	1	1	69	1	7	7	12	61	22	0	0	0	181
1939	0	0	0	0	0	3	19	4	0	0	0	0	26
1940	1	0	0	51	18	32	26	42	0	0	0	0	170
1941	1	0	16	3	6	10	13	59	5	0	0	0	113
1942	2	0	10	7	5	3	18	32	18	0	0	0	95
1943	1	0	2	12	3	14	41	17	0	0	0	0	90
1944	0	0	0	0	12	3	4	42	9	0	0	0	70
1945	1	4	8	2	28	4	13	43	11	0	0	0	114
1946	1	6	8	2	1	3	23	44	7	0	0	0	95
1947	1	3	6	0	4	5	12	17	2	0	0	0	50
1948	1	3	0	7	0	10	35	50	28	0	0	0	134
1949	0	0	0	0	0	18	16	45	5	0	0	0	84
1950	0	0	1	18	42	5	25	48	10	3	0	0	152
1951	3	46	16	4	4	4	4	13	0	0	0	0	94
1952	0	4	10	4	6	6	31	71	15	0	0	0	147
1953	0	0	0	4	1	5	23	34	28	0	0	0	95
1954	0	0	0	1	1	4	27	29	3	0	0	0	65
1955	0	0	5	8	0	0	4	36	28	0	0	0	81
1956	0	0	110	17	7	3	18	42	7	0	0	0	204
1957	0	0	0	0	3	6	11	36	19	0	0	0	75
1958	0	0	6	0	12	7	9	68	28	0	0	0	130
1959	1	0	0	4	3	3	13	11	0	0	0	0	35
1960	0	3	0	0	25	34	27	22	2	0	0	1	114
1961	0	0	0	2	3	1	8	22	3	0	0	0	39
1962	0	3	0	0	28	11	39	34	14	0	0	0	129
1963	29	0	3	10	31	3	5	34	0	0	0	0	115
1964	2	3	0	0	0	0	12	31	7	0	0	0	55
1965	0	0	114	10	3	2	18	28	2	0	0	0	177
1966	1	0	0	0	0	1	12	25	0	0	0	0	39
1967	0	7	30	20	1	15	1	43	53	0	0	0	170
1968	0	2	0	0	11	3	8	15	0	0	0	0	39
1969	0	1	12	47	4	2	20	69	16	0	0	0	171
1970	1	0	5	45	3	3	0	12	3	0	0	0	72
1971	0	12	3	2	1	3	12	42	39	0	0	0	114
1972	0	0	0	0	2	10	9	28	5	0	0	0	54
1973	0	12	14	7	4	2	15	48	7	0	0	0	109
1974	0	37	3	21	3	10	10	32	11	0	0	0	127
1975	0	0	0	1	8	1	0	43	50	5	0	0	108
1976	3	0	0	0	0	7	3	9	0	0	0	0	22
1977	0	0	0	1	3	2	1	11	6	0	0	0	24
1978	0	0	19	50	2	15	14	52	31	1	0	0	184
1979	0	0	5	8	2	2	9	41	4	0	0	0	71
1980	0	0	11	57	14	4	16	36	8	0	0	0	146
1981	3	0	0	4	3	3	12	11	0	0	0	0	36
1982	0	85	49	5	24	9	11	20	0	0	0	0	203
1983	1	5	2	4	5	17	2	50	36	0	0	0	122
1984	0	23	9	3	3	3	4	20	0	0	0	0	65
1985	0	1	0	0	1	2	21	25	0	0	0	0	50
1986	1	0	1	22	88	43	13	4	0	0	0	0	172
1987	0	0	0	0	3	15	21	5	0	0	0	0	44
1988	0	3	4	10	0	0	6	1	5	1	0	0	30
1989	2	3	1	5	1	68	14	17	3	0	1	0	115
1990	0	1	3	6	7	14	12	11	0	3	5	1	63
1991	0	3	0	0	0	49	8	0	11	0	3	2	76
1992	3	0	0	0	24	18	6	4	3	0	0	0	58
AVG:	1	4	9	8	9	9	15	31	11	0	0	0	97
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	22
MAX:	29	85	114	57	88	68	41	71	53	5	5	2	204

STUDY: 1995C06F-SWRCB-469 DWRSIM: 8.18, 27 Nov 96

Alternative 3 - Priority Group 8 Diversion to Storage (TAF)

Friant (A000234)
Increased storage shown as a positive value; releases from storage set to zero.
Corrected for months in which diversion to storage has been curtailed to meet Vernalis objective.

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	42	70	75	7	84	0	89	0	0	0	0	367
1923	0	26	75	59	0	0	87	31	0	0	0	14	292
1924	28	26	43	44	0	0	10	14	0	0	0	8	173
1925	0	19	36	36	16	0	61	61	0	0	0	0	229
1926	6	29	43	41	12	0	145	67	0	0	0	26	369
1927	15	43	68	65	68	8	0	46	37	0	0	0	350
1928	0	55	68	63	0	13	32	14	0	0	0	25	270
1929	19	37	40	34	0	0	60	0	0	0	0	25	215
1930	5	37	34	34	0	0	50	33	0	0	0	37	230
1931	9	40	33	31	0	0	5	18	0	0	0	1	137
1932	1	19	69	54	82	0	0	26	83	0	0	0	334
1933	0	26	32	46	0	0	59	59	0	0	0	1	223
1934	7	23	50	53	0	0	38	40	0	0	0	21	232
1935	10	27	44	69	0	0	116	94	58	0	0	24	442
1936	15	44	47	51	115	0	27	65	0	0	0	14	378
1937	22	24	58	64	106	50	36	0	0	0	0	0	360
1938	7	32	144	113	0	0	0	0	361	24	0	0	681
1939	0	3	50	34	0	0	67	79	0	0	0	53	286
1940	0	26	40	121	4	6	0	59	0	0	0	11	267
1941	23	31	107	113	17	70	0	0	39	0	0	0	400
1942	0	29	81	79	0	19	3	36	77	0	0	0	324
1943	0	40	71	151	0	106	0	10	0	0	0	0	378
1944	7	27	50	40	9	0	28	2	0	0	0	0	163
1945	3	56	63	35	113	42	0	29	30	0	0	0	371
1946	0	45	92	65	0	0	46	98	0	0	0	5	351
1947	1	48	80	66	0	0	58	52	0	0	0	20	325
1948	14	42	44	38	0	24	106	0	0	0	0	9	277
1949	14	29	38	42	0	0	36	58	0	0	0	28	245
1950	6	33	48	59	21	0	37	66	0	0	0	14	284
1951	18	132	116	0	0	0	27	0	0	0	0	40	333
1952	15	33	93	120	6	35	0	0	224	0	0	0	526
1953	0	39	64	63	0	0	32	0	0	0	0	5	203
1954	17	25	50	61	0	0	38	97	0	0	0	39	327
1955	13	36	62	67	0	0	51	43	0	0	0	14	286
1956	8	23	223	0	0	86	0	0	80	0	0	0	420
1957	0	23	42	31	0	11	68	66	8	0	0	22	271
1958	17	34	74	76	39	56	58	0	2	0	0	0	356
1959	0	43	49	24	24	0	82	81	0	0	0	11	314
1960	0	3	12	22	37	0	50	34	0	0	0	0	158
1961	0	24	38	18	0	3	51	49	0	0	0	0	183
1962	1	8	30	18	148	0	0	115	65	0	0	0	385
1963	8	27	28	53	156	1	93	0	0	0	0	0	366
1964	0	78	92	35	0	0	40	36	0	0	0	17	298
1965	0	39	100	130	0	0	25	0	48	0	0	0	342
1966	0	71	121	55	0	0	70	89	0	0	0	0	406
1967	9	33	126	86	3	60	0	0	232	34	0	0	583
1968	0	20	66	22	3	0	45	21	0	0	0	10	187
1969	0	39	51	182	0	0	0	4	382	0	0	0	658
1970	0	53	87	85	0	0	0	4	0	0	0	3	232
1971	10	53	103	68	0	0	30	11	0	0	0	0	275
1972	1	28	83	61	0	0	46	24	0	0	0	0	243
1973	19	32	68	84	65	1	0	125	6	0	0	0	400
1974	23	64	123	68	0	24	41	55	20	0	0	0	418
1975	6	43	62	42	26	0	23	11	138	0	0	14	365
1976	17	62	67	39	0	19	14	0	0	0	0	35	253
1977	0	17	10	8	0	0	4	0	0	7	0	2	48
1978	0	1	48	142	118	0	0	0	310	0	0	0	619
1979	0	29	55	50	0	33	0	57	0	0	0	11	235
1980	17	0	55	197	0	0	41	0	130	0	0	0	440
1981	0	27	26	28	8	8	53	31	0	0	0	25	206
1982	8	36	106	103	0	86	0	67	82	0	0	0	488
1983	0	104	18	0	0	0	0	0	37	285	40	24	508
1984	0	0	0	0	0	42	10	0	0	0	0	0	52
1985	0	24	55	84	0	0	96	59	0	0	0	1	319
1986	17	49	87	81	0	7	110	0	58	0	0	0	409
1987	3	19	9	9	1	44	64	83	0	0	0	15	247
1988	4	32	35	60	0	37	47	32	0	0	0	6	253
1989	1	27	25	28	0	15	74	59	0	0	0	14	243
1990	11	18	19	23	0	23	52	45	0	0	0	10	201
1991	0	14	16	18	0	0	31	22	12	0	0	13	126
1992	0	13	9	13	3	0	8	2	0	0	0	1	49
1993	4	0	23	176	26	59	9	94	0	0	0	0	391
1994	0	19	30	13	0	41	48	56	0	0	0	15	222
AVG:	6	34	60	59	17	15	36	36	35	5	1	9	312
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	48
MAX:	28	132	223	197	156	106	145	125	382	285	40	53	681

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1922	Add Water	6	x	x	x	0	0	29	108	0	x	x	x
	Right #	71	x	x	x	0	0	16	8	0	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	0.5	0	x	x	x
	Friant Stor & DD	53	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	2.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	208	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	107.5	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	100.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	13	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	13	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	13	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	13	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	43	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	1.9	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	41.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	41.1	100.5	0	x	x	x
	Water Generated	6	x	x	x	0	0	29	108	0	x	x	x
1923	Add Water	0	x	x	x	0	52	52	109	0	x	x	x
	Right #	0	x	x	x	0	12	16	11	0	x	x	x
	From DD	0	x	x	x	0	0.2	1.1	0.5	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	42	0	98	0	x	x	x
	NM for Vern	0	x	x	x	0	42	0	98	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	5	3	16	0	x	x	x
	Hensley for Vern	0	x	x	x	0	5	3	10.5	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	5.5	0	x	x	x
	From Eastman	0	x	x	x	0	5	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	5	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	73	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	47.9	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	25.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	25.1	5.5	0	x	x	x
	Water Generated	0	x	x	x	0	52	52	109	0	x	x	x
1924	Add Water	0	x	x	x	0	0	18	43	0	x	x	x
	Right #	0	x	x	x	0	0	24	71	0	x	x	x
	From DD	0	x	x	x	0	0	7.5	29.7	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	2.3	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	4	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	4	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	9	11	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	9	11	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	21	43	0	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1925	Add Water	27	x	x	x	0	0	23	70	0	x	x	x
	Right #	71	x	x	x	0	0	8	8	0	x	x	x
	From DD	3.6	x	x	x	0	0	0.3	0.5	0	x	x	x
	Friant Stor & DD	33	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	23.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	24	147	0	x	x	x
	NM for Vern	0	x	x	x	0	0	22.7	69.5	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	1	77.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	1	77.5	0	x	x	x
	Water Generated	27	x	x	x	0	0	23	70	0	x	x	x
1926	Add Water	27	x	x	x	0	32	34	88	8	x	x	x
	Right #	71	x	x	x	0	8	16	21	24	x	x	x
	From DD	3.6	x	x	x	0	0.2	1.1	3.2	9.2	x	x	x
	Friant Stor & DD	60	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	23.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	47	4	0	0	x	x	x
	NM for Vern	0	x	x	x	0	31.8	4	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	15.2	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	5	5	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	5	5	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0.0	0.0	0	x	x	x
	From Eastman	0	x	x	x	0	0	1	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	1	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	110	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	22.9	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	87.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	128	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	79.8	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	48.2	0	x	x	x
	Stor avail for DO	0	x	x	x	0	15.2	87.1	48.2	0	x	x	x
	Water Generated	27	x	x	x	0	32	34	88	9	x	x	x
1927	Add Water	27	x	x	x	0	0	24	113	90	x	x	x
	Right #	71	x	x	x	0	0	8	8	16	x	x	x
	From DD	3.6	x	x	x	0	0	0.3	0.5	1.4	x	x	x
	Friant Stor & DD	73	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	20.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	3	x	x	x	0	0	78	139	21	x	x	x
	NM for Vern	3	x	x	x	0	0	23.7	112.5	21	x	x	x
	NM avail for DO	0	x	x	x	0	0	54.3	26.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	75	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	67.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	7.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	54.3	26.5	7.4	x	x	x
	Water Generated	27	x	x	x	0	0	24	113	90	x	x	x

C—032582

C-032582

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1928	Add Water	0	x	x	x	0	0	39	91	2	x	x	x
	Right #	0	x	x	x	0	0	21	16	18	x	x	x
	From DD	0	x	x	x	0	0	2.1	1.4	2.5	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	17	70	0	x	x	x
	NM for Vern	0	x	x	x	0	0	17	70	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	78	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	19.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	58.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	23	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	19.9	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	1	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	1	58.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	39	91	3	x	x	x
1929	Add Water	27	x	x	x	0	0	0	23	0	x	x	x
	Right #	71	x	x	x	0	0	0	16	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	1.4	0	x	x	x
	Friant Stor & DD	50	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	21.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	2	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	2	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	6	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	6	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	21	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	15.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	5.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	5.4	0	x	x	x
	Water Generated	27	x	x	x	0	0	0	23	0	x	x	x
1930	Add Water	27	x	x	x	0	0	15	20	0	x	x	x
	Right #	71	x	x	x	0	0	16	21	0	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	3.2	0	x	x	x
	Friant Stor & DD	34	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	20.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	3	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	3	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	3	2	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	3	2	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	20	9	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	10.9	9	0	x	x	x
	McClure for DO	0	x	x	x	0	0	9.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	32	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	5.8	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	26.2	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	9.1	26.2	0	x	x	x
	Water Generated	27	x	x	x	0	0	15	20	0	x	x	x

C-032583

C-032583

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1931	Add Water	0	x	x	x	0	0	23	45	0	x	x	x
	Right #	0	x	x	x	0	0	52	70	0	x	x	x
	From DD	0	x	x	x	0	0	9.3	29.7	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0.7	2.3	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	13	13	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	13	13	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	23	45	0	x	x	x
1932	Add Water	0	x	x	x	0	0	0	68	32	x	x	x
	Right #	0	x	x	x	0	0	0	8	8	x	x	x
	From DD	0	x	x	x	0	0	0	0.5	0.5	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	175	121	x	x	x
	NM for Vern	0	x	x	x	0	0	0	67.5	31.5	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	107.5	89.5	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	107.5	89.5	x	x	x
	Water Generated	0	x	x	x	0	0	0	68	32	x	x	x
1933	Add Water	0	x	x	x	0	0	31	57	23	x	x	x
	Right #	0	x	x	x	0	0	24	24	16	x	x	x
	From DD	0	x	x	x	0	0	7.5	8.7	1.4	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0.3	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	3	4	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	3	4	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	24	45	87	x	x	x
	McClure for Vern	0	x	x	x	0	0	24	45	17.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	69.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	69.4	x	x	x
	Water Generated	0	x	x	x	0	0	32	57	23	x	x	x

C—032584

C-032584

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1934	Add Water	27	x	x	x	0	0	10	42	0	x	x	x
	Right #	71	x	x	x	0	0	16	71	0	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	29.7	0	x	x	x
	Friant Stor & DD	46	x	x	x	0	0	0	85	0	x	x	x
	Friant Oblig at NM	19.4	x	x	x	0	0	0	12.3	0	x	x	x
	From NM	4	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	4	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	1	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	1	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	34	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	7.9	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	26.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	26.1	0	0	x	x	x
	Water Generated	27	x	x	x	0	0	10	42	0	x	x	x
1935	Add Water	27	x	x	x	0	0	0	0	0	x	x	x
	Right #	71	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	47	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	23.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	27	x	x	x	0	0	0	0	0	x	x	x
1936	Add Water	0	x	x	x	0	0	0	49	13	x	x	x
	Right #	0	x	x	x	0	0	0	8	8	x	x	x
	From DD	0	x	x	x	0	0	0	0.5	0.5	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	185	56	x	x	x
	NM for Vern	0	x	x	x	0	0	0	48.5	12.5	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	136.5	43.5	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	136.5	43.5	x	x	x
	Water Generated	0	x	x	x	0	0	0	49	13	x	x	x

Alternative 3
Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1937	Add Water	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1938	Add Water	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1939	Add Water	0	x	x	x	0	0	0	45	12	x	x	x
	Right #	0	x	x	x	0	0	0	63	44	x	x	x
	From DD	0	x	x	x	0	0	0	26.5	10.9	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	1.1	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	7	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	7	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	19	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	19	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	53	12	x	x	x

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Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1940	Add Water	23	x	x	x	0	0	0	62	91	x	x	x
	Right #	71	x	x	x	0	0	0	8	21	x	x	x
	From DD	3.6	x	x	x	0	0	0	0.5	3.7	x	x	x
	Friant Stor & DD	49	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	11.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	182	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	61.5	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	120.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	8	x	x	x	0	0	0	0	18	x	x	x
	McClure for Vern	8	x	x	x	0	0	0	0	18	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	142	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	69.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	72.7	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	120.5	72.7	x	x	x
	Water Generated	23	x	x	x	0	0	0	62	91	x	x	x
1941	Add Water	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1942	Add Water	0	x	x	x	0	0	0	11	0	x	x	x
	Right #	0	x	x	x	0	0	0	8	0	x	x	x
	From DD	0	x	x	x	0	0	0	0.5	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	153	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	10.5	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	142.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	142.5	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	11	0	x	x	x

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Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1943	Add Water	0	x	x	x	0	0	0	0	46	x	x	x
	Right #	0	x	x	x	0	0	0	0	16	x	x	x
	From DD	0	x	x	x	0	0	0	0	1.4	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	30	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	30	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	36	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	14.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	21.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	21.4	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	46	x	x	x
1944	Add Water	0	x	x	x	0	0	0	25	0	x	x	x
	Right #	0	x	x	x	0	0	0	16	0	x	x	x
	From DD	0	x	x	x	0	0	0	1.4	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	130	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	23.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	106.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	106.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	25	0	x	x	x
1945	Add Water	14	x	x	x	0	0	0	11	0	x	x	x
	Right #	71	x	x	x	0	0	0	8	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0.5	0	x	x	x
	Friant Stor & DD	87	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	10.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	139	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	10.5	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	128.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	128.5	0	x	x	x
	Water Generated	14	x	x	x	0	0	0	11	0	x	x	x

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Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1946	Add Water	0	x	x	x	0	0	26	11	18	x	x	x
	Right #	0	x	x	x	0	0	16	8	21	x	x	x
	From DD	0	x	x	x	0	0	1.1	0.5	3.7	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	10	80	0	x	x	x
	NM for Vern	0	x	x	x	0	0	10	10.5	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	69.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	108	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	14.9	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	93.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	59	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	13.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	45.7	x	x	x
	Stor avail for DO	0	x	x	x	0	0	93.1	69.5	45.7	x	x	x
	Water Generated	0	x	x	x	0	0	26	11	18	x	x	x
1947	Add Water	0	x	x	x	0	23	85	62	19	x	x	x
	Right #	0	x	x	x	0	8	71	16	58	x	x	x
	From DD	0	x	x	x	0	0.2	19.5	1.4	18.7	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	134	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	26.5	0	0.3	x	x	x
	From NM	0	x	x	x	0	53	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	22.8	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	30.2	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	39	81	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	39	60.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	20.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	1	x	x	x
	Stor avail for DO	0	x	x	x	0	30.2	0	20.4	0	x	x	x
	Water Generated	0	x	x	x	0	23	85	62	19	x	x	x
1948	Add Water	27	x	x	x	12	0	21	59	27	x	x	x
	Right #	71	x	x	x	8	0	16	16	5	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	1.4	0.5	x	x	x
	Friant Stor & DD	44	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	15.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	8	x	x	x	20	0	9	45	52	x	x	x
	NM for Vern	8	x	x	x	12	0	9	45	26.5	x	x	x
	NM avail for DO	0	x	x	x	8	0	0	0	26.5	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	1	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	22	119	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	10.9	12.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	11.1	106.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	1	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	8	0	11.1	106.4	26.5	x	x	x
	Water Generated	27	x	x	x	12	0	21	59	27	x	x	x

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Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1949	Add Water	27	x	x	x	0	0	59	46	4	x	x	x
	Right #	71	x	x	x	0	0	21	16	20	x	x	x
	From DD	3.6	x	x	x	0	0	2.1	1.4	3.7	x	x	x
	Friant Stor & DD	53	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	21.4	x	x	x	0	0	0	0	0.3	x	x	x
	From NM	2	x	x	x	0	0	0	17	0	x	x	x
	NM for Vern	2	x	x	x	0	0	0	17	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	55	117	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	55	27.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	89.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	64	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	1.9	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	62.1	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	62.1	89.4	0	x	x	x
	Water Generated	27	x	x	x	0	0	59	46	4	x	x	x
1950	Add Water	26	x	x	x	0	0	56	100	5	x	x	x
	Right #	71	x	x	x	0	0	16	8	16	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	0.5	1.4	x	x	x
	Friant Stor & DD	59	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	22.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	28	119	0	x	x	x
	NM for Vern	0	x	x	x	0	0	28	99.5	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	19.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	86	0	6	x	x	x
	McClure for Vern	0	x	x	x	0	0	26.9	0	2.6	x	x	x
	McClure for DO	0	x	x	x	0	0	59.1	0	3.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	59.1	19.5	3.4	x	x	x
	Water Generated	26	x	x	x	0	0	56	100	5	x	x	x
1951	Add Water	25	x	x	x	0	0	107	143	33	x	x	x
	Right #	71	x	x	x	0	0	71	71	21	x	x	x
	From DD	3.6	x	x	x	0	0	19.5	29.7	3.7	x	x	x
	Friant Stor & DD	107	x	x	x	0	0	148	154	0	x	x	x
	Friant Oblig at NM	21.4	x	x	x	0	0	13.5	56.3	0	x	x	x
	From NM	0	x	x	x	0	0	27	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	27	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	47	57	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	47	57	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	41	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	29.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	11.7	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	11.7	x	x	x
	Water Generated	25	x	x	x	0	0	107	143	33	x	x	x

Alternative 3
Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1952	Add Water	8	x	x	x	0	0	0	0	0	x	x	x
	Right #	71	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	59	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	4.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	8	x	x	x	0	0	0	0	0	x	x	x
1953	Add Water	0	x	x	x	0	0	67	95	49	x	x	x
	Right #	0	x	x	x	0	0	53	71	21	x	x	x
	From DD	0	x	x	x	0	0	10.3	29.7	3.7	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	110	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0.7	44.3	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	33	2	39	x	x	x
	McClure for Vern	0	x	x	x	0	0	33	2	39	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	23	19	102	x	x	x
	Pedro for Vern	0	x	x	x	0	0	23	19	6.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	95.7	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	95.7	x	x	x
	Water Generated	0	x	x	x	0	0	67	95	49	x	x	x
1954	Add Water	23	x	x	x	21	0	3	82	0	x	x	x
	Right #	71	x	x	x	8	0	8	8	0	x	x	x
	From DD	3.6	x	x	x	0	0	0.3	0.5	0	x	x	x
	Friant Stor & DD	67	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	19.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	42	0	29	101	0	x	x	x
	NM for Vern	0	x	x	x	21	0	2.7	81.5	0	x	x	x
	NM avail for DO	0	x	x	x	21	0	26.3	19.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	21	0	26.3	19.5	0	x	x	x
	Water Generated	23	x	x	x	21	0	3	82	0	x	x	x

Alternative 3
Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1955	Add Water	25	x	x	x	36	33	31	44	9	x	x	x
	Right #	71	x	x	x	8	21	71	16	16	x	x	x
	From DD	3.6	x	x	x	0	0.8	19.5	1.4	1.4	x	x	x
	Friant Stor & DD	53	x	x	x	0	0	103	0	0	x	x	x
	Friant Oblig at NM	21.4	x	x	x	0	0	9.5	0	0	x	x	x
	From NM	0	x	x	x	37	2	0	0	0	x	x	x
	NM for Vern	0	x	x	x	36	2	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	1	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	4	0	7	3	x	x	x
	Hensley for Vern	0	x	x	x	0	4	0	7	3	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	3	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	3	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	8	2	103	39	x	x	x
	McClure for Vern	0	x	x	x	0	8	2	35.6	4.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	67.4	34.4	x	x	x
	From Don Pedro	0	x	x	x	0	34	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	15.2	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	18.8	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	1	18.8	0	67.4	34.4	x	x	x
	Water Generated	25	x	x	x	36	33	31	44	9	x	x	x
1956	Add Water	27	x	x	x	0	0	95	0	0	x	x	x
	Right #	71	x	x	x	0	0	21	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	2.1	0	0	x	x	x
	Friant Stor & DD	50	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	18.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	5	x	x	x	0	0	1	0	0	x	x	x
	NM for Vern	5	x	x	x	0	0	1	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	3	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	3	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	73	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	73	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	23	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	15.9	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	7.1	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	7.1	0	0	x	x	x
	Water Generated	27	x	x	x	0	0	95	0	0	x	x	x
1957	Add Water	0	x	x	x	0	0	77	86	44	x	x	x
	Right #	0	x	x	x	0	0	71	21	16	x	x	x
	From DD	0	x	x	x	0	0	19.5	3.2	1.4	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	127	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	56.5	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	82	57	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	82	42.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	14.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	1	60	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	1	0.8	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	59.2	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	59.2	14.4	x	x	x
	Water Generated	0	x	x	x	0	0	77	86	44	x	x	x

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Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1958	Add Water	18	x	x	x	0	0	0	0	0	x	x	x
	Right #	71	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	62	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	14.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	18	x	x	x	0	0	0	0	0	x	x	x
1959	Add Water	0	x	x	x	0	0	35	67	23	x	x	x
	Right #	0	x	x	x	0	0	16	71	63	x	x	x
	From DD	0	x	x	x	0	0	1.1	29.7	33.3	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	153	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	22.3	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	48	15	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	33.9	15	0	x	x	x
	McClure for DO	0	x	x	x	0	0	14.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	14.1	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	35	67	33	x	x	x
1960	Add Water	28	x	x	x	0	0	9	14	0	x	x	x
	Right #	71	x	x	x	0	0	16	16	0	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	1.4	0	x	x	x
	Friant Stor & DD	30	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	24.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	5	5	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	5	5	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	1	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	1	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	67	67	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	1.9	7.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	65.1	59.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	65.1	59.4	0	x	x	x
	Water Generated	28	x	x	x	0	0	9	14	0	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1961	Add Water	27	x	x	x	0	0	17	39	0	x	x	x
	Right #	71	x	x	x	0	0	16	63	0	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	26.5	0	x	x	x
	Friant Stor & DD	27	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	23.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	2	1	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	2	1	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	26	16	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	13.9	16	0	x	x	x
	McClure for DO	0	x	x	x	0	0	12.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	12.1	0	0	x	x	x
	Water Generated	27	x	x	x	0	0	17	44	0	x	x	x
1962	Add Water	0	x	x	x	0	0	0	85	8	x	x	x
	Right #	0	x	x	x	0	0	0	16	8	x	x	x
	From DD	0	x	x	x	0	0	0	1.4	0.5	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	66	21	x	x	x
	NM for Vern	0	x	x	x	0	0	0	66	7.5	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	13.5	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	85	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	17.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	67.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	67.4	13.5	x	x	x
	Water Generated	0	x	x	x	0	0	0	85	8	x	x	x
1963	Add Water	27	x	x	x	0	44	0	62	53	x	x	x
	Right #	71	x	x	x	0	8	0	8	8	x	x	x
	From DD	3.6	x	x	x	0	0.2	0	0.5	0.5	x	x	x
	Friant Stor & DD	71	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	22.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	1	x	x	x	0	57	0	240	74	x	x	x
	NM for Vern	1	x	x	x	0	43.8	0	61.5	52.5	x	x	x
	NM avail for DO	0	x	x	x	0	13.2	0	178.5	21.5	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	13.2	0	178.5	21.5	x	x	x
	Water Generated	27	x	x	x	0	44	0	62	53	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1964	Add Water	0	x	x	x	21	33	37	58	20	x	x	x
	Right #	0	x	x	x	8	36	71	24	21	x	x	x
	From DD	0	x	x	x	0	6.5	19.5	8.7	3.7	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	92	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	1.5	4.5	0.3	0	x	x	x
	From NM	0	x	x	x	36	20	0	0	0	x	x	x
	NM for Vern	0	x	x	x	21	20	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	15	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	2	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	2	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	3	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	3	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	1	13	49	0	x	x	x
	McClure for Vern	0	x	x	x	0	1	13	49	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	1	0	0	28	x	x	x
	Pedro for Vern	0	x	x	x	0	1	0	0	14.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	13.7	x	x	x
	Stor avail for DO	0	x	x	x	15	0	0	0	13.7	x	x	x
	Water Generated	0	x	x	x	21	33	37	58	20	x	x	x
1965	Add Water	27	x	x	x	0	0	14	137	33	x	x	x
	Right #	(72+)	x	x	x	0	0	8	16	16	x	x	x
	From DD	3.6	x	x	x	0	0	0.3	1.4	1.4	x	x	x
	Friant Stor & DD	20	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	20	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	91	132	0	x	x	x
	NM for Vern	0	x	x	x	0	0	13.7	132	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	77.3	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	140	88	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	3.6	31.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	136.4	56.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	77.3	136.4	56.4	x	x	x
	Water Generated	24	x	x	x	0	0	14	137	33	x	x	x
1966	Add Water	0	x	x	x	0	0	92	68	11	x	x	x
	Right #	0	x	x	x	0	0	24	24	36	x	x	x
	From DD	0	x	x	x	0	0	7.6	8.7	10.4	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0.6	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	74	62	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	74	62	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	16	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	16	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	98	71	11	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1967	Add Water	19	x	x	x	0	0	0	0	0	x	x	x
	Right #	71	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	43	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	13.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	2	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	2	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	19	x	x	x	0	0	0	0	0	x	x	x
1968	Add Water	0	x	x	x	0	0	78	59	17	x	x	x
	Right #	0	x	x	x	0	0	71	24	57	x	x	x
	From DD	0	x	x	x	0	0	19.5	7.6	16.1	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	99	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	12.5	0	0.9	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	23	24	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	23	24	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	23	34	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	23	34	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	78	66	17	x	x	x
1969	Add Water	21	x	x	x	0	0	0	0	0	x	x	x
	Right #	71	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	21	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	17.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	21	x	x	x	0	0	0	0	0	x	x	x

C-032596

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Alternative 3
Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1970	Add Water	0	x	x	x	0	0	80	129	32	x	x	x
	Right #	0	x	x	x	0	0	71	71	21	x	x	x
	From DD	0	x	x	x	0	0	19.5	29.7	3.7	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	126	161	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	58.5	5.3	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	2	94	2	x	x	x
	McClure for Vern	0	x	x	x	0	0	2	94	2	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	89	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	26.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	62.7	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	62.7	x	x	x
	Water Generated	0	x	x	x	0	0	80	129	32	x	x	x
1971	Add Water	11	x	x	x	0	0	83	102	51	x	x	x
	Right #	71	x	x	x	0	0	71	71	16	x	x	x
	From DD	3.6	x	x	x	0	0	19.5	29.7	1.4	x	x	x
	Friant Stor & DD	38	x	x	x	0	0	139	146	0	x	x	x
	Friant Oblig at NM	7.4	x	x	x	0	0	56.5	9.3	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	1	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	1	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	7	63	60	x	x	x
	McClure for Vern	0	x	x	x	0	0	7	63	47.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	12.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	12.4	x	x	x
	Water Generated	11	x	x	x	0	0	83	102	51	x	x	x
1972	Add Water	25	x	x	x	37	29	101	74	27	x	x	x
	Right #	71	x	x	x	8	8	71	16	63	x	x	x
	From DD	3.6	x	x	x	0	0.2	19.5	1.4	33.3	x	x	x
	Friant Stor & DD	54	x	x	x	0	0	94	0	0	x	x	x
	Friant Oblig at NM	21.4	x	x	x	0	0	61.5	0	0	x	x	x
	From NM	0	x	x	x	43	31	0	0	0	x	x	x
	NM for Vern	0	x	x	x	37	28.8	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	6	2.2	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	15	75	4	x	x	x
	McClure for Vern	0	x	x	x	0	0	15	72.6	4	x	x	x
	McClure for DO	0	x	x	x	0	0	0	2.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	5	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	5	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	6	2.2	0	2.4	0	x	x	x
	Water Generated	25	x	x	x	37	29	101	74	37	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1973	Add Water	27	x	x	x	0	0	0	16	0	x	x	x
	Right #	71	x	x	x	0	0	0	8	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0.5	0	x	x	x
	Friant Stor & DD	68	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	14.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	8	x	x	x	0	0	0	195	0	x	x	x
	NM for Vern	8	x	x	x	0	0	0	15.5	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	179.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	1	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	1	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	179.5	0	x	x	x
	Water Generated	27	x	x	x	0	0	0	16	0	x	x	x
1974	Add Water	0	x	x	x	0	0	0	31	52	x	x	x
	Right #	0	x	x	x	0	0	0	8	16	x	x	x
	From DD	0	x	x	x	0	0	0	0.5	1.4	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	156	16	x	x	x
	NM for Vern	0	x	x	x	0	0	0	30.5	16	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	125.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	55	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	34.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	20.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	125.5	20.4	x	x	x
	Water Generated	0	x	x	x	0	0	0	31	52	x	x	x
1975	Add Water	0	x	x	x	0	0	0	79	0	x	x	x
	Right #	0	x	x	x	0	0	0	16	0	x	x	x
	From DD	0	x	x	x	0	0	0	1.4	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	60	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	60	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	190	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	16.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	173.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	173.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	79	0	x	x	x

C—032598

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Alternative 3
Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1976	Add Water	0	x	x	x	0	0	8	33	0	x	x	x
	Right #	0	x	x	x	0	0	24	63	0	x	x	x
	From DD	0	x	x	x	0	0	7.5	26.5	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	3	2	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	3	2	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	9	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	9	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	11	38	0	x	x	x
1977	Add Water	0	x	x	x	0	0	30	45	0	x	x	x
	Right #	0	x	x	x	0	0	(72+)	(72+)	0	x	x	x
	From DD	0	x	x	x	0	0	17.6	29.7	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	5	2	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	5	2	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	1	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	1	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	24	32	0	x	x	x
1978	Add Water	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x

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Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1979	Add Water	0	x	x	x	0	0	2	68	21	x	x	x
	Right #	0	x	x	x	0	0	8	8	16	x	x	x
	From DD	0	x	x	x	0	0	0.3	0.5	1.4	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	7	170	0	x	x	x
	NM for Vern	0	x	x	x	0	0	1.7	67.5	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	5.3	102.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	29	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	19.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	9.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	5.3	102.5	9.4	x	x	x
	Water Generated	0	x	x	x	0	0	2	68	21	x	x	x
1980	Add Water	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1981	Add Water	0	x	x	x	0	0	51	53	17	x	x	x
	Right #	0	x	x	x	0	0	16	16	57	x	x	x
	From DD	0	x	x	x	0	0	1.1	1.4	16.1	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0.9	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	52	70	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	49.9	50.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	1	19.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	1	19.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	51	53	17	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1982	Add Water	19	x	x	x	0	0	0	0	0	x	x	x
	Right #	71	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	49	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	15.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	19	x	x	x	0	0	0	0	0	x	x	x
1983	Add Water	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1984	Add Water	0	x	x	x	0	0	99	143	29	x	x	x
	Right #	0	x	x	x	0	0	71	21	21	x	x	x
	From DD	0	x	x	x	0	0	19.5	3.2	3.7	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	182	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	39.5	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	40	138	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	40	138	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	55	117	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	1.8	25.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	53.2	91.7	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	53.2	91.7	x	x	x
	Water Generated	0	x	x	x	0	0	99	143	29	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1985	Add Water	12	x	x	x	0	0	21	54	14	x	x	x
	Right #	71	x	x	x	0	0	16	16	53	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	1.4	13.8	x	x	x
	Friant Stor & DD	77	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	6.4	x	x	x	0	0	0	0	0.2	x	x	x
	From NM	2	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	2	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	77	78	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	19.9	51.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	57.1	26.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	57.1	26.4	0	x	x	x
	Water Generated	12	x	x	x	0	0	21	54	14	x	x	x
1986	Add Water	20	x	x	x	0	0	0	0	0	x	x	x
	Right #	71	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	Friant Stor & DD	72	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	2.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	13	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	13	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	1	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	1	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	20	x	x	x	0	0	0	0	0	x	x	x
1987	Add Water	0	x	x	x	0	0	0	26	0	x	x	x
	Right #	0	x	x	x	0	0	0	29	0	x	x	x
	From DD	0	x	x	x	0	0	0	9.1	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0.9	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	15	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	15	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	26	0	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1988	Add Water	28	x	x	x	0	0	14	34	0	x	x	x
	Right #	71	x	x	x	0	0	16	53	0	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	12.4	0	x	x	x
	Friant Stor & DD	31	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	24.4	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	3	1	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	3	1	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	28	21	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	9.9	21	0	x	x	x
	McClure for DO	0	x	x	x	0	0	18.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	18.1	0	0	x	x	x
	Water Generated	28	x	x	x	0	0	14	34	0	x	x	x
1989	Add Water	0	x	x	x	0	0	21	23	0	x	x	x
	Right #	0	x	x	x	0	0	16	16	0	x	x	x
	From DD	0	x	x	x	0	0	1.1	1.4	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	3	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	3	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	97	53	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	16.9	21.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	80.1	31.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	80.1	31.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	21	23	0	x	x	x
1990	Add Water	0	x	x	x	0	0	14	39	0	x	x	x
	Right #	0	x	x	x	0	0	16	16	0	x	x	x
	From DD	0	x	x	x	0	0	1.1	1.4	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	1	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	1	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	51	53	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	11.9	37.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	39.1	15.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	39.1	15.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	14	39	0	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1991	Add Water	0	x	x	x	0	0	0	13	0	x	x	x
	Right #	0	x	x	x	0	0	0	16	0	x	x	x
	From DD	0	x	x	x	0	0	0	1.4	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	3	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	3	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	87	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	8.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	78.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	78.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	13	0	x	x	x
1992	Add Water	0	x	x	x	0	0	0	26	0	x	x	x
	Right #	0	x	x	x	0	0	0	18	0	x	x	x
	From DD	0	x	x	x	0	0	0	2.2	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	24	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	24	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	27	0	x	x	x
1993	Add Water	0	x	x	x	35	34	165	85	0	x	x	x
	Right #	0	x	x	x	8	8	21	16	0	x	x	x
	From DD	0	x	x	x	0	0.2	2.1	1.4	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	475	322	42	0	0	x	x	x
	NM for Vern	0	x	x	x	35	33.8	42	0	0	x	x	x
	NM avail for DO	0	x	x	x	440	288.2	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	9	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	9	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	9	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	9	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	96	136	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	96	83.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	52.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	65	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	6.9	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	58.1	0	0	x	x	x
	Stor avail for DO	0	x	x	x	440	288.2	58.1	52.4	0	x	x	x
	Water Generated	0	x	x	x	35	34	165	85	0	x	x	x

Alternative 3

Allocation of "Add Water" for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1994	Add Water	0	x	x	x	0	0	3	16	0	x	x	x
	Right #	0	x	x	x	0	0	11	16	0	x	x	x
	From DD	0	x	x	x	0	0	0.3	1 4	0	x	x	x
	Friant Stor & DD	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From NM	0	x	x	x	0	0	0	0	0	x	x	x
	NM for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	3	2	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	2.7	2	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0.3	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	34	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	12.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	21.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Stor avail for DO	0	x	x	x	0	0	0.3	21.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	3	16	0	x	x	x

C—032605

C-032605

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1922	SW (Alt 3)	0	0	0	0	0	0	0	0	0	349	183	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	81.6	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	12.9	0
	From IO	0	0	0	0	0	0	0	0	0	122.7	85.8	0
	Water Generated	0	0	0	0	0	0	0	0	0	288.9	167.4	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	60	16	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	5	0
1923	SW (Alt 3)	0	0	0	0	0	0	0	0	330	556	299	0
	From Storage	0	0	0	0	0	0	0	0	192	0	0	0
	From DD	0	0	0	0	0	0	0	0	43.5	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	78.8	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	314.3	383.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	16	173	70	0
	Cutoff Group	0	0	0	0	0	0	0	0	4	8	7	0
1924	SW (Alt 3)	0	0	0	0	0	0	159	319	555	473	222	0
	From Storage	0	0	0	0	0	0	96	61	8	0	0	0
	From DD	0	0	0	0	0	0	19.9	95.0	154.9	172.6	112.5	0
	From Friant DD	0	0	0	0	0	0	0	0	52	54	0	0
	From SJ DD	0	0	0	0	0	0	10.3	29.7	37.5	39.1	27.2	0
	From IO	0	0	0	0	0	0	25.9	78.4	174.4	168.7	64	0
	Water Generated	0	0	0	0	0	0	141.8	234.4	389.3	395.3	176.5	0
	Proj Obligation	0	0	0	0	0	0	17	85	166	78	45	0
	Cutoff Group	0	0	0	0	0	0	4	7	8	8	6	0
1925	SW (Alt 3)	0	0	0	0	0	0	0	0	353	512	236	0
	From Storage	0	0	0	0	0	0	0	0	261	0	0	0
	From DD	0	0	0	0	0	0	0	0	37.4	166.2	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	11.2	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	9.8	122.7	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	308.2	288.9	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	45	223	7	0
	Cutoff Group	0	0	0	0	0	0	0	0	3	7	7	0
1926	SW (Alt 3)	0	0	0	0	0	0	0	95	685	733	386	0
	From Storage	0	0	0	0	0	0	0	0	6	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.8	0
	From Friant DD	0	0	0	0	0	0	0	0	109	92	69	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	198	210.5	183.2	0
	Water Generated	0	0	0	0	0	0	0	0	467.9	475.1	372.0	0
	Proj Obligation	0	0	0	0	0	0	0	95	217	258	14	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	8	8	8	0
1927	SW (Alt 3)	0	0	0	0	0	0	0	0	0	477	276	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	0	122.7	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	0	288.9	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	188	47	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	7	0

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1928	SW (Alt 3)	0	0	0	0	0	0	0	0	521	827	413	0
	From Storage	0	0	0	0	0	0	0	0	22	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.8	0
	From Friant DD	0	0	0	0	0	0	0	0	113	69	66	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	198	490.3	183.2	0
	Water Generated	0	0	0	0	0	0	0	0	487.9	731.9	369.0	0
	Proj Obligation	0	0	0	0	0	0	0	0	33	95	44	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	9	8	0
1929	SW (Alt 3)	0	0	0	0	0	0	0	0	199	504	257	0
	From Storage	0	0	0	0	0	0	0	0	96	10	15	0
	From DD	0	0	0	0	0	0	0	0	43.5	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	81	0	0
	From SJ DD	0	0	0	0	0	0	0	0	13.8	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	58.9	168.7	75.2	0
	Water Generated	0	0	0	0	0	0	0	0	198.4	432.3	205.5	0
	Proj Obligation	0	0	0	0	0	0	0	0	1	72	52	0
	Cutoff Group	0	0	0	0	0	0	0	0	4	8	7	0
1930	SW (Alt 3)	0	0	0	0	0	0	0	0	536	563	237	0
	From Storage	0	0	0	0	0	0	0	0	192	14	17	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	78	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	90.1	178.3	78.1	0
	Water Generated	0	0	0	0	0	0	0	0	431.3	442.9	210.4	0
	Proj Obligation	0	0	0	0	0	0	0	0	105	120	27	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	7	0
1931	SW (Alt 3)	0	0	0	0	0	0	156	157	425	424	290	0
	From Storage	0	0	0	0	0	0	112	49	7	0	0	0
	From DD	0	0	0	0	0	0	17.5	29.9	154.9	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	60	62	0	0
	From SJ DD	0	0	0	0	0	0	9.3	12.4	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0.2	48.3	174.4	168.7	75.2	0
	Water Generated	0	0	0	0	0	0	129.7	127.2	396.3	403.3	190.5	0
	Proj Obligation	0	0	0	0	0	0	26	30	29	21	100	0
	Cutoff Group	0	0	0	0	0	0	3	4	8	8	7	0
1932	SW (Alt 3)	0	0	0	0	0	0	0	0	137	436	196	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	112.5	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	27.2	0
	From IO	0	0	0	0	0	0	0	0	0	92.4	63.4	0
	Water Generated	0	0	0	0	0	0	0	0	0	258.6	175.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	137	177	20	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	7	6	0
1933	SW (Alt 3)	0	0	0	0	0	0	0	0	136	438	281	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	0	88.1	75.2	0
	Water Generated	0	0	0	0	0	0	0	0	0	254.3	190.5	0
	Proj Obligation	0	0	0	0	0	0	0	0	136	184	91	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	7	7	0

C-032607

C-032607

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1934	SW (Alt 3)	0	0	0	0	0	0	0	85	479	450	226	0
	From Storage	0	0	0	0	0	0	0	40	12	0	0	0
	From DD	0	0	0	0	0	0	0	25.9	154.9	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	73	84	0	0
	From SJ DD	0	0	0	0	0	0	0	10.5	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0.5	173.8	168.3	74.5	0
	Water Generated	0	0	0	0	0	0	0	66.4	413.7	424.9	189.8	0
	Proj Obligation	0	0	0	0	0	0	0	19	65	25	36	0
	Cutoff Group	0	0	0	0	0	0	0	3	8	8	7	0
1935	SW (Alt 3)	0	0	0	0	0	0	0	0	0	520	233	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	112.5	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	27.2	0
	From IO	0	0	0	0	0	0	0	0	0	122.7	96.5	0
	Water Generated	0	0	0	0	0	0	0	0	0	288.9	209.0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	231	24	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	6	0
1936	SW (Alt 3)	0	0	0	0	0	0	0	0	9	620	345	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	151	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	0	534.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	9	86	116	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	7	0
1937	SW (Alt 3)	0	0	0	0	0	0	0	0	154	651	344	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	155	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	0	538.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	154	113	115	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	7	0
1938	SW (Alt 3)	0	0	0	0	0	0	0	0	0	6	58	0
	From Storage	0	0	0	0	0	0	0	0	0	0	2	0
	From DD	0	0	0	0	0	0	0	0	0	0	19.7	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	0	4.6	0
	From IO	0	0	0	0	0	0	0	0	0	0	10.9	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	32.6	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	6	25	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	(0)	2	0
1939	SW (Alt 3)	0	0	0	0	0	0	122	85	730	602	320	0
	From Storage	0	0	0	0	0	0	0	63	8	0	0	0
	From DD	0	0	0	0	0	0	0	13.6	154.9	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	104	96	0	0
	From SJ DD	0	0	0	0	0	0	0	3.3	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0.5	442.4	195.5	99	0
	Water Generated	0	0	0	0	0	0	0	77.1	709.3	464.1	214.3	0
	Proj Obligation	0	0	0	0	0	0	122	8	21	138	106	0
	Cutoff Group	0	0	0	0	0	0	(0)	1	9	8	7	0

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1940	SW (Alt 3)	0	0	0	0	0	0	0	0	269	686	346	0
	From Storage	0	0	0	0	0	0	0	0	129	0	0	0
	From DD	0	0	0	0	0	0	0	0	43.5	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	127	0	0
	From SJ DD	0	0	0	0	0	0	0	0	13.8	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	78.8	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	251.3	510.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	18	176	117	0
	Cutoff Group	0	0	0	0	0	0	0	0	4	8	7	0
1941	SW (Alt 3)	0	0	0	0	0	0	0	0	0	233	119	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	119.6	31.5	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	20.5	7.6	0
	From IO	0	0	0	0	0	0	0	0	0	89.2	84.2	0
	Water Generated	0	0	0	0	0	0	0	0	0	208.8	115.7	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	24	3	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	5	4	0
1942	SW (Alt 3)	0	0	0	0	0	0	0	0	0	190	112	0
	From Storage	0	0	0	0	0	0	0	0	0	3	0	0
	From DD	0	0	0	0	0	0	0	0	0	43.4	26.7	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	14.1	5.5	0
	From IO	0	0	0	0	0	0	0	0	0	87.1	81.7	0
	Water Generated	0	0	0	0	0	0	0	0	0	133.5	108.4	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	57	4	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	4	3	0
1943	SW (Alt 3)	0	0	0	0	0	0	0	0	0	510	244	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	0	122.7	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	0	288.9	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	221	15	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	7	0
1944	SW (Alt 3)	0	0	0	0	0	0	0	0	494	630	328	0
	From Storage	0	0	0	0	0	0	0	0	155	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	143	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	112.9	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	417.1	526.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	77	104	99	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	7	0
1945	SW (Alt 3)	0	0	0	0	0	0	0	0	154	641	291	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	181	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	0	564.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	154	77	62	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	7	0

C-032609

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Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1946	SW (Alt 3)	0	0	0	0	0	0	0	0	397	555	244	0
	From Storage	0	0	0	0	0	0	0	0	81	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	130	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	112.9	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	343.1	513.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	54	42	15	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	7	0
1947	SW (Alt 3)	0	0	0	0	0	0	0	134	459	708	330	0
	From Storage	0	0	0	0	0	0	0	0	25	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	85	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	112.9	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	287.1	468.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	134	172	240	101	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	7	8	7	0
1948	SW (Alt 3)	0	0	0	0	0	0	0	0	0	410	299	0
	From Storage	0	0	0	0	0	0	0	0	0	1	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	0	122.7	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	0	289.9	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	120	70	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	7	0
1949	SW (Alt 3)	0	0	0	0	0	0	0	0	561	644	288	0
	From Storage	0	0	0	0	0	0	0	0	109	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	97	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	112.9	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	371.1	480.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	190	164	59	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	7	0
1950	SW (Alt 3)	0	0	0	0	0	0	0	0	196	508	172	0
	From Storage	0	0	0	0	0	0	0	0	0	3	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	31.5	0
	From Friant DD	0	0	0	0	0	0	0	0	0	106	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	7.6	0
	From IO	0	0	0	0	0	0	0	0	0	210.5	84.2	0
	Water Generated	0	0	0	0	0	0	0	0	0	492.1	115.7	0
	Proj Obligation	0	0	0	0	0	0	0	0	196	16	56	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	4	0
1951	SW (Alt 3)	0	0	0	0	0	0	0	0	392	703	210	0
	From Storage	0	0	0	0	0	0	0	0	31	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	81.6	0
	From Friant DD	0	0	0	0	0	0	0	0	0	118	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	12.9	0
	From IO	0	0	0	0	0	0	0	0	112.9	210.5	85.8	0
	Water Generated	0	0	0	0	0	0	0	0	293.1	501.1	167.4	0
	Proj Obligation	0	0	0	0	0	0	0	0	99	202	43	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	5	0

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1952	SW (Alt 3)	0	0	0	0	0	0	0	0	0	0	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	0	0	0
	From IO	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	0	0
1953	SW (Alt 3)	0	0	0	0	0	0	0	0	0	174	59	0
	From Storage	0	0	0	0	0	0	0	0	0	1	0	0
	From DD	0	0	0	0	0	0	0	0	0	43.4	19.7	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	14.1	4.6	0
	From IO	0	0	0	0	0	0	0	0	0	87.1	10.9	0
	Water Generated	0	0	0	0	0	0	0	0	0	131.5	30.6	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	43	28	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	4	2	0
1954	SW (Alt 3)	0	0	0	0	0	0	0	51	250	708	153	0
	From Storage	0	0	0	0	0	0	0	0	33	0	0	0
	From DD	0	0	0	0	0	0	0	0	107.7	172.6	31.5	0
	From Friant DD	0	0	0	0	0	0	0	0	0	101	0	0
	From SJ DD	0	0	0	0	0	0	0	0	19.8	39.1	7.6	0
	From IO	0	0	0	0	0	0	0	0	80.9	210.5	84.2	0
	Water Generated	0	0	0	0	0	0	0	0	221.6	484.1	115.7	0
	Proj Obligation	0	0	0	0	0	0	0	51	28	224	37	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	5	8	4	0
1955	SW (Alt 3)	0	0	0	0	0	0	0	0	524	659	319	0
	From Storage	0	0	0	0	0	0	0	0	211	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	106	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	112.9	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	473.1	489.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	51	170	90	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	7	0
1956	SW (Alt 3)	0	0	0	0	0	0	0	0	0	128	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	36.8	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	11.4	0	0
	From IO	0	0	0	0	0	0	0	0	0	83.9	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	120.7	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	7	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	3	0	0
1957	SW (Alt 3)	0	0	0	0	0	0	0	0	112	544	168	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	31.5	0
	From Friant DD	0	0	0	0	0	0	0	0	0	124	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	7.6	0
	From IO	0	0	0	0	0	0	0	0	0	210.5	84.2	0
	Water Generated	0	0	0	0	0	0	0	0	0	507.1	115.7	0
	Proj Obligation	0	0	0	0	0	0	0	0	112	37	52	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	4	0

C-032611

C-032611

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1958	SW (Alt 3)	0	0	0	0	0	0	0	0	0	0	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	0	0	0
	From IO	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	0	0
1959	SW (Alt 3)	0	0	0	0	0	0	0	0	654	708	288	0
	From Storage	0	0	0	0	0	0	0	0	19	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	124	56	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	198	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	495.9	439.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	158	269	59	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	7	0
1960	SW (Alt 3)	0	0	0	0	0	0	0	0	608	664	339	0
	From Storage	0	0	0	0	0	0	0	0	77	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	93	91	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	198	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	522.9	474.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	85	190	110	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	7	0
1961	SW (Alt 3)	0	0	0	0	0	0	0	0	552	719	372	0
	From Storage	0	0	0	0	0	0	0	0	40	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.8	0
	From Friant DD	0	0	0	0	0	0	0	0	86	31	40	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	198	490.3	183.2	0
	Water Generated	0	0	0	0	0	0	0	0	478.9	693.9	343.0	0
	Proj Obligation	0	0	0	0	0	0	0	0	73	25	29	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	9	8	0
1962	SW (Alt 3)	0	0	0	0	0	0	0	0	242	654	283	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	172	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	0	555.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	242	99	54	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	7	0
1963	SW (Alt 3)	0	0	0	0	0	0	0	0	0	380	101	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	19.7	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	4.6	0
	From IO	0	0	0	0	0	0	0	0	0	122.7	10.9	0
	Water Generated	0	0	0	0	0	0	0	0	0	288.9	30.6	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	91	70	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	2	0

C-032612

C-032612

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1964	SW (Alt 3)	0	0	0	0	0	0	0	0	401	677	324	0
	From Storage	0	0	0	0	0	0	0	0	84	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	99	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	112.9	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	346.1	482.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	0	55	195	95	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	7	0
1965	SW (Alt 3)	0	0	0	0	0	0	0	0	0	374	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	0	0
	From IO	0	0	0	0	0	0	0	0	0	122.7	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	288.9	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	85	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	0	0
1966	SW (Alt 3)	0	0	0	0	0	0	0	39	607	666	274	0
	From Storage	0	0	0	0	0	0	0	0	13	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	125	92	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	198	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	0	490.9	475.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	39	116	191	45	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	8	8	7	0
1967	SW (Alt 3)	0	0	0	0	0	0	0	0	0	0	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	0	0	0
	From IO	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	0	0
1968	SW (Alt 3)	0	0	0	0	0	0	0	0	580	641	0	0
	From Storage	0	0	0	0	0	0	0	0	23	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	0	0
	From Friant DD	0	0	0	0	0	0	0	0	96	102	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	0	0
	From IO	0	0	0	0	0	0	0	0	198	210.5	0	0
	Water Generated	0	0	0	0	0	0	0	0	471.9	485.1	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	108	156	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	0	0
1969	SW (Alt 3)	0	0	0	0	0	0	0	0	0	27	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	20.1	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	3.8	0	0
	From IO	0	0	0	0	0	0	0	0	0	3.6	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	23.7	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	3	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	1	0	0

C—032613

C-032613

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1970	SW (Alt 3)	0	0	0	0	0	0	0	0	301	536	113	0
	From Storage	0	0	0	0	0	0	0	0	98	0	0	0
	From DD	0	0	0	0	0	0	0	0	107.7	172.6	26.7	0
	From Friant DD	0	0	0	0	0	0	0	0	0	138	0	0
	From SJ DD	0	0	0	0	0	0	0	0	19.8	39.1	5.5	0
	From IO	0	0	0	0	0	0	0	0	80.9	210.5	81.7	0
	Water Generated	0	0	0	0	0	0	0	0	286.6	521.1	108.4	0
	Proj Obligation	0	0	0	0	0	0	0	0	14	15	5	0
	Cutoff Group	0	0	0	0	0	0	0	0	5	8	3	0
1971	SW (Alt 3)	0	0	0	0	0	0	0	0	0	133	25	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	36.8	14.8	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	11.4	3.5	0
	From IO	0	0	0	0	0	0	0	0	0	83.9	3.2	0
	Water Generated	0	0	0	0	0	0	0	0	0	120.7	18.0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	12	7	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	3	1	0
1972	SW (Alt 3)	0	0	0	0	0	0	0	0	615	677	201	0
	From Storage	0	0	0	0	0	0	0	0	47	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	81.6	0
	From Friant DD	0	0	0	0	0	0	0	0	120	86	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	12.9	0
	From IO	0	0	0	0	0	0	0	0	198	210.5	85.8	0
	Water Generated	0	0	0	0	0	0	0	0	519.9	469.1	167.4	0
	Proj Obligation	0	0	0	0	0	0	0	0	95	208	34	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	5	0
1973	SW (Alt 3)	0	0	0	0	0	0	0	0	421	598	119	0
	From Storage	0	0	0	0	0	0	0	0	275	0	0	0
	From DD	0	0	0	0	0	0	0	0	43.5	172.6	31.5	0
	From Friant DD	0	0	0	0	0	0	0	0	0	152	0	0
	From SJ DD	0	0	0	0	0	0	0	0	13.8	39.1	7.6	0
	From IO	0	0	0	0	0	0	0	0	78.8	210.5	84.2	0
	Water Generated	0	0	0	0	0	0	0	0	397.3	535.1	115.7	0
	Proj Obligation	0	0	0	0	0	0	0	0	24	63	3	0
	Cutoff Group	0	0	0	0	0	0	0	0	4	8	4	0
1974	SW (Alt 3)	0	0	0	0	0	0	0	0	0	0	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	0	0	0
	From IO	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	0	0
1975	SW (Alt 3)	0	0	0	0	0	0	0	0	0	75	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	26.9	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	10.5	0	0
	From IO	0	0	0	0	0	0	0	0	0	11.5	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	38.4	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	37	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	2	0	0

C-032614

C-032614

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1976	SW (Alt 3)	0	0	0	0	0	0	0	79	690	489	34	0
	From Storage	0	0	0	0	0	0	0	58	7	0	0	0
	From DD	0	0	0	0	0	0	0	19.0	154.9	172.6	19.7	0
	From Friant DD	0	0	0	0	0	0	0	0	57	49	0	0
	From SJ DD	0	0	0	0	0	0	0	9.8	37.5	39.1	4.6	0
	From IO	0	0	0	0	0	0	0	0.5	430.8	168.7	0.6	0
	Water Generated	0	0	0	0	0	0	0	77.5	649.7	390.3	20.3	0
	Proj Obligation	0	0	0	0	0	0	0	2	40	99	14	0
	Cutoff Group	0	0	0	0	0	0	0	2	9	8	2	0
1977	SW (Alt 3)	0	0	0	0	189	0	311	116	516	420	126	0
	From Storage	0	0	0	0	9	0	38	42	22	7	0	0
	From DD	0	0	0	0	0.6	0	49.6	25.9	154.9	172.6	31.5	0
	From Friant DD	0	0	0	0	11	0	1	0	57	56	0	0
	From SJ DD	0	0	0	0	0.5	0	19.5	10.5	37.5	39.1	7.6	0
	From IO	0	0	0	0	3.7	0	203	0.5	173.8	168.3	56.1	0
	Water Generated	0	0	0	0	24.3	0	291.6	68.4	407.7	403.9	87.6	0
	Proj Obligation	0	0	0	0	165	0	19	48	108	16	38	0
	Cutoff Group	0	0	0	0	9	0	9	3	8	8	4	0
1978	SW (Alt 3)	41	0	0	0	0	0	0	0	0	443	189	0
	From Storage	0	0	0	0	0	0	0	0	0	84	0	0
	From DD	5.4	0	0	0	0	0	0	0	0	166.2	81.6	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0.9	0	0	0	0	0	0	0	0	39.1	12.9	0
	From IO	6.3	0	0	0	0	0	0	0	0	122.7	85.8	0
	Water Generated	11.664	0	0	0	0	0	0	0	0	372.9	167.4	0
	Proj Obligation	29	0	0	0	0	0	0	0	0	70	22	0
	Cutoff Group	3	0	0	0	0	0	0	0	0	7	5	0
1979	SW (Alt 3)	0	0	0	0	0	0	0	0	636	520	101	0
	From Storage	0	0	0	0	0	0	0	0	145	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	19.7	0
	From Friant DD	0	0	0	0	0	0	0	0	0	133	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	4.6	0
	From IO	0	0	0	0	0	0	0	0	112.9	210.5	10.9	0
	Water Generated	0	0	0	0	0	0	0	0	407.1	516.1	30.6	0
	Proj Obligation	0	0	0	0	0	0	0	0	229	4	70	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	2	0
1980	SW (Alt 3)	0	0	0	0	0	0	0	0	0	223	75	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	119.6	19.7	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	20.5	4.6	0
	From IO	0	0	0	0	0	0	0	0	0	89.2	10.9	0
	Water Generated	0	0	0	0	0	0	0	0	0	208.8	30.6	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	14	44	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	5	2	0
1981	SW (Alt 3)	0	0	0	0	0	0	0	0	699	639	206	0
	From Storage	0	0	0	0	0	0	0	0	10	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	81.6	0
	From Friant DD	0	0	0	0	0	0	0	0	105	92	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	12.9	0
	From IO	0	0	0	0	0	0	0	0	198	210.5	85.8	0
	Water Generated	0	0	0	0	0	0	0	0	467.9	475.1	167.4	0
	Proj Obligation	0	0	0	0	0	0	0	0	231	164	39	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	5	0

C-032615

C-032615

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1982	SW (Alt 3)	0	0	0	0	0	0	0	0	0	0	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	0	0	0
	From IO	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	0	0
1983	SW (Alt 3)	0	0	0	0	0	0	0	0	0	0	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	0	0	0
	From IO	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	0	0
1984	SW (Alt 3)	0	0	0	0	0	0	0	0	191	495	0	0
	From Storage	0	0	0	0	0	0	0	0	92	0	0	0
	From DD	0	0	0	0	0	0	0	0	37.4	166.2	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	11.2	39.1	0	0
	From IO	0	0	0	0	0	0	0	0	9.8	122.7	0	0
	Water Generated	0	0	0	0	0	0	0	0	139.2	288.9	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	52	206	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	3	7	0	0
1985	SW (Alt 3)	0	0	0	0	0	0	0	275	763	655	261	0
	From Storage	0	0	0	0	0	0	0	147	18	0	0	0
	From DD	0	0	0	0	0	0	0	29.9	154.9	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	99	68	0	0
	From SJ DD	0	0	0	0	0	0	0	12.4	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	67.4	460.3	210.5	113.6	0
	Water Generated	0	0	0	0	0	0	0	244.3	732.2	451.1	228.9	0
	Proj Obligation	0	0	0	0	0	0	0	31	31	204	32	0
	Cutoff Group	0	0	0	0	0	0	0	4	9	8	7	0
1986	SW (Alt 3)	0	0	0	0	0	0	0	0	41	582	163	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	31.5	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	7.6	0
	From IO	0	0	0	0	0	0	0	0	0	122.7	84.2	0
	Water Generated	0	0	0	0	0	0	0	0	0	288.9	115.7	0
	Proj Obligation	0	0	0	0	0	0	0	0	41	293	47	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	7	4	0
1987	SW (Alt 3)	0	0	0	0	0	0	0	228	971	666	369	0
	From Storage	0	0	0	0	0	0	0	59	5	0	0	0
	From DD	0	0	0	0	0	0	0	68.7	154.9	172.6	119.9	0
	From Friant DD	0	0	0	0	0	0	0	0	90	94	103	0
	From SJ DD	0	0	0	0	0	0	0	16.7	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	69.4	432.2	178.3	143	0
	Water Generated	0	0	0	0	0	0	0	197.1	682.1	444.9	365.9	0
	Proj Obligation	0	0	0	0	0	0	0	31	289	221	3	0
	Cutoff Group	0	0	0	0	0	0	0	5	9	8	8	0

C-032616

C-032616

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1988	SW (Alt 3)	0	0	0	0	0	0	0	12	505	608	332	0
	From Storage	0	0	0	0	0	0	0	0	13	1	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.9	0
	From Friant DD	0	0	0	0	0	0	0	0	89	91	61	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	174.9	178.3	143	0
	Water Generated	0	0	0	0	0	0	0	0	431.8	442.9	323.9	0
	Proj Obligation	0	0	0	0	0	0	0	12	73	165	8	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	8	8	8	0
1989	SW (Alt 3)	0	0	0	0	0	0	0	31	527	579	166	0
	From Storage	0	0	0	0	0	0	0	0	106	0	1	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	81.6	0
	From Friant DD	0	0	0	0	0	0	0	0	0	96	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	12.9	0
	From IO	0	0	0	0	0	0	0	0	90.1	178.3	57.2	0
	Water Generated	0	0	0	0	0	0	0	0	345.3	446.9	139.8	0
	Proj Obligation	0	0	0	0	0	0	0	31	182	132	26	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	7	8	5	0
1990	SW (Alt 3)	0	0	0	0	0	0	70	0	427	614	282	0
	From Storage	0	0	0	0	0	0	0	0	52	3	5	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	0	112	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0	90.1	178.3	78.1	0
	Water Generated	0	0	0	0	0	0	0	0	291.3	465.9	198.4	0
	Proj Obligation	0	0	0	0	0	0	70	0	136	148	84	0
	Cutoff Group	0	0	0	0	0	0	(0)	0	7	8	7	0
1991	SW (Alt 3)	0	0	0	0	75	0	0	0	192	307	121	0
	From Storage	0	0	0	0	5	0	0	0	166	0	0	0
	From DD	0	0	0	0	0.6	0	0	0	20.2	166.2	31.5	0
	From Friant DD	0	0	0	0	12	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0.5	0	0	0	3.7	39.1	7.6	0
	From IO	0	0	0	0	3.7	0	0	0	0.8	88.1	56.2	0
	Water Generated	0	0	0	0	21.3	0	0	0	186.98	254.3	87.7	0
	Proj Obligation	0	0	0	0	54	0	0	0	5	53	33	0
	Cutoff Group	0	0	0	0	9	0	0	0	1	7	4	0
1992	SW (Alt 3)	0	0	0	0	0	0	0	143	500	418	269	0
	From Storage	0	0	0	0	0	0	0	103	13	4	0	0
	From DD	0	0	0	0	0	0	0	25.9	154.9	172.6	115.3	0
	From Friant DD	0	0	0	0	0	0	0	0	24	45	0	0
	From SJ DD	0	0	0	0	0	0	0	10.5	37.5	39.1	28.2	0
	From IO	0	0	0	0	0	0	0	0.5	174.4	168.7	75.2	0
	Water Generated	0	0	0	0	0	0	0	129.4	366.3	390.3	190.5	0
	Proj Obligation	0	0	0	0	0	0	0	14	134	28	79	0
	Cutoff Group	0	0	0	0	0	0	0	3	8	8	7	0
1993	SW (Alt 3)	0	0	0	0	0	0	0	0	0	367	7	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	0	0
	From Friant DD	0	0	0	0	0	0	0	0	0	0	0	0
	From SJ DD	0	0	0	0	0	0	0	0	0	39.1	0	0
	From IO	0	0	0	0	0	0	0	0	0	122.7	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	288.9	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	78	7	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	(0)	0

C—032617

C-032617

Alternative 3
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1994	SW (Alt 3)	0	0	0	0	0	0	0	0	685	455	177	0
	From Storage	0	0	0	0	0	0	0	0	13	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	81.6	0
	From Friant DD	0	0	0	0	0	0	0	0	104	96	0	0
	From SJ DD	0	0	0	0	0	0	0	0	37.5	39.1	12.9	0
	From IO	0	0	0	0	0	0	0	0	174.4	168.7	57.8	0
	Water Generated	0	0	0	0	0	0	0	0	446.3	437.3	139.4	0
	Proj Obligation	0	0	0	0	0	0	0	0	239	18	38	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	5	0

C-032618

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1922	SW (Vernalis)	0	x	x	x	0	0	7	0	0	x	x	x
	Right #	0	x	x	x	0	0	11	0	0	x	x	x
	From DD	0	x	x	x	0	0	0.3	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	13	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	6.7	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	6.3	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	6.3	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	7	0	0	x	x	x
1923	SW (Vernalis)	0	x	x	x	0	52	0	39	0	x	x	x
	Right #	0	x	x	x	0	12	0	8	0	x	x	x
	From DD	0	x	x	x	0	0.2	0	0.5	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	42	0	98	0	x	x	x
	Melones for Vern	0	x	x	x	0	42	0	38.5	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	59.5	0	x	x	x
	From Hensley	0	x	x	x	0	5	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	5	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	5	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	4.8	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0.2	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0.2	0	59.5	0	x	x	x
	Water Generated	0	x	x	x	0	52	0	39	0	x	x	x
1924	SW (Vernalis)	0	x	x	x	0	0	7	27	0	x	x	x
	Right #	0	x	x	x	0	0	16	59	0	x	x	x
	From DD	0	x	x	x	0	0	1.1	16.8	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	4	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	4	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	9	11	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	1.9	11	0	x	x	x
	McClure for DO	0	x	x	x	0	0	7.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	7.1	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	7	28	0	x	x	x

C-032619

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1925	SW (Vernalis)	27	x	x	x	0	0	0	7	0	x	x	x
	Right #	72+	x	x	x	0	0	0	8	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0.5	0	x	x	x
	From IO(8)	4	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	25	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	23.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	147	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	6.5	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	140.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	140.5	0	x	x	x
	Water Generated	27	x	x	x	0	0	0	7	0	x	x	x
1926	SW (Vernalis)	10	x	x	x	0	32	0	18	8	x	x	x
	Right #	72	x	x	x	0	8	0	21	24	x	x	x
	From DD	3.6	x	x	x	0	0.2	0	3.2	9.2	x	x	x
	From IO(8)	6	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	6.7	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	47	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	31.8	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	15.2	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	5	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	5	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	128	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	9.8	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	118.2	0	x	x	x
	Storage avail for DO	0	x	x	x	0	15.2	0	118.2	0	x	x	x
	Water Generated	10	x	x	x	0	32	0	18	9	x	x	x
1927	SW (Vernalis)	0	x	x	x	0	0	0	0	3	x	x	x
	Right #	0	x	x	x	0	0	0	0	8	x	x	x
	From DD	0	x	x	x	0	0	0	0	0.5	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	21	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	2.5	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	18.5	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	18.5	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	3	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1928	SW (Vernalis)	0	x	x	x	0	0	5	74	2	x	x	x
	Right #	0	x	x	x	0	0	8	16	18	x	x	x
	From DD	0	x	x	x	0	0	0.3	1.4	2.5	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	17	70	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	4.7	70	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	12.3	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	78	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	2.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	75.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	12.3	75.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	5	74	3	x	x	x
1929	SW (Vernalis)	8	x	x	x	0	0	0	20	0	x	x	x
	Right #	71	x	x	x	0	0	0	16	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	1.4	0	x	x	x
	From IO(8)	4	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	2.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	2	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	2	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	6	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	6	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	21	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	12.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	8.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	8.4	0	x	x	x
	Water Generated	8	x	x	x	0	0	0	20	0	x	x	x
1930	SW (Vernalis)	24	x	x	x	0	0	0	0	0	x	x	x
	Right #	72+	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	3	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	26	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	17.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	3	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	3	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	24	x	x	x	0	0	0	0	0	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1931	SW (Vernalis)	0	x	x	x	0	0	17	25	0	x	x	x
	Right #	0	x	x	x	0	0	24	53	0	x	x	x
	From DD	0	x	x	x	0	0	7.5	12.4	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	13	13	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	13	13	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	21	25	0	x	x	x
1932	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1933	SW (Vernalis)	0	x	x	x	0	0	0	0	23	x	x	x
	Right #	0	x	x	x	0	0	0	0	16	x	x	x
	From DD	0	x	x	x	0	0	0	0	1.4	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	4	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	4	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	87	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	17.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	69.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	69.4	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	23	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1934	SW (Vernalis)	16	x	x	x	0	0	0	0	0	x	x	x
	Right #	72+	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	5	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	25	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	11.9	x	x	x	0	0	0	0	0	x	x	x
	From Melones	4	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	4	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	4	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	16	x	x	x	0	0	0	0	0	x	x	x
1935	SW (Vernalis)	17	x	x	x	0	0	0	0	0	x	x	x
	Right #	72+	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	5	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	28	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	13.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	17	x	x	x	0	0	0	0	0	x	x	x
1936	SW (Vernalis)	0	x	x	x	0	0	0	0	10	x	x	x
	Right #	0	x	x	x	0	0	0	0	8	x	x	x
	From DD	0	x	x	x	0	0	0	0	0.5	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	56	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	9.5	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	46.5	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	46.5	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	10	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1937	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1938	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1939	SW (Vernalis)	0	x	x	x	0	0	0	0	12	x	x	x
	Right #	0	x	x	x	0	0	0	0	53	x	x	x
	From DD	0	x	x	x	0	0	0	0	13.8	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	14	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1940	SW (Vernalis)	21	x	x	x	0	0	0	0	91	x	x	x
	Right #	72+	x	x	x	0	0	0	0	21	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	3.7	x	x	x
	From IO(8)	8	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	33	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	9.0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	8	x	x	x	0	0	0	0	18	x	x	x
	McClure for Vern	8	x	x	x	0	0	0	0	18	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	142	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	69.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	72.7	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	72.7	x	x	x
	Water Generated	21	x	x	x	0	0	0	0	91	x	x	x
1941	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1942	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1943	SW (Vernalis)	0	x	x	x	0	0	0	0	31	x	x	x
	Right #	0	x	x	x	0	0	0	0	17	x	x	x
	From DD	0	x	x	x	0	0	0	0	1.4	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	30	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	30	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	31	x	x	x
1944	SW (Vernalis)	0	x	x	x	0	0	0	21	0	x	x	x
	Right #	0	x	x	x	0	0	0	16	0	x	x	x
	From DD	0	x	x	x	0	0	0	1.4	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	130	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	19.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	110.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	110.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	21	0	x	x	x
1945	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1946	SW (Vernalis)	0	x	x	x	0	0	0	0	18	x	x	x
	Right #	0	x	x	x	0	0	0	0	21	x	x	x
	From DD	0	x	x	x	0	0	0	0	3.7	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	59	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	13.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	45.7	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	45.7	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	18	x	x	x
1947	SW (Vernalis)	0	x	x	x	0	23	25	7	19	x	x	x
	Right #	0	x	x	x	0	8	16	16	59	x	x	x
	From DD	0	x	x	x	0	0.2	1.1	1.4	19.8	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	53	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	22.8	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	30.2	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	39	81	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	23.9	5.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	15.1	75.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	30.2	15.1	75.4	0	x	x	x
	Water Generated	0	x	x	x	0	23	25	7	20	x	x	x
1948	SW (Vernalis)	12	x	x	x	1	0	0	59	27	x	x	x
	Right #	66	x	x	x	8	0	0	16	8	x	x	x
	From DD	3.6	x	x	x	0	0	0	1.4	0.5	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	8	x	x	x	20	0	0	45	53	x	x	x
	Melones for Vern	8	x	x	x	1	0	0	45	26.5	x	x	x
	NM avail for FOv	0	x	x	x	19	0	0	0	26.5	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	119	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	12.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	106.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	19	0	0	106.4	26.5	x	x	x
	Water Generated	12	x	x	x	1	0	0	59	27	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1949	SW (Vernalis)	12	x	x	x	0	0	22	0	4	x	x	x
	Right #	72+	x	x	x	0	0	16	0	20	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	0	3.7	x	x	x
	From IO(8)	5	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	34	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	6.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	2	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	2	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	55	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	20.9	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	34.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	34.1	0	0	x	x	x
	Water Generated	12	x	x	x	0	0	22	0	4	x	x	x
1950	SW (Vernalis)	13	x	x	x	0	0	17	31	5	x	x	x
	Right #	72+	x	x	x	0	0	8	8	16	x	x	x
	From DD	3.6	x	x	x	0	0	0.3	0.5	1.4	x	x	x
	From IO(8)	8	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	33	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	9.2	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	28	119	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	16.7	30.5	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	11.3	88.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	6	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	3.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	2.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	11.3	88.5	2.4	x	x	x
	Water Generated	13	x	x	x	0	0	17	31	5	x	x	x
1951	SW (Vernalis)	0	x	x	x	0	0	78	143	33	x	x	x
	Right #	0	x	x	x	0	0	24	72+	21	x	x	x
	From DD	0	x	x	x	0	0	7.5	29.7	3.7	x	x	x
	From IO(8)	0	x	x	x	0	0	0	39	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	104	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	56.3	0	x	x	x
	From Melones	0	x	x	x	0	0	27	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	27	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	47	57	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	47	57	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	41	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	29.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	11.7	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	11.7	x	x	x
	Water Generated	0	x	x	x	0	0	82	143	33	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1952	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1953	SW (Vernalis)	0	x	x	x	0	0	33	95	49	x	x	x
	Right #	0	x	x	x	0	0	16	72+	21	x	x	x
	From DD	0	x	x	x	0	0	1.1	29.7	3.7	x	x	x
	From IO(8)	0	x	x	x	0	0	0	28	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	96	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	44.3	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	33	2	39	x	x	x
	McClure for Vern	0	x	x	x	0	0	31.9	2	39	x	x	x
	McClure for DO	0	x	x	x	0	0	1.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	19	102	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	19	6.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	95.7	x	x	x
	Storage avail for DO	0	x	x	x	0	0	1.1	0	95.7	x	x	x
	Water Generated	0	x	x	x	0	0	33	95	49	x	x	x
1954	SW (Vernalis)	1	x	x	x	0	0	0	0	0	x	x	x
	Right #	53	x	x	x	0	0	0	0	0	x	x	x
	From DD	1.2	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	1	x	x	x	0	0	0	0	0	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1955	SW (Vernalis)	11	x	x	x	7	33	0	0	9	x	x	x
	Right #	72+	x	x	x	8	21	0	0	16	x	x	x
	From DD	3.6	x	x	x	0	0.8	0	0	1.4	x	x	x
	From IO(8)	5	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	33	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	7.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	37	2	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	7	2	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	30	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	4	0	0	3	x	x	x
	Hensley for Vern	0	x	x	x	0	4	0	0	3	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	3	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	3	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	8	0	0	46	x	x	x
	McClure for Vern	0	x	x	x	0	8	0	0	4.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	41.4	x	x	x
	From Don Pedro	0	x	x	x	0	34	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	15.2	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	18.8	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	30	18.8	0	0	41.4	x	x	x
	Water Generated	11	x	x	x	7	33	0	0	9	x	x	x
1956	SW (Vernalis)	18	x	x	x	0	0	20	0	0	x	x	x
	Right #	72+	x	x	x	0	0	16	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	1.1	0	0	x	x	x
	From IO(8)	6	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	30	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	9.0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	5	x	x	x	0	0	1	0	0	x	x	x
	Melones for Vern	5	x	x	x	0	0	1	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	3	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	3	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	8	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	8	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	73	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	6.9	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	18	x	x	x	0	0	20	0	0	x	x	x
1957	SW (Vernalis)	0	x	x	x	0	0	8	17	14	x	x	x
	Right #	0	x	x	x	0	0	24	16	16	x	x	x
	From DD	0	x	x	x	0	0	7.5	1.4	1.4	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	82	57	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	15.6	12.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	66.4	44.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	1	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	1	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	1	66.4	44.4	x	x	x
	Water Generated	0	x	x	x	0	0	8	17	14	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1958	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1959	SW (Vernalis)	0	x	x	x	0	0	0	0	23	x	x	x
	Right #	0	x	x	x	0	0	0	0	63	x	x	x
	From DD	0	x	x	x	0	0	0	0	33.3	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	33	x	x	x
1960	SW (Vernalis)	28	x	x	x	0	0	0	0	0	x	x	x
	Right #	72+	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	4	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	26	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	24.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	28	x	x	x	0	0	0	0	0	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1961	SW (Vernalis)	26	x	x	x	0	0	0	0	0	x	x	x
	Right #	72+	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	3	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	24	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	22.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	26	x	x	x	0	0	0	0	0	x	x	x
1962	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1963	SW (Vernalis)	0	x	x	x	0	42	0	0	2	x	x	x
	Right #	0	x	x	x	0	8	0	0	8	x	x	x
	From DD	0	x	x	x	0	0.2	0	0	0.5	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	57	0	0	74	x	x	x
	Melones for Vern	0	x	x	x	0	41.8	0	0	1.5	x	x	x
	NM avail for FOv	0	x	x	x	0	15.2	0	0	72.5	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	15.2	0	0	72.5	x	x	x
	Water Generated	0	x	x	x	0	42	0	0	2	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1964	SW (Vernalis)	0	x	x	x	18	33	0	19	20	x	x	x
	Right #	0	x	x	x	8	48	0	16	21	x	x	x
	From DD	0	x	x	x	0	8	0	1.4	3.7	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	36	20	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	18	20	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	18	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	2	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	2	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	3	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	3	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	1	0	49	0	x	x	x
	McClure for Vern	0	x	x	x	0	1	0	17.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	31.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	1	0	0	28	x	x	x
	Don Pedro for Vern	0	x	x	x	0	1	0	0	14.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	13.7	x	x	x
	Storage avail for DO	0	x	x	x	18	0	0	31.4	13.7	x	x	x
	Water Generated	0	x	x	x	18	33	0	19	20	x	x	x
1965	SW (Vernalis)	27	x	x	x	0	0	0	99	0	x	x	x
	Right #	72++	x	x	x	0	0	0	8	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0.5	0	x	x	x
	From IO(8)	3	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	17	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	20.0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	132	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	98.5	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	33.5	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	33.5	0	x	x	x
	Water Generated	24	x	x	x	0	0	0	99	0	x	x	x
1966	SW (Vernalis)	0	x	x	x	0	0	20	0	11	x	x	x
	Right #	0	x	x	x	0	0	16	0	47	x	x	x
	From DD	0	x	x	x	0	0	1.1	0	11.2	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	74	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	18.9	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	55.1	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	55.1	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	20	0	11	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1967	SW (Vernalis)	9	x	x	x	0	0	0	0	0	x	x	x
	Right #	71	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.5	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	4	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	3.5	x	x	x	0	0	0	0	0	x	x	x
	From Melones	2	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	2	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	9	x	x	x	0	0	0	0	0	x	x	x
1968	SW (Vernalis)	0	x	x	x	0	0	31	35	17	x	x	x
	Right #	0	x	x	x	0	0	21	21	58	x	x	x
	From DD	0	x	x	x	0	0	2.1	3.2	18.7	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	23	24	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	23	24	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	23	34	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	5.9	7.8	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	17.1	26.2	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	17.1	26.2	0	x	x	x
	Water Generated	0	x	x	x	0	0	31	35	19	x	x	x
1969	SW (Vernalis)	21	x	x	x	0	0	0	0	0	x	x	x
	Right #	72+	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	3	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	17	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	17.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	21	x	x	x	0	0	0	0	0	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1970	SW (Vernalis)	0	x	x	x	0	0	78	120	32	x	x	x
	Right #	0	x	x	x	0	0	72+	63	21	x	x	x
	From DD	0	x	x	x	0	0	19.5	26.5	3.7	x	x	x
	From IO(8)	0	x	x	x	0	0	27	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	91	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	56.5	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	2	94	2	x	x	x
	McClure for Vern	0	x	x	x	0	0	2	94	2	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	89	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	26.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	62.7	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	62.7	x	x	x
	Water Generated	0	x	x	x	0	0	78	121	32	x	x	x
1971	SW (Vernalis)	0	x	x	x	0	0	51	88	51	x	x	x
	Right #	0	x	x	x	0	0	71	63	16	x	x	x
	From DD	0	x	x	x	0	0	19.5	26.5	1.4	x	x	x
	From IO(8)	0	x	x	x	0	0	22	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	7.5	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	1	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	1	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	1	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	7	63	60	x	x	x
	McClure for Vern	0	x	x	x	0	0	7	63	47.6	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	12.4	x	x	x
	From Don Pedro	0	x	x	x	0	0	17	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	17	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	12.4	x	x	x
	Water Generated	0	x	x	x	0	0	51	90	51	x	x	x
1972	SW (Vernalis)	15	x	x	x	9	29	54	47	27	x	x	x
	Right #	72+	x	x	x	8	8	72+	16	63	x	x	x
	From DD	3.6	x	x	x	0	0.2	19.5	1.4	33.3	x	x	x
	From IO(8)	6	x	x	x	0	0	7	0	0	x	x	x
	From IO(9)	33	x	x	x	0	0	83	0	0	x	x	x
	Friant Oblig at NM	11.6	x	x	x	0	0	14.5	0	0	x	x	x
	From Melones	0	x	x	x	43	31	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	9	28.8	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	34	2.2	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	15	75	4	x	x	x
	McClure for Vern	0	x	x	x	0	0	15	45.6	4	x	x	x
	McClure for DO	0	x	x	x	0	0	0	29.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	5	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	5	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	34	2.2	0	29.4	0	x	x	x
	Water Generated	15	x	x	x	9	29	54	47	37	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1973	SW (Vernalis)	2	x	x	x	0	0	0	0	0	x	x	x
	Right #	8	x	x	x	0	0	0	0	0	x	x	x
	From DD	0.1	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	8	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	1.9	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	6.1	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	6.1	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	2	x	x	x	0	0	0	0	0	x	x	x
1974	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1975	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1976	SW (Vernalis)	0	x	x	x	0	0	0	33	0	x	x	x
	Right #	0	x	x	x	0	0	0	63	0	x	x	x
	From DD	0	x	x	x	0	0	0	26.5	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	2	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	2	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	9	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	9	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	38	0	x	x	x
1977	SW (Vernalis)	0	x	x	x	0	0	26	45	0	x	x	x
	Right #	0	x	x	x	0	0	72++	72++	0	x	x	x
	From DD	0	x	x	x	0	0	19.5	29.7	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	4	0	x	x	x
	From IO(9)	0	x	x	x	0	0	4	2	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	4.0	6.0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	1	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	1	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	24	36	0	x	x	x
1978	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1979	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1980	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1981	SW (Vernalis)	0	x	x	x	0	0	0	19	17	x	x	x
	Right #	0	x	x	x	0	0	0	16	58	x	x	x
	From DD	0	x	x	x	0	0	0	1.4	18.7	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	70	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	16.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	53.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	53.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	19	19	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1982	SW (Vernalis)	10	x	x	x	0	0	0	0	0	x	x	x
	Right #	71	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	6	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	6.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	10	x	x	x	0	0	0	0	0	x	x	x
1983	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1984	SW (Vernalis)	0	x	x	x	0	0	57	112	29	x	x	x
	Right #	0	x	x	x	0	0	63	16	21	x	x	x
	From DD	0	x	x	x	0	0	17.7	1.4	3.7	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	40	138	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	40	110.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	27.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	117	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	25.3	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	91.7	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	27.4	91.7	x	x	x
	Water Generated	0	x	x	x	0	0	58	112	29	x	x	x

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1985	SW (Vernalis)	0	x	x	x	0	0	0	0	14	x	x	x
	Right #	0	x	x	x	0	0	0	0	56	x	x	x
	From DD	0	x	x	x	0	0	0	0	14.5	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Ver	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	15	x	x	x
1986	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1987	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x

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Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1988	SW (Vernalis)	23	x	x	x	0	0	0	0	0	x	x	x
	Right #	72+	x	x	x	0	0	0	0	0	x	x	x
	From DD	3.6	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	3	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	28	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	19.4	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	23	x	x	x	0	0	0	0	0	x	x	x
1989	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1990	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x

C—032641

C-032641

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1991	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x
1992	SW (Vernalis)	0	x	x	x	0	0	0	22	0	x	x	x
	Right #	0	x	x	x	0	0	0	16	0	x	x	x
	From DD	0	x	x	x	0	0	0	1.4	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	1	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	24	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	19.6	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	4.4	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	4.4	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	22	0	x	x	x
1993	SW (Vernalis)	0	x	x	x	0	0	85	0	0	x	x	x
	Right #	0	x	x	x	0	0	16	0	0	x	x	x
	From DD	0	x	x	x	0	0	1.1	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	42	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	42	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	9	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	9	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	9	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	9	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	96	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	23.9	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	85	0	0	x	x	x

C-032642

C-032642

Alternative 4

Allocation of Supplemental Water for Vernalis Objective

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1994	SW (Vernalis)	0	x	x	x	0	0	0	0	0	x	x	x
	Right #	0	x	x	x	0	0	0	0	0	x	x	x
	From DD	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(8)	0	x	x	x	0	0	0	0	0	x	x	x
	From IO(9)	0	x	x	x	0	0	0	0	0	x	x	x
	Friant Oblig at NM	0	x	x	x	0	0	0	0	0	x	x	x
	From Melones	0	x	x	x	0	0	0	0	0	x	x	x
	Melones for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	NM avail for FOv	0	x	x	x	0	0	0	0	0	x	x	x
	From Hensley	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Hensley for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Eastman	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Eastman for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From McClure	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	McClure for DO	0	x	x	x	0	0	0	0	0	x	x	x
	From Don Pedro	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for Vern	0	x	x	x	0	0	0	0	0	x	x	x
	Don Pedro for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Storage avail for DO	0	x	x	x	0	0	0	0	0	x	x	x
	Water Generated	0	x	x	x	0	0	0	0	0	x	x	x

C-032643

C-032643

Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1922	SW (Alt4)	0	0	0	0	0	0	0	0	0	350	256	6
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	122.7	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	289	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	61	27	6
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	7	(0)
1923	SW (Alt4)	0	0	0	0	0	0	0	0	325	585	375	0
	From Storage	0	0	0	0	0	0	0	0	192	0	0	0
	From DD	0	0	0	0	0	0	0	0	43.5	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	13.8	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	78.8	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	76	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	314	459	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	11	126	146	0
	Cutoff Group	0	0	0	0	0	0	0	0	4	8	7	0
1924	SW (Alt4)	0	0	0	0	0	14	159	319	571	521	240	0
	From Storage	0	0	0	0	0	0	94	47	8	0	0	0
	From DD	0	0	0	0	0	0	19.9	98.6	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	10.3	29.7	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	25.9	161.6	174.4	168.7	75.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	3	27	44	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	140	310	364	385	190	0
	Proj Obligation	0	0	0	0	0	14	19	9	207	136	49	0
	Cutoff Group	0	0	0	0	0	(0)	4	8	8	8	7	0
1925	SW (Alt4)	6	0	0	0	0	0	0	0	372	577	273	6
	From Storage	0	0	0	0	0	0	0	0	261	0	0	0
	From DD	0	0	0	0	0	0	0	0	37.4	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	11.2	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	9.8	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	61	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	308	444	229	0
	Proj Obligation	6	0	0	0	0	0	0	0	64	133	44	6
	Cutoff Group	(0)	0	0	0	0	0	0	0	3	8	7	(0)
1926	SW (Alt4)	0	0	0	0	0	0	0	95	754	812	418	0
	From Storage	0	0	0	0	0	0	0	0	6	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	210.5	210.5	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	63	72	29	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	434	455	332	0
	Proj Obligation	0	0	0	0	0	0	0	95	319	356	86	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	8	8	8	0
1927	SW (Alt4)	0	0	0	0	0	0	0	0	0	566	354	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	99	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	482	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	84	125	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	8	7	0

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Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1928	SW (Alt4)	0	0	0	0	0	0	0	0	591	896	433	0
	From Storage	0	0	0	0	0	0	0	0	22	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	198	490.3	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	65	63	19	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	61	0	0
	Water Generated	0	0	0	0	0	0	0	0	440	787	322	0
	Proj Obligation	0	0	0	0	0	0	0	0	151	109	111	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	8	0
1929	SW (Alt4)	0	0	0	0	0	0	0	0	208	552	301	0
	From Storage	0	0	0	0	0	0	0	0	96	15	15	0
	From DD	0	0	0	0	0	0	0	0	43.5	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	13.8	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	58.9	168.7	75.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	44	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	198	395	205	0
	Proj Obligation	0	0	0	0	0	0	0	0	10	156	96	0
	Cutoff Group	0	0	0	0	0	0	0	0	4	5	7	0
1930	SW (Alt4)	0	0	0	0	0	0	0	0	587	613	267	0
	From Storage	0	0	0	0	0	0	0	0	192	14	17	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	175.1	178.3	78.1	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	47	46	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	569	411	210	0
	Proj Obligation	0	0	0	0	0	0	0	0	18	202	57	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	5	7	0
1931	SW (Alt4)	0	0	0	0	0	22	156	157	445	475	311	0
	From Storage	0	0	0	0	0	0	112	49	7	1	0	0
	From DD	0	0	0	0	0	0	17.6	29.9	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	9.3	12.3	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0.2	48.3	174.4	168.7	137.4	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	31	47	19	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	1	0	0
	Water Generated	0	0	0	0	0	0	130	127	367	388	276	0
	Proj Obligation	0	0	0	0	0	22	26	30	78	87	34	0
	Cutoff Group	0	0	0	0	0	(0)	3	4	8	5	8	0
1932	SW (Alt4)	0	0	0	0	0	0	0	0	43	500	246	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	178.3	78.1	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	96	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	447	193	0
	Proj Obligation	0	0	0	0	0	0	0	0	43	53	53	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	5	7	0
1933	SW (Alt4)	0	0	0	0	0	0	0	0	150	435	337	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	168.7	137.4	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	43	52	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	354	309	0
	Proj Obligation	0	0	0	0	0	0	0	0	150	111	28	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	8	0

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Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1934	SW (Alt4)	0	0	0	0	0	22	0	85	492	512	262	0
	From Storage	0	0	0	0	0	0	0	40	12	0	0	0
	From DD	0	0	0	0	0	0	0	25.9	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	10.4	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0.5	173.8	168.3	74.5	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	33	57	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	66	374	398	190	0
	Proj Obligation	0	0	0	0	0	22	0	19	118	114	72	0
	Cutoff Group	0	0	0	0	0	(0)	0	3	8	8	7	0
1935	SW (Alt4)	0	0	0	0	0	0	0	0	0	525	317	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	101	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	484	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	141	89	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	8	7	0
1936	SW (Alt4)	0	0	0	0	0	0	0	0	9	720	413	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	100	69	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	483	372	0
	Proj Obligation	0	0	0	0	0	0	0	0	9	237	40	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	8	0
1937	SW (Alt4)	0	0	0	0	0	0	0	0	81	751	422	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	102	79	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	485	382	0
	Proj Obligation	0	0	0	0	0	0	0	0	81	266	40	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	8	0
1938	SW (Alt4)	0	0	0	0	0	0	0	0	0	0	141	0
	From Storage	0	0	0	0	0	0	0	0	0	0	2	0
	From DD	0	0	0	0	0	0	0	0	0	0	31.4	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	0	7.6	0
	From IO Sac	0	0	0	0	0	0	0	0	0	0	84.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	118	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	24	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	4	0
1939	SW (Alt4)	0	0	0	0	0	0	54	47	789	678	369	0
	From Storage	0	0	0	0	0	0	0	0	8	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	442.4	195.5	168.7	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	54	69	45	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	91	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	750	437	334	0
	Proj Obligation	0	0	0	0	0	0	54	47	38	241	35	0
	Cutoff Group	0	0	0	0	0	0	(0)	(0)	9	8	8	0

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Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1940	SW (Alt4)	0	0	0	0	0	0	0	0	270	781	406	0
	From Storage	0	0	0	0	0	0	0	0	129	0	0	0
	From DD	0	0	0	0	0	0	0	0	43.5	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	13.8	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	78.8	210.5	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	88	55	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	251	471	358	0
	Proj Obligation	0	0	0	0	0	0	0	0	19	310	48	0
	Cutoff Group	0	0	0	0	0	0	0	0	4	8	8	0
1941	SW (Alt4)	0	0	0	0	0	0	0	0	0	196	189	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	43.4	81.6	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	14.0	12.9	0
	From IO Sac	0	0	0	0	0	0	0	0	0	87.1	85.8	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	130	167	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	65	22	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	4	5	0
1942	SW (Alt4)	0	0	0	0	0	0	0	0	0	210	188	0
	From Storage	0	0	0	0	0	0	0	0	0	3	0	0
	From DD	0	0	0	0	0	0	0	0	0	43.4	81.6	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	14.0	12.9	0
	From IO Sac	0	0	0	0	0	0	0	0	0	87.1	85.8	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	134	167	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	77	20	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	4	5	0
1943	SW (Alt4)	0	0	0	0	0	0	0	0	0	596	302	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	92	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	475	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	121	73	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	8	7	0
1944	SW (Alt4)	0	0	0	0	0	0	0	0	528	646	336	0
	From Storage	0	0	0	0	0	0	0	0	155	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	112.9	210.5	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	50	31	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	417	433	334	0
	Proj Obligation	0	0	0	0	0	0	0	0	111	213	2	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	8	0
1945	SW (Alt4)	0	0	0	0	0	0	0	0	75	697	357	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	89	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	472	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	75	225	129	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	7	0

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C-032647

Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1946	SW (Alt4)	0	0	0	0	0	0	0	0	422	637	298	0
	From Storage	0	0	0	0	0	0	0	0	81	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	112.9	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	80	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	343	463	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	79	174	69	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	7	0
1947	SW (Alt4)	0	0	0	0	0	0	0	134	516	780	366	0
	From Storage	0	0	0	0	0	0	0	0	25	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	198	210.5	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	53	66	33	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	431	449	336	0
	Proj Obligation	0	0	0	0	0	0	0	134	85	331	29	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	8	8	8	0
1948	SW (Alt4)	0	0	0	0	0	0	0	0	0	504	304	0
	From Storage	0	0	0	0	0	0	0	0	0	1	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	87	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	471	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	33	75	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	8	7	0
1949	SW (Alt4)	0	0	0	0	0	0	0	0	606	712	298	0
	From Storage	0	0	0	0	0	0	0	0	109	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	198	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	61	63	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	523	446	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	83	266	69	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	7	0
1950	SW (Alt4)	0	0	0	0	0	0	0	0	235	580	223	0
	From Storage	0	0	0	0	0	0	0	0	193	3	0	0
	From DD	0	0	0	0	0	0	0	0	20.1	172.6	112.6	0
	From DD - SJ	0	0	0	0	0	0	0	0	3.7	39.1	27.1	0
	From IO Sac	0	0	0	0	0	0	0	0	3.3	210.5	96.5	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	66	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	216	452	209	0
	Proj Obligation	0	0	0	0	0	0	0	0	19	128	14	0
	Cutoff Group	0	0	0	0	0	0	0	0	1	8	6	0
1951	SW (Alt4)	0	0	0	0	0	0	0	0	470	785	208	0
	From Storage	0	0	0	0	0	0	0	0	31	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	81.6	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	12.9	0
	From IO Sac	0	0	0	0	0	0	0	0	198	210.5	85.8	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	81	75	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	465	458	167	0
	Proj Obligation	0	0	0	0	0	0	0	0	5	327	41	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	5	0

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C-032648

Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1952	SW (Alt4)	0	0	0	0	0	0	0	0	0	0	83	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	0	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	0	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	52	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	2	0
1953	SW (Alt4)	0	0	0	0	0	0	0	0	0	233	102	0
	From Storage	0	0	0	0	0	0	0	0	0	1	0	0
	From DD	0	0	0	0	0	0	0	0	0	119.6	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	20.4	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	89.2	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	210	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	23	71	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	5	2	0
1954	SW (Alt4)	0	0	0	0	0	0	0	33	304	786	207	0
	From Storage	0	0	0	0	0	0	0	0	36	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	81.6	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	12.9	0
	From IO Sac	0	0	0	0	0	0	0	0	112.9	210.5	85.8	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	72	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	298	455	167	0
	Proj Obligation	0	0	0	0	0	0	0	33	6	331	39	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	7	8	5	0
1955	SW (Alt4)	0	0	0	0	0	0	0	0	553	726	359	0
	From Storage	0	0	0	0	0	0	0	0	218	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	112.9	210.5	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	62	36	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	480	445	339	0
	Proj Obligation	0	0	0	0	0	0	0	0	73	281	20	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	8	0
1956	SW (Alt4)	0	0	0	0	0	0	0	0	0	108	66	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	26.9	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	10.5	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	11.5	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	38	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	69	35	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	2	2	0
1957	SW (Alt4)	0	0	0	0	0	0	0	0	112	629	241	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	79	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	462	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	112	166	13	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	7	0

Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1958	SW (Alt4)	0	0	0	0	0	0	0	0	0	8	68	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	0	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	0	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	8	37	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	(0)	2	0
1959	SW (Alt4)	0	0	0	0	0	14	0	0	713	790	316	0
	From Storage	0	0	0	0	0	0	0	0	19	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	198	490.3	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	55	75	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	50	0	0
	Water Generated	0	0	0	0	0	0	0	0	427	788	229	0
	Proj Obligation	0	0	0	0	0	14	0	0	286	3	87	0
	Cutoff Group	0	0	0	0	0	(0)	0	0	8	9	7	0
1960	SW (Alt4)	4	0	0	0	0	0	0	0	657	695	370	2
	From Storage	0	0	0	0	0	0	0	0	77	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	198	210.5	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	45	44	34	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	475	427	337	0
	Proj Obligation	4	0	0	0	0	0	0	0	182	268	33	2
	Cutoff Group	(0)	0	0	0	0	0	0	0	8	8	8	(0)
1961	SW (Alt4)	0	0	0	0	0	0	0	0	596	780	386	0
	From Storage	0	0	0	0	0	0	0	0	40	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	198	490.3	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	42	56	13	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	28	0	0
	Water Generated	0	0	0	0	0	0	0	0	435	747	316	0
	Proj Obligation	0	0	0	0	0	0	0	0	161	33	70	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	9	8	0
1962	SW (Alt4)	0	0	0	0	0	0	0	0	142	726	364	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	90	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	473	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	142	252	135	0
	Cutoff Group	0	0	0	0	0	0	0	0	(0)	8	7	0
1963	SW (Alt4)	0	0	0	0	0	0	0	0	0	376	166	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	31.4	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	7.6	0
	From IO Sac	0	0	0	0	0	0	0	0	0	122.7	84.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	289	116	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	87	50	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	7	4	0

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Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1964	SW (Alt4)	0	0	0	0	0	0	0	0	444	764	379	0
	From Storage	0	0	0	0	0	0	0	0	84	0	0	0
	From DD	0	0	0	0	0	0	0	0	149.2	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	112.9	210.5	183.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	79	51	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	346	462	354	0
	Proj Obligation	0	0	0	0	0	0	0	0	98	301	25	0
	Cutoff Group	0	0	0	0	0	0	0	0	7	8	8	0
1965	SW (Alt4)	2	0	0	0	0	0	0	0	0	404	52	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	122.7	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	289	31	0
	Proj Obligation	2	0	0	0	0	0	0	0	0	115	21	0
	Cutoff Group	(0)	0	0	0	0	0	0	0	0	7	2	0
1966	SW (Alt4)	0	0	0	0	0	0	0	15	666	755	308	0
	From Storage	0	0	0	0	0	0	0	0	13	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	198	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	54	81	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	420	464	229	0
	Proj Obligation	0	0	0	0	0	0	0	15	246	291	79	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	8	8	7	0
1967	SW (Alt4)	0	0	0	0	0	0	0	0	0	0	55	0
	From Storage	0	0	0	0	0	0	0	0	0	0	1	0
	From DD	0	0	0	0	0	0	0	0	0	0	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	0	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	0	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	32	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	24	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	2	0
1968	SW (Alt4)	0	0	0	0	0	0	0	0	632	719	48	0
	From Storage	0	0	0	0	0	0	0	0	23	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	198	210.5	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	48	71	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	424	454	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	208	265	18	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	2	0
1969	SW (Alt4)	2	0	0	0	0	0	0	0	0	0	63	0
	From Storage	0	0	0	0	0	0	0	0	0	0	1	0
	From DD	0	0	0	0	0	0	0	0	0	0	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	0	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	0	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	32	0
	Proj Obligation	2	0	0	0	0	0	0	0	0	0	31	0
	Cutoff Group	(0)	0	0	0	0	0	0	0	0	0	2	0

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Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1970	SW (Alt4)	0	0	0	0	0	0	0	0	345	608	173	0
	From Storage	0	0	0	0	0	0	0	0	101	0	0	0
	From DD	0	0	0	0	0	0	0	0	146.3	172.6	81.6	0
	From DD - SJ	0	0	0	0	0	0	0	0	36.3	39.1	12.9	0
	From IO Sac	0	0	0	0	0	0	0	0	92.1	210.5	85.8	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	70	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	339	453	167	0
	Proj Obligation	0	0	0	0	0	0	0	0	6	155	6	0
	Cutoff Group	0	0	0	0	0	0	0	0	6	8	5	0
1971	SW (Alt4)	0	0	0	0	0	0	0	0	0	185	42	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	43.4	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	14.1	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	87.1	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	130	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	55	11	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	4	2	0
1972	SW (Alt4)	0	0	0	0	0	0	0	0	621	755	234	0
	From Storage	0	0	0	0	0	0	0	0	47	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	198	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	42	72	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	442	455	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	179	300	5	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	7	0
1973	SW (Alt4)	0	0	0	0	0	0	0	0	367	697	199	7
	From Storage	0	0	0	0	0	0	0	0	275	0	0	0
	From DD	0	0	0	0	0	0	0	0	37.4	172.6	81.6	0
	From DD - SJ	0	0	0	0	0	0	0	0	11.2	39.1	12.9	0
	From IO Sac	0	0	0	0	0	0	0	0	9.8	210.5	85.8	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	98	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	322	481	167	0
	Proj Obligation	0	0	0	0	0	0	0	0	45	215	32	7
	Cutoff Group	0	0	0	0	0	0	0	0	3	8	5	0
1974	SW (Alt4)	0	0	0	0	0	0	0	0	0	83	68	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	26.9	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	10.5	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	11.5	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	38	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	44	38	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	2	2	0
1975	SW (Alt4)	0	0	0	0	0	0	0	0	0	174	69	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	43.4	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	14.1	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	87.1	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	130	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	43	39	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	4	2	0

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Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1976	SW (Alt4)	0	0	0	0	0	0	0	88	737	547	57	0
	From Storage	0	0	0	0	0	0	0	58	7	0	0	0
	From DD	0	0	0	0	0	0	0	25.9	154.9	172.6	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	10.4	37.5	39.1	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0.5	430.8	210.5	0.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	43	53	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	51	0	0	0
	Water Generated	0	0	0	0	0	0	0	84	687	436	20	0
	Proj Obligation	0	0	0	0	0	0	0	4	51	111	36	0
	Cutoff Group	0	0	0	0	0	0	0	3	9	8	2	0
1977	SW (Alt4)	5	0	0	0	190	34	311	118	516	410	133	0
	From Storage	0	0	0	0	9	9	34	42	22	0	0	0
	From DD	0	0	0	0	0.6	12.2	49.6	25.9	154.9	172.6	31.4	0
	From DD - SJ	0	0	0	0	0.6	13.1	19.4	10.4	37.5	39.1	7.6	0
	From IO Sac	0	0	0	0	3.7	3.1	203	0.5	173.8	168.3	57.7	0
	From IO(8) Friant	0	0	0	0	1	0	0	0	7	7	0	0
	From IO(9) Friant	0	0	0	0	10	0	4	0	0	0	0	0
	Water Generated	0	0	0	0	24	24	291	68	358	348	89	0
	Proj Obligation	5	0	0	0	166	10	20	50	158	62	44	0
	Cutoff Group	(0)	0	0	0	9	7	9	3	8	8	5	0
1978	SW (Alt4)	41	0	0	0	0	0	0	0	0	370	219	0
	From Storage	0	0	0	0	0	0	0	0	0	83	0	0
	From DD	5.4	0	0	0	0	0	0	0	0	119.6	112.6	0
	From DD - SJ	0.9	0	0	0	0	0	0	0	0	20.4	27.1	0
	From IO Sac	6.3	0	0	0	0	0	0	0	0	101.3	96.5	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	12	0	0	0	0	0	0	0	0	304	209	0
	Proj Obligation	29	0	0	0	0	0	0	0	0	66	10	0
	Cutoff Group	3	0	0	0	0	0	0	0	0	5	6	0
1979	SW (Alt4)	0	0	0	0	0	0	0	0	628	617	168	0
	From Storage	0	0	0	0	0	0	0	0	165	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	31.4	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	7.6	0
	From IO Sac	0	0	0	0	0	0	0	0	198	210.5	84.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	83	94	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	601	477	116	0
	Proj Obligation	0	0	0	0	0	0	0	0	27	140	52	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	4	0
1980	SW (Alt4)	0	0	0	0	0	0	0	0	0	145	119	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	43.4	31.4	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	14.0	7.6	0
	From IO Sac	0	0	0	0	0	0	0	0	0	87.1	84.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	130	116	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	15	3	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	4	4	0
1981	SW (Alt4)	0	0	0	0	0	0	0	0	741	709	256	0
	From Storage	0	0	0	0	0	0	0	0	10	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	198	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	45	64	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	408	447	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	333	262	27	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	7	0

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Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1982	SW (Alt4)	0	0	0	0	0	0	0	0	0	0	28	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	14.8	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	0	3.5	0
	From IO Sac	0	0	0	0	0	0	0	0	0	0	3.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	18	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	10	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	1	0
1983	SW (Alt4)	0	0	0	0	0	0	0	0	0	0	0	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	0	0	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	0	0	0
	From IO Sac	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	0	0	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	0	0	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	0	0	0
1984	SW (Alt4)	0	0	0	0	0	0	0	0	209	572	68	0
	From Storage	0	0	0	0	0	0	0	0	92	0	0	0
	From DD	0	0	0	0	0	0	0	0	37.4	172.6	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	11.2	39.1	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	9.8	210.5	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	84	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	139	467	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	70	105	37	0
	Cutoff Group	0	0	0	0	0	0	0	0	3	8	2	0
1985	SW (Alt4)	0	0	0	0	0	0	0	267	824	726	294	0
	From Storage	0	0	0	0	0	0	0	199	18	0	0	0
	From DD	0	0	0	0	0	0	0	25.9	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	10.4	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	7.5	460.3	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	56	65	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	87	0	0	0
	Water Generated	0	0	0	0	0	0	0	232	776	448	229	0
	Proj Obligation	0	0	0	0	0	0	0	35	48	278	65	0
	Cutoff Group	0	0	0	0	0	0	0	3	8	8	7	0
1986	SW (Alt4)	0	0	0	0	0	0	0	0	0	592	249	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	0	210.5	113.6	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	103	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	486	229	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	106	20	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	8	7	0
1987	SW (Alt4)	0	0	0	0	0	0	0	167	1015	744	420	0
	From Storage	0	0	0	0	0	0	0	57	5	0	0	0
	From DD	0	0	0	0	0	0	0	29.9	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	12.3	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	48.7	432.2	178.3	143	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	43	71	47	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	80	0	0	0
	Water Generated	0	0	0	0	0	0	0	136	715	422	310	0
	Proj Obligation	0	0	0	0	0	0	0	31	300	322	110	0
	Cutoff Group	0	0	0	0	0	0	0	4	9	8	8	0

Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1988	SW (Alt4)	0	0	0	0	0	0	0	11	558	676	356	0
	From Storage	0	0	0	0	0	0	0	0	13	1	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	174.9	178.3	143	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	49	62	22	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	392	414	285	0
	Proj Obligation	0	0	0	0	0	0	0	11	166	262	71	0
	Cutoff Group	0	0	0	0	0	0	0	(0)	8	8	8	0
1989	SW (Alt4)	0	0	0	0	0	0	0	0	570	655	212	0
	From Storage	0	0	0	0	0	0	0	0	106	0	1	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	175.1	178.3	78.1	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	45	70	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	481	421	194	0
	Proj Obligation	0	0	0	0	0	0	0	0	89	235	18	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	7	0
1990	SW (Alt4)	0	0	0	0	0	0	31	0	470	665	321	0
	From Storage	0	0	0	0	0	0	0	0	52	3	5	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	175.1	178.3	143	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	39	55	36	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	421	409	304	0
	Proj Obligation	0	0	0	0	0	0	31	0	49	256	17	0
	Cutoff Group	0	0	0	0	0	0	(0)	0	8	8	8	0
1991	SW (Alt4)	3	0	0	0	80	0	0	0	177	320	163	0
	From Storage	0	0	0	0	5	0	0	0	0	0	3	0
	From DD	0	0	0	0	0.6	0	0	0	0	166.2	81.6	0
	From DD - SJ	0	0	0	0	0.6	0	0	0	0	39.1	12.9	0
	From IO Sac	0	0	0	0	3.7	0	0	0	0	88.1	57.8	0
	From IO(8) Friant	0	0	0	0	2	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	13	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	24	0	0	0	0	254	142	0
	Proj Obligation	3	0	0	0	56	0	0	0	177	66	21	0
	Cutoff Group	(0)	0	0	0	9	0	0	0	(0)	7	5	0
1992	SW (Alt4)	1	0	0	0	0	0	0	143	521	438	277	0
	From Storage	0	0	0	0	0	0	0	83	13	4	0	0
	From DD	0	0	0	0	0	0	0	25.9	154.9	172.6	119.9	0
	From DD - SJ	0	0	0	0	0	0	0	10.4	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0.5	174.4	168.7	137.4	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	19	20	8	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	109	361	365	265	0
	Proj Obligation	1	0	0	0	0	0	0	34	160	73	12	0
	Cutoff Group	(0)	0	0	0	0	0	0	3	8	8	8	0
1993	SW (Alt4)	0	0	0	0	0	0	0	0	0	324	88	0
	From Storage	0	0	0	0	0	0	0	0	0	0	0	0
	From DD	0	0	0	0	0	0	0	0	0	166.2	19.7	0
	From DD - SJ	0	0	0	0	0	0	0	0	0	39.1	4.7	0
	From IO Sac	0	0	0	0	0	0	0	0	0	122.7	10.9	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	0	289	31	0
	Proj Obligation	0	0	0	0	0	0	0	0	0	35	57	0
	Cutoff Group	0	0	0	0	0	0	0	0	0	8	2	0

C-032655

C-032655

Alternative 4
Allocation of Supplemental Water for Delta Outflow

Year		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1994	SW (Alt4)	0	0	0	0	0	0	0	0	741	524	217	0
	From Storage	0	0	0	0	0	0	0	0	13	0	0	0
	From DD	0	0	0	0	0	0	0	0	154.9	172.6	115.3	0
	From DD - SJ	0	0	0	0	0	0	0	0	37.5	39.1	28.2	0
	From IO Sac	0	0	0	0	0	0	0	0	174.4	168.7	75.2	0
	From IO(8) Friant	0	0	0	0	0	0	0	0	51	63	0	0
	From IO(9) Friant	0	0	0	0	0	0	0	0	0	0	0	0
	Water Generated	0	0	0	0	0	0	0	0	393	404	190	0
	Proj Obligation	0	0	0	0	0	0	0	0	347	119	26	0
	Cutoff Group	0	0	0	0	0	0	0	0	8	8	7	0

C-032656

C-032656

Table 1

Alternative 3 - Total Water to be Released from New Melones Reservoir for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	2.4	0	0	0	0	0	0	107.5	0	0	0	0	109.9
1923	0	0	0	0	0	42	0	98	0	0	0	0	140
1924	0	0	0	0	0	0	0	2.3	0	0	0	0	2.3
1925	23.4	0	0	0	0	0	22.7	69.5	0	0	0	0	115.6
1926	23.4	0	0	0	0	31.8	4	0	0	0	0	0	59.2
1927	23.4	0	0	0	0	0	23.7	112.5	21	0	0	0	180.6
1928	0	0	0	0	0	0	17	70	0	0	0	0	87
1929	23.4	0	0	0	0	0	0	0	0	0	0	0	23.4
1930	23.4	0	0	0	0	0	0	0	0	0	0	0	23.4
1931	0	0	0	0	0	0	0.7	2.3	0	0	0	0	3
1932	0	0	0	0	0	0	0	67.5	31.5	0	0	0	99
1933	0	0	0	0	0	0	0	0.3	0	0	0	0	0.3
1934	23.4	0	0	0	0	0	0	12.3	0	0	0	0	35.6
1935	23.4	0	0	0	0	0	0	0	0	0	0	0	23.4
1936	0	0	0	0	0	0	0	48.5	12.5	0	0	0	61
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	1.1	0	0	0	1.1
1940	11.4	0	0	0	0	0	0	61.5	0	0	0	0	72.9
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	10.5	0	0	0	0	10.5
1943	0	0	0	0	0	0	0	0	30	0	0	0	30
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	10.4	0	0	0	0	0	0	10.5	0	0	0	0	20.9
1946	0	0	0	0	0	0	10	10.5	0	0	0	0	20.5
1947	0	0	0	0	0	22.8	26.5	0	0.3	0	0	0	49.6
1948	23.4	0	0	0	12	0	9	45	26.5	0	0	0	115.9
1949	23.4	0	0	0	0	0	0	17	0.3	0	0	0	40.6
1950	22.4	0	0	0	0	0	28	99.5	0	0	0	0	149.9
1951	21.4	0	0	0	0	0	40.5	56.3	0	0	0	0	118.2
1952	4.4	0	0	0	0	0	0	0	0	0	0	0	4.4
1953	0	0	0	0	0	0	0.7	44.3	0	0	0	0	45
1954	19.4	0	0	0	21	0	2.7	81.5	0	0	0	0	124.6
1955	21.4	0	0	0	36	2	9.5	0	0	0	0	0	68.9
1956	23.4	0	0	0	0	0	1	0	0	0	0	0	24.4
1957	0	0	0	0	0	0	56.5	0	0	0	0	0	56.5
1958	14.4	0	0	0	0	0	0	0	0	0	0	0	14.4
1959	0	0	0	0	0	0	0	22.3	0	0	0	0	22.3
1960	24.4	0	0	0	0	0	0	0	0	0	0	0	24.4
1961	23.4	0	0	0	0	0	0	0	0	0	0	0	23.4
1962	0	0	0	0	0	0	0	66	7.5	0	0	0	73.5
1963	23.4	0	0	0	0	43.8	0	61.5	52.5	0	0	0	181.2
1964	0	0	0	0	21	21.5	4.5	0.3	0	0	0	0	47.3
1965	20	0	0	0	0	0	13.7	132	0	0	0	0	165.7
1966	0	0	0	0	0	0	0	0	0.6	0	0	0	0.6
1967	15.4	0	0	0	0	0	0	0	0	0	0	0	15.4
1968	0	0	0	0	0	0	12.5	0	0.9	0	0	0	13.5
1969	17.4	0	0	0	0	0	0	0	0	0	0	0	17.4
1970	0	0	0	0	0	0	58.5	5.3	0	0	0	0	63.8
1971	7.4	0	0	0	0	0	56.5	9.3	0	0	0	0	73.2
1972	21.4	0	0	0	37	28.8	61.5	0	0	0	0	0	148.7
1973	22.4	0	0	0	0	0	0	15.5	22	0	0	0	59.9
1974	0	0	0	0	0	0	0	30.5	16	0	0	0	46.5
1975	0	0	0	0	0	0	0	60	0	0	0	0	60
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	1	0	5	2	0	0	0	0	8
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	1.7	67.5	0	0	0	0	89.2
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0.9	0	0	0	0.9
1982	15.4	0	0	0	0	0	0	0	0	0	0	0	15.4
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	39.5	0	0	0	0	0	39.5
1985	8.4	0	0	0	0	0	0	0	0.2	0	0	0	8.5
1986	15.4	0	0	0	0	0	0	0	0	0	0	0	15.4
1987	0	0	0	0	0	0	0	0.9	0	0	0	0	0.9
1988	24.4	0	0	0	0	0	0	0	0	0	0	0	24.4
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	35	33.8	42	0	0	0	0	0	110.8
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG:	8.2	0	0	0	2.2	3.1	7.5	20.5	3.1	0	0	0	44.7
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	24.4	0	0	0	37	43.8	61.5	132	52.5	0	0	0	181.2

Table 2

Alternative 3 - Diversion to Storage Bypassed at Don Pedro for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	95	0	0	0	95
1924	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	173	0	0	0	173
1926	0	0	0	0	0	0	0	79.5	0	0	0	0	79.5
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	19.7	0	0	0	0	0	19.7
1929	0	0	0	0	0	0	0	0	76	0	0	0	76
1930	0	0	0	0	0	0	0	5.5	129	0	0	0	134.5
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	38	0	0	0	0	38
1940	0	0	0	0	0	0	0	0	142	0	0	0	142
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	3	0	0	3
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	69	0	0	0	69
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	59	0	0	0	59
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	1.7	0	63	0	0	0	64.7
1950	0	0	0	0	0	0	0	0	142	0	0	0	142
1951	0	0	0	0	0	0	0	0	41	0	0	0	41
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	23	19	5.9	0	0	0	47.9
1954	0	0	0	0	0	0	0	0	7	0	0	0	7
1955	0	0	0	0	0	15.1	0	0	64	0	0	0	79.1
1956	0	0	0	0	0	0	15.7	0	0	0	0	0	15.7
1957	0	0	0	0	0	0	1	0.5	0	0	0	0	1.5
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	32	0	0	0	32
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	1	0	0	28	0	0	0	29
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	15.6	0	0	0	0	0	15.6
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	23	31.5	0	0	0	0	54.5
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	89	0	0	0	89
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	5	0	0	0	0	0	5
1973	0	0	0	0	0	0	0	0	156	0	0	0	156
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	83	0	0	83
1979	0	0	0	0	0	0	0	0	105	0	0	0	105
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	1.5	117	0	0	0	118.5
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	66	0	0	0	66
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	78	0	0	0	78
1992	0	0	0	0	0	0	0	57	0	0	0	0	57
1993	0	0	0	0	0	0	6.7	0	0	0	0	0	6.7
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG:	0	0	0	0	0	0	2	3	24	1	0	0	30
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	0	0	0	0	0	15.1	23	79.5	173	83	0	0	173

Table 3

Alternative 3 - Diversion to Storage Bypassed at Lake McClure for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	1.8	0	0	0	0	0	1.8
1923	0	0	0	0	0	0	47.8	0	35	0	0	0	82.8
1924	0	0	0	0	0	0	18	22	0	0	0	0	40
1925	0	0	0	0	0	0	0	0	27	0	0	0	27
1926	0	0	0	0	0	0	22.8	0	0	0	0	0	22.8
1927	0	0	0	0	0	0	0	0	67.5	0	0	0	67.5
1928	0	0	0	0	0	0	0	19.5	0	0	0	0	19.5
1929	0	0	0	0	0	0	0	15.5	0	10	15	0	40.5
1930	0	0	0	0	0	0	10.8	9	21	14	17	0	71.8
1931	0	0	0	0	0	0	26	26	0	0	0	0	52
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	24	45	17.5	0	0	0	86.5
1934	0	0	0	0	0	0	7.8	0	0	0	0	0	7.8
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	14	0	0	0	0	14
1940	8	0	0	0	0	0	0	0	36	0	0	0	44
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	14.5	0	0	0	14.5
1944	0	0	0	0	0	0	0	23.5	13	0	0	0	36.5
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	14.8	0	0	0	0	0	14.8
1947	0	0	0	0	0	0	39	60.5	0	0	0	0	99.5
1948	0	0	0	0	0	0	10.8	12.5	0	0	0	0	23.3
1949	0	0	0	0	0	0	55	27.5	0	0	0	0	82.5
1950	0	0	0	0	0	0	26.8	0	6	0	0	0	32.8
1951	0	0	0	0	0	0	47	57	0	0	0	0	104
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	33	2	39	0	0	0	74
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	8	2	35.5	39	0	0	0	84.5
1956	0	0	0	0	0	0	73	0	0	0	0	0	73
1957	0	0	0	0	0	0	0	82	42.5	0	0	0	124.5
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	33.8	15	0	0	0	0	48.8
1960	0	0	0	0	0	0	1.8	7.5	0	0	0	0	9.3
1961	0	0	0	0	0	0	13.8	16	0	0	0	0	29.8
1962	0	0	0	0	0	0	0	17.5	0	0	0	0	17.5
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	1	13	49	0	0	0	0	63
1965	0	0	0	0	0	0	0	3.5	31.5	0	0	0	35
1966	0	0	0	0	0	0	74	62	0	0	0	0	136
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	23	24	0	0	0	0	47
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	2	94	4	0	0	0	100
1971	0	0	0	0	0	0	7	63	47.5	0	0	0	117.5
1972	0	0	0	0	0	0	15	72.5	8	0	0	0	95.5
1973	1	0	0	0	0	0	0	0	55	0	0	0	56
1974	0	0	0	0	0	0	0	0	34.5	0	0	0	34.5
1975	0	0	0	0	0	0	0	16.5	0	0	0	0	16.5
1976	0	0	0	0	0	0	0	18	0	0	0	0	18
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	29	0	0	0	29
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	49.8	50.5	0	0	0	0	100.3
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	40	138	0	0	0	0	178
1985	0	0	0	0	0	0	19.8	78	0	0	0	0	97.8
1986	1	0	0	0	0	0	0	0	0	0	0	0	1
1987	0	0	0	0	0	0	0	30	0	0	0	0	30
1988	0	0	0	0	0	0	9.8	21	0	0	0	0	30.8
1989	0	0	0	0	0	0	16.8	21.5	0	0	0	0	38.3
1990	0	0	0	0	0	0	11.8	37.5	0	0	0	0	49.3
1991	0	0	0	0	0	0	0	8.5	61	0	0	0	69.5
1992	0	0	0	0	0	0	0	24	0	0	0	0	24
1993	0	0	0	0	0	0	96	83.5	0	0	0	0	179.5
1994	0	0	0	0	0	0	0	12.5	0	0	0	0	12.5
AVG:	0	0	0	0	0	0	12	19	9	0	0	0	41
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	8	0	0	0	0	8	96	138	67.5	14	17	0	179.5

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Table 4

Alternative 3 - Diversion to Storage Bypassed at Eastman Lake for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	13	0	0	0	0	0	13
1923	0	0	0	0	0	4.8	0	0	0	0	0	0	4.8
1924	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	1	0	0	0	0	0	1
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	2	0	0	0	2
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	1	0	0	0	1
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	3	0	0	0	0	0	0	3
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	1	0	0	0	0	0	1
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	3	0	0	0	0	0	0	3
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	1	0	0	0	1
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	1	0	0	1
1993	0	0	0	0	0	0	9	0	0	0	0	0	9
1994	0	0	0	0	0	0	0	0	1	0	0	0	1
AVG:	0	0	0	0	0	0.1	0.3	0	0.1	0.0	0	0	0.6
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	0	0	0	0	0	4.8	13	0	2	1	0	0	13

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Table 5

Alternative 3 - Diversion to Storage Bypassed at Hensley Lake for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	13	0	0	0	0	0	13
1923	0	0	0	0	0	5	3	10.5	0	0	0	0	18.5
1924	0	0	0	0	0	0	8	0	0	0	0	0	8
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	5	5	0	0	0	0	10
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	6	1	0	0	0	7
1930	0	0	0	0	0	0	3	2	0	0	0	0	5
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	3	4	0	0	0	7
1934	0	0	0	0	0	0	1	0	0	0	0	0	1
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	2	0	2
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	1	0	0	1
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	1	0	0	1
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	4	0	7	6	0	0	0	17
1956	0	0	0	0	0	0	3	0	0	0	0	0	3
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	5	5	0	0	0	0	10
1961	0	0	0	0	0	0	2	1	0	0	0	0	3
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	4	0	0	0	4
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	1	0	0	0	1
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	1	0	0	0	0	1
1976	0	0	0	0	0	0	3	4	0	0	0	0	7
1977	0	0	0	0	0	0	2	0	0	0	0	0	2
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	1	0	0	0	0	1
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	2	0	0	0	0	2
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	2	0	0	0	0	2
1988	0	0	0	0	0	0	3	1	0	0	0	0	4
1989	0	0	0	0	0	0	3	0	0	0	0	0	3
1990	0	0	0	0	0	0	1	0	0	0	0	0	1
1991	0	0	0	0	0	0	0	3	1	0	0	0	4
1992	0	0	0	0	0	0	0	2	0	0	0	0	2
1993	0	0	0	0	0	0	9	0	0	0	0	0	9
1994	0	0	0	0	0	0	2.7	2	0	0	0	0	4.7
AVG:	0	0	0	0	0	0	1	1	0	0	0	0	2
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	0	0	0	0	0	5	13	10.5	6	1	2	0	18.5

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Table 6

Alternative 3 - Diversion to Storage Bypassed at Bowman Lake for Delta Outflow Objective, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	6	0	0	0	6
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	9	0	0	0	9
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	7	0	0	0	7
1947	0	0	0	0	0	0	0	0	2	0	0	0	2
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	5	0	0	0	5
1950	0	0	0	0	0	0	0	0	0	3	0	0	3
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	19	0	0	0	19
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	2	0	0	0	2
1961	0	0	0	0	0	0	0	0	2	0	0	0	2
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	7	0	0	0	7
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	5	0	0	0	5
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	1	0	0	1
1979	0	0	0	0	0	0	0	0	4	0	0	0	4
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG	0	0	0	0	0	0	0	0	1	0	0	0	1
MIN	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX	0	0	0	0	0	0	0	0	19	3	0	0	19

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Table 7

Alternative 3 - Diversion to Storage Bypassed at Jackson Meadows Reservoir for Delta Outflow Objective, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	0	1	0	0	0	0	1
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	3	0	0	0	3
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	1	0	0	0	0	0	1
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	5	1	0	0	6
1989	0	0	0	0	0	0	0	0	3	0	0	0	3
1990	0	0	0	0	0	0	0	0	0	3	5	0	8
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	3	0	0	0	3
AVG	0	0	0	0	0	0	0	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX	0	0	0	0	0	0	1	1	5	3	5	0	8

Table 8

Alternative 3 - Diversion to Storage Bypassed at Bullards Bar for Delta Outflow Objective, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	27	0	0	0	0	0	27
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	25	0	0	0	0	0	25
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	2	0	0	0	0	2
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	5	0	0	0	5
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	6	0	0	0	6
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	1	0	0	0	1
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	2	0	0	0	0	2
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	36	0	0	0	0	36
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	24	0	0	0	24
1991	0	0	0	0	0	0	0	0	19	0	0	0	19
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG:	0	0	0	0	0	0	1	1	1	0	0	0	2
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	0	0	0	0	0	0	27	36	24	0	0	0	36

Table 9

Alternative 3 - Diversion to Storage Bypassed at Fordyce Lake for Delta Outflow Objective, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	0	1	0	0	0	0	1
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	9	0	0	0	9
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	4	0	0	0	4
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	10	0	0	0	10
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	3	0	0	0	3
1961	0	0	0	0	0	0	0	0	2	0	0	0	2
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	8	0	0	0	8
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	3	0	0	0	0	0	3
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	2	0	0	0	0	2
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG	0	0	0	0	0	0	0	0	1	0	0	0	1
MIN	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX	0	0	0	0	0	0	3	2	10	0	0	0	10

Table 10

Alternative 3 - Water to be Subtracted from Diversion at CP #16, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1925	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1926	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1927	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1929	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1930	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1934	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.8
1935	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1940	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1945	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1948	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1949	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1950	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1951	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.8
1952	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.0	0.8
1954	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1955	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1956	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.5
1957	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1958	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1960	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1961	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.8
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1963	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.5
1964	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1965	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.5
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1967	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.9
1969	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1970	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1971	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.0	0.9
1972	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1973	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	1.3
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1978	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.9
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1982	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.9
1985	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.8
1986	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1988	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.8
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
AVG:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.0	1.0
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.8

Table 11

Alternative 3 - Water to be Subtracted from Diversion at CP #634, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1924	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.9	6.9	6.9	0.8	0.0	28.2
1925	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1926	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1927	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1929	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1930	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1931	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.9	6.9	6.9	0.8	0.0	28.2
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1933	0.0	0.0	0.0	0.0	0.0	0.0	6.1	6.1	0.0	6.9	0.8	0.0	20.0
1934	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.7
1935	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.5
1940	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1945	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1947	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	6.9	6.9	0.8	0.0	21.3
1948	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1949	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1950	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1951	0.2	0.0	0.0	0.0	0.0	0.0	6.7	6.9	6.9	6.9	0.8	0.0	28.3
1952	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1953	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.9	0.0	6.9	0.8	0.0	21.3
1954	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1955	0.2	0.0	0.0	0.0	0.0	0.0	6.7	0.0	6.9	6.9	0.8	0.0	21.4
1956	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	7.1
1957	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	6.9	0.8	0.0	14.3
1958	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.5
1960	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1961	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.7
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1963	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1964	0.0	0.0	0.0	0.0	0.0	6.4	6.7	6.1	6.9	6.9	0.8	0.0	33.8
1965	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	7.1
1966	0.0	0.0	0.0	0.0	0.0	0.0	6.1	6.1	6.9	6.9	0.8	0.0	26.9
1967	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1968	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	6.9	6.9	0.0	0.0	20.5
1969	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1970	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.9	6.9	6.9	0.8	0.0	28.2
1971	0.2	0.0	0.0	0.0	0.0	0.0	6.7	6.9	0.0	6.9	0.0	0.0	20.6
1972	0.2	0.0	0.0	0.0	0.0	0.0	6.7	0.0	6.9	6.9	0.8	0.0	21.4
1973	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	6.9
1976	0.0	0.0	0.0	0.0	0.0	0.0	6.1	6.9	6.9	6.9	0.8	0.0	27.7
1977	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.9	6.9	6.9	0.8	0.0	28.2
1978	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1982	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	6.9	6.9	0.0	0.0	20.5
1985	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.7
1986	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.5
1988	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.7
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.5
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	6.9
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
AVG:	0.1	0.0	0.0	0.0	0.0	0.1	1.5	1.8	3.6	6.2	0.6	0.0	13.8
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	0.2	0.0	0.0	0.0	0.0	6.4	6.7	6.9	6.9	6.9	0.8	0.0	33.8

Table 12

Alternative 3 - Water to be Subtracted from Diversion at CP #649, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	1.1	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	8.6	5.9	0.0	16.4
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	8.6	7.2	0.0	16.6
1924	0.0	0.0	0.0	0.0	0.0	0.0	3.7	6.2	8.1	8.6	7.2	0.0	33.8
1925	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	8.6	7.2	0.0	19.8
1926	1.1	0.0	0.0	0.0	0.0	0.0	0.9	2.0	8.1	8.6	7.2	0.0	27.8
1927	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.6	7.2	0.0	17.8
1928	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.0	8.1	8.6	7.2	0.0	26.2
1929	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	5.9	8.6	7.2	0.0	23.7
1930	1.1	0.0	0.0	0.0	0.0	0.0	0.9	2.0	8.1	8.6	7.2	0.0	27.8
1931	0.0	0.0	0.0	0.0	0.0	0.0	2.6	6.2	8.1	8.6	7.2	0.0	32.7
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1933	0.0	0.0	0.0	0.0	0.0	0.0	1.4	2.0	1.0	8.6	7.2	0.0	20.1
1934	1.1	0.0	0.0	0.0	0.0	0.0	0.9	6.2	8.1	8.6	7.2	0.0	32.0
1935	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	16.8
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	2.7
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	8.2	8.6	7.2	0.0	29.0
1940	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	8.6	7.2	0.0	22.7
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	5.2	0.0	12.3
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	2.7	0.0	8.9
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.6	7.2	0.0	16.8
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.1	8.6	7.2	0.0	24.8
1945	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	16.8
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	8.1	8.6	7.2	0.0	24.7
1947	0.0	0.0	0.0	0.0	0.0	0.0	4.6	1.0	8.1	8.6	7.2	0.0	29.4
1948	1.1	0.0	0.0	0.0	0.0	0.0	0.9	1.0	0.0	8.6	7.2	0.0	18.6
1949	1.1	0.0	0.0	0.0	0.0	0.0	1.4	1.0	8.1	8.6	7.2	0.0	27.3
1950	1.1	0.0	0.0	0.0	0.0	0.0	0.9	0.0	1.0	8.6	5.2	0.0	16.7
1951	1.1	0.0	0.0	0.0	0.0	0.0	4.6	6.2	8.1	8.6	5.9	0.0	34.5
1952	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
1953	0.0	0.0	0.0	0.0	0.0	0.0	3.7	6.2	2.4	6.2	2.7	0.0	21.1
1954	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	8.6	5.2	0.0	21.6
1955	1.1	0.0	0.0	0.0	0.0	0.4	4.6	1.0	8.1	8.6	7.2	0.0	30.9
1956	1.1	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	3.1	0.0	0.0	5.6
1957	0.0	0.0	0.0	0.0	0.0	0.0	4.6	2.0	1.0	8.6	5.2	0.0	21.4
1958	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.9	6.2	8.1	8.6	7.2	0.0	30.9
1960	1.1	0.0	0.0	0.0	0.0	0.0	0.9	1.0	8.1	8.6	7.2	0.0	26.8
1961	1.1	0.0	0.0	0.0	0.0	0.0	0.9	5.2	8.1	8.6	7.2	0.0	30.9
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	8.6	7.2	0.0	16.7
1963	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	2.7	0.0	12.3
1964	0.0	0.0	0.0	0.0	0.0	0.5	4.6	2.0	8.1	8.6	7.2	0.0	31.0
1965	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	8.6	0.0	0.0	11.7
1966	0.0	0.0	0.0	0.0	0.0	0.0	1.4	2.0	8.1	8.6	7.2	0.0	27.2
1967	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
1968	0.0	0.0	0.0	0.0	0.0	0.0	4.6	2.0	8.1	8.6	0.0	0.0	23.3
1969	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	3.6
1970	0.0	0.0	0.0	0.0	0.0	0.0	4.6	6.2	6.7	8.6	2.7	0.0	28.8
1971	1.1	0.0	0.0	0.0	0.0	0.0	4.6	6.2	1.0	3.1	2.2	0.0	18.2
1972	1.1	0.0	0.0	0.0	0.0	0.0	4.6	1.0	8.1	8.6	5.9	0.0	29.3
1973	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	8.6	5.2	0.0	20.7
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	3.1	0.0	0.0	4.1
1976	0.0	0.0	0.0	0.0	0.0	0.0	1.4	5.2	8.1	8.6	2.7	0.0	25.9
1977	0.0	0.0	0.0	0.0	0.6	0.0	4.6	6.2	8.1	8.6	5.2	0.0	33.3
1978	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	5.9	0.0	15.0
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1	8.6	2.7	0.0	19.4
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.7	0.0	9.8
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0	8.1	8.6	5.9	0.0	24.5
1982	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	4.6	2.0	3.0	8.6	0.0	0.0	18.1
1985	1.1	0.0	0.0	0.0	0.0	0.0	0.9	4.5	8.1	8.6	7.2	0.0	30.3
1986	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	5.2	0.0	14.8
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	8.1	8.6	7.2	0.0	29.0
1988	1.1	0.0	0.0	0.0	0.0	0.0	0.9	4.5	8.1	8.6	7.2	0.0	30.3
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0	8.1	8.6	5.9	0.0	24.5
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0	8.1	8.6	7.2	0.0	25.7
1991	0.0	0.0	0.0	0.0	0.6	0.0	0.0	1.0	2.4	8.6	5.2	0.0	17.8
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	8.1	8.6	7.2	0.0	26.3
1993	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.0	0.0	8.6	0.0	0.0	10.9
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.1	8.6	5.9	0.0	23.6
AVG:	0.5	0.0	0.0	0.0	0.0	0.0	1.1	1.7	4.1	7.3	5.0	0.0	19.8
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	1.1	0.0	0.0	0.0	0.6	0.5	4.6	6.2	8.2	8.6	7.2	0.0	34.5

C-032668

C-032668

Table 13

Alternative 3 - Water to be Subtracted from Diversion at CP #672, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	4.5	0.0	14.3
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.6
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.2	6.3	8.6	9.1	6.2	0.0	30.5
1925	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	9.1	7.4	0.0	17.7
1926	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.8
1927	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	17.2
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	8.6	9.1	7.4	0.0	25.2
1929	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	9.1	7.4	0.0	17.7
1930	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.8
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.2	6.3	8.6	9.1	7.4	0.0	31.7
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	6.2	0.0	15.3
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	9.1	7.4	0.0	16.6
1934	0.7	0.0	0.0	0.0	0.0	0.0	0.0	6.3	8.6	9.1	7.4	0.0	32.1
1935	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	6.2	0.0	16.0
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	8.6	9.1	7.4	0.0	28.9
1940	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	9.1	7.4	0.0	17.7
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.5	0.0	6.0
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
1945	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	17.2
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.2
1947	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	8.6	9.1	7.4	0.0	28.5
1948	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	17.2
1949	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	8.6	9.1	7.4	0.0	25.8
1950	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.5	0.0	10.3
1951	0.7	0.0	0.0	0.0	0.0	0.0	3.4	6.3	8.6	9.1	4.5	0.0	32.5
1952	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.2	6.3	0.0	0.5	0.0	0.0	7.1
1954	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	9.1	0.5	0.0	15.4
1955	0.7	0.0	0.0	0.0	0.0	0.0	3.4	0.0	8.6	9.1	7.4	0.0	29.1
1956	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0	1.2
1957	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	9.1	0.5	0.0	12.9
1958	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	8.6	9.1	7.4	0.0	31.5
1960	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.8
1961	0.7	0.0	0.0	0.0	0.0	0.0	0.0	3.8	8.6	9.1	7.4	0.0	29.6
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1963	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	9.8
1964	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	8.6	9.1	7.4	0.0	28.5
1965	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	9.7
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	8.6	9.1	7.4	0.0	25.2
1967	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
1968	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	8.6	9.1	0.0	0.0	21.0
1969	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
1970	0.0	0.0	0.0	0.0	0.0	0.0	3.4	6.3	5.2	9.1	0.5	0.0	24.4
1971	0.7	0.0	0.0	0.0	0.0	0.0	3.4	6.3	0.0	0.5	0.0	0.0	10.9
1972	0.7	0.0	0.0	0.0	0.0	0.0	3.4	0.0	8.6	9.1	4.5	0.0	26.2
1973	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	9.1	0.5	0.0	10.7
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.8	8.6	9.1	0.0	0.0	21.6
1977	0.0	0.0	0.0	0.0	0.0	0.0	3.4	6.3	8.6	9.1	0.5	0.0	27.8
1978	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	4.5	0.0	13.7
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	0.0	0.0	17.7
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	5.5
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	4.5	0.0	22.2
1982	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.5	9.1	0.0	0.0	13.0
1985	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.4	8.6	9.1	7.4	0.0	26.2
1986	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.5	0.0	10.2
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	8.6	9.1	7.4	0.0	28.9
1988	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.4	8.6	9.1	7.4	0.0	26.2
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	4.5	0.0	22.2
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.2
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.5	0.0	9.6
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	8.6	9.1	7.4	0.0	25.5
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	9.1	0.0	0.0	9.1
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	4.5	0.0	22.2
AVG:	0.3	0.0	0.0	0.0	0.0	0.0	0.5	1.0	3.8	7.4	4.1	0.0	17.2
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	0.7	0.0	0.0	0.0	0.0	0.0	3.4	6.3	8.6	9.1	7.4	0.0	32.5

Table 14

Alternative 3 - Water to be Subtracted from Diversion at CP #688, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1925	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1926	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.1
1927	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.3	1.3	1.3	0.0	4.4
1929	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1930	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.1
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	0.0	1.3	1.3	0.0	4.3
1934	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.1
1935	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.0
1940	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1945	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.3	1.3	1.3	0.0	4.4
1948	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1949	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.3	1.3	1.3	0.0	4.6
1950	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1951	0.2	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.8
1952	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1954	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1955	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.0	1.3	1.3	1.3	0.0	4.9
1956	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	1.3	0.0	0.0	2.1
1957	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	0.0	1.3	1.3	0.0	4.3
1958	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.0
1960	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1961	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.1
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1963	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1964	0.0	0.0	0.0	0.0	0.0	0.3	0.6	1.2	1.3	1.3	1.3	0.0	5.9
1965	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.5
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1967	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	0.0	0.0	4.3
1969	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.5
1970	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1971	0.2	0.0	0.0	0.0	0.0	0.0	0.6	1.2	0.0	1.3	1.3	0.0	4.5
1972	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.3	1.3	1.3	0.0	4.6
1973	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.3
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1978	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1982	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	0.0	0.0	4.3
1985	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.1
1986	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.0
1988	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.1
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.0
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	1.3	0.0	0.0	1.9
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
AVG:	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.7	1.1	1.0	0.0	3.5
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	0.2	0.0	0.0	0.0	0.0	0.3	0.6	1.2	1.3	1.3	1.3	0.0	5.9

Table 15

Alternative 3 - Water to be Subtracted from Diversion at CP #693, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.5	0.5	0.0	1.9
1923	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.0	0.5	0.5	0.0	2.0
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1925	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1926	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	2.6
1927	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1929	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.1
1930	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1934	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1935	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.1
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1940	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.1
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.5	0.0	1.5
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1945	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.5	0.0	1.6
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1947	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	2.5
1948	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1949	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1950	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1951	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1952	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1954	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1955	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	2.6
1956	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.0	0.9
1957	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1958	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1960	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1961	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1963	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.5	0.5	0.5	0.0	2.3
1964	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	2.5
1965	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.0	0.0	1.9
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1967	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.0	0.0	1.8
1969	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.6
1970	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1971	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1972	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	2.6
1973	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.1
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	1.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	1.0
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1978	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.1
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1982	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.0	0.0	1.8
1985	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1986	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.1
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1988	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1993	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.0	0.5	0.0	0.0	1.5
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
AVG:	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.4	0.5	0.4	0.0	1.9
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	2.6

Table 16

Alternative 3 - Water to be Subtracted from Diversion at CP #699, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	1.1	0.0	20.3
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	14.2	0.0	59.9
1925	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1926	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1927	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1929	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1930	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	14.2	0.0	59.9
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1934	1.9	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	14.2	0.0	61.8
1935	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	14.2	0.0	59.9
1940	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.3
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1945	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1947	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	16.4	17.3	14.2	0.0	54.2
1948	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1949	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1950	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	19.2
1951	1.9	0.0	0.0	0.0	0.0	0.0	6.3	12.0	16.4	17.3	1.1	0.0	55.0
1952	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	12.0
1954	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	17.3	0.0	0.0	20.5
1955	1.9	0.0	0.0	0.0	0.0	0.0	6.3	0.0	16.4	17.3	14.2	0.0	56.1
1956	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1957	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	0.0	17.3	0.0	0.0	23.6
1958	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	14.2	0.0	59.9
1960	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1961	1.9	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	14.2	0.0	61.8
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1963	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	19.2
1964	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	16.4	17.3	14.2	0.0	54.2
1965	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	19.2
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1967	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1968	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	16.4	17.3	0.0	0.0	40.0
1969	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1970	0.0	0.0	0.0	0.0	0.0	0.0	6.3	12.0	1.3	17.3	0.0	0.0	36.9
1971	1.9	0.0	0.0	0.0	0.0	0.0	6.3	12.0	0.0	0.0	0.0	0.0	20.2
1972	1.9	0.0	0.0	0.0	0.0	0.0	6.3	0.0	16.4	17.3	1.1	0.0	43.0
1973	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	19.2
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	0.0	0.0	45.7
1977	0.0	0.0	0.0	0.0	0.0	0.0	6.3	12.0	16.4	17.3	0.0	0.0	52.0
1978	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	1.1	0.0	18.4
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	0.0	0.0	33.7
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.3
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	1.1	0.0	34.8
1982	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	0.0	17.3	0.0	0.0	23.6
1985	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1986	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	19.2
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	16.4	17.3	14.2	0.0	48.9
1988	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	1.1	0.0	34.8
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	17.3
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	17.3
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	1.1	0.0	34.8
AVG:	0.8	0.0	0.0	0.0	0.0	0.0	1.0	2.0	7.0	13.8	7.1	0.0	31.7
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	1.9	0.0	0.0	0.0	0.0	0.0	6.3	12.0	16.4	17.3	14.2	0.0	61.8

Table 1

Alternative 4 - Total Water to be Released from New Melones Reservoir for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	6	0	0	0	0	0	21.8	108	0	0	0	0	135.8
1923	0	0	0	0	0	42.0	52	108.4	0	0	0	0	202.4
1924	0	0	0	0	0	0	11.0	16	0	0	0	0	27.0
1925	23.4	0	0	0	0	0	23	69.5	0	0	0	0	115.9
1926	23.4	0	0	0	0	31.8	34	70.0	0	0	0	0	159.2
1927	27	0	0	0	0	0	24	113	89.4	0	0	0	253.4
1928	0	0	0	0	0	0	38.7	87.0	0	0	0	0	125.8
1929	23.4	0	0	0	0	0	0	3.0	0	0	0	0	26.4
1930	23.4	0	0	0	0	0	15	20	0	0	0	0	58.4
1931	0	0	0	0	0	0	6	20	0	0	0	0	26
1932	0	0	0	0	0	0	0	68	32	0	0	0	100
1933	0	0	0	0	0	0	31	57	0.0	0	0	0	88.0
1934	23.4	0	0	0	0	0	10	42	0	0	0	0	75.4
1935	23.4	0	0	0	0	0	0	0	0	0	0	0	23.4
1936	0	0	0	0	0	0	0	49	12.3	0	0	0	61.3
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	45	0	0	0	0	45
1940	11.4	0	0	0	0	0	0	62	0	0	0	0	73.4
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	11	0	0	0	0	11
1943	0	0	0	0	0	0	0	0	45.2	0	0	0	45.2
1944	0	0	0	0	0	0	0	4.1	0	0	0	0	4.1
1945	14	0	0	0	0	0	0	11	0	0	0	0	25
1946	0	0	0	0	0	0	26	11	0	0	0	0	37
1947	0	0	0	0	0	22.8	60.0	55.0	0	0	0	0	137.9
1948	23.4	0	0	0	12.1	0	21	45.0	26.5	0	0	0	128.0
1949	23.4	0	0	0	0	0	37.0	46	0.3	0	0	0	106.6
1950	22.4	0	0	0	0	0	55.7	99.5	0.0	0	0	0	177.7
1951	25	0	0	0	0	0	56	56.3	0	0	0	0	137.3
1952	8	0	0	0	0	0	0	0	0	0	0	0	8
1953	0	0	0	0	0	0	34.0	44.3	0	0	0	0	78.3
1954	22.4	0	0	0	21	0	3	82	0	0	0	0	128.4
1955	21.4	0	0	0	36.3	2	31	44	0.0	0	0	0	134.7
1956	23.4	0	0	0	0	0	75.8	0	0	0	0	0	99.2
1957	0	0	0	0	0	0	69.5	69.0	30.3	0	0	0	168.8
1958	18	0	0	0	0	0	0	0	0	0	0	0	18
1959	0	0	0	0	0	0	35	67	0	0	0	0	102
1960	24.4	0	0	0	0	0	9	14	0	0	0	0	47.4
1961	23.4	0	0	0	0	0	17	39	0	0	0	0	79.4
1962	0	0	0	0	0	0	0	85	8	0	0	0	93
1963	27	0	0	0	0	43.8	0	62	52.1	0	0	0	184.9
1964	0	0	0	0	21.1	20	37	39.0	0	0	0	0	117.1
1965	20	0	0	0	0	0	14	136.6	33	0	0	0	203.6
1966	0	0	0	0	0	0	72.0	68	0	0	0	0	140.0
1967	15.5	0	0	0	0	0	0	0	0	0	0	0	15.5
1968	0	0	0	0	0	0	47.0	24.0	0	0	0	0	71.0
1969	17.4	0	0	0	0	0	0	0	0	0	0	0	17.4
1970	0	0	0	0	0	0	58.5	8.5	0	0	0	0	67.0
1971	11	0	0	0	0	0	39.5	14	0.0	0	0	0	64.6
1972	21.4	0	0	0	37.3	28.8	61.5	27.0	0	0	0	0	176.0
1973	27.2	0	0	0	0	0	0	16	22	0	0	0	65.2
1974	0	0	0	0	0	0	0	31	52	0	0	0	83.0
1975	0	0	0	0	0	0	0	79	0	0	0	0	79
1976	0	0	0	0	0	0	8	0	0	0	0	0	8
1977	0	0	0	0	1	0	8	6	0	0	0	0	15
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	2	68	21	0	0	0	91
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	51	34.0	0	0	0	0	85.0
1982	15.4	0	0	0	0	0	0	0	0	0	0	0	15.4
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	42.0	31.3	0	0	0	0	73.3
1985	12	0	0	0	0	0	21	54	0	0	0	0	87
1986	20	0	0	0	0	0	0	0	0	0	0	0	20
1987	0	0	0	0	0	0	0	26	0	0	0	0	26
1988	24.4	0	0	0	0	0	14	34	0	0	0	0	72.4
1989	0	0	0	0	0	0	21	23	0	0	0	0	44
1990	0	0	0	0	0	0	14	39	0	0	0	0	53
1991	0	0	0	0	0	0	0	13	0	0	0	0	13
1992	0	0	0	0	0	0	0	4.0	0	0	0	0	4.0
1993	0	0	0	0	35	34	122.2	85	0	0	0	0	276.2
1994	0	0	0	0	0	0	3	16	0	0	0	0	19
AVG:	8.8	0	0	0	2.2	3.1	19.6	36.4	5.8	0	0	0	76.0
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	27.2	0	0	0	37.3	43.8	122.2	136.6	89.4	0	0	0	276.2

Table 2

Alternative 4 - Diversion to Storage Bypassed at Don Pedro for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	95	0	0	0	95
1924	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	173	0	0	0	173
1926	0	0	0	0	0	0	0	9.5	0	0	0	0	9.5
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	76	0	0	0	76
1930	0	0	0	0	0	0	0	0	129	0	0	0	129
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	142	0	0	0	142
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	3	0	0	3
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	69	0	0	0	69
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	59	0	0	0	59
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	63	0	0	0	63
1950	0	0	0	0	0	0	0	0	142	0	0	0	142
1951	0	0	0	0	0	0	0	0	41	0	0	0	41
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	19	5.9	0	0	0	24.9
1954	0	0	0	0	0	0	0	0	7	0	0	0	7
1955	0	0	0	0	0	15.1	0	0	64	0	0	0	79.1
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	32	0	0	0	32
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	1	0	0	28	0	0	0	29
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	5.7	7.5	0	0	0	0	13.2
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	89	0	0	0	89
1971	0	0	0	0	0	0	17	0	0	0	0	0	17
1972	0	0	0	0	0	0	5	0	0	0	0	0	5
1973	0	0	0	0	0	0	0	0	156	0	0	0	156
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	83	0	0	83
1979	0	0	0	0	0	0	0	0	105	0	0	0	105
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	117	0	0	0	117
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	66	0	0	0	66
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	57	0	0	0	0	57
1993	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG:	0	0	0	0	0	0	0	1	23	1	0	0	26
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	0	0	0	0	0	15.1	17	57	173	83	0	0	173

Table 3

Alternative 4 - Diversion to Storage Bypassed at Lake McClure for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	35	0	0	0	35
1924	0	0	0	0	0	0	9	22	0	0	0	0	31
1925	0	0	0	0	0	0	0	0	27	0	0	0	27
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	2.5	0	0	0	0	2.5
1929	0	0	0	0	0	0	0	12.5	0	10	15	0	37.5
1930	0	0	0	0	0	0	0	0	21	14	17	0	52
1931	0	0	0	0	0	0	26	26	0	0	0	0	52
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	17.5	0	0	0	17.5
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	8	0	0	0	0	0	0	0	36	0	0	0	44
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	19.5	13	0	0	0	32.5
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	23.8	5.5	0	0	0	0	29.3
1948	0	0	0	0	0	0	0	12.5	0	0	0	0	12.5
1949	0	0	0	0	0	0	20.8	0	0	0	0	0	20.8
1950	0	0	0	0	0	0	0	0	6	0	0	0	6
1951	0	0	0	0	0	0	47	57	0	0	0	0	104
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	31.8	2	39	0	0	0	72.8
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	8	0	0	46	0	0	0	54
1956	0	0	0	0	0	0	6.8	0	0	0	0	0	6.8
1957	0	0	0	0	0	0	0	15.5	12.5	0	0	0	28
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	1	0	17.5	0	0	0	0	18.5
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	18.8	0	0	0	0	0	18.8
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	23	24	0	0	0	0	47
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	2	94	4	0	0	0	100
1971	0	0	0	0	0	0	7	63	47.5	0	0	0	117.5
1972	0	0	0	0	0	0	15	45.5	8	0	0	0	68.5
1973	0	0	0	0	0	0	0	0	55	0	0	0	55
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	18	0	0	0	0	18
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	29	0	0	0	29
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	16.5	0	0	0	0	16.5
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	40	110.5	0	0	0	0	150.5
1985	0	0	0	0	0	0	0	78	0	0	0	0	78
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	15	0	0	0	0	15
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	24	0	0	0	0	24
1993	0	0	0	0	0	0	23.8	0	0	0	0	0	23.8
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG:	0	0	0	0	0	0	4	9	5	0	0	0	20
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	8	0	0	0	0	8	47	110.5	55	14	17	0	150.5

Table 4

Alternative 4 - Diversion to Storage Bypassed at Eastman Lake for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	4.8	0	0	0	0	0	0	4.8
1924	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	2	0	0	0	2
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	3	0	0	0	0	0	0	3
1956	0	0	0	0	0	0	8	0	0	0	0	0	8
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	3	0	0	0	0	0	0	3
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	1	0	0	0	1
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	1	0	0	1
1993	0	0	0	0	0	0	9	0	0	0	0	0	9
1994	0	0	0	0	0	0	0	0	1	0	0	0	1
AVG:	0	0	0	0	0	0.1	0.2	0	0.1	0.0	0	0	0.4
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	0	0	0	0	0	4.8	9	0	2	1	0	0	9

C—032676

C-032676

Table 5

Alternative 4 - Diversion to Storage Bypassed at Hensley Lake for Vernalis and Delta Outflow Objectives, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	6.7	0	0	0	0	0	6.7
1923	0	0	0	0	0	5	0	0	0	0	0	0	5
1924	0	0	0	0	0	0	8	0	0	0	0	0	8
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	5	0	0	0	0	5
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	6	1	0	0	0	7
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	4	0	0	0	4
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	2	0	2
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	1	0	0	1
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	1	0	0	1
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	4	0	0	6	0	0	0	10
1956	0	0	0	0	0	0	3	0	0	0	0	0	3
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	4	0	0	0	4
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	1	0	1
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	1	0	1
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	1	0	0	0	1
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	4	0	0	0	0	4
1977	0	0	0	0	0	1	2	0	0	0	0	0	3
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	1	0	0	0	0	1
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	1	0	0	0	0	1
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	1	0	0	0	0	1
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	2	0	0	0	0	2
1993	0	0	0	0	0	0	9	0	0	0	0	0	9
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG:	0	0	0	0	0	0	0	0	0	0	0	0	1
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX.	0	0	0	0	0	5	9	6	6	1	2	0	10

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Table 6

Alternative 4 - Diversion to Storage Bypassed at Bowman Lake for Delta Outflow Objective, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	6	0	0	0	6
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	9	0	0	0	9
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	7	0	0	0	7
1947	0	0	0	0	0	0	0	0	2	0	0	0	2
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	5	0	0	0	5
1950	0	0	0	0	0	0	0	0	0	3	0	0	3
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	3	0	0	0	3
1955	0	0	0	0	0	0	0	0	19	0	0	0	19
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	2	0	0	0	2
1961	0	0	0	0	0	0	0	0	2	0	0	0	2
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	7	0	0	0	7
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	5	0	0	0	5
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	4	0	0	0	4
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG	0	0	0	0	0	0	0	0	1	0	0	0	1
MIN	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX	0	0	0	0	0	0	0	0	19	3	0	0	19

Table 7

Alternative 4 - Diversion to Storage Bypassed at Jackson Meadows Reservoir for Delta Outflow Objective, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	4	1	0	0	0	0	5
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	7	3	0	0	0	0	10
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	3	0	0	0	3
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	5	0	0	0	0	5
1977	0	0	0	0	0	0	1	1	0	0	0	0	2
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	8	0	0	0	0	8
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	2	0	0	0	0	2
1988	0	0	0	0	0	0	0	0	5	1	0	0	6
1989	0	0	0	0	0	0	0	0	3	0	1	0	4
1990	0	0	0	0	0	0	0	0	0	3	5	0	8
1991	0	0	0	0	0	0	0	0	0	0	3	0	3
1992	0	0	0	0	0	0	0	4	3	0	0	0	7
AVG	0	0	0	0	0	0	0	0	0	0	0	0	1
MIN	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX	0	0	0	0	0	0	7	8	5	3	5	0	10

Table 8

Alternative 4 - Diversion to Storage Bypassed at Bullards Bar for Delta Outflow Objective, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	27	0	0	0	0	0	27
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	25	0	0	0	0	0	25
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	5	0	0	0	5
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	6	0	0	0	6
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	1	0	0	0	1
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	2	0	0	0	0	2
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	36	0	0	0	0	36
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	24	0	0	0	24
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG:	0	0	0	0	0	0	1	1	1	0	0	0	2
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	0	0	0	0	0	0	27	36	24	0	0	0	36

Table 9

Alternative 4 - Diversion to Storage Bypassed at Fordyce Lake for Delta Outflow Objective, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	0	1	0	0	0	0	1
1925	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	9	0	0	0	9
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	4	0	0	0	4
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	10	0	0	0	10
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	3	0	0	0	3
1961	0	0	0	0	0	0	0	0	2	0	0	0	2
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	8	0	0	0	8
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	3	0	0	0	0	0	3
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG	0	0	0	0	0	0	0	0	1	0	0	0	1
MIN	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX	0	0	0	0	0	0	3	1	10	0	0	0	10

C—032681

C-032681

Table 10

Alternative 4 - Water to be Subtracted from Diversion at CP #16, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1925	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1926	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1927	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1929	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1930	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1934	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.8
1935	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1940	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1948	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1949	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1950	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1951	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1952	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.0	0.8
1954	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1955	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1956	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1957	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1958	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1960	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1961	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1963	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1964	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1965	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.5
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1967	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.9
1969	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1970	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1971	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.0	0.8
1972	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1973	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	1.3
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1978	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1982	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.9
1985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1988	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.4
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.9
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.7
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.3
AVG:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.0	1.0
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	1.8

Table 11

Alternative 4 - Water to be Subtracted from Diversion at CP #634, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1924	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.9	6.9	6.9	0.8	0.0	28.2
1925	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1926	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1927	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1929	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1930	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1931	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.9	6.9	6.9	0.8	0.0	28.2
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1934	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.7
1935	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1940	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1948	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1949	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1950	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1951	0.0	0.0	0.0	0.0	0.0	0.0	6.1	6.9	6.9	6.9	0.8	0.0	27.7
1952	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	6.9	0.8	0.0	14.6
1954	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1955	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	15.7
1956	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1957	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	6.9	0.8	0.0	13.8
1958	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1960	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1961	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1963	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1964	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	6.9	6.9	0.8	0.0	21.0
1965	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1967	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.9
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1969	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.9
1970	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.9	6.9	6.9	0.8	0.0	28.2
1971	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.9	0.0	6.9	0.8	0.0	21.3
1972	0.2	0.0	0.0	0.0	0.0	0.0	6.7	0.0	6.9	6.9	0.8	0.0	21.4
1973	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.5
1977	0.0	0.0	0.0	0.0	0.0	6.4	6.7	6.9	6.9	6.9	0.8	0.0	34.6
1978	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.8
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1982	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	2.3
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	6.9	6.9	0.8	0.0	21.3
1985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.5
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.5
1988	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.8
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	0.8	0.0	21.5
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.8	0.0	7.7
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	0.8	0.0	14.6
AVG:	0.1	0.0	0.0	0.0	0.0	0.2	0.8	1.1	3.7	6.2	0.8	0.0	12.9
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	1.1	0.0	0.0	0.0	0.0	6.4	6.7	6.9	6.9	6.9	2.2	0.0	34.6

Table 12

Alternative 4 - Water to be Subtracted from Diversion at CP #649, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	8.6	7.2	0.0	21.6
1924	0.0	0.0	0.0	0.0	0.0	0.0	3.7	6.2	8.2	8.6	7.2	0.0	33.8
1925	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	8.6	7.2	0.0	19.8
1926	1.1	0.0	0.0	0.0	0.0	0.0	0.0	2.0	8.2	8.6	7.2	0.0	26.9
1927	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.2	8.6	7.2	0.0	24.9
1929	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	5.9	8.6	7.2	0.0	23.7
1930	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	24.9
1931	0.0	0.0	0.0	0.0	0.0	0.0	2.6	4.5	8.2	8.6	7.2	0.0	31.0
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.6	7.2	0.0	16.8
1934	1.1	0.0	0.0	0.0	0.0	0.0	0.0	2.4	8.2	8.6	7.2	0.0	27.3
1935	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	16.8
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.0	5.2
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	23.9
1940	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	8.6	7.2	0.0	22.7
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	5.9	0.0	12.1
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	5.9	0.0	12.1
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.6	7.2	0.0	16.8
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.2	8.6	7.2	0.0	24.9
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	23.9
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0	8.2	8.6	7.2	0.0	25.7
1948	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	8.6	7.2	0.0	17.8
1949	1.1	0.0	0.0	0.0	0.0	0.0	0.9	0.0	8.2	8.6	7.2	0.0	25.8
1950	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	8.6	7.2	0.0	19.2
1951	0.0	0.0	0.0	0.0	0.0	0.0	1.4	6.2	8.2	8.6	5.9	0.0	30.2
1952	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	2.7
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.9	6.2	2.4	7.1	2.7	0.0	19.2
1954	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	5.9	0.0	23.5
1955	0.7	0.0	0.0	0.0	0.0	0.4	0.0	0.0	8.2	8.6	7.2	0.0	24.9
1956	1.1	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	3.1	2.7	0.0	7.7
1957	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.0	1.0	8.6	7.2	0.0	19.1
1958	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	2.7
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	23.9
1960	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	24.9
1961	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	24.9
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1963	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	5.2	0.0	13.7
1964	0.0	0.0	0.0	0.0	0.0	2.1	0.0	1.0	8.2	8.6	7.2	0.0	26.9
1965	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	2.7	0.0	12.3
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	8.2	8.6	7.2	0.0	24.7
1967	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	3.8
1968	0.0	0.0	0.0	0.0	0.0	0.0	1.4	2.0	8.2	8.6	2.7	0.0	22.7
1969	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	3.8
1970	0.0	0.0	0.0	0.0	0.0	0.0	4.6	5.2	8.1	8.6	5.2	0.0	31.6
1971	0.0	0.0	0.0	0.0	0.0	0.0	4.6	5.2	1.0	6.2	2.7	0.0	19.6
1972	1.1	0.0	0.0	0.0	0.0	0.0	4.6	1.0	8.2	8.6	7.2	0.0	30.5
1973	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	8.6	5.9	0.0	17.5
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	2.7	0.0	5.8
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	2.7	0.0	8.9
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	8.2	8.6	2.7	0.0	24.5
1977	0.0	0.0	0.0	0.0	0.6	3.1	4.6	6.2	8.2	8.6	5.2	0.0	36.3
1978	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	7.2	0.0	14.7
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	5.2	0.0	21.9
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	5.2	0.0	11.4
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.2	8.6	7.2	0.0	24.9
1982	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.0	3.0	8.6	2.7	0.0	19.3
1985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	8.2	8.6	7.2	0.0	26.3
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	7.2	0.0	15.7
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	8.2	8.6	7.2	0.0	28.4
1988	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	24.9
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	23.9
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	23.9
1991	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	8.6	5.9	0.0	15.1
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	8.2	8.6	7.2	0.0	26.3
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	8.6	2.7	0.0	12.1
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.6	7.2	0.0	23.9
AVG:	0.3	0.0	0.0	0.0	0.0	0.1	0.5	1.0	4.2	7.4	5.8	0.0	19.3
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	1.1	0.0	0.0	0.0	0.6	3.1	4.6	6.2	8.2	8.6	7.2	0.0	36.3

Table 13

Alternative 4 - Water to be Subtracted from Diversion at CP #672, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	9.1	7.4	0.0	17.1
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.2	6.3	8.6	9.1	7.4	0.0	31.7
1925	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	9.1	7.4	0.0	17.7
1926	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.8
1927	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
1929	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	9.1	7.4	0.0	17.7
1930	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.8
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	8.6	9.1	7.4	0.0	25.8
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1934	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.4	8.6	9.1	7.4	0.0	26.2
1935	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	17.2
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
1940	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	9.1	7.4	0.0	17.7
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.5	0.0	5.0
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.5	0.0	5.0
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	8.6	9.1	7.4	0.0	25.2
1948	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	17.2
1949	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	8.6	9.1	7.4	0.0	25.8
1950	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	6.2	0.0	16.0
1951	0.0	0.0	0.0	0.0	0.0	0.0	0.1	6.3	8.6	9.1	4.5	0.0	28.5
1952	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.1	6.3	0.0	5.5	0.0	0.0	11.9
1954	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	4.5	0.0	22.2
1955	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.3
1956	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.8
1957	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	9.1	7.4	0.0	16.6
1958	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
1960	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.8
1961	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.8
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1963	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.5	0.0	9.5
1964	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	8.6	9.1	7.4	0.0	25.2
1965	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	9.8
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	8.6	9.1	7.4	0.0	25.2
1967	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	8.6	9.1	0.0	0.0	17.8
1969	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
1970	0.0	0.0	0.0	0.0	0.0	0.0	3.4	3.8	7.2	9.1	0.5	0.0	23.9
1971	0.0	0.0	0.0	0.0	0.0	0.0	3.4	3.8	0.0	0.5	0.0	0.0	7.7
1972	0.7	0.0	0.0	0.0	0.0	0.0	3.4	0.0	8.6	9.1	7.4	0.0	29.2
1973	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	9.1	4.5	0.0	14.1
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.6
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	8.6	9.1	0.0	0.0	21.5
1977	0.0	0.0	0.0	0.0	0.0	1.6	3.4	6.3	8.6	9.1	0.5	0.0	29.4
1978	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	6.3	0.0	11.8
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	0.5	0.0	18.1
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
1982	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.5	9.1	0.0	0.0	11.7
1985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	8.6	9.1	7.4	0.0	25.5
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	7.4	0.0	16.5
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	8.6	9.1	7.4	0.0	25.5
1988	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.8
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	4.5	0.0	13.6
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	8.6	9.1	7.4	0.0	25.5
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	9.1	0.0	0.0	9.2
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	9.1	7.4	0.0	25.1
AVG:	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.5	3.9	7.3	5.0	0.0	17.1
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	0.7	0.0	0.0	0.0	0.0	1.6	3.4	6.3	8.6	9.1	7.4	0.0	31.7

Table 14

Alternative 4 - Water to be Subtracted from Diversion at CP #688, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1925	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1926	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.2
1927	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1929	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1930	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1934	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.2
1935	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1940	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1948	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1949	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1950	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1951	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1952	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.0
1954	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1955	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	1.3	1.3	1.3	0.0	4.2
1956	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1957	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	1.3	1.3	0.0	3.2
1958	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1960	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1961	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1963	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1964	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	1.3	1.3	1.3	0.0	4.1
1965	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1967	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.5
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1969	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.5
1970	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	1.3	1.3	1.3	0.0	5.6
1971	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	0.0	1.3	1.3	0.0	4.3
1972	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.3	1.3	1.3	0.0	4.6
1973	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.0
1977	0.0	0.0	0.0	0.0	0.0	0.3	0.6	1.2	1.3	1.3	1.3	0.0	5.9
1978	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.7
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1982	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.5
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.3	1.3	1.3	0.0	4.4
1985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.0
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.0
1988	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	4.0
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	0.0	5.0
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	2.5
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	3.8
AVG:	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.7	1.1	1.3	0.0	3.5
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	0.2	0.0	0.0	0.0	0.0	0.3	0.6	1.2	1.3	1.3	1.3	0.0	6.1

Table 15

Alternative 4 - Water to be Subtracted from Diversion at CP #693, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5	0.5	0.0	1.3
1923	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.5	0.5	0.5	0.0	2.2
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1925	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.1
1926	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.5	0.5	0.5	0.0	2.3
1927	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1929	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.1
1930	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.6
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1934	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.1
1935	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.1
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1940	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.6
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1947	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	2.5
1948	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.1
1949	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.5	0.5	0.5	0.0	1.9
1950	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.4
1951	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1952	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1954	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.6
1955	1.9	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5	0.5	0.5	0.0	3.6
1956	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5	0.5	0.0	1.4
1957	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1958	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1960	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.6
1961	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.6
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1963	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5	0.5	0.5	0.0	1.7
1964	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.5	0.5	0.5	0.0	2.2
1965	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.5	0.0	1.6
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.5	0.5	0.5	0.0	1.8
1967	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.6
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1969	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.6
1970	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1971	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1972	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	2.6
1973	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.6
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1977	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	2.5
1978	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.1
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1982	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.6
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	0.5	0.5	0.0	2.3
1985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1988	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.6
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	2.0
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5	0.5	0.0	1.3
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	1.5
AVG:	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.5	0.5	0.0	1.6
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	1.9	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.0	4.4

Table 16

Alternative 4 - Water to be Subtracted from Diversion at CP #699, TAF

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	14.2	0.0	59.9
1925	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1926	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1927	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1929	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1930	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1934	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1935	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1940	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	1.1
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	1.1
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1948	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1949	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1950	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	33.4
1951	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	1.1	0.0	46.8
1952	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	1.3	0.0	0.0	13.3
1954	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	1.1	0.0	34.8
1955	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1956	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1957	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1958	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1960	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1961	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1962	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1963	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	17.3
1964	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1965	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	19.2
1966	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1967	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	0.0	0.0	33.7
1969	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1970	0.0	0.0	0.0	0.0	0.0	0.0	6.3	12.0	16.4	17.3	0.0	0.0	52.0
1971	0.0	0.0	0.0	0.0	0.0	0.0	6.3	12.0	0.0	0.0	0.0	0.0	18.3
1972	1.9	0.0	0.0	0.0	0.0	0.0	6.3	0.0	16.4	17.3	14.2	0.0	56.1
1973	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	1.1	0.0	18.4
1974	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.4	17.3	0.0	0.0	45.7
1977	0.0	0.0	0.0	0.0	0.0	3.2	6.3	12.0	16.4	17.3	0.0	0.0	55.1
1978	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	14.2	0.0	15.5
1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	0.0	0.0	33.7
1980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1982	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
1983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	0.0	17.3	0.0	0.0	23.6
1985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	14.2	0.0	31.5
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1988	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	49.8
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	1.1	0.0	18.4
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	17.3
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.4	17.3	14.2	0.0	47.9
AVG:	0.5	0.0	0.0	0.0	0.0	0.0	0.4	1.1	7.4	13.5	8.8	0.0	31.9
MIN:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX:	1.9	0.0	0.0	0.0	0.0	3.2	6.3	12.0	16.4	17.3	14.2	0.0	71.3

Alternative 3

Water Right Cutoff Number for Vernalis Objective

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	71	x	x	x	0	0	16	8	0	x	x	x
1923	0	x	x	x	0	12	16	11	0	x	x	x
1924	0	x	x	x	0	0	24	70	0	x	x	x
1925	71	x	x	x	0	0	8	8	0	x	x	x
1926	71	x	x	x	0	8	16	21	24	x	x	x
1927	71	x	x	x	0	0	8	8	16	x	x	x
1928	0	x	x	x	0	0	21	16	18	x	x	x
1929	71	x	x	x	0	0	0	16	0	x	x	x
1930	71	x	x	x	0	0	16	21	0	x	x	x
1931	0	x	x	x	0	0	52	70	0	x	x	x
1932	0	x	x	x	0	0	0	8	8	x	x	x
1933	0	x	x	x	0	0	24	24	16	x	x	x
1934	71	x	x	x	0	0	16	71	0	x	x	x
1935	71	x	x	x	0	0	0	0	0	x	x	x
1936	0	x	x	x	0	0	0	8	8	x	x	x
1937	0	x	x	x	0	0	0	0	0	x	x	x
1938	0	x	x	x	0	0	0	0	0	x	x	x
1939	0	x	x	x	0	0	0	63	44	x	x	x
1940	71	x	x	x	0	0	0	8	21	x	x	x
1941	0	x	x	x	0	0	0	0	0	x	x	x
1942	0	x	x	x	0	0	0	8	0	x	x	x
1943	0	x	x	x	0	0	0	0	16	x	x	x
1944	0	x	x	x	0	0	0	16	0	x	x	x
1945	71	x	x	x	0	0	0	8	0	x	x	x
1946	0	x	x	x	0	0	16	8	21	x	x	x
1947	0	x	x	x	0	8	71	16	58	x	x	x
1948	71	x	x	x	8	0	16	16	8	x	x	x
1949	71	x	x	x	0	0	21	16	20	x	x	x
1950	71	x	x	x	0	0	16	8	16	x	x	x
1951	71	x	x	x	0	0	71	71	21	x	x	x
1952	71	x	x	x	0	0	0	0	0	x	x	x
1953	0	x	x	x	0	0	53	71	21	x	x	x
1954	71	x	x	x	8	0	8	8	0	x	x	x
1955	71	x	x	x	8	21	71	16	16	x	x	x
1956	71	x	x	x	0	0	21	0	0	x	x	x
1957	0	x	x	x	0	0	71	21	16	x	x	x
1958	71	x	x	x	0	0	0	0	0	x	x	x
1959	0	x	x	x	0	0	16	71	63	x	x	x
1960	71	x	x	x	0	0	16	16	0	x	x	x
1961	71	x	x	x	0	0	16	63	0	x	x	x
1962	0	x	x	x	0	0	0	16	8	x	x	x
1963	71	x	x	x	0	8	0	8	8	x	x	x
1964	0	x	x	x	8	36	71	24	21	x	x	x
1965	(72+)	x	x	x	0	0	8	16	16	x	x	x
1966	0	x	x	x	0	0	24	24	36	x	x	x
1967	71	x	x	x	0	0	0	0	0	x	x	x
1968	0	x	x	x	0	0	71	21	57	x	x	x
1969	71	x	x	x	0	0	0	0	0	x	x	x
1970	0	x	x	x	0	0	71	71	21	x	x	x
1971	71	x	x	x	0	0	71	71	16	x	x	x
1972	71	x	x	x	8	8	71	16	63	x	x	x
1973	71	x	x	x	0	0	0	8	0	x	x	x
1974	0	x	x	x	0	0	0	8	16	x	x	x
1975	0	x	x	x	0	0	0	16	0	x	x	x
1976	0	x	x	x	0	0	24	63	0	x	x	x
1977	0	x	x	x	0	0	(72+)	(72+)	0	x	x	x
1978	0	x	x	x	0	0	0	0	0	x	x	x
1979	0	x	x	x	0	0	8	8	16	x	x	x
1980	0	x	x	x	0	0	0	0	0	x	x	x
1981	0	x	x	x	0	0	16	16	57	x	x	x
1982	71	x	x	x	0	0	0	0	0	x	x	x
1983	0	x	x	x	0	0	0	0	0	x	x	x
1984	0	x	x	x	0	0	71	21	21	x	x	x
1985	71	x	x	x	0	0	16	16	53	x	x	x
1986	71	x	x	x	0	0	0	0	0	x	x	x
1987	0	x	x	x	0	0	0	29	0	x	x	x
1988	71	x	x	x	0	0	16	53	0	x	x	x
1989	0	x	x	x	0	0	16	16	0	x	x	x
1990	0	x	x	x	0	0	16	16	0	x	x	x
1991	0	x	x	x	0	0	0	16	0	x	x	x
1992	0	x	x	x	0	0	0	16	0	x	x	x
1993	0	x	x	x	8	8	21	16	0	x	x	x
1994	0	x	x	x	0	0	11	16	0	x	x	x

Alternative 4

Water Right Cutoff Number for Vernalis Objective

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	0	x	x	x	0	0	11	0	0	x	x	x
1923	0	x	x	x	0	12	0	8	0	x	x	x
1924	0	x	x	x	0	0	16	58	0	x	x	x
1925	72+	x	x	x	0	0	0	8	0	x	x	x
1926	72	x	x	x	0	8	0	21	24	x	x	x
1927	0	x	x	x	0	0	0	0	8	x	x	x
1928	0	x	x	x	0	0	8	16	18	x	x	x
1929	71	x	x	x	0	0	0	16	0	x	x	x
1930	72+	x	x	x	0	0	0	0	0	x	x	x
1931	0	x	x	x	0	0	24	53	0	x	x	x
1932	0	x	x	x	0	0	0	0	0	x	x	x
1933	0	x	x	x	0	0	0	0	16	x	x	x
1934	72+	x	x	x	0	0	0	0	0	x	x	x
1935	72+	x	x	x	0	0	0	0	0	x	x	x
1936	0	x	x	x	0	0	0	0	8	x	x	x
1937	0	x	x	x	0	0	0	0	0	x	x	x
1938	0	x	x	x	0	0	0	0	0	x	x	x
1939	0	x	x	x	0	0	0	0	53	x	x	x
1940	72+	x	x	x	0	0	0	0	21	x	x	x
1941	0	x	x	x	0	0	0	0	0	x	x	x
1942	0	x	x	x	0	0	0	0	0	x	x	x
1943	0	x	x	x	0	0	0	0	17	x	x	x
1944	0	x	x	x	0	0	0	16	0	x	x	x
1945	0	x	x	x	0	0	0	0	0	x	x	x
1946	0	x	x	x	0	0	0	0	21	x	x	x
1947	0	x	x	x	0	8	16	16	59	x	x	x
1948	66	x	x	x	8	0	0	16	8	x	x	x
1949	72+	x	x	x	0	0	16	0	20	x	x	x
1950	72+	x	x	x	0	0	8	8	16	x	x	x
1951	0	x	x	x	0	0	24	72+	21	x	x	x
1952	0	x	x	x	0	0	0	0	0	x	x	x
1953	0	x	x	x	0	0	16	72+	21	x	x	x
1954	43	x	x	x	0	0	0	0	0	x	x	x
1955	72+	x	x	x	8	21	0	0	16	x	x	x
1956	72+	x	x	x	0	0	16	0	0	x	x	x
1957	0	x	x	x	0	0	24	16	16	x	x	x
1958	0	x	x	x	0	0	0	0	0	x	x	x
1959	0	x	x	x	0	0	0	0	63	x	x	x
1960	72+	x	x	x	0	0	0	0	0	x	x	x
1961	72+	x	x	x	0	0	0	0	0	x	x	x
1962	0	x	x	x	0	0	0	0	0	x	x	x
1963	0	x	x	x	0	8	0	0	8	x	x	x
1964	0	x	x	x	8	48	0	16	21	x	x	x
1965	72++	x	x	x	0	0	0	8	0	x	x	x
1966	0	x	x	x	0	0	16	0	47	x	x	x
1967	71	x	x	x	0	0	0	0	0	x	x	x
1968	0	x	x	x	0	0	21	21	58	x	x	x
1969	72+	x	x	x	0	0	0	0	0	x	x	x
1970	0	x	x	x	0	0	72+	63	21	x	x	x
1971	0	x	x	x	0	0	71	63	16	x	x	x
1972	72+	x	x	x	8	8	72+	16	63	x	x	x
1973	8	x	x	x	0	0	0	0	0	x	x	x
1974	0	x	x	x	0	0	0	0	0	x	x	x
1975	0	x	x	x	0	0	0	0	0	x	x	x
1976	0	x	x	x	0	0	0	63	0	x	x	x
1977	0	x	x	x	0	0	72++	72++	0	x	x	x
1978	0	x	x	x	0	0	0	0	0	x	x	x
1979	0	x	x	x	0	0	0	0	0	x	x	x
1980	0	x	x	x	0	0	0	0	0	x	x	x
1981	0	x	x	x	0	0	0	16	58	x	x	x
1982	71	x	x	x	0	0	0	0	0	x	x	x
1983	0	x	x	x	0	0	0	0	0	x	x	x
1984	0	x	x	x	0	0	63	16	21	x	x	x
1985	0	x	x	x	0	0	0	0	56	x	x	x
1986	0	x	x	x	0	0	0	0	0	x	x	x
1987	0	x	x	x	0	0	0	0	0	x	x	x
1988	72+	x	x	x	0	0	0	0	0	x	x	x
1989	0	x	x	x	0	0	0	0	0	x	x	x
1990	0	x	x	x	0	0	0	0	0	x	x	x
1991	0	x	x	x	0	0	0	0	0	x	x	x
1992	0	x	x	x	0	0	0	16	0	x	x	x
1993	0	x	x	x	0	0	16	0	0	x	x	x
1994	0	x	x	x	0	0	0	0	0	x	x	x

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Alternative 3

Priority Group Curtailed for Delta Outflow Objective

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	0	0	0	0	0	0	0	0	0	7	5	0
1923	0	0	0	0	0	0	0	0	4	8	7	0
1924	0	0	0	0	0	0	4	7	8	8	6	0
1925	0	0	0	0	0	0	0	0	3	7	7	0
1926	0	0	0	0	0	0	0	(0)	8	8	8	0
1927	0	0	0	0	0	0	0	0	0	7	7	0
1928	0	0	0	0	0	0	0	0	8	9	8	0
1929	0	0	0	0	0	0	0	0	4	8	7	0
1930	0	0	0	0	0	0	0	0	7	8	7	0
1931	0	0	0	0	0	0	3	4	8	8	7	0
1932	0	0	0	0	0	0	0	0	(0)	7	6	0
1933	0	0	0	0	0	0	0	0	(0)	7	7	0
1934	0	0	0	0	0	0	0	3	8	8	7	0
1935	0	0	0	0	0	0	0	0	0	7	6	0
1936	0	0	0	0	0	0	0	0	(0)	8	7	0
1937	0	0	0	0	0	0	0	0	(0)	8	7	0
1938	0	0	0	0	0	0	0	0	0	(0)	2	0
1939	0	0	0	0	0	0	(0)	1	9	8	7	0
1940	0	0	0	0	0	0	0	0	4	8	7	0
1941	0	0	0	0	0	0	0	0	0	5	4	0
1942	0	0	0	0	0	0	0	0	0	4	3	0
1943	0	0	0	0	0	0	0	0	0	7	7	0
1944	0	0	0	0	0	0	0	0	7	8	7	0
1945	0	0	0	0	0	0	0	0	(0)	8	7	0
1946	0	0	0	0	0	0	0	0	7	8	7	0
1947	0	0	0	0	0	0	0	(0)	7	8	7	0
1948	0	0	0	0	0	0	0	0	0	7	7	0
1949	0	0	0	0	0	0	0	0	7	8	7	0
1950	0	0	0	0	0	0	0	0	(0)	8	4	0
1951	0	0	0	0	0	0	0	0	7	8	5	0
1952	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	4	2	0
1954	0	0	0	0	0	0	0	(0)	5	8	4	0
1955	0	0	0	0	0	0	0	0	7	8	7	0
1956	0	0	0	0	0	0	0	0	0	3	0	0
1957	0	0	0	0	0	0	0	0	(0)	8	4	0
1958	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	8	8	7	0
1960	0	0	0	0	0	0	0	0	8	8	7	0
1961	0	0	0	0	0	0	0	0	8	9	8	0
1962	0	0	0	0	0	0	0	0	(0)	8	7	0
1963	0	0	0	0	0	0	0	0	0	7	2	0
1964	0	0	0	0	0	0	0	0	7	8	7	0
1965	0	0	0	0	0	0	0	0	0	7	0	0
1966	0	0	0	0	0	0	0	(0)	8	8	7	0
1967	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	8	8	0	0
1969	0	0	0	0	0	0	0	0	0	1	0	0
1970	0	0	0	0	0	0	0	0	5	8	3	0
1971	0	0	0	0	0	0	0	0	0	3	1	0
1972	0	0	0	0	0	0	0	0	8	8	5	0
1973	0	0	0	0	0	0	0	0	4	8	4	0
1974	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	2	0	0
1976	0	0	0	0	0	0	0	2	9	8	2	0
1977	0	0	0	0	9	0	9	3	8	8	4	0
1978	3	0	0	0	0	0	0	0	0	7	5	0
1979	0	0	0	0	0	0	0	0	7	8	2	0
1980	0	0	0	0	0	0	0	0	0	5	2	0
1981	0	0	0	0	0	0	0	0	8	8	5	0
1982	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	3	7	0	0
1985	0	0	0	0	0	0	0	4	9	8	7	0
1986	0	0	0	0	0	0	0	0	(0)	7	4	0
1987	0	0	0	0	0	0	0	5	9	8	8	0
1988	0	0	0	0	0	0	0	(0)	8	8	8	0
1989	0	0	0	0	0	0	0	(0)	7	8	5	0
1990	0	0	0	0	0	0	(0)	0	7	8	7	0
1991	0	0	0	0	9	0	0	0	1	7	4	0
1992	0	0	0	0	0	0	0	3	8	8	7	0
1993	0	0	0	0	0	0	0	0	0	7	(0)	0
1994	0	0	0	0	0	0	0	0	8	8	5	0

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Alternative 4

Priority Group Curtailed for Delta Outflow Objective

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1922	0	0	0	0	0	0	0	0	0	7	7	(0)
1923	0	0	0	0	0	0	0	0	4	8	7	0
1924	0	0	0	0	0	(0)	4	8	8	8	7	0
1925	(0)	0	0	0	0	0	0	0	3	8	7	(0)
1926	0	0	0	0	0	0	0	(0)	8	8	8	0
1927	0	0	0	0	0	0	0	0	0	8	7	0
1928	0	0	0	0	0	0	0	0	8	9	8	0
1929	0	0	0	0	0	0	0	0	4	8	7	0
1930	0	0	0	0	0	0	0	0	8	8	7	0
1931	0	0	0	0	0	(0)	3	4	8	8	8	0
1932	0	0	0	0	0	0	0	0	(0)	8	7	0
1933	0	0	0	0	0	0	0	0	(0)	8	8	0
1934	0	0	0	0	0	(0)	0	3	8	8	7	0
1935	0	0	0	0	0	0	0	0	0	8	7	0
1936	0	0	0	0	0	0	0	0	(0)	8	8	0
1937	0	0	0	0	0	0	0	0	(0)	8	8	0
1938	0	0	0	0	0	0	0	0	0	0	4	0
1939	0	0	0	0	0	0	(0)	(0)	9	8	8	0
1940	0	0	0	0	0	0	0	0	4	8	8	0
1941	0	0	0	0	0	0	0	0	0	4	5	0
1942	0	0	0	0	0	0	0	0	0	4	5	0
1943	0	0	0	0	0	0	0	0	0	8	7	0
1944	0	0	0	0	0	0	0	0	7	8	8	0
1945	0	0	0	0	0	0	0	0	(0)	8	7	0
1946	0	0	0	0	0	0	0	0	7	8	7	0
1947	0	0	0	0	0	0	0	(0)	8	8	8	0
1948	0	0	0	0	0	0	0	0	0	8	7	0
1949	0	0	0	0	0	0	0	0	8	8	7	0
1950	0	0	0	0	0	0	0	0	1	8	6	0
1951	0	0	0	0	0	0	0	0	8	8	5	0
1952	0	0	0	0	0	0	0	0	0	0	2	0
1953	0	0	0	0	0	0	0	0	0	5	2	0
1954	0	0	0	0	0	0	0	(0)	7	8	5	0
1955	0	0	0	0	0	0	0	0	7	8	8	0
1956	0	0	0	0	0	0	0	0	0	2	2	0
1957	0	0	0	0	0	0	0	0	(0)	8	7	0
1958	0	0	0	0	0	0	0	0	0	(0)	2	0
1959	0	0	0	0	0	(0)	0	0	8	9	7	0
1960	(0)	0	0	0	0	0	0	0	8	8	8	(0)
1961	0	0	0	0	0	0	0	0	8	9	8	0
1962	0	0	0	0	0	0	0	0	(0)	8	7	0
1963	0	0	0	0	0	0	0	0	0	7	4	0
1964	0	0	0	0	0	0	0	0	7	8	8	0
1965	(0)	0	0	0	0	0	0	0	0	7	2	0
1966	0	0	0	0	0	0	0	(0)	8	8	7	0
1967	0	0	0	0	0	0	0	0	0	0	2	0
1968	0	0	0	0	0	0	0	0	8	8	2	0
1969	(0)	0	0	0	0	0	0	0	0	0	2	0
1970	0	0	0	0	0	0	0	0	6	8	5	0
1971	0	0	0	0	0	0	0	0	0	4	2	0
1972	0	0	0	0	0	0	0	0	8	8	7	0
1973	0	0	0	0	0	0	0	0	3	8	5	0
1974	0	0	0	0	0	0	0	0	0	2	2	0
1975	0	0	0	0	0	0	0	0	0	4	2	0
1976	0	0	0	0	0	0	0	3	9	8	2	0
1977	(0)	0	0	0	9	7	9	3	8	8	5	0
1978	3	0	0	0	0	0	0	0	0	5	6	0
1979	0	0	0	0	0	0	0	0	8	8	4	0
1980	0	0	0	0	0	0	0	0	0	4	4	0
1981	0	0	0	0	0	0	0	0	8	8	7	0
1982	0	0	0	0	0	0	0	0	0	0	1	0
1983	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	3	8	2	0
1985	0	0	0	0	0	0	0	3	8	8	7	0
1986	0	0	0	0	0	0	0	0	0	8	7	0
1987	0	0	0	0	0	0	0	4	9	8	8	0
1988	0	0	0	0	0	0	0	(0)	8	8	8	0
1989	0	0	0	0	0	0	0	0	8	8	7	0
1990	0	0	0	0	0	0	(0)	0	8	8	8	0
1991	(0)	0	0	0	9	0	0	0	(0)	7	5	0
1992	(0)	0	0	0	0	0	0	3	8	8	8	0
1993	0	0	0	0	0	0	0	0	0	8	2	0
1994	0	0	0	0	0	0	0	0	8	8	7	0

Alternarive 3

Unallocated Water (additional project obligation) (TAF)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	60	16	0	76
1923	0	0	0	0	0	0	0	0	16	173	70	0	259
1924	0	0	0	0	0	0	17	85	166	78	45	0	391
1925	0	0	0	0	0	0	0	0	45	223	7	0	275
1926	0	0	0	0	0	0	0	95	217	258	14	0	584
1927	0	0	0	0	0	0	0	0	0	188	47	0	235
1928	0	0	0	0	0	0	0	0	33	95	44	0	172
1929	0	0	0	0	0	0	0	0	1	72	52	0	124
1930	0	0	0	0	0	0	0	0	105	120	27	0	251
1931	0	0	0	0	0	0	26	30	29	21	100	0	205
1932	0	0	0	0	0	0	0	0	137	177	20	0	334
1933	0	0	0	0	0	0	0	0	136	184	91	0	410
1934	0	0	0	0	0	0	0	19	65	25	36	0	145
1935	0	0	0	0	0	0	0	0	0	231	24	0	255
1936	0	0	0	0	0	0	0	0	9	86	116	0	211
1937	0	0	0	0	0	0	0	0	154	113	115	0	382
1938	0	0	0	0	0	0	0	0	0	6	25	0	31
1939	0	0	0	0	0	0	122	8	21	138	106	0	394
1940	0	0	0	0	0	0	0	0	18	176	117	0	311
1941	0	0	0	0	0	0	0	0	0	24	3	0	28
1942	0	0	0	0	0	0	0	0	0	57	4	0	60
1943	0	0	0	0	0	0	0	0	0	221	15	0	236
1944	0	0	0	0	0	0	0	0	77	104	99	0	280
1945	0	0	0	0	0	0	0	0	154	77	62	0	293
1946	0	0	0	0	0	0	0	0	54	42	15	0	111
1947	0	0	0	0	0	0	0	134	172	240	101	0	647
1948	0	0	0	0	0	0	0	0	0	120	70	0	190
1949	0	0	0	0	0	0	0	0	190	164	59	0	413
1950	0	0	0	0	0	0	0	0	196	16	56	0	268
1951	0	0	0	0	0	0	0	0	99	202	43	0	343
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	43	28	0	71
1954	0	0	0	0	0	0	0	51	28	224	37	0	341
1955	0	0	0	0	0	0	0	0	51	170	90	0	311
1956	0	0	0	0	0	0	0	0	0	7	0	0	7
1957	0	0	0	0	0	0	0	0	112	37	52	0	201
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	158	269	59	0	486
1960	0	0	0	0	0	0	0	0	85	190	110	0	385
1961	0	0	0	0	0	0	0	0	73	25	29	0	127
1962	0	0	0	0	0	0	0	0	242	99	54	0	395
1963	0	0	0	0	0	0	0	0	0	91	70	0	161
1964	0	0	0	0	0	0	0	0	55	195	95	0	345
1965	0	0	0	0	0	0	0	0	0	85	0	0	85
1966	0	0	0	0	0	0	0	39	116	191	45	0	391
1967	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	108	156	0	0	264
1969	0	0	0	0	0	0	0	0	0	3	0	0	3
1970	0	0	0	0	0	0	0	0	14	15	5	0	34
1971	0	0	0	0	0	0	0	0	0	12	7	0	19
1972	0	0	0	0	0	0	0	0	95	208	34	0	337
1973	0	0	0	0	0	0	0	0	24	63	3	0	90
1974	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	37	0	0	37
1976	0	0	0	0	0	0	0	2	40	99	14	0	154
1977	0	0	0	0	165	0	19	48	108	16	38	0	394
1978	29	0	0	0	0	0	0	0	0	70	22	0	121
1979	0	0	0	0	0	0	0	0	229	4	70	0	303
1980	0	0	0	0	0	0	0	0	0	14	44	0	59
1981	0	0	0	0	0	0	0	0	231	164	39	0	434
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	52	206	0	0	258
1985	0	0	0	0	0	0	0	31	31	204	32	0	297
1986	0	0	0	0	0	0	0	0	41	293	47	0	381
1987	0	0	0	0	0	0	0	31	289	221	3	0	544
1988	0	0	0	0	0	0	0	12	73	165	8	0	258
1989	0	0	0	0	0	0	0	31	182	132	26	0	371
1990	0	0	0	0	0	0	70	0	136	148	84	0	437
1991	0	0	0	0	54	0	0	0	5	53	33	0	145
1992	0	0	0	0	0	0	0	14	134	28	79	0	253
1993	0	0	0	0	0	0	0	0	0	78	7	0	85
1994	0	0	0	0	0	0	0	0	239	18	38	0	294
AVG:	0	0	0	0	3	0	3	9	69	106	40	0	230
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	29	0	0	0	165	0	122	134	289	293	117	0	1149

Alternative 4

Unallocated Water (additional project obligation) (TAF)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1922	0	0	0	0	0	0	0	0	0	61	27	6	94
1923	0	0	0	0	0	0	0	0	11	126	146	0	283
1924	0	0	0	0	0	14	19	9	207	136	49	0	433
1925	6	0	0	0	0	0	0	0	64	133	44	6	253
1926	0	0	0	0	0	0	0	95	319	356	86	0	857
1927	0	0	0	0	0	0	0	0	0	84	125	0	209
1928	0	0	0	0	0	0	0	0	151	109	111	0	371
1929	0	0	0	0	0	0	0	0	10	156	96	0	262
1930	0	0	0	0	0	0	0	0	18	202	57	0	277
1931	0	0	0	0	0	22	26	30	78	87	34	0	277
1932	0	0	0	0	0	0	0	0	43	53	53	0	149
1933	0	0	0	0	0	0	0	0	150	101	28	0	279
1934	0	0	0	0	0	22	0	19	118	114	72	0	345
1935	0	0	0	0	0	0	0	0	0	141	89	0	229
1936	0	0	0	0	0	0	0	0	9	237	40	0	287
1937	0	0	0	0	0	0	0	0	81	266	40	0	387
1938	0	0	0	0	0	0	0	0	0	0	24	0	24
1939	0	0	0	0	0	0	54	47	38	241	35	0	415
1940	0	0	0	0	0	0	0	0	19	310	48	0	377
1941	0	0	0	0	0	0	0	0	0	65	22	0	87
1942	0	0	0	0	0	0	0	0	0	77	20	0	97
1943	0	0	0	0	0	0	0	0	0	121	73	0	194
1944	0	0	0	0	0	0	0	0	111	213	2	0	326
1945	0	0	0	0	0	0	0	0	75	225	129	0	428
1946	0	0	0	0	0	0	0	0	79	174	69	0	322
1947	0	0	0	0	0	0	0	134	85	331	29	0	579
1948	0	0	0	0	0	0	0	0	0	33	75	0	108
1949	0	0	0	0	0	0	0	0	83	266	69	0	418
1950	0	0	0	0	0	0	0	0	19	128	14	0	161
1951	0	0	0	0	0	0	0	0	5	327	41	0	372
1952	0	0	0	0	0	0	0	0	0	0	52	0	52
1953	0	0	0	0	0	0	0	0	0	23	71	0	94
1954	0	0	0	0	0	0	0	33	6	331	39	0	409
1955	0	0	0	0	0	0	0	0	73	281	20	0	374
1956	0	0	0	0	0	0	0	0	0	69	35	0	105
1957	0	0	0	0	0	0	0	0	112	166	13	0	291
1958	0	0	0	0	0	0	0	0	0	8	37	0	45
1959	0	0	0	0	0	14	0	0	286	3	87	0	391
1960	4	0	0	0	0	0	0	0	182	268	33	2	489
1961	0	0	0	0	0	0	0	0	161	33	70	0	264
1962	0	0	0	0	0	0	0	0	142	252	135	0	529
1963	0	0	0	0	0	0	0	0	0	87	50	0	138
1964	0	0	0	0	0	0	0	0	98	301	25	0	424
1965	2	0	0	0	0	0	0	0	0	115	21	0	138
1966	0	0	0	0	0	0	0	15	246	291	79	0	631
1967	0	0	0	0	0	0	0	0	0	0	24	0	24
1968	0	0	0	0	0	0	0	0	208	265	18	0	491
1969	2	0	0	0	0	0	0	0	0	0	31	0	33
1970	0	0	0	0	0	0	0	0	6	155	6	0	166
1971	0	0	0	0	0	0	0	0	0	55	11	0	66
1972	0	0	0	0	0	0	0	0	179	300	5	0	484
1973	0	0	0	0	0	0	0	0	45	215	32	7	300
1974	0	0	0	0	0	0	0	0	0	44	38	0	82
1975	0	0	0	0	0	0	0	0	0	43	39	0	82
1976	0	0	0	0	0	0	0	4	51	111	36	0	202
1977	5	0	0	0	166	10	20	50	158	62	44	0	515
1978	29	0	0	0	0	0	0	0	0	66	10	0	105
1979	0	0	0	0	0	0	0	0	27	140	52	0	219
1980	0	0	0	0	0	0	0	0	0	15	3	0	18
1981	0	0	0	0	0	0	0	0	333	262	27	0	622
1982	0	0	0	0	0	0	0	0	0	0	10	0	10
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	70	105	37	0	212
1985	0	0	0	0	0	0	0	35	48	278	65	0	425
1986	0	0	0	0	0	0	0	0	0	106	20	0	126
1987	0	0	0	0	0	0	0	31	300	322	110	0	763
1988	0	0	0	0	0	0	0	11	166	262	71	0	509
1989	0	0	0	0	0	0	0	0	89	235	18	0	341
1990	0	0	0	0	0	0	31	0	49	256	17	0	354
1991	3	0	0	0	56	0	0	0	177	66	21	0	322
1992	1	0	0	0	0	0	0	34	160	73	12	0	279
1993	0	0	0	0	0	0	0	0	0	35	57	0	92
1994	0	0	0	0	0	0	0	0	347	119	26	0	493
AVG:	1	0	0	0	3	1	2	7	75	146	46	0	282
MIN:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:	29	0	0	0	166	22	54	134	347	356	146	7	1262