APPENDIX II.

THIS SECTION CONTAINS THE PLATES, FIGURES, AND TABLES PERTINENT TO PARTS I, II, AND III OF THE TEXT.

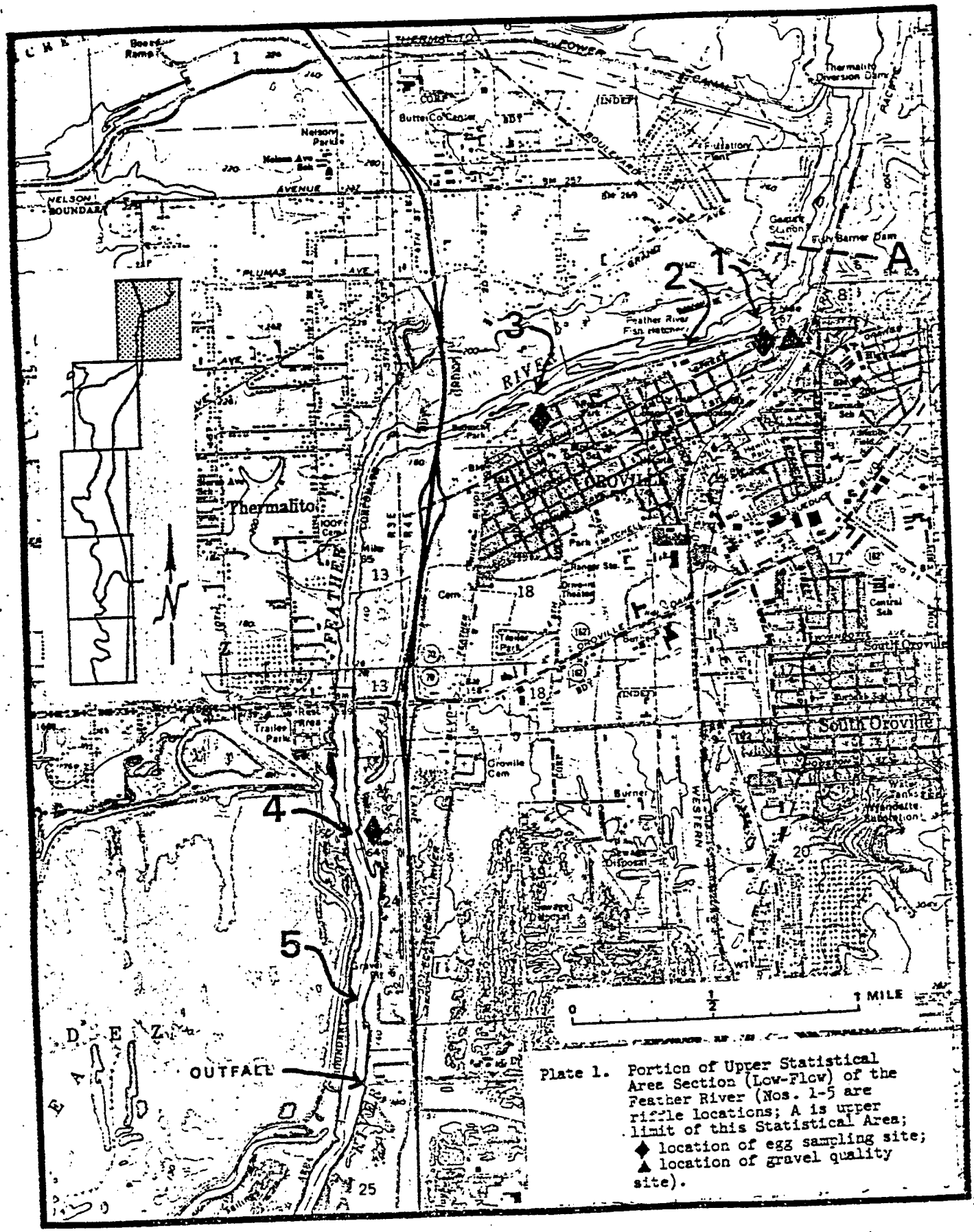

Plate 1. Portion of Upper Statistical Area Section (Low-Flow) of the Feather River (Nos. 1-5 are riffle locations; A is upper limit of this Statistical Area; ◆ location of egg sampling site; ▲ location of gravel quality site).

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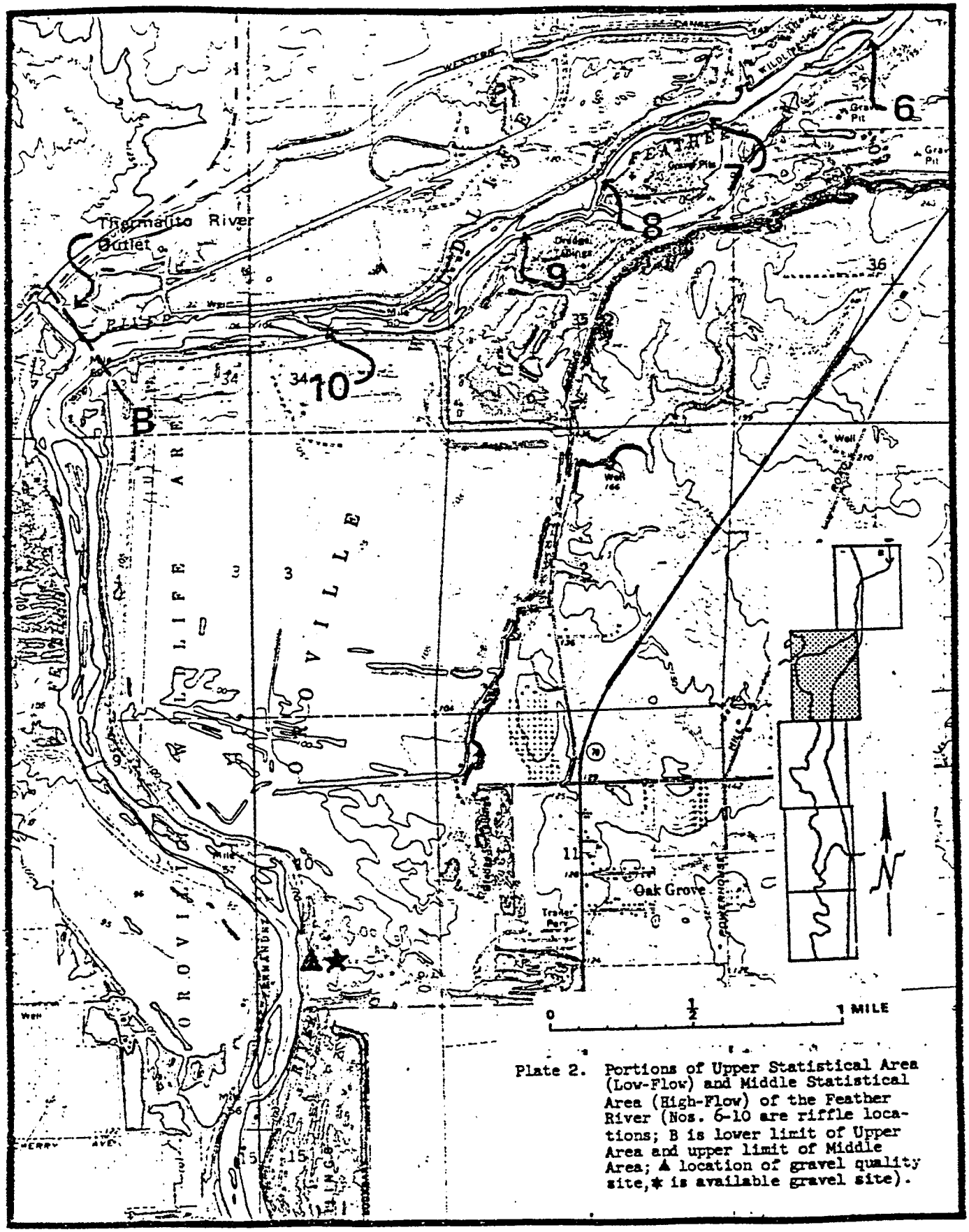

Plate 2. Portions of Upper Statistical Area (Low-Flow) and Middle Statistical Area (High-Flow) of the Feather River (Nos. 6-10 are riffle locations; B is lower limit of Upper Area and upper limit of Middle Area; ▲ location of gravel quality site, ✱ is available gravel site).

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Plate 3: Portions of Middle Statistical Area (High-Flow) River (C is lower of and the lower Statistical Area and upper limit of Middle Area (C is location of reactor Lower Area: ♦ location of sampling site, ★ site, ■ available gravel

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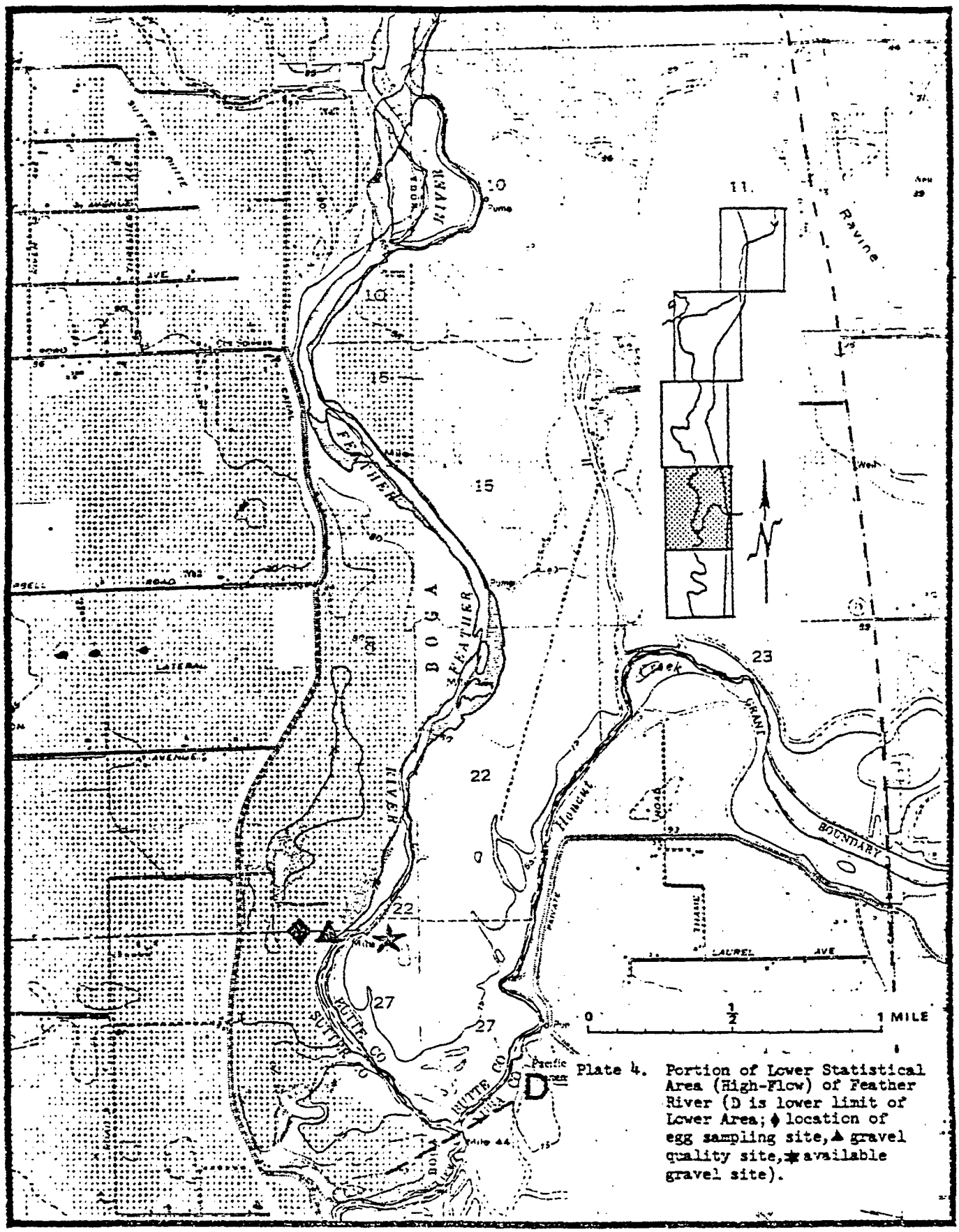

Plate 4. Portion of Lower Statistical Area (High-Flow) of Feather River (D is lower limit of Lower Area; ♦ location of egg sampling site, ▲ gravel quality site, ✱ available gravel site).

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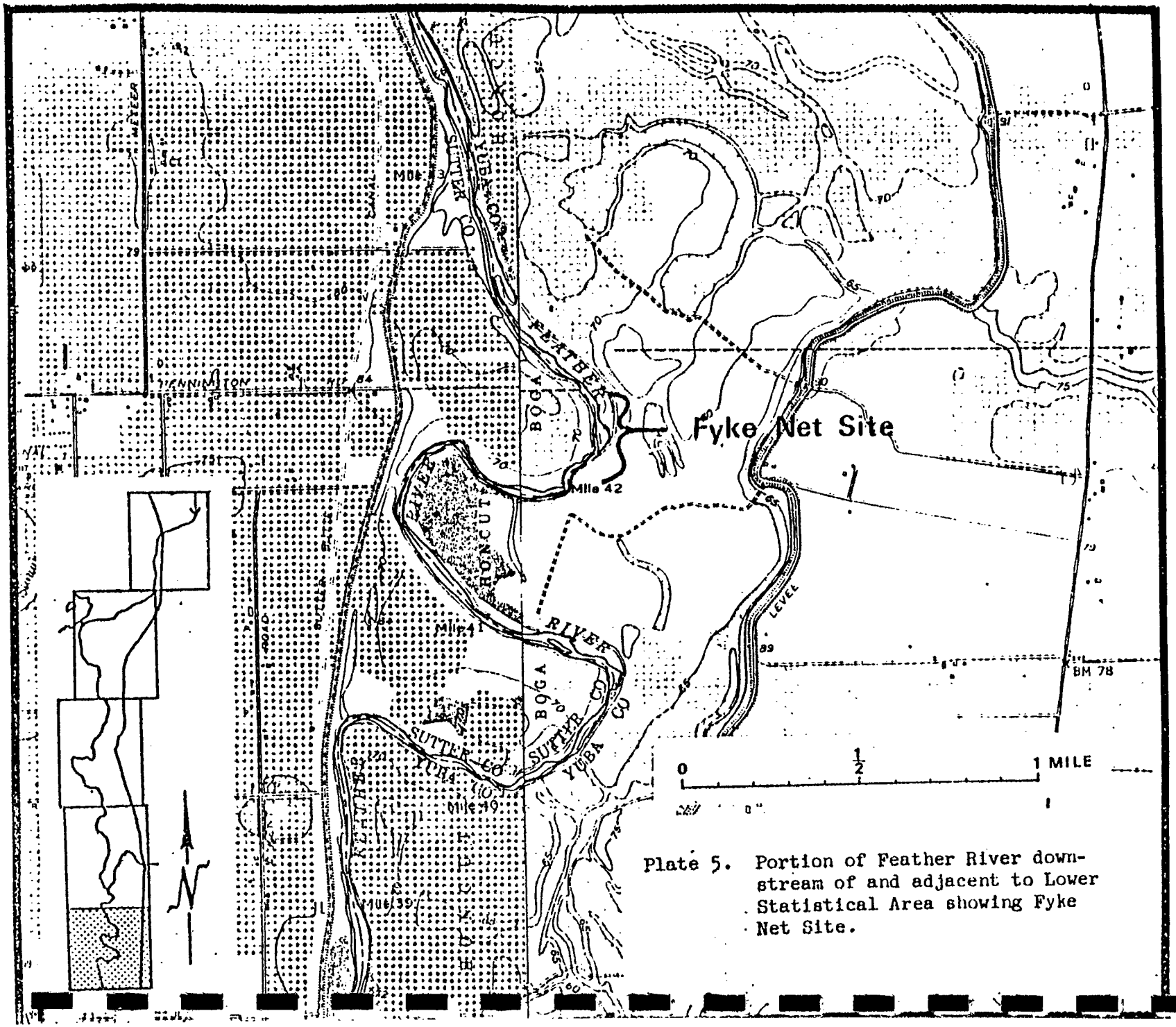

Plate 5. Portion of Feather River downstream of and adjacent to Lower Statistical Area showing Fyke Net Site.

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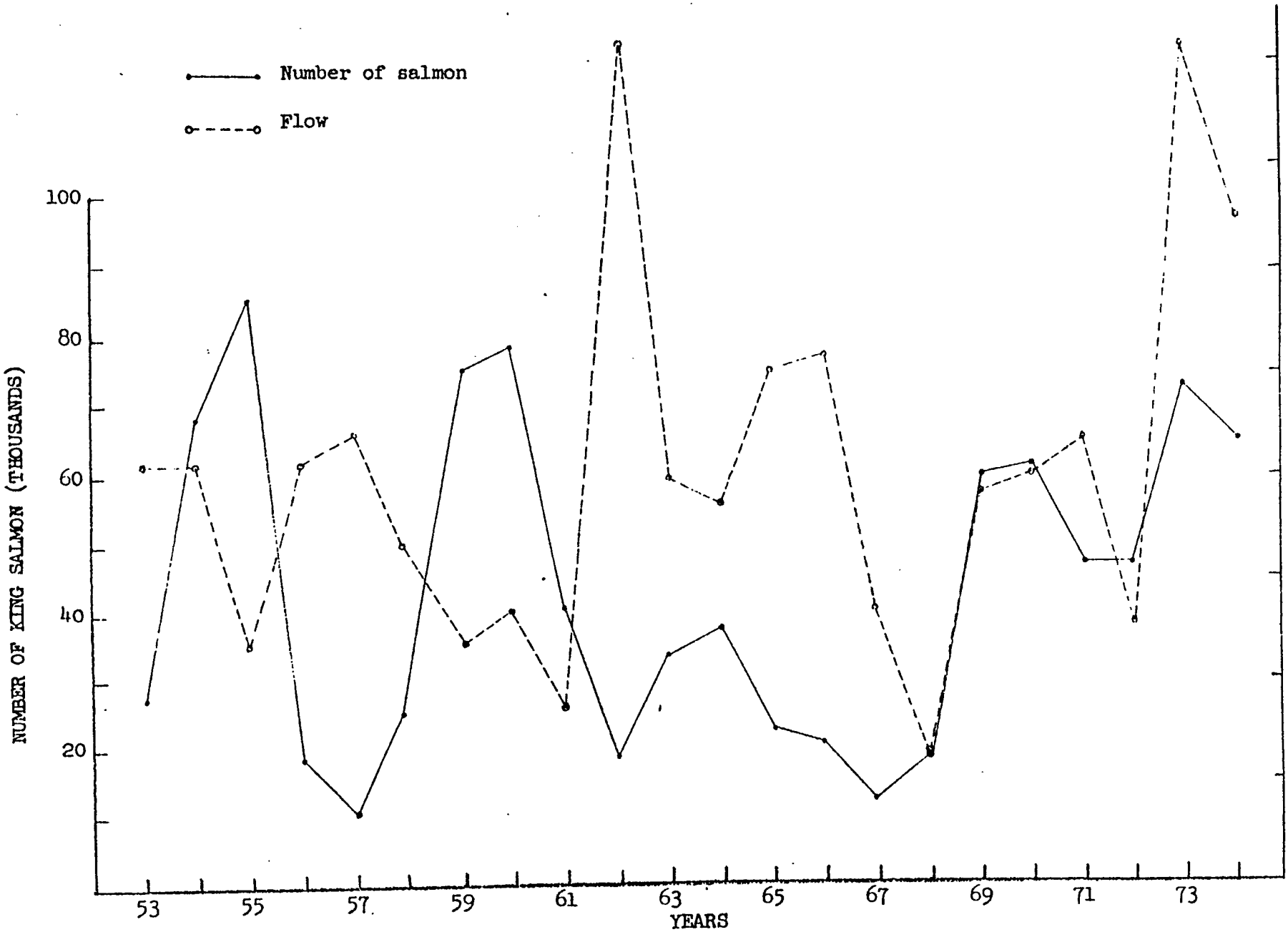

Figure 1. Graph of yearly estimates of king salmon abundance and the mean Feather River flow for October-November 1953-1974.

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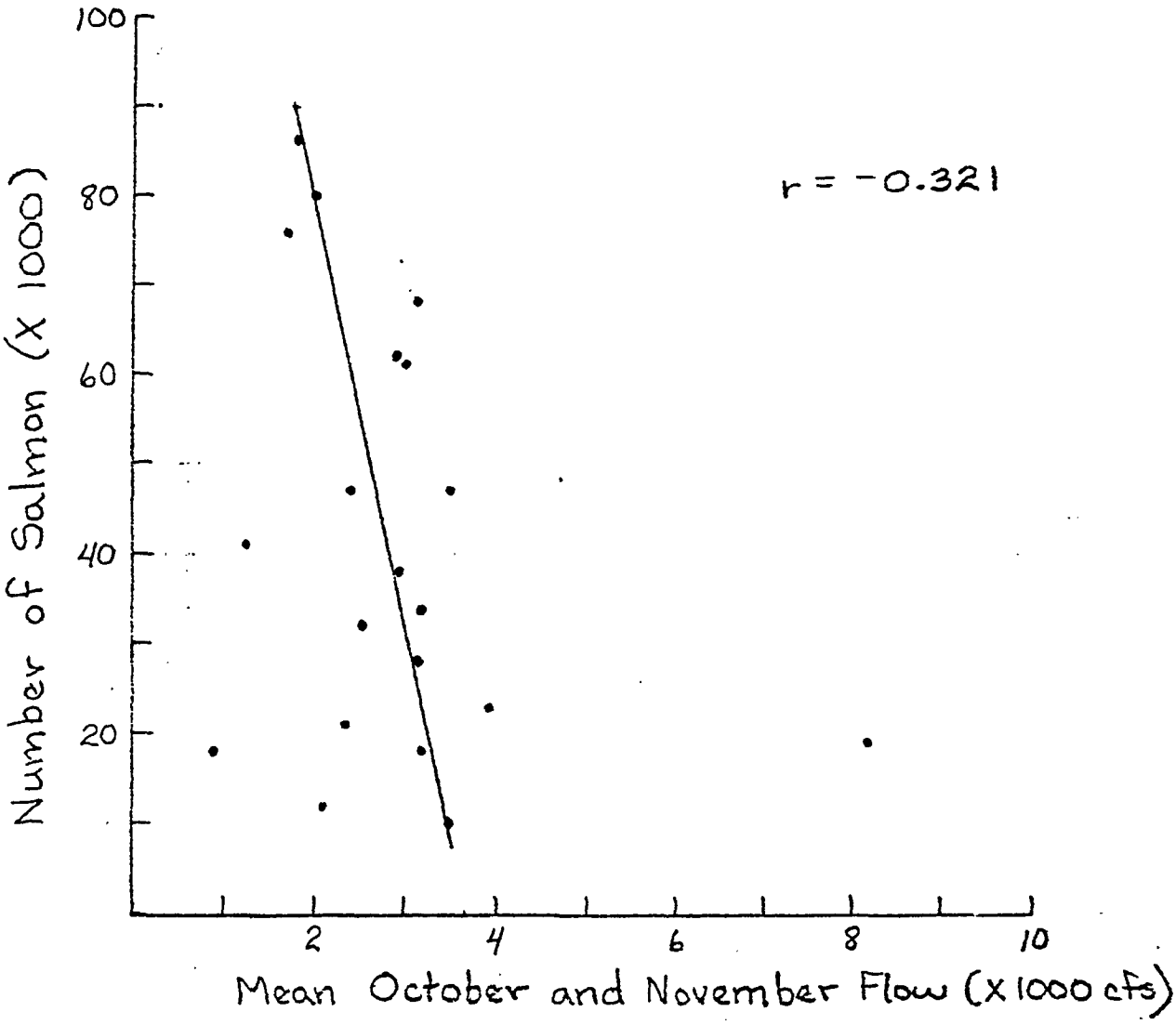

Figure 2. Apparent lack of relationship between flow and abundance of adult king salmon.

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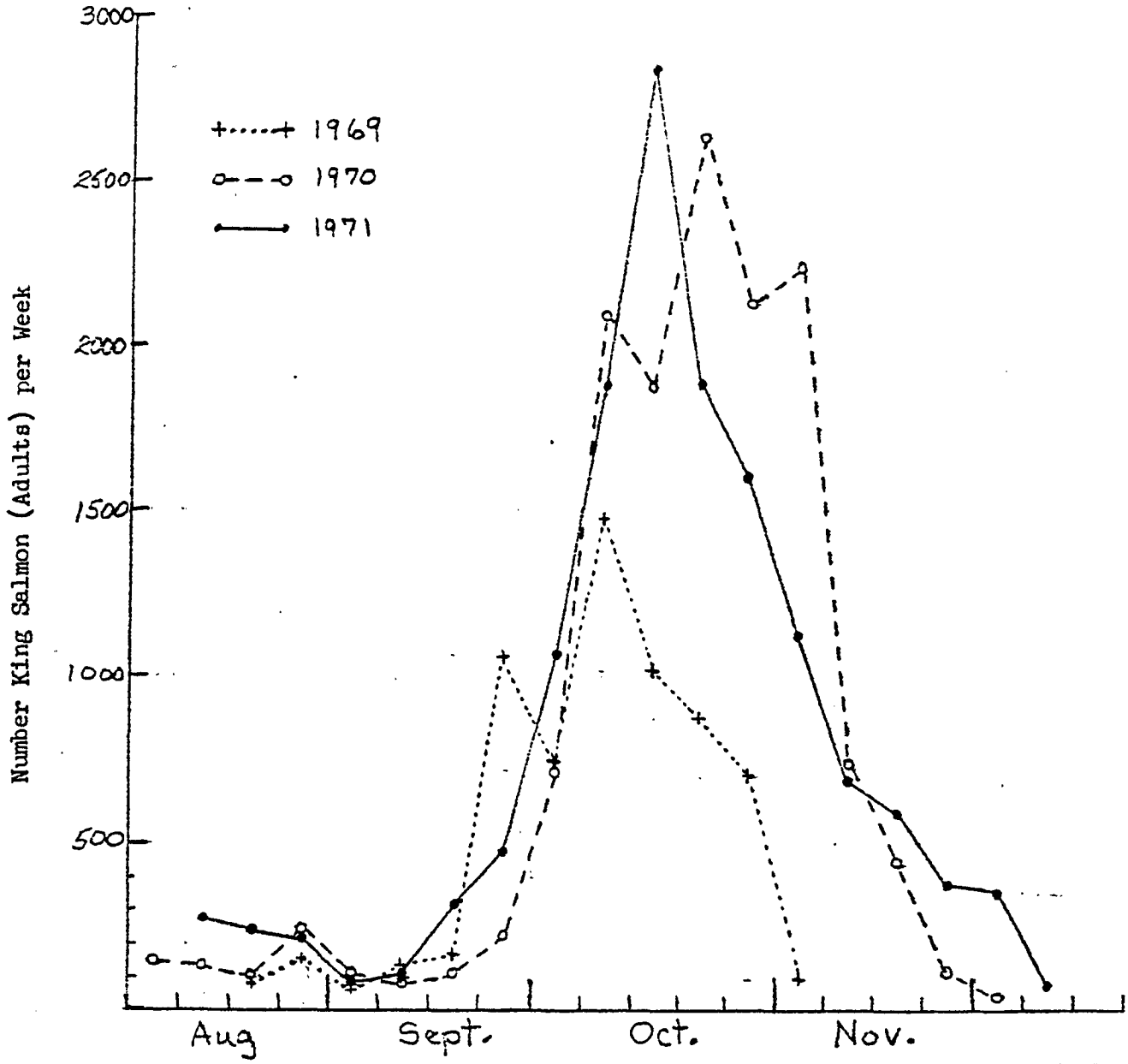

Figure 3. Number of adult king salmon (by weeks) counted through the weir in the low flow section of the Feather River, 1969, 1970, 1971.

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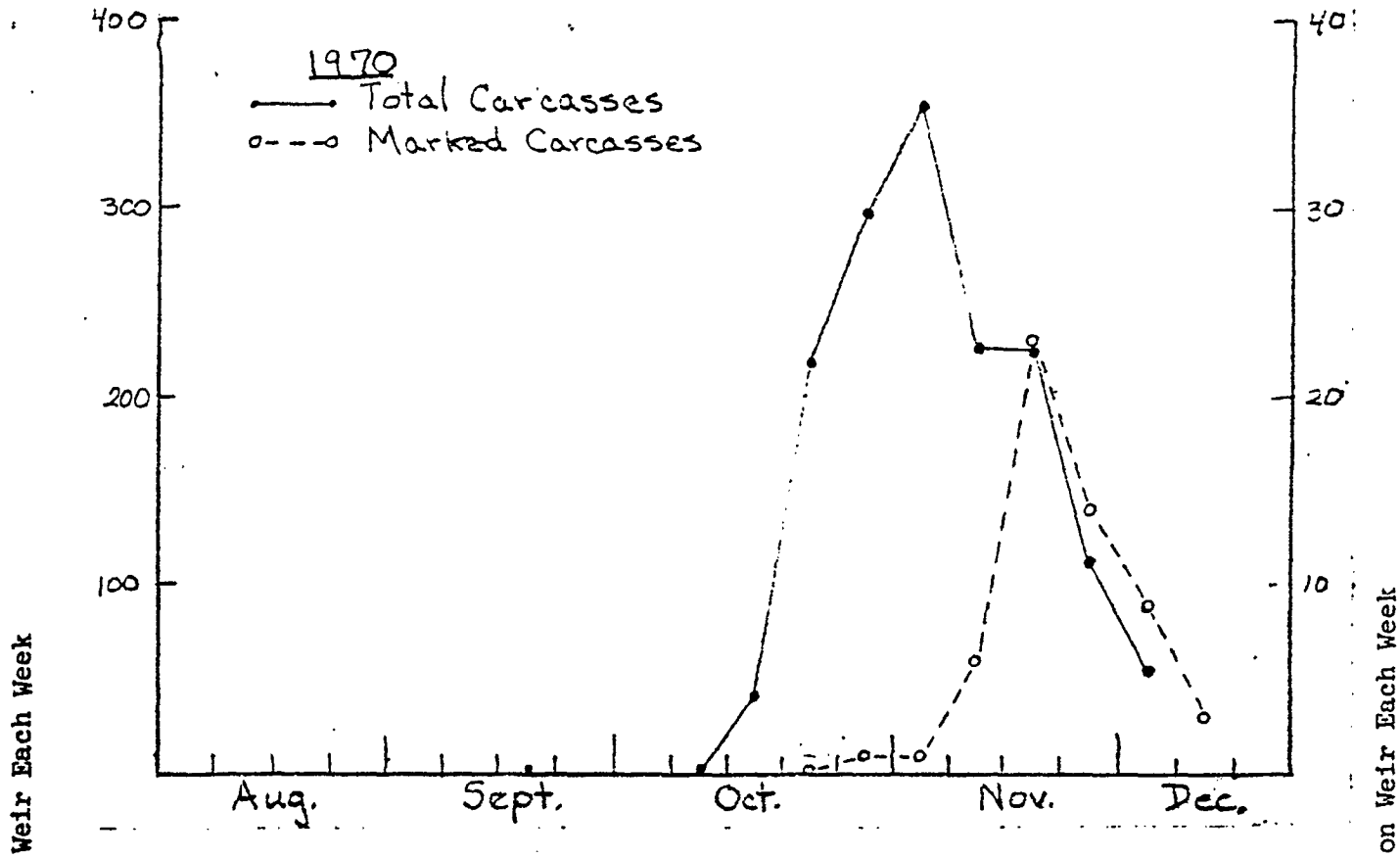

Figure 4. Weekly counts of marked and unmarked carcasses from the weir, 1970.

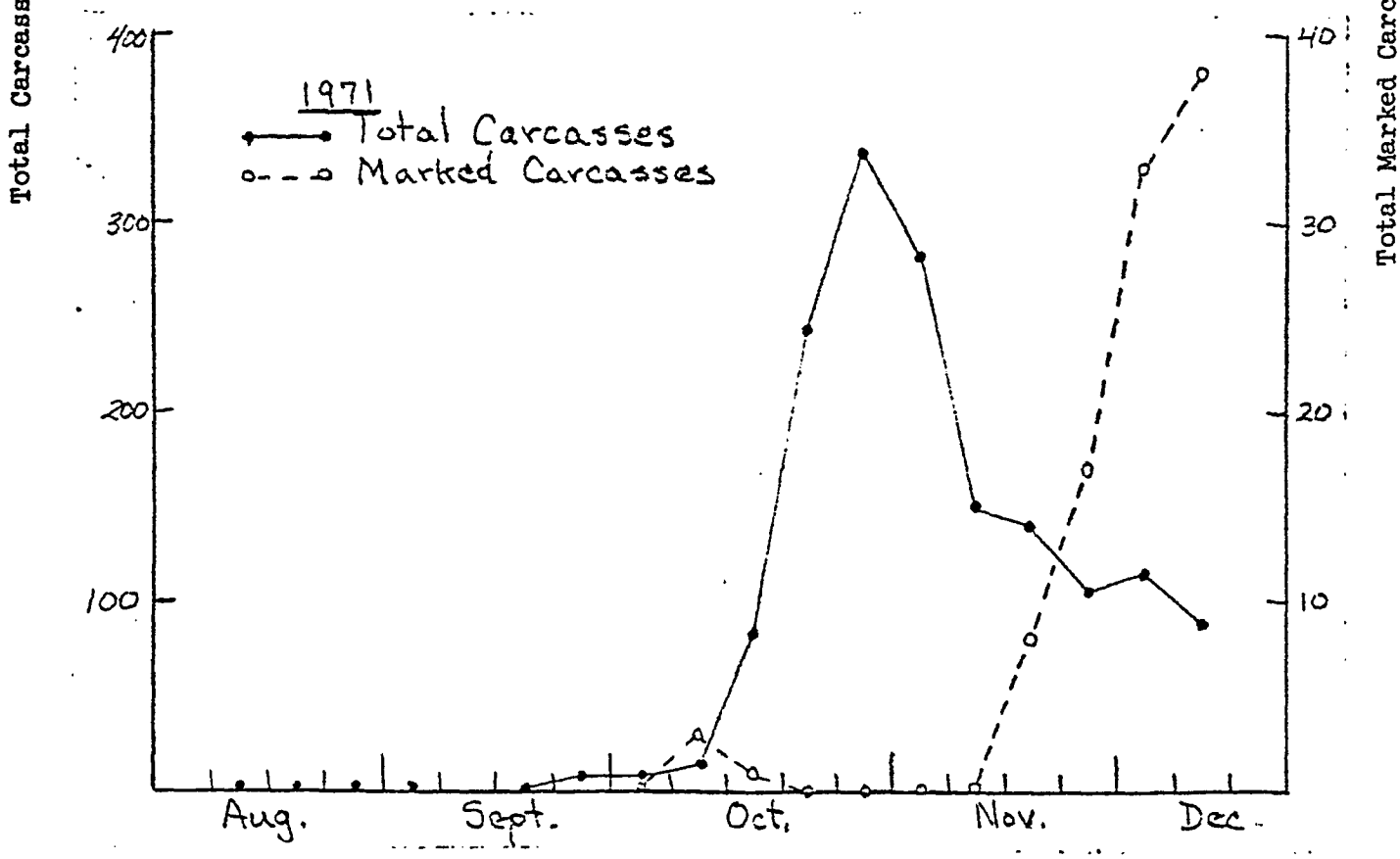

Figure 5. Weekly counts of marked and unmarked carcasses from the weir, 1971.

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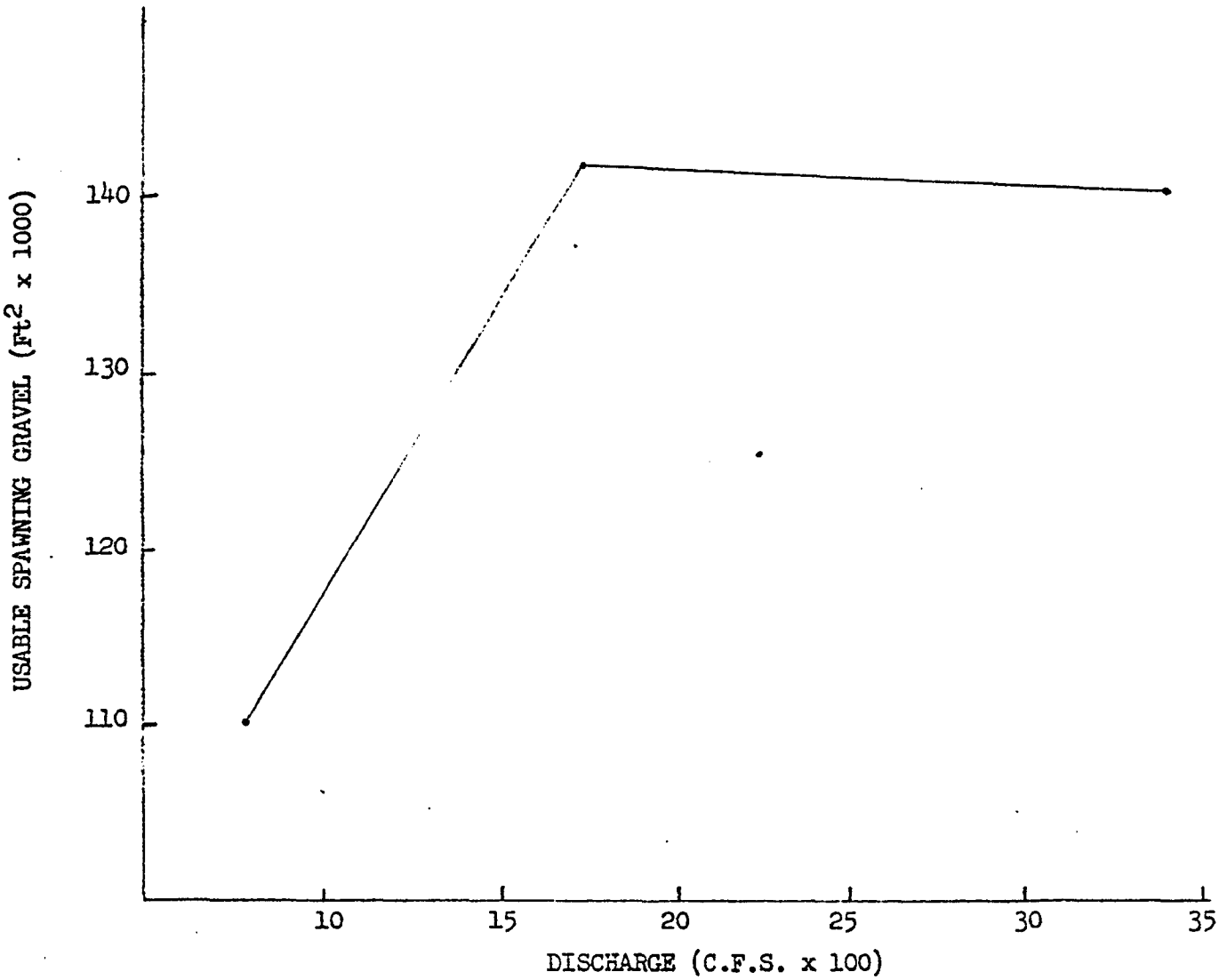

Figure 6. River flow - available gravel relationship in the Feather River (Keir, 1964).

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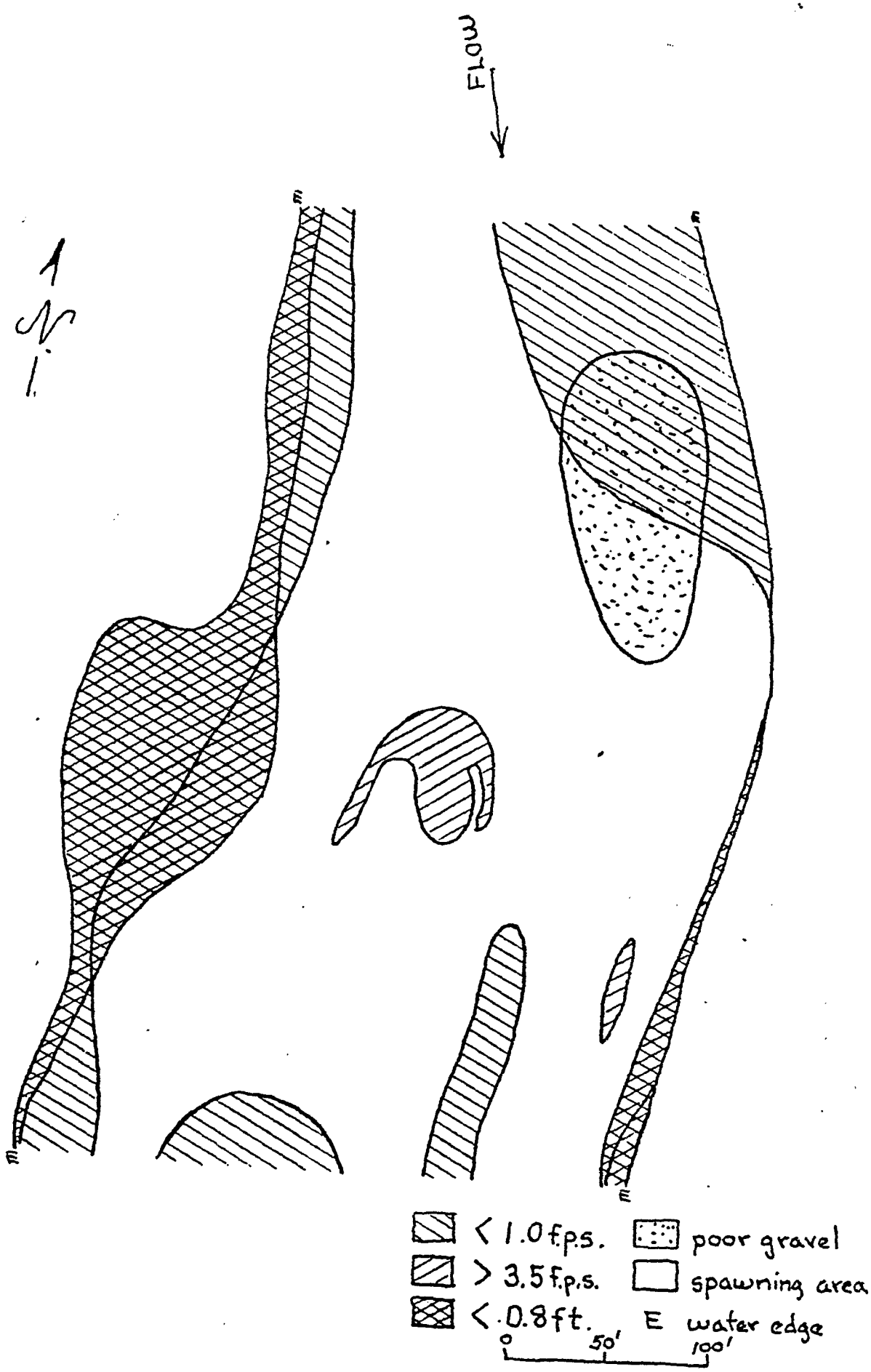

Figure 7. Salmon spawning gravel area available at 1,000 c.f.s on Hour Riffle, spring 1969.

C — 0 6 7 1 4 2

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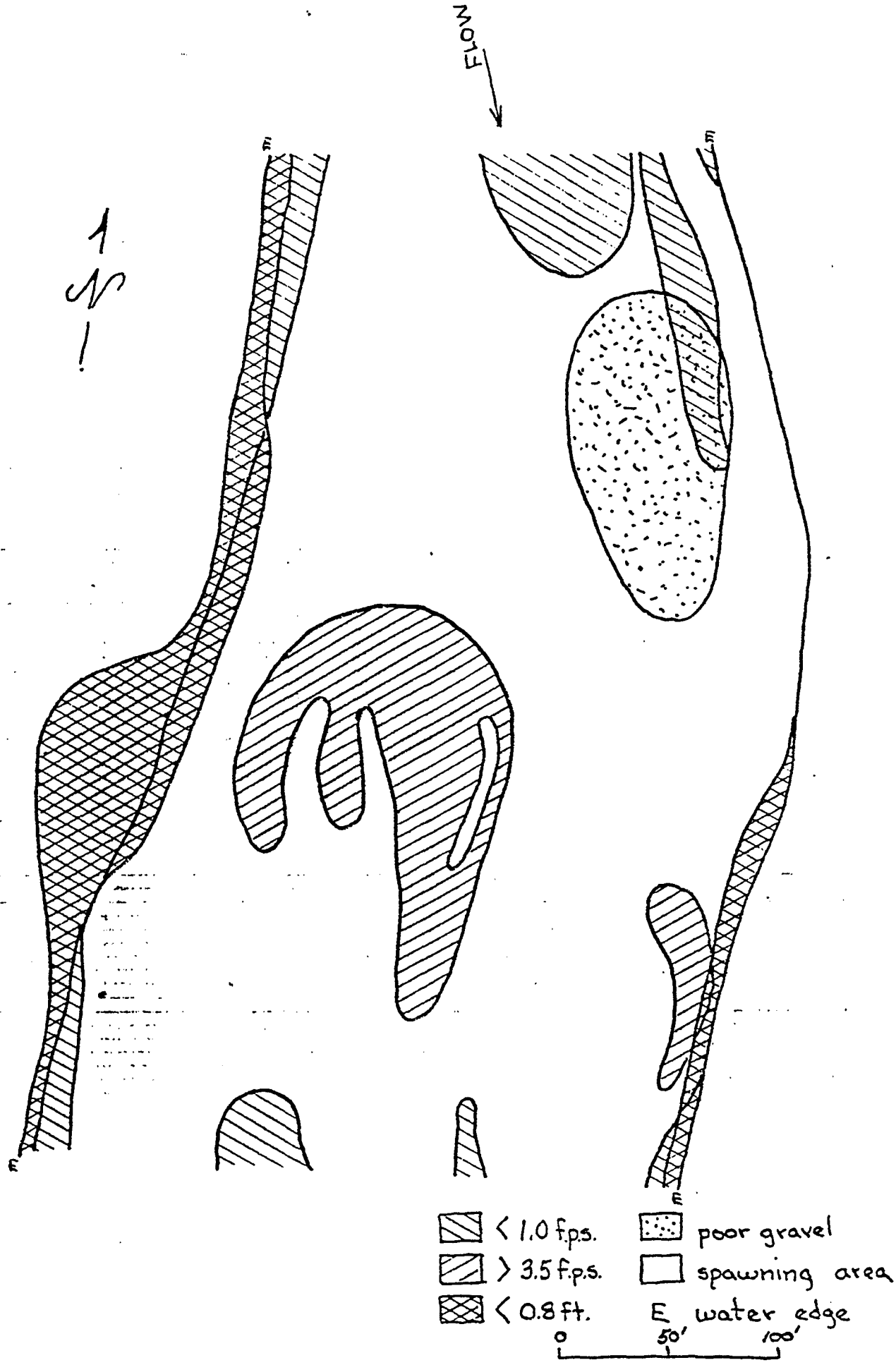

Figure 8. 1,500 c.f.s. - Hour Riffle

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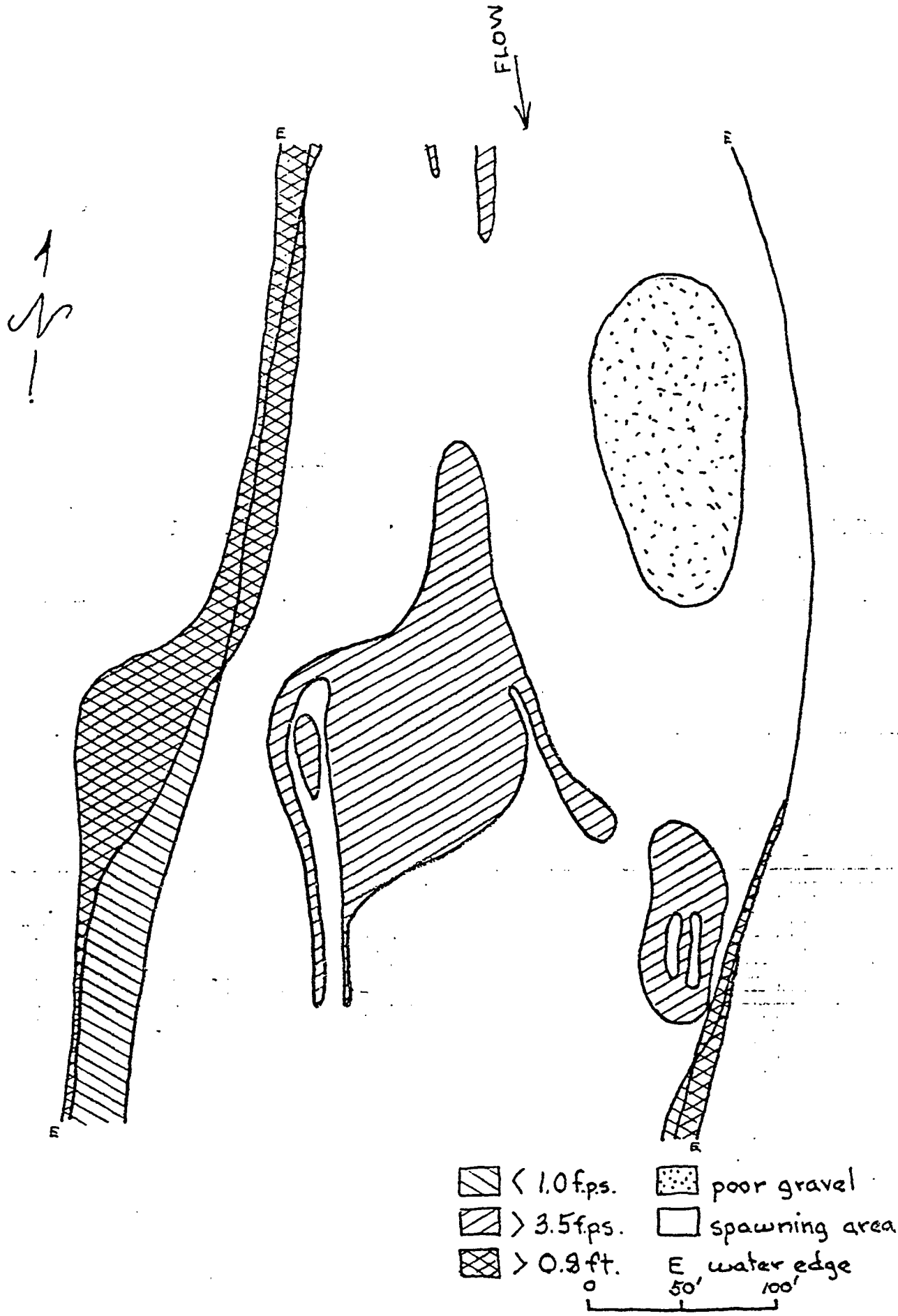

Figure 9. 2,000 c.f.s. - Hour Riffle

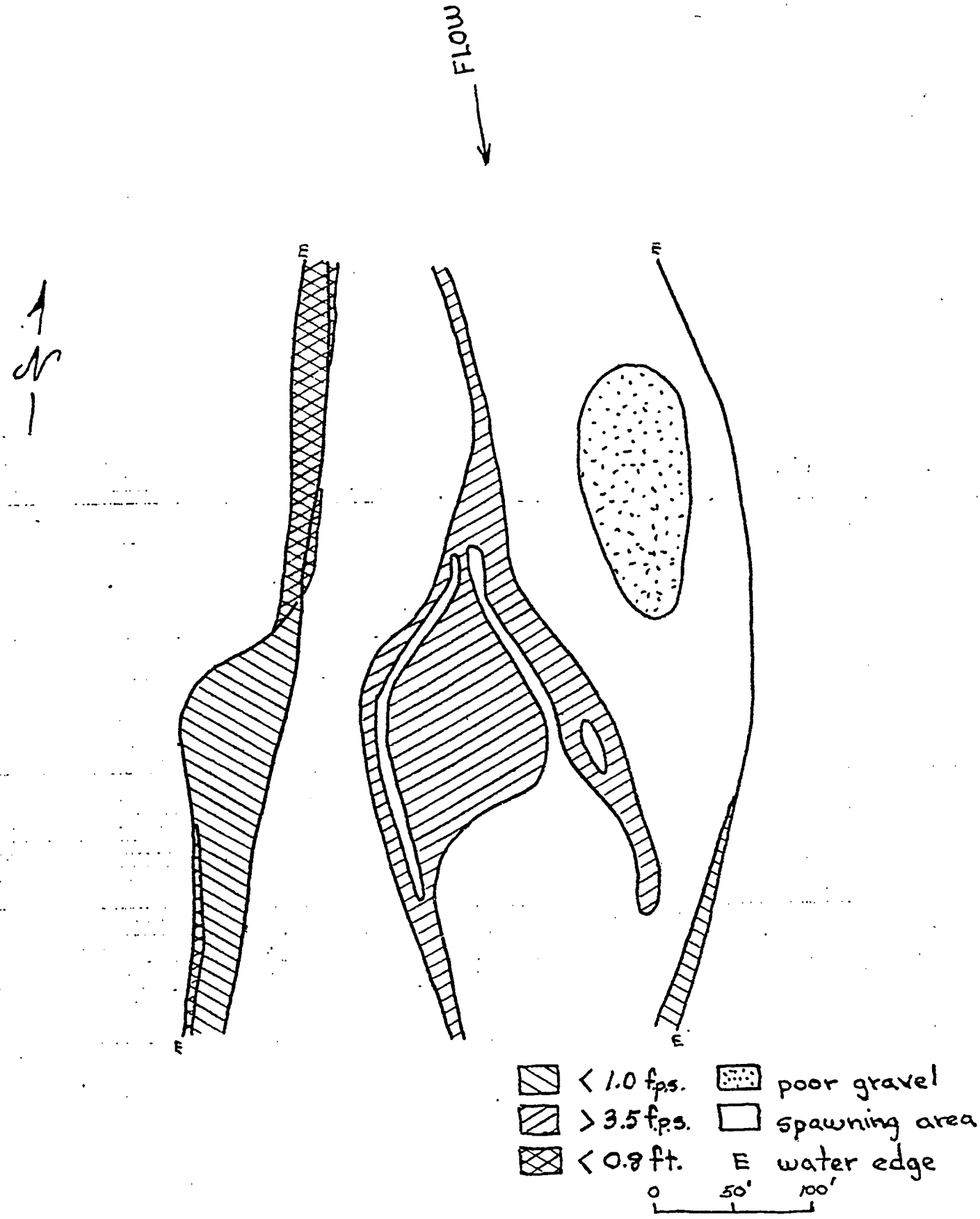

Figure 10. 2,500 c.f.s. - Hour Riffle

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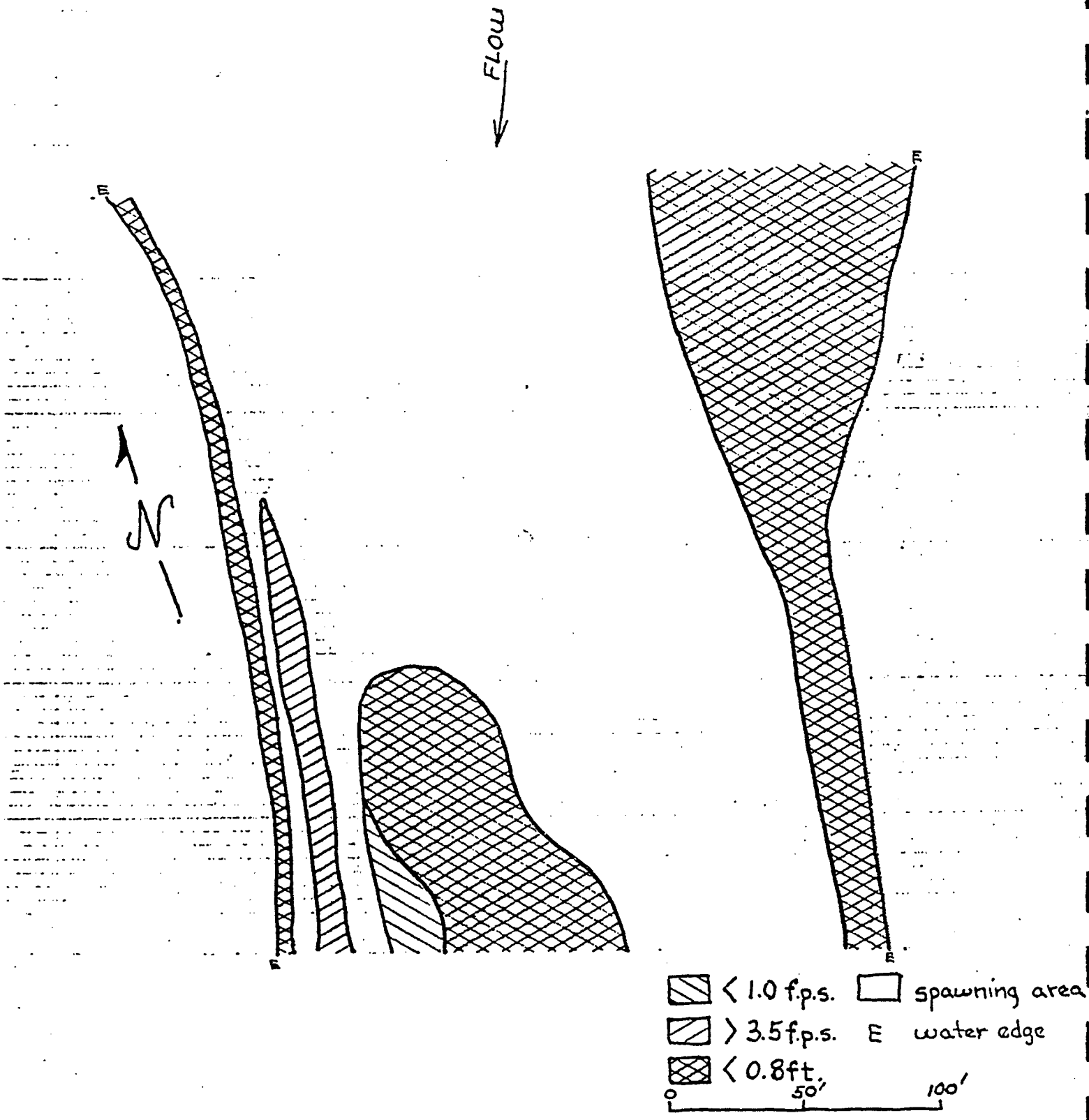

Figure 11. Salmon spawning gravel area available at 1,000 c.f.s. on Big Riffle, spring 1969.

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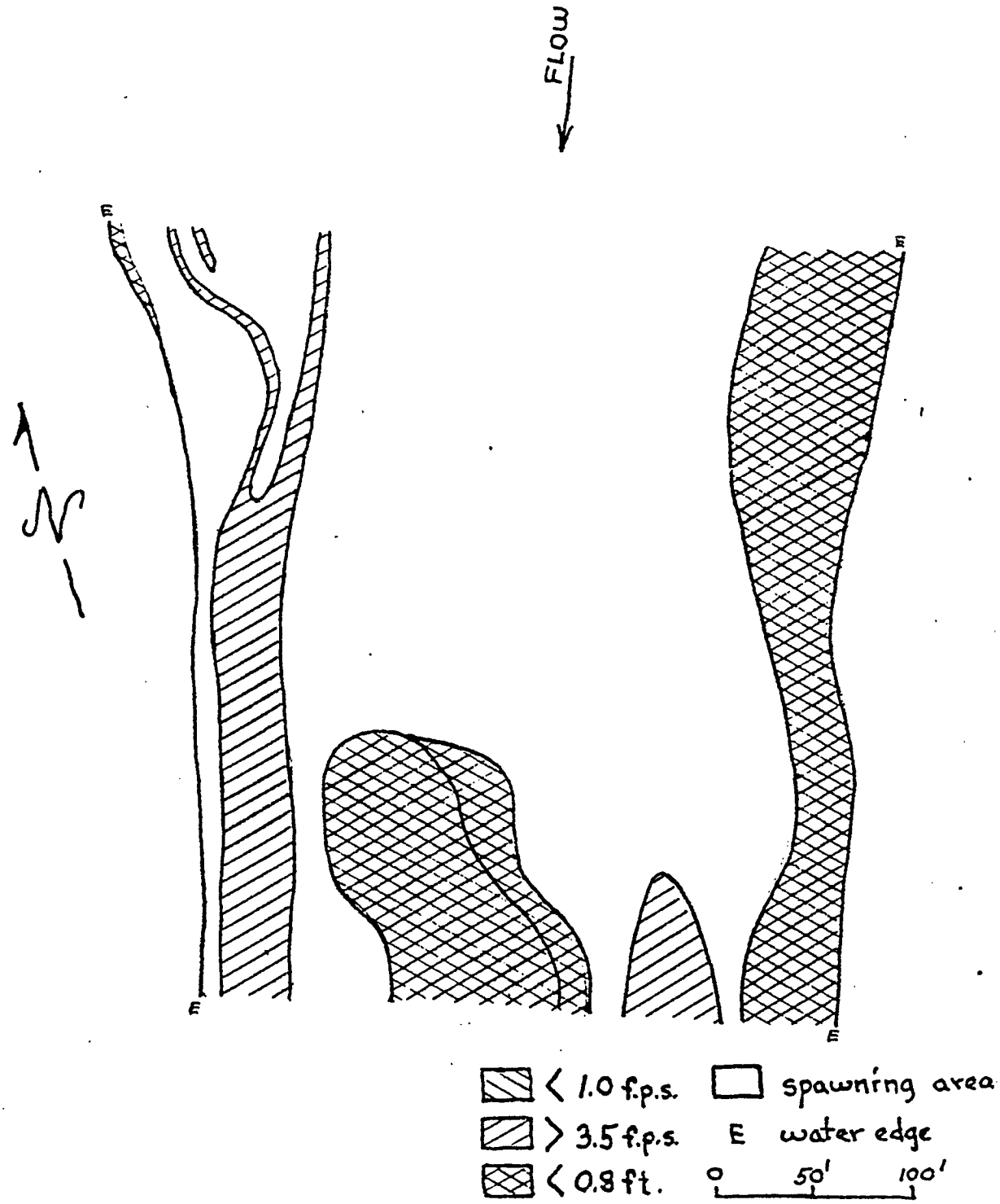

Figure 12. 1,500 c.f.s. - Big Riffle

C —0 6 7 1 4 7

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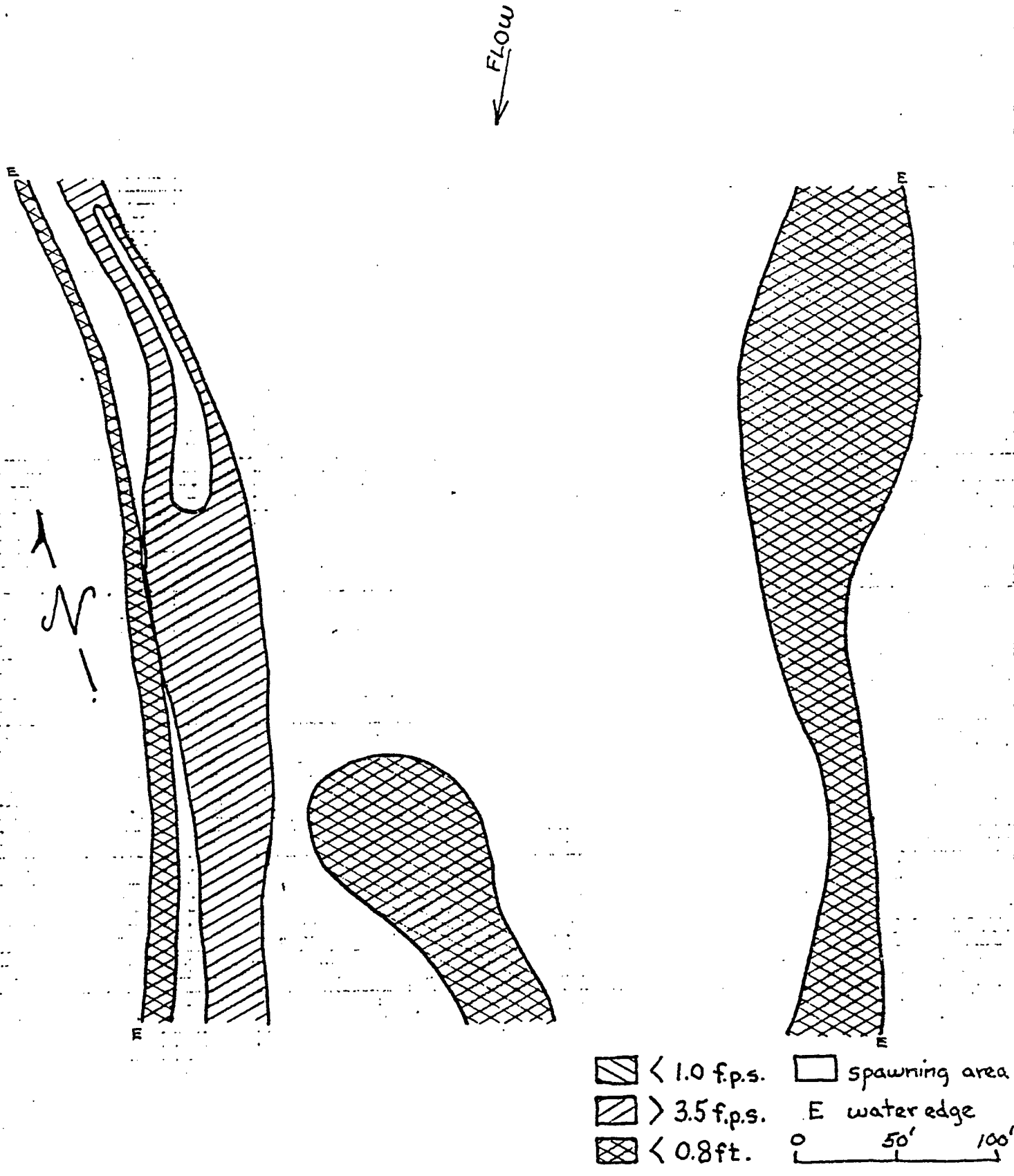

Figure 13. 2,000 c.f.s. - Big Riffle

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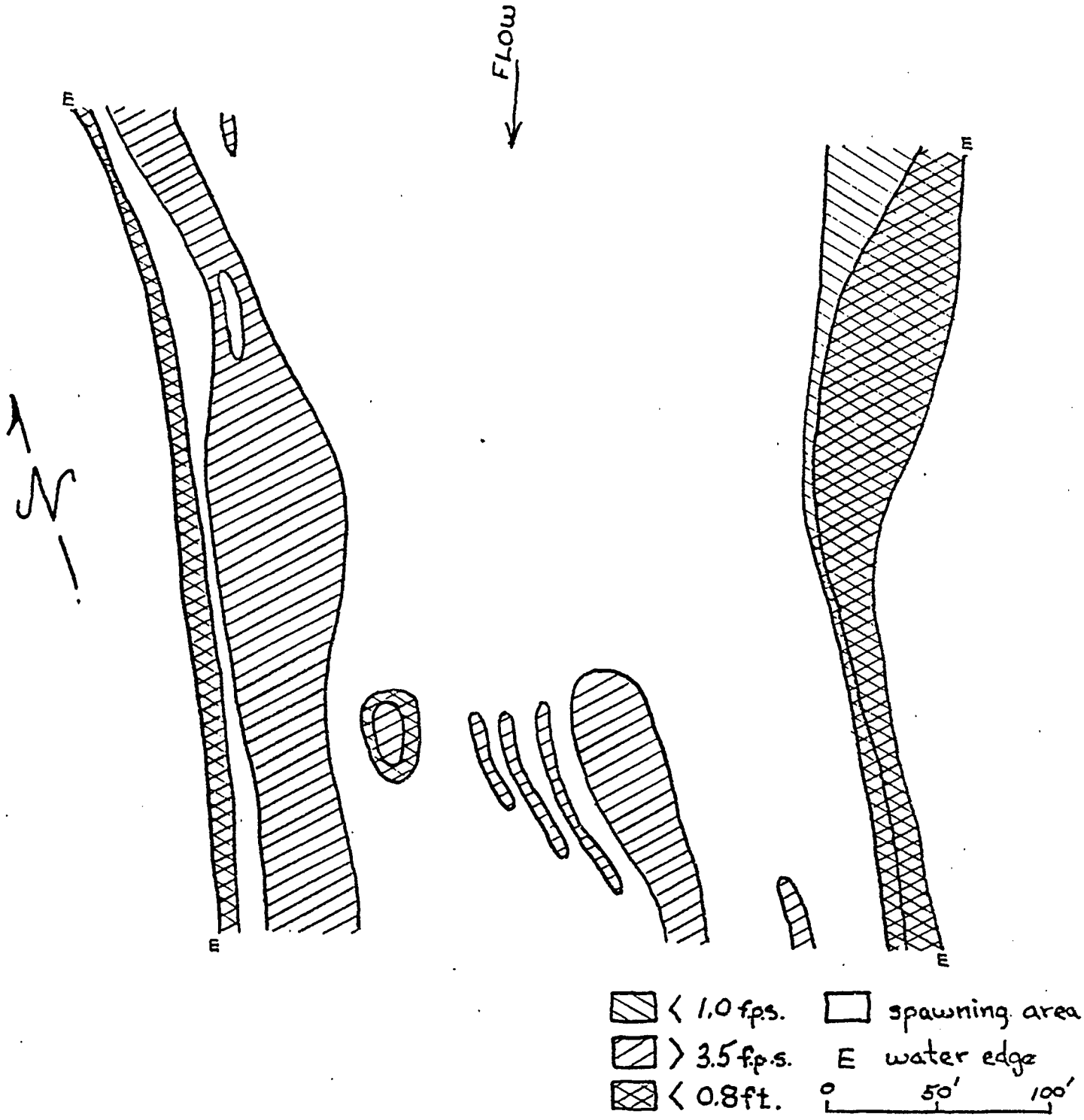

Figure 14. 2,500 c.f.s. - Big Riffle

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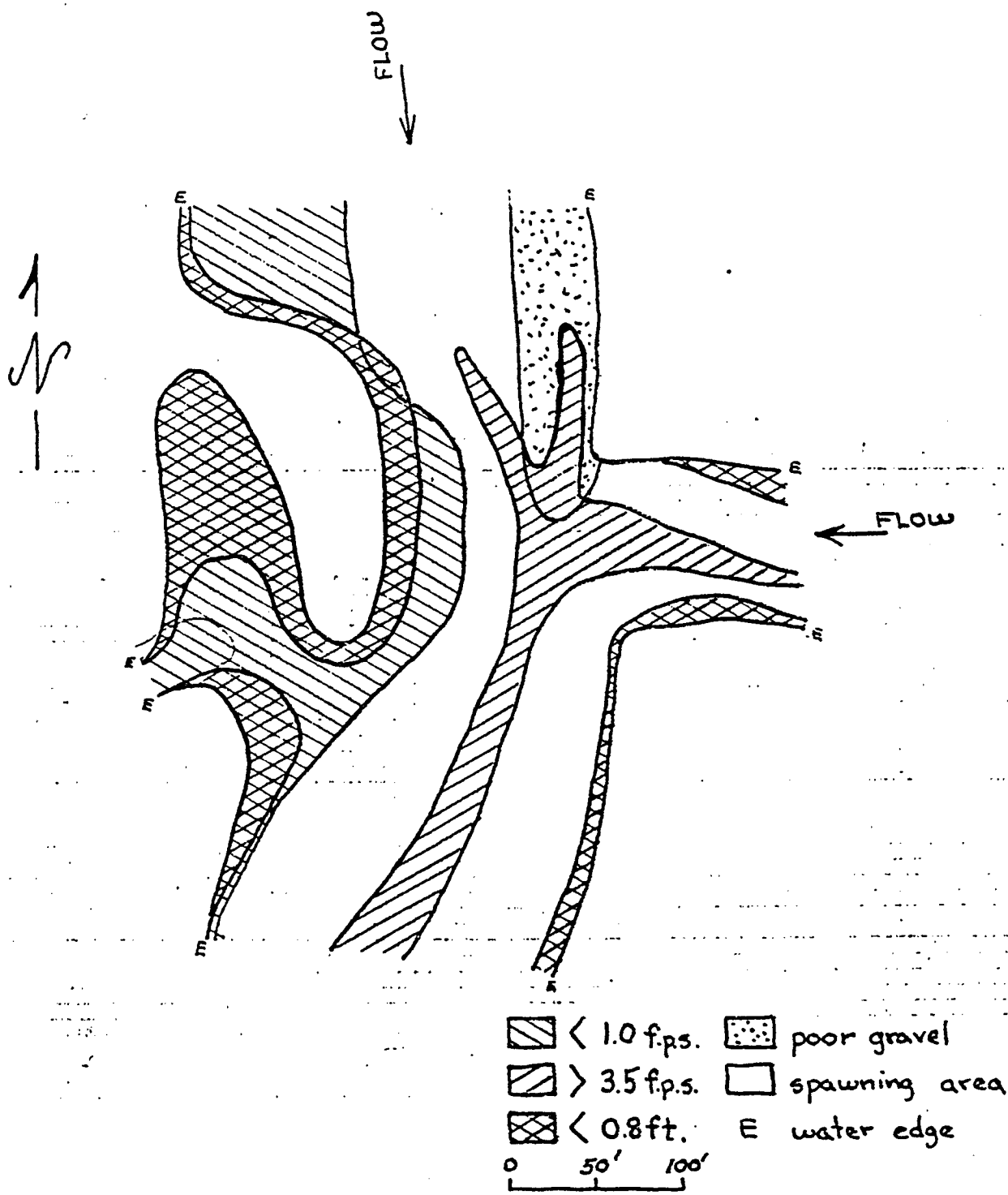

Figure 15. Salmon spawning gravel area available at 1,000 c.f.s. on Herringer Riffle, spring 1969.

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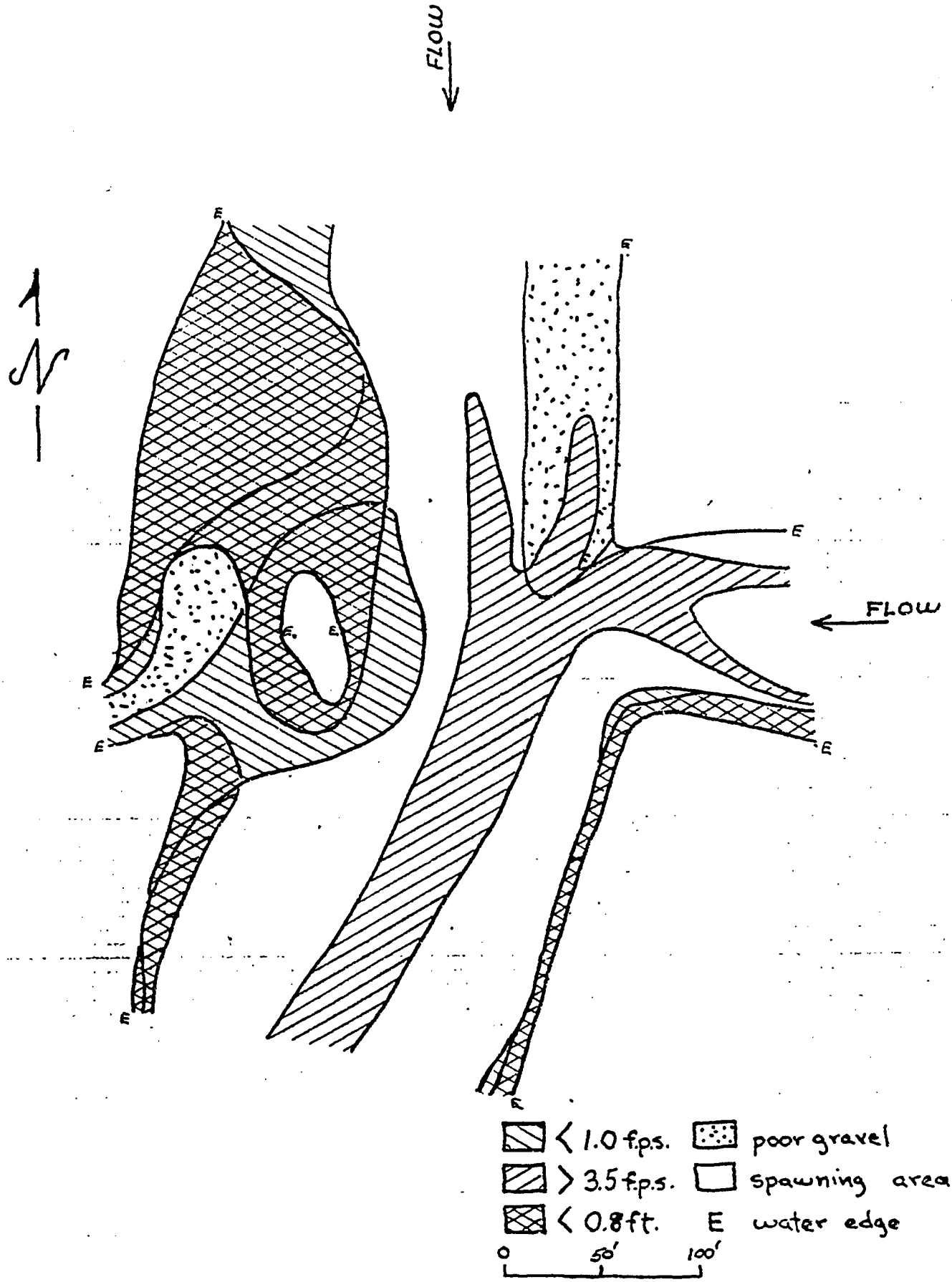

Figure 16. 1,500 c.f.s. - Herringer Riffle

C —0 6 7 1 5 1

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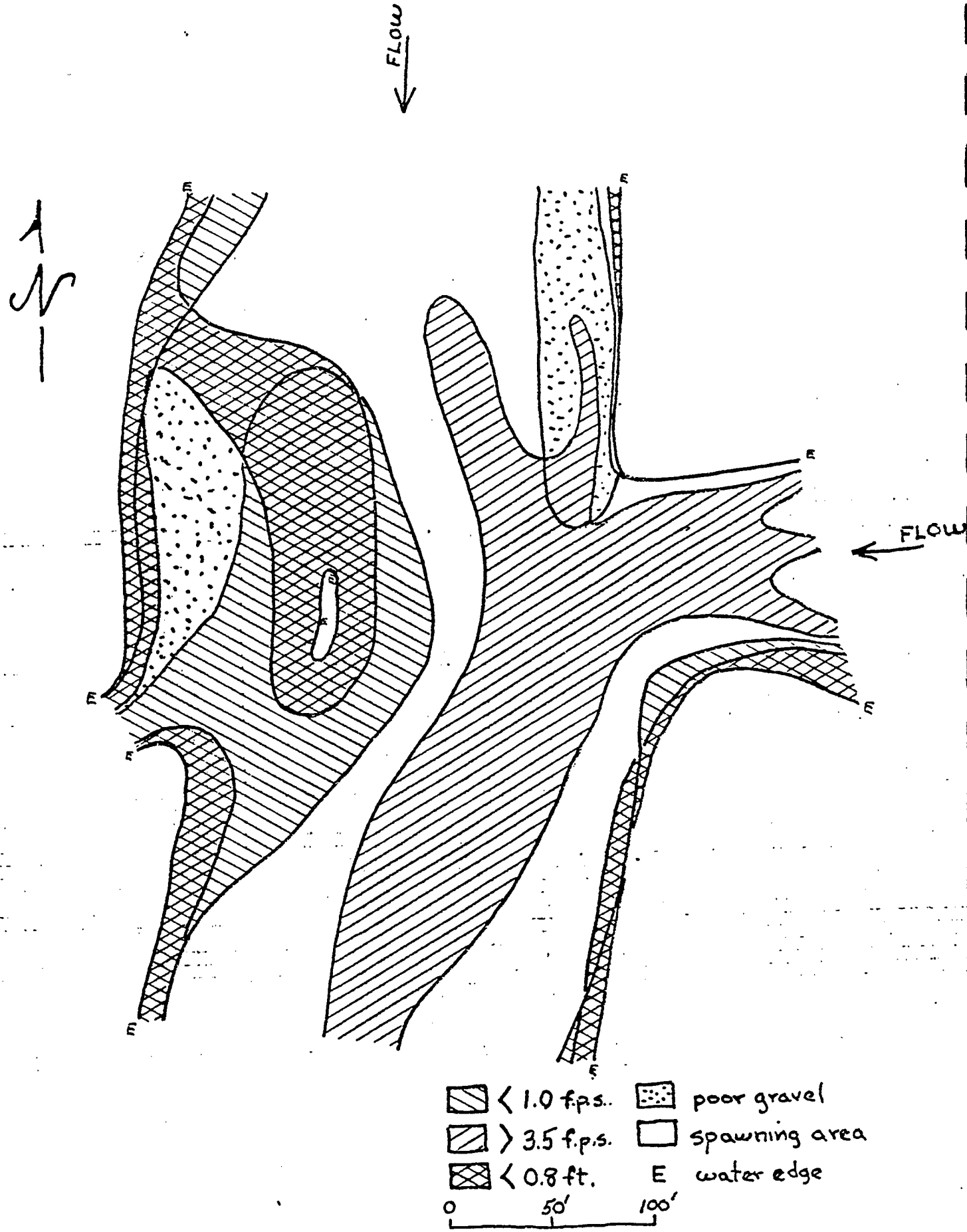

Figure 17. 2,000 c.f.s. - Herringer Riffle

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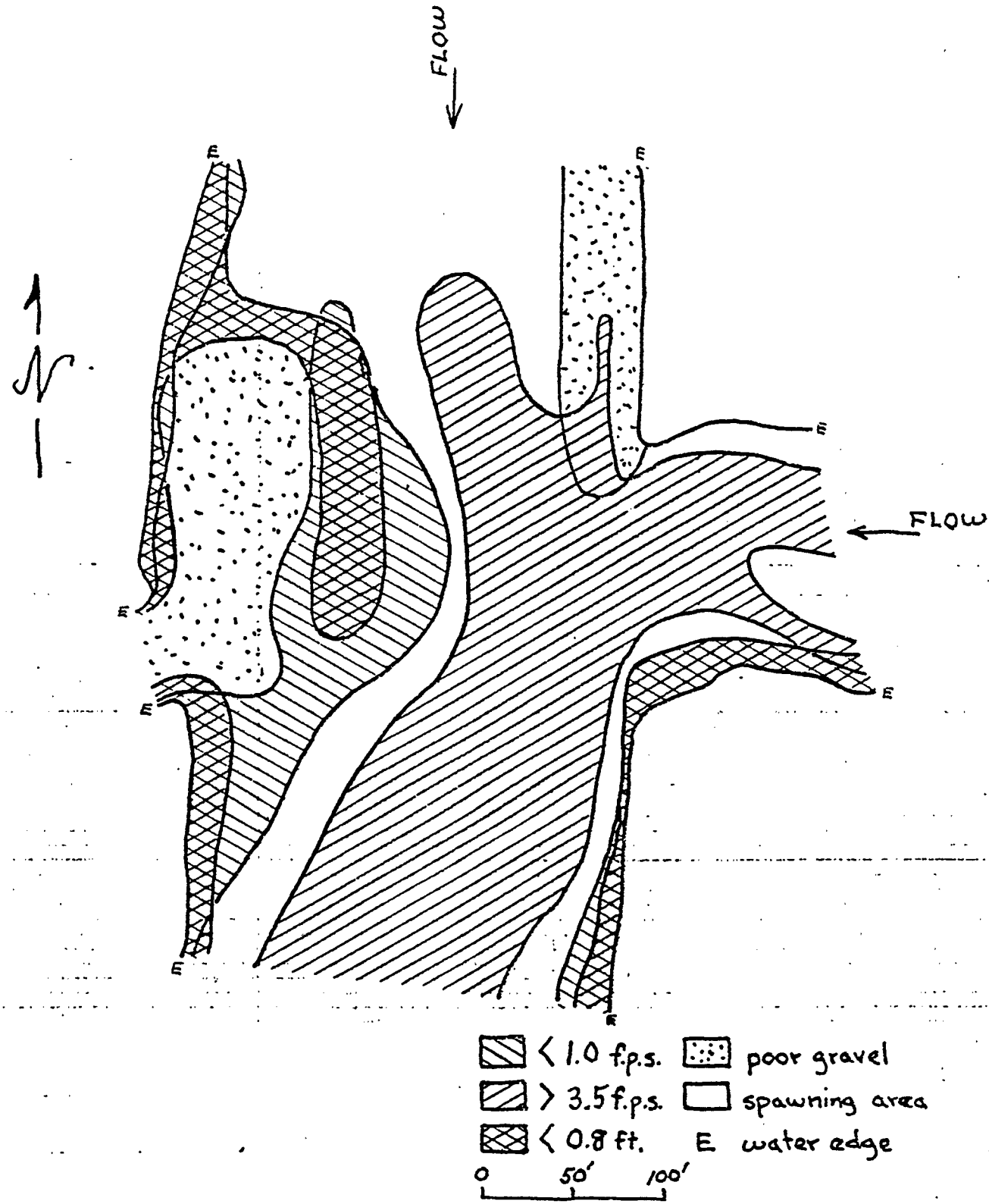

Figure 18. 2,500 c.f.s. - Herringer Riffle

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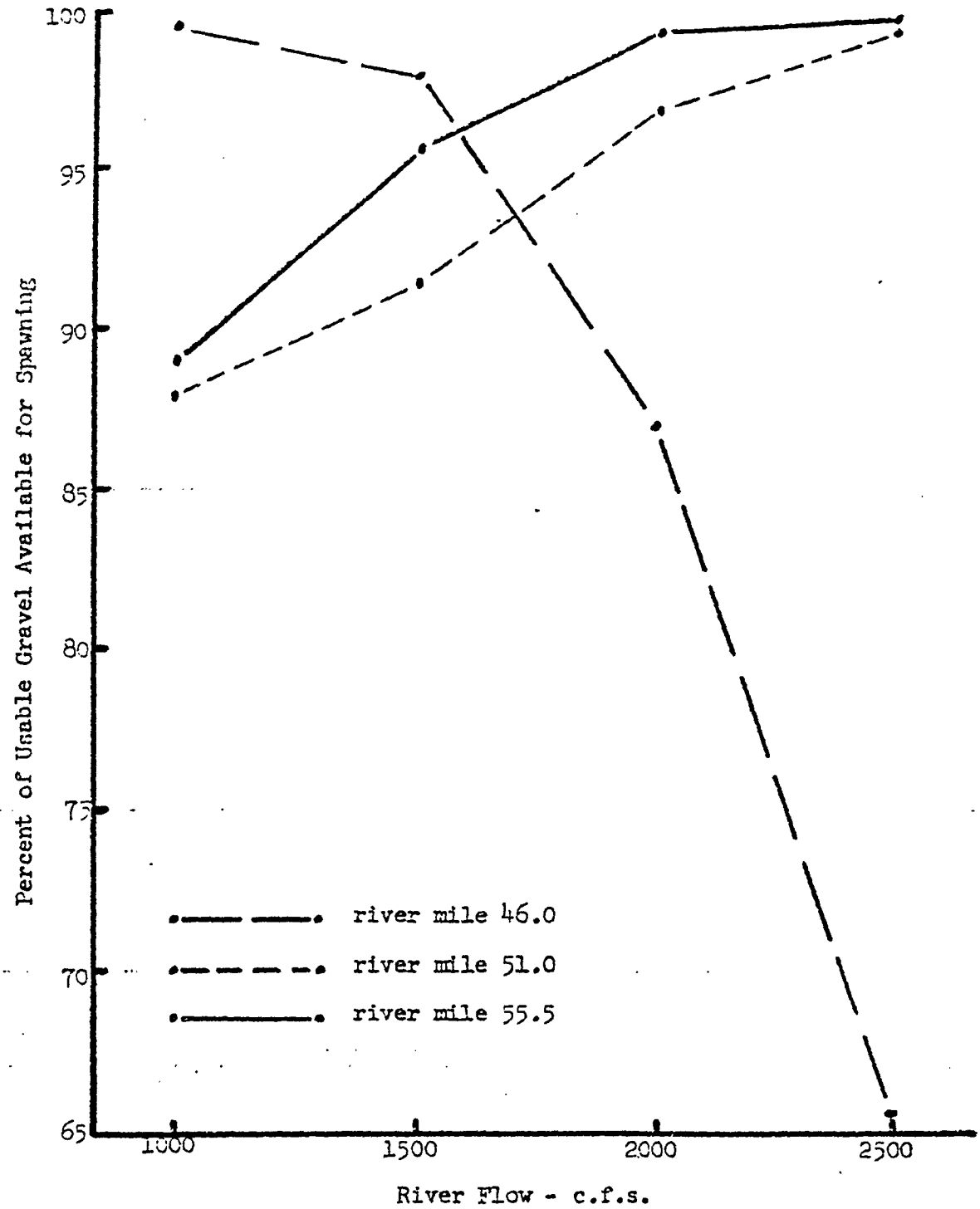

Figure 19. River-flow available-gravel relationship at three riffles in the Feather River.

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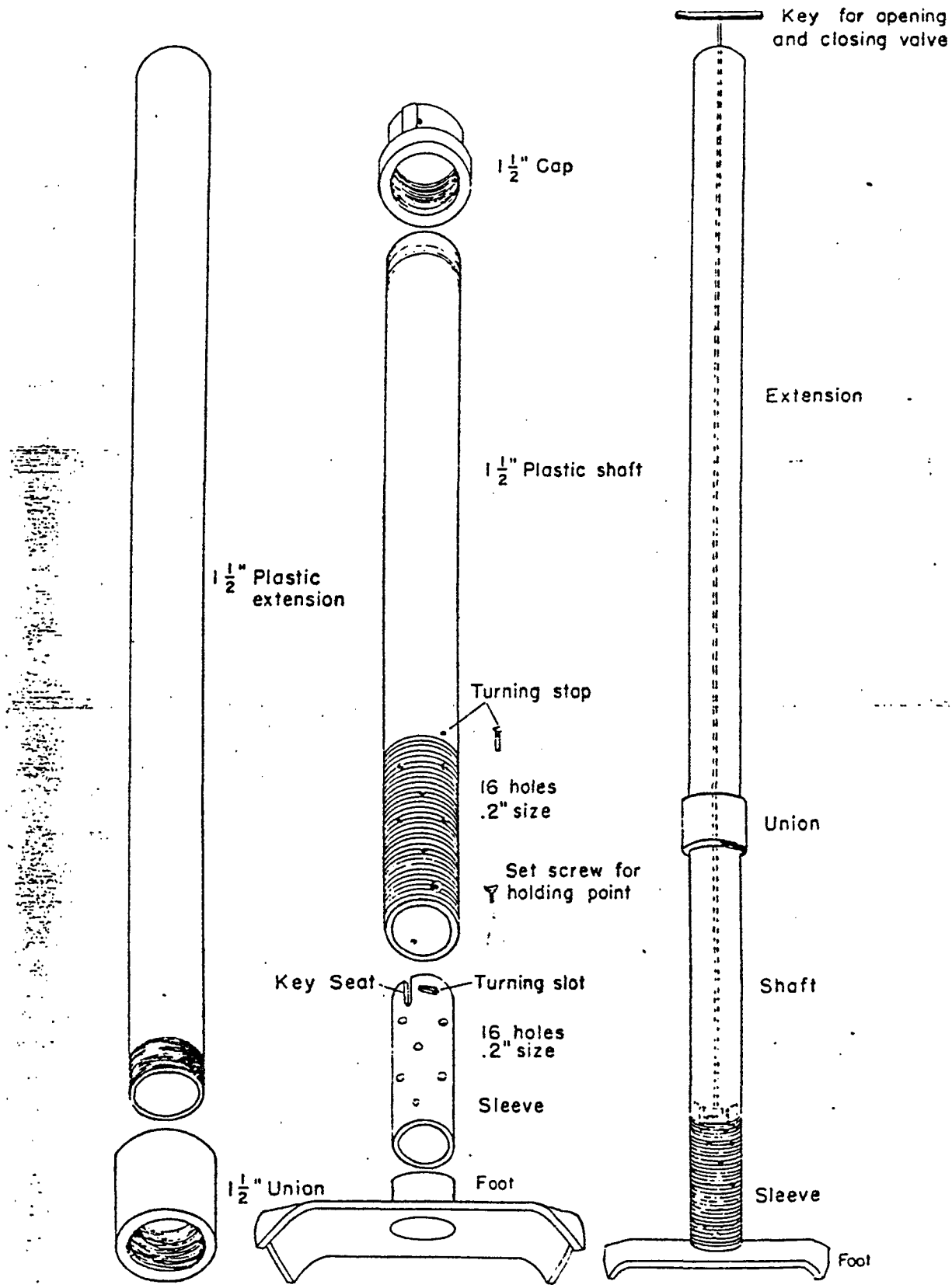

Figure 20. A plastic standpipe for sampling water seeping through stream gravel (from Gangmark and Bakkala, 1958).

C—0 6 7 1 5 5

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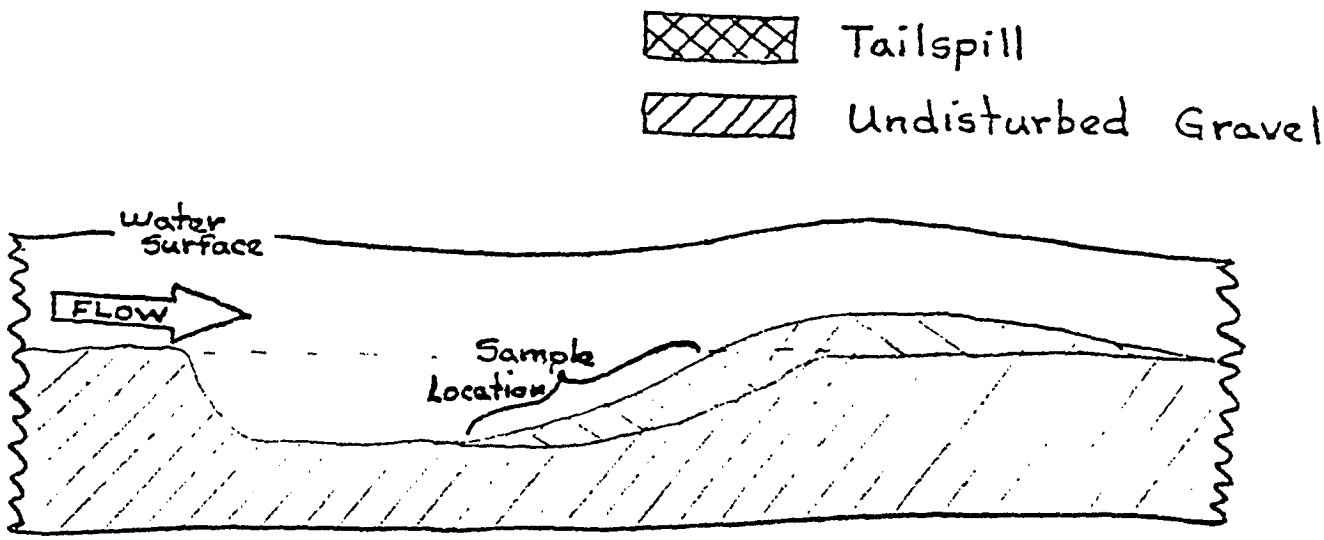

Figure 21. Cross-section of typical redd showing location where eggs were sampled.

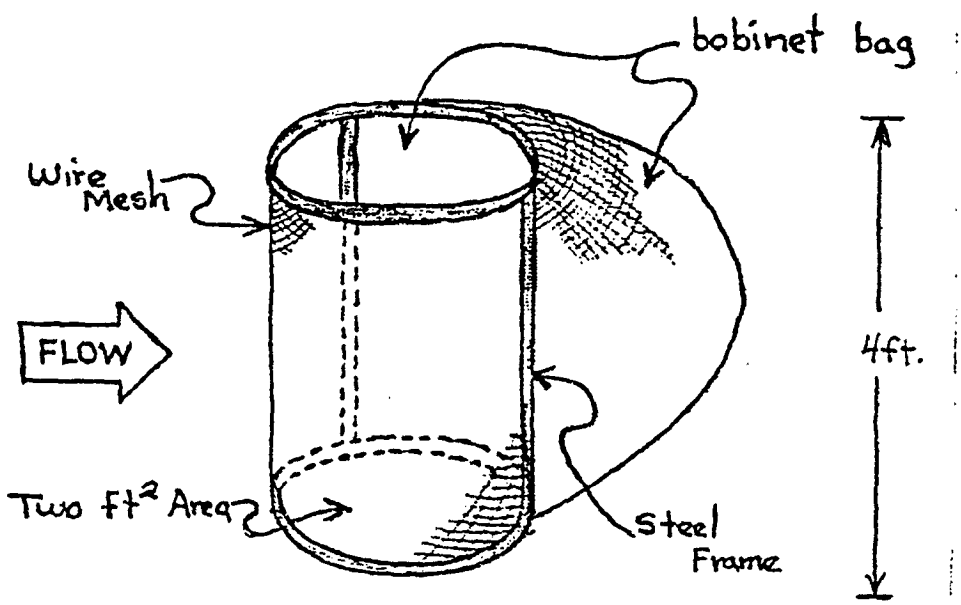

Figure 22. Sketch of special egg collection net.

C —0 6 7 1 5 6

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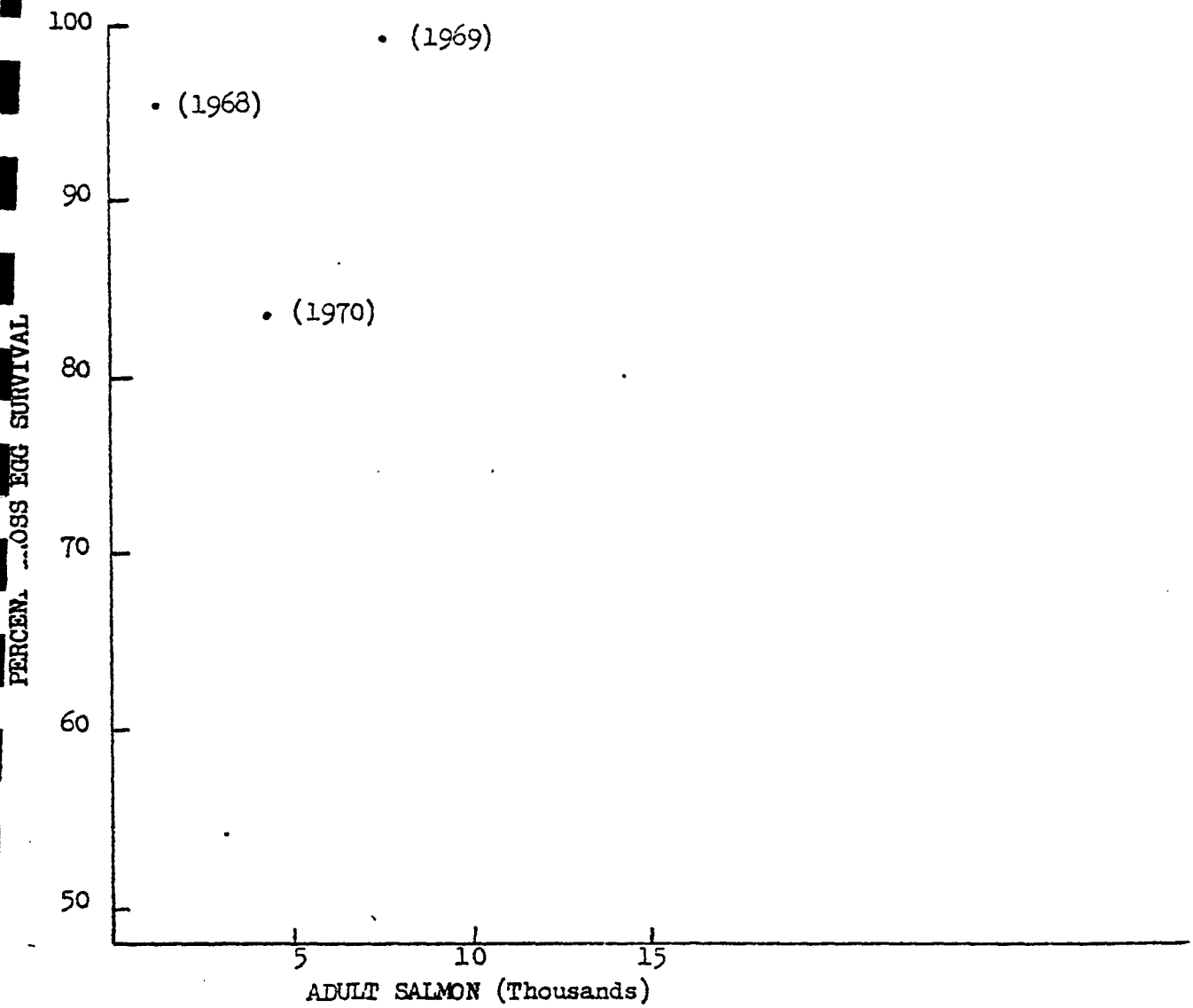

Figure 23. Relationship between gross egg survival and number of spawning king salmon in the lower river area.

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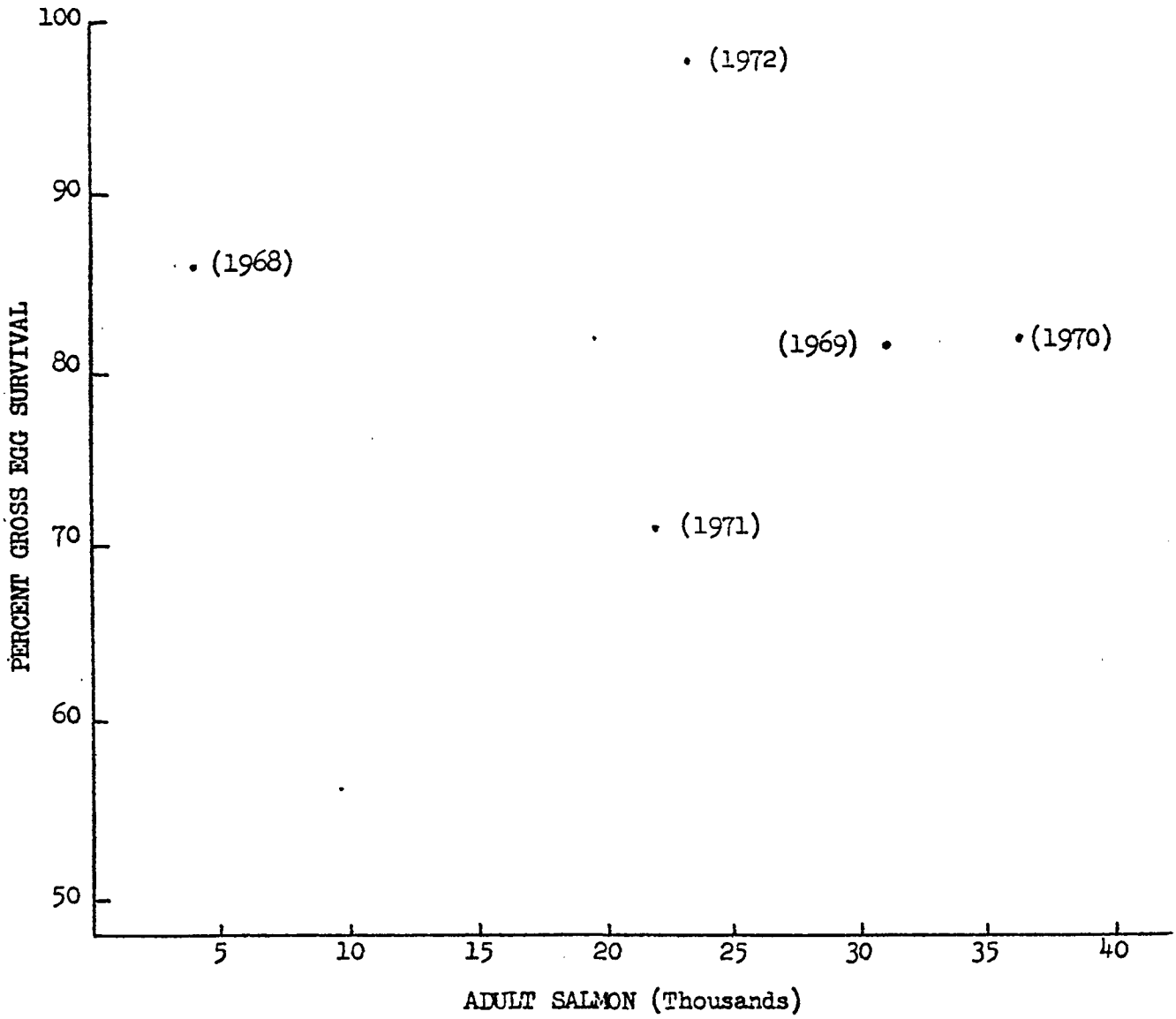

Figure 24. Relationship between gross egg survival and number of spawning king salmon in the middle river area.

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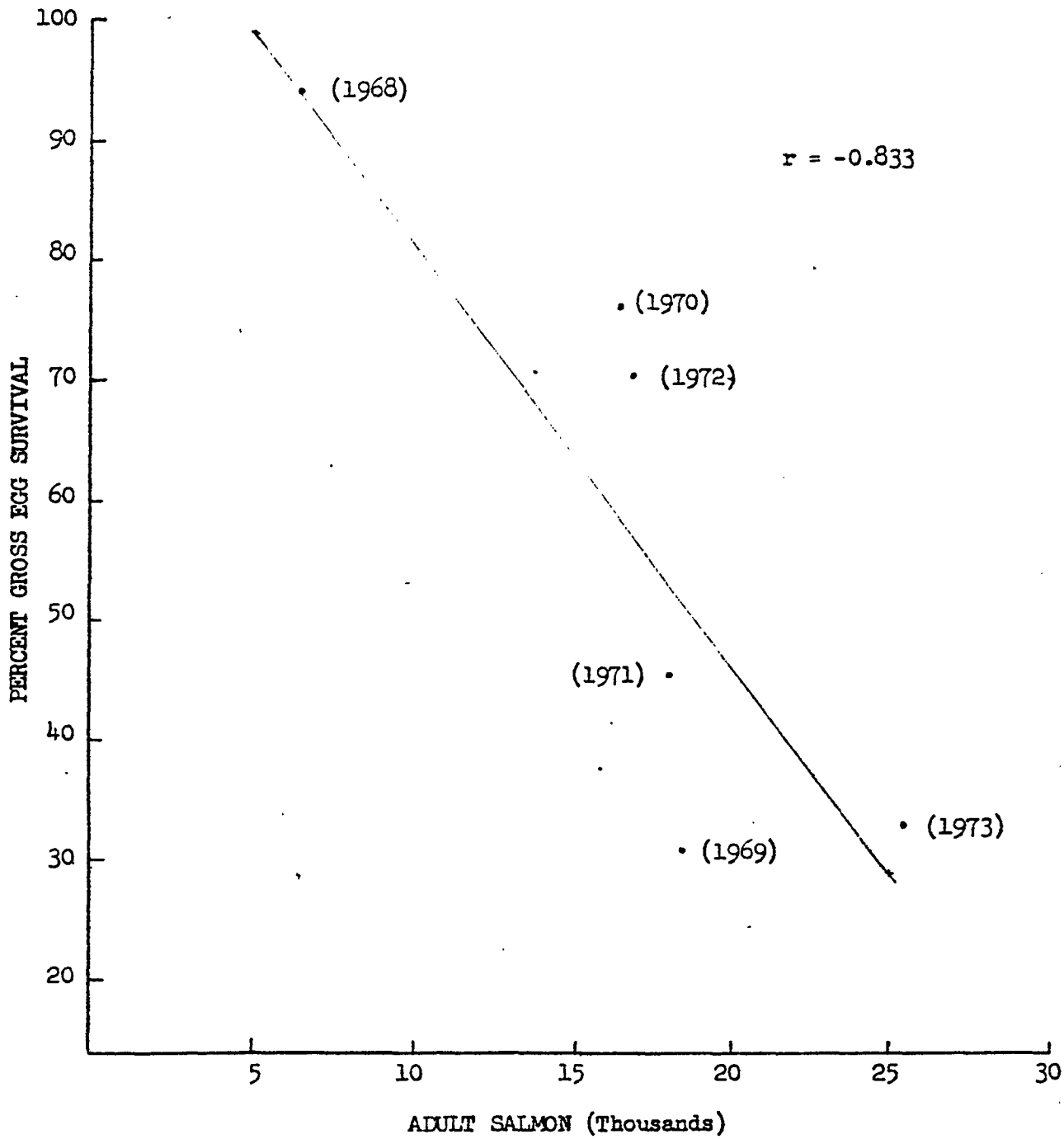

Figure 25. Relationship between gross egg survival and numbers of spawning king salmon in the upper river area (low-flow section).

C—0 6 7 1 5 9

C-067159

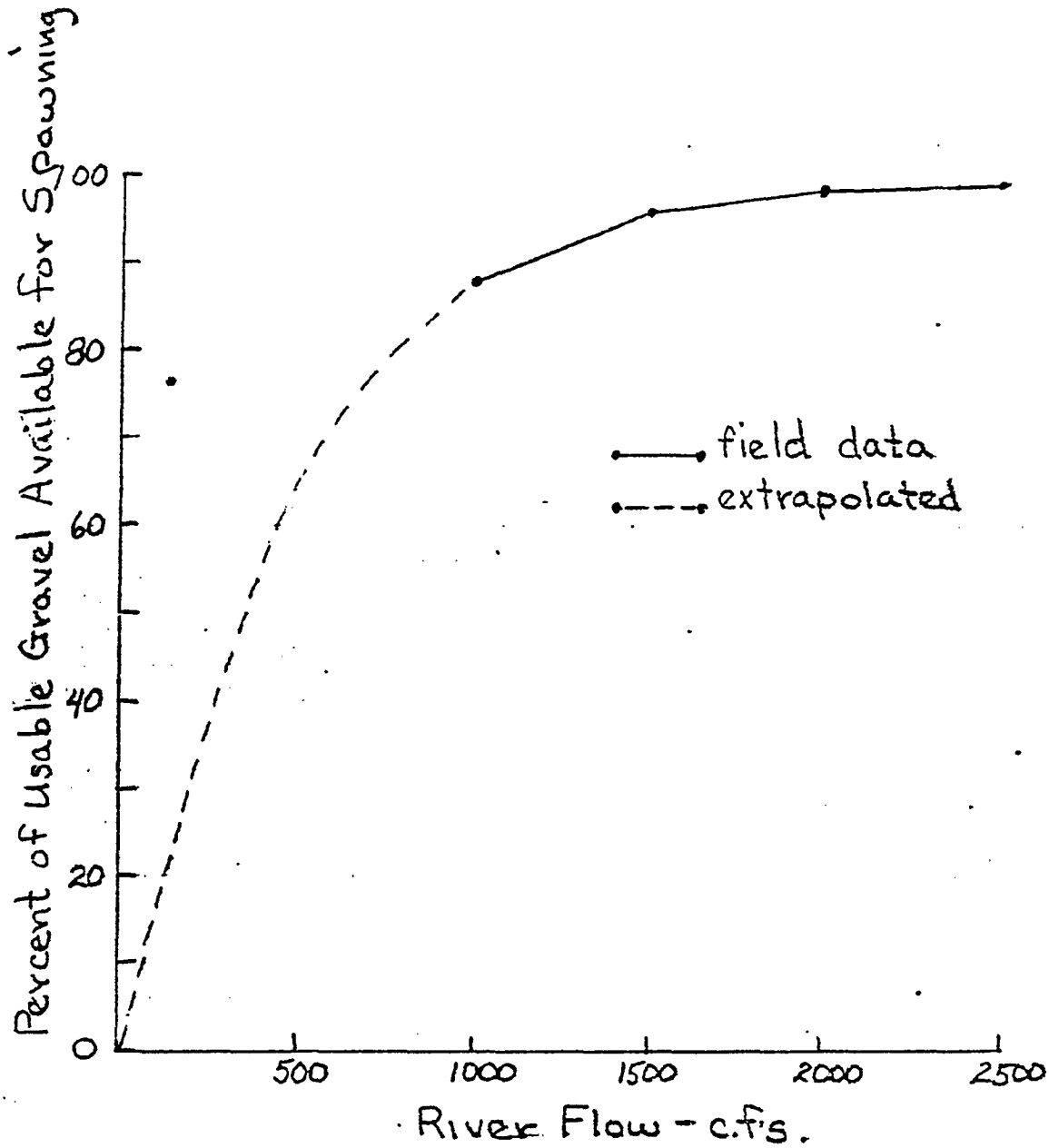

Figure 26. River-Flow available gravel relationship at river-mile 55.5, high-flow area.

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C-067160

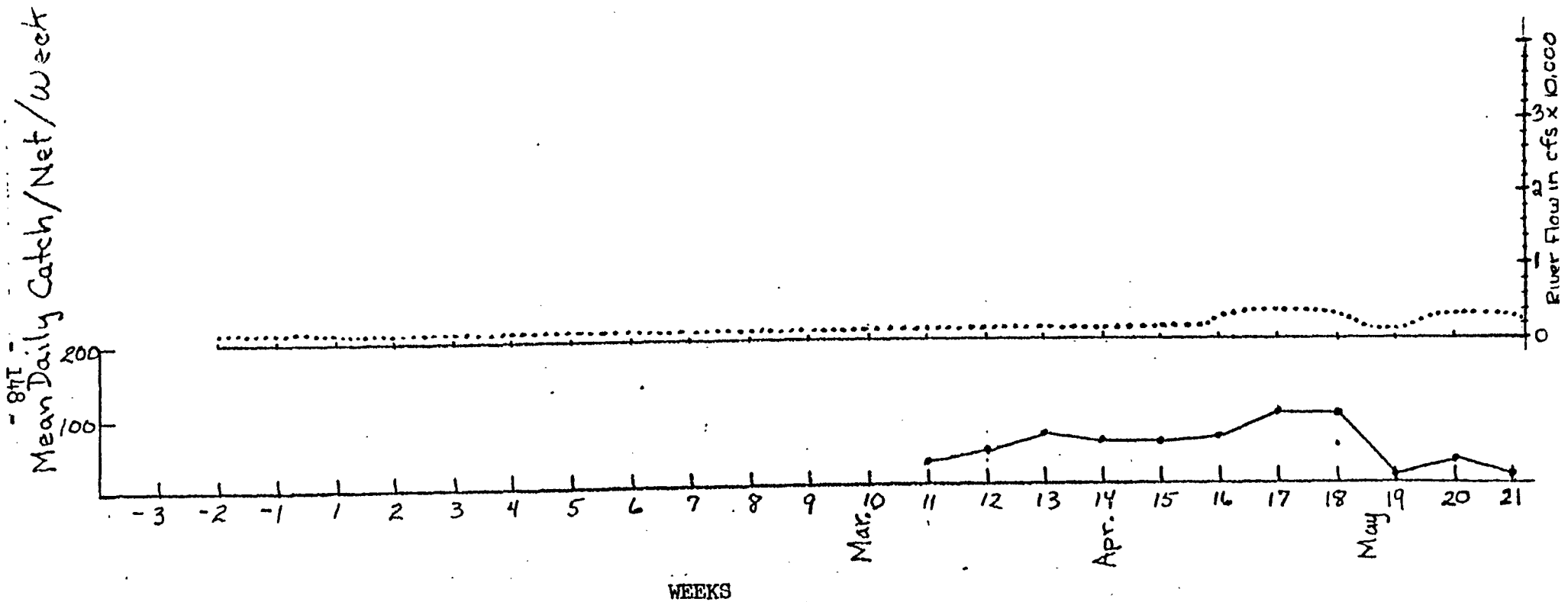

Figure 27. Mean daily catch/net for the 1967 year class of king salmon outmigrating past Live Oak. Shown with river flow. Catch not adjusted for river flow.

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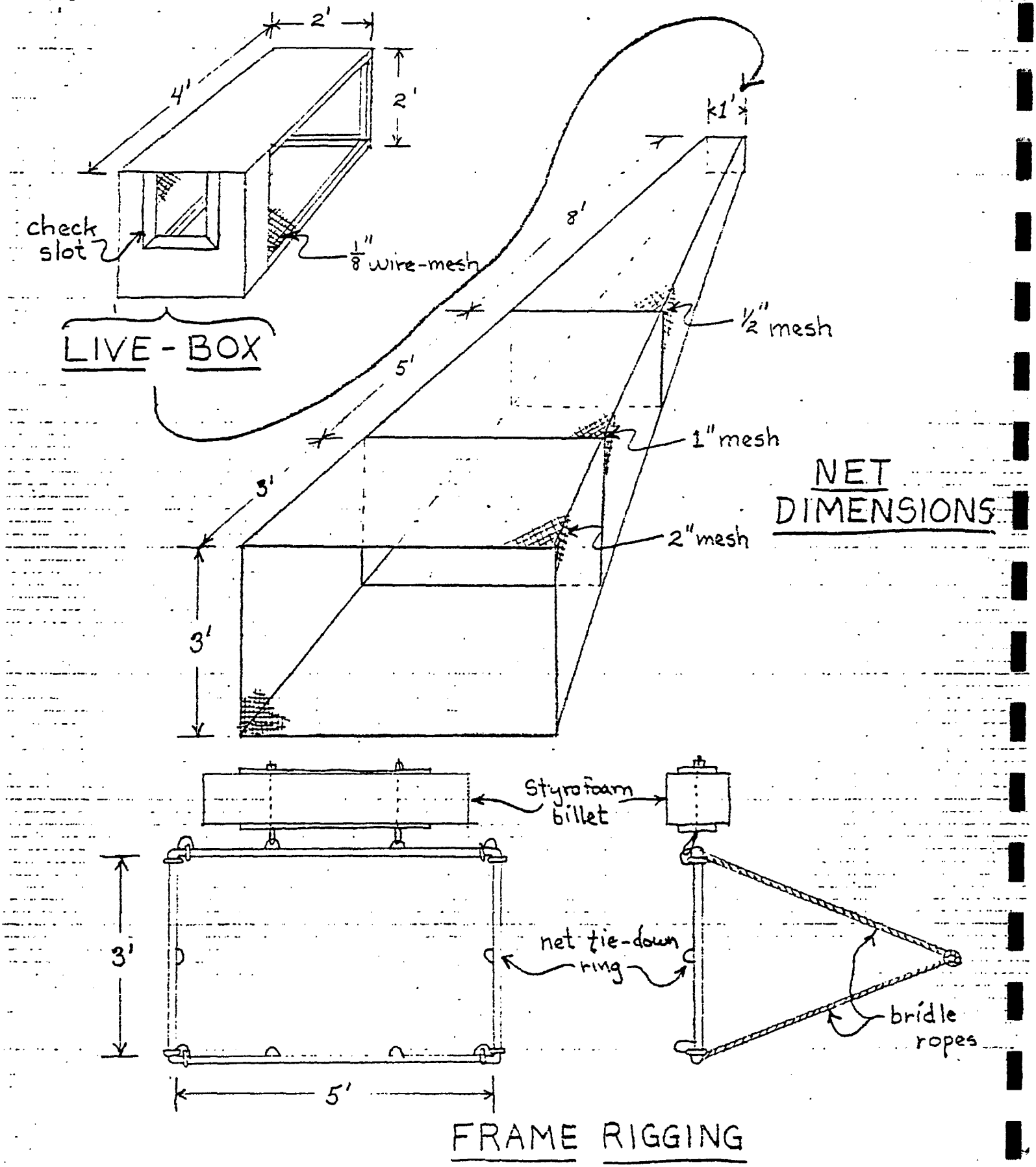

Figure 28. Sketch of fyke-net gear.

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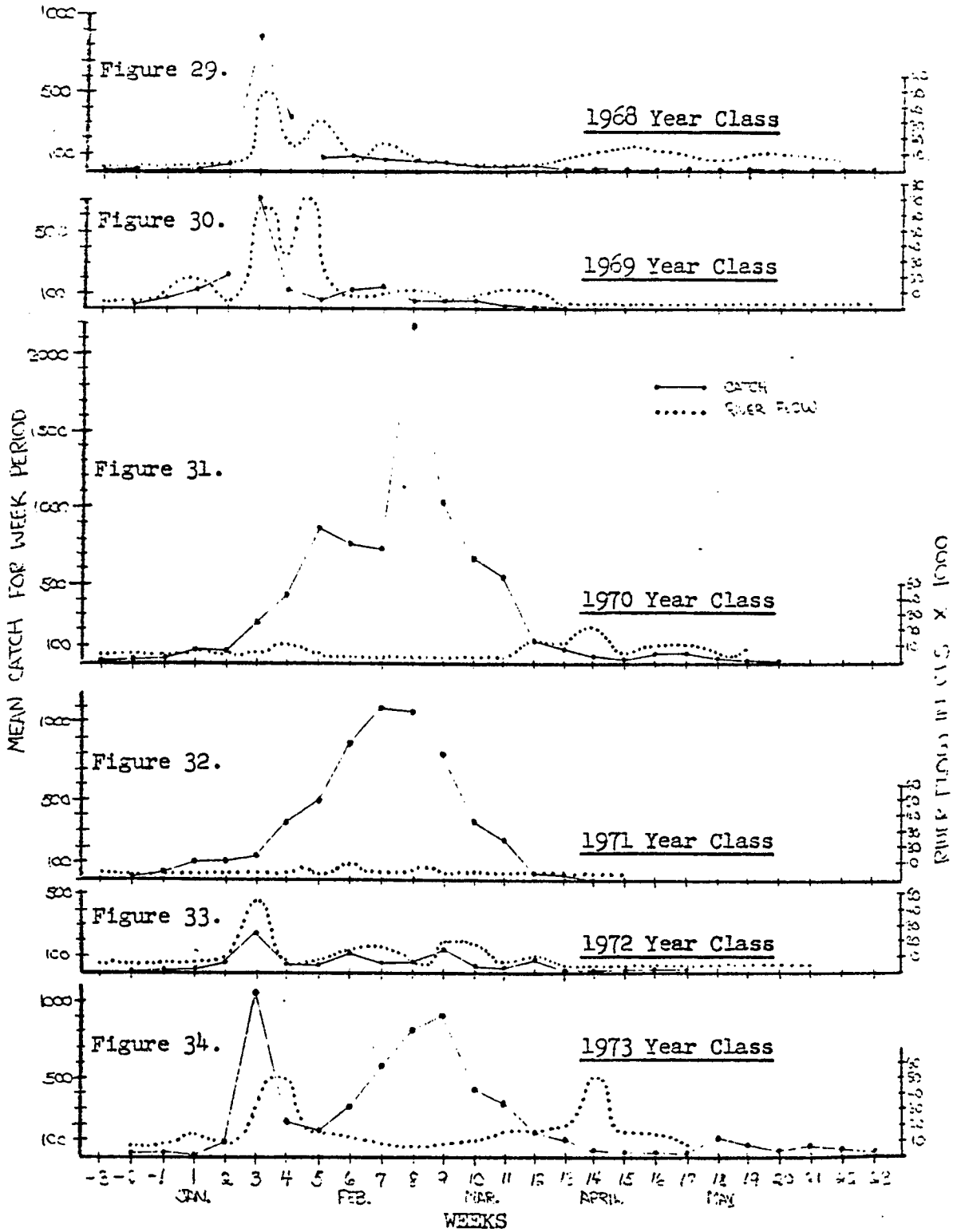

Figures 29 - 34. Mean daily catch per fyke net for the year classes 1968-1973 of emigrating king salmon fry sampled near Live Oak, Feather River. Shown with river flow. Catch not adjusted for river flow. Year class denotes year eggs were deposited in gravel.

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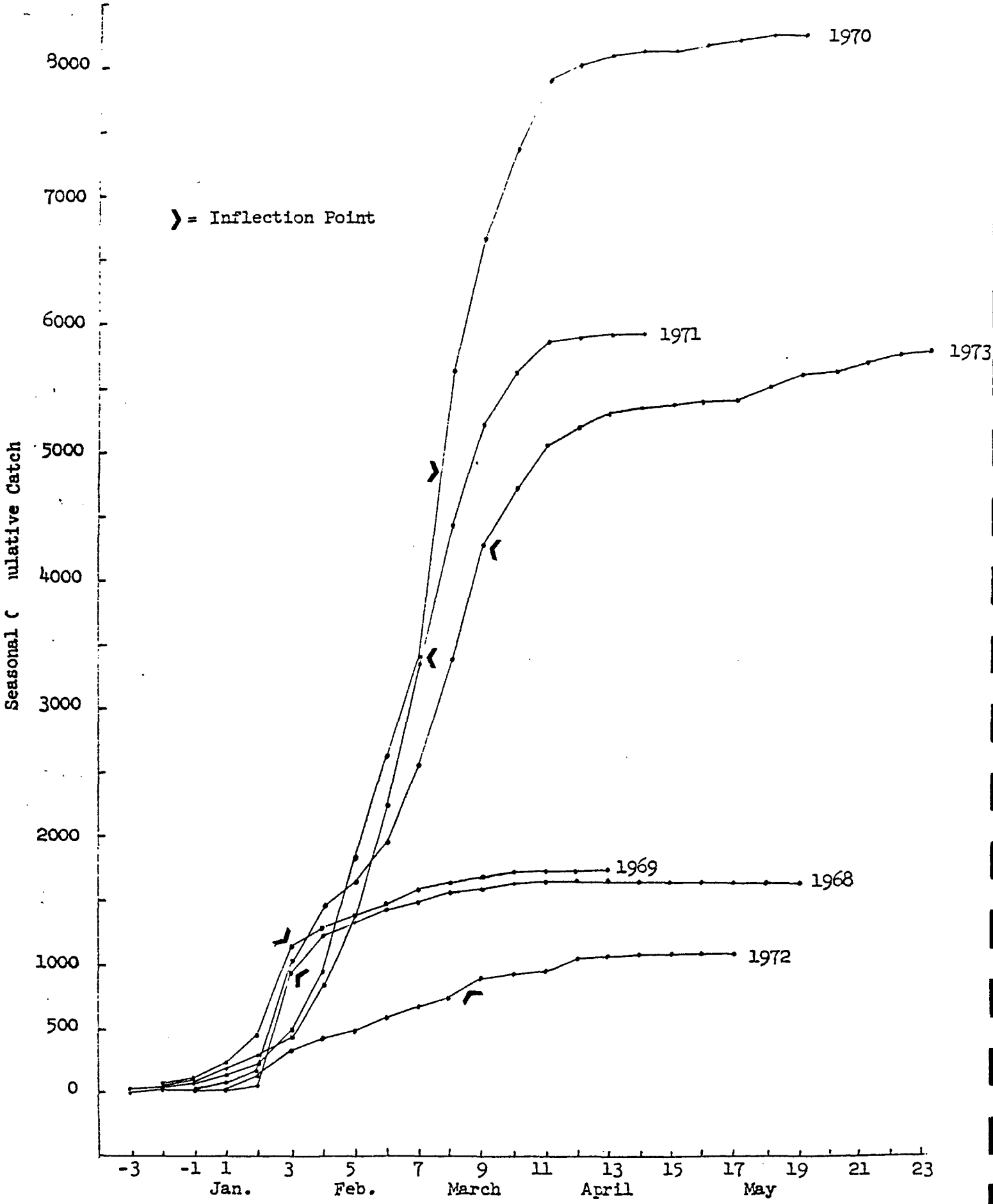
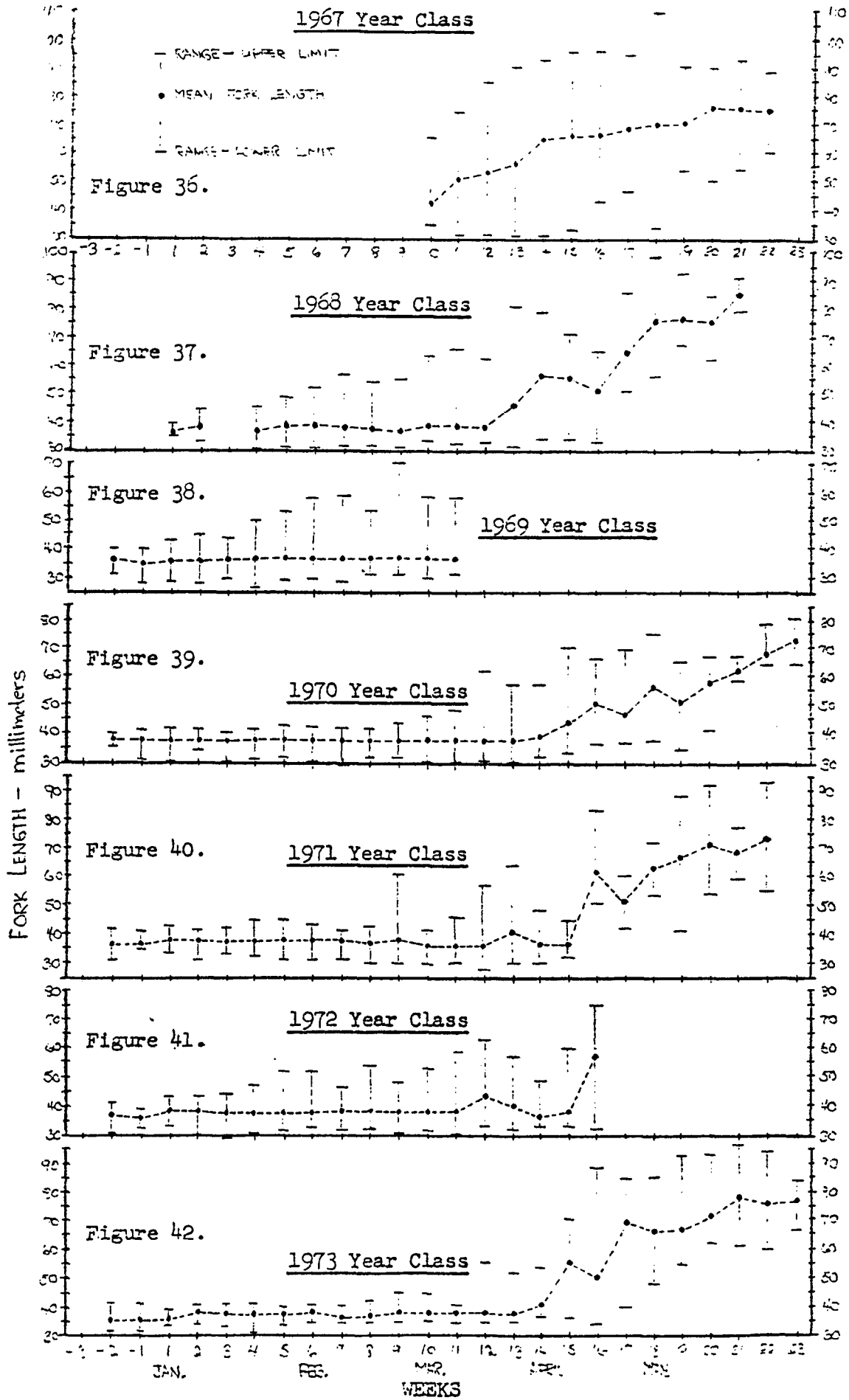


Figure 35. Cummulative catch curves, 1968-1973 year class of king salmon fry outmigration, Feather River



Figures 36 - 42. Mean fork length with range by weeks periods for the 1967-1973 year classes of king salmon fry sampled in the Feather River near Live Oak

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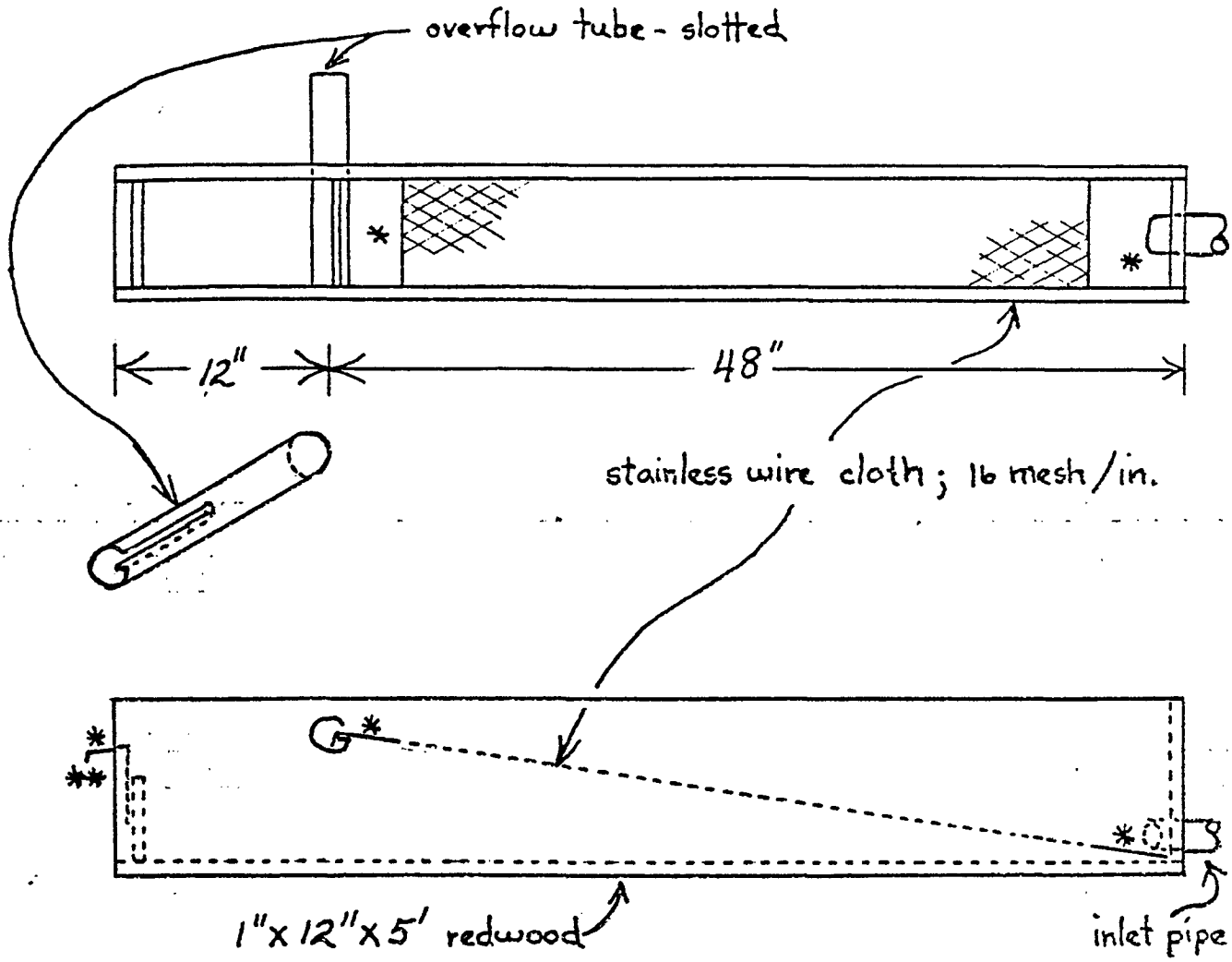

* galvanized sheet metal

** metal sheet adjustable in a slot so that water level just reaches overflow tube

Figure 43. Egg and larvae collection box.

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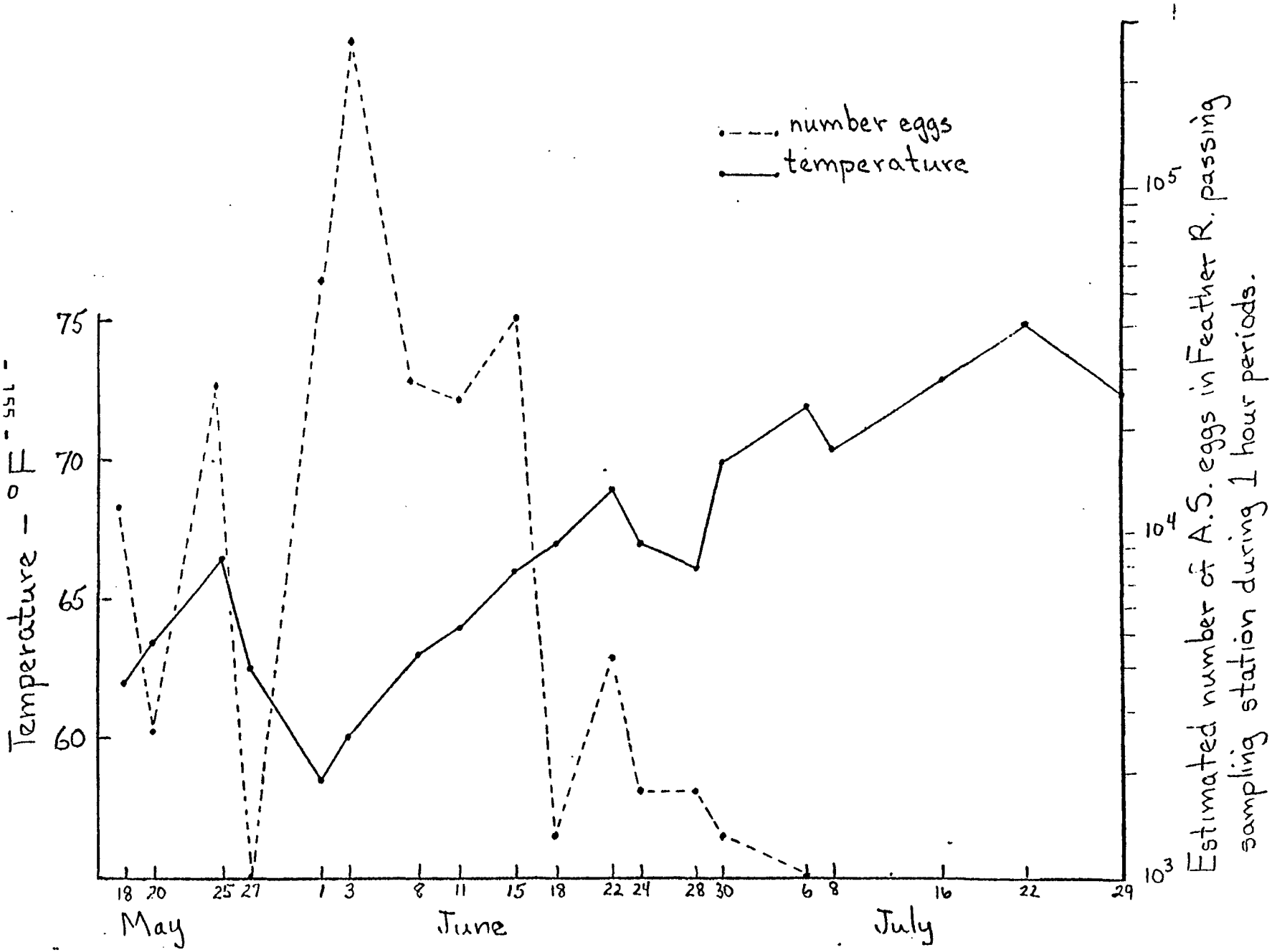

Figure 45. Apparent relationship between water temperature and abundance of

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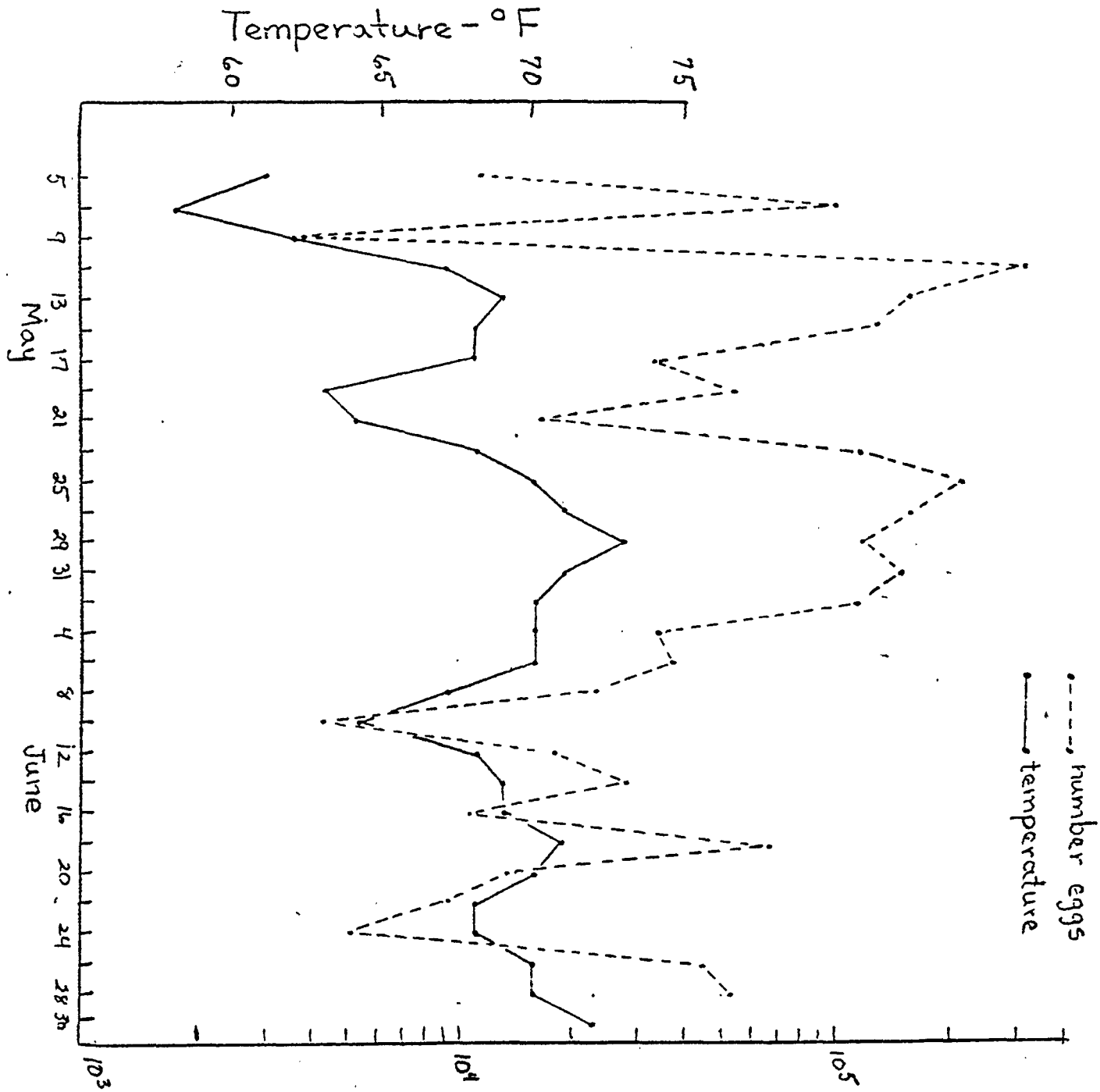

Estimated number of A.S. eggs in Feather R. passing sampling station during 1 hour sample periods.

C-067168

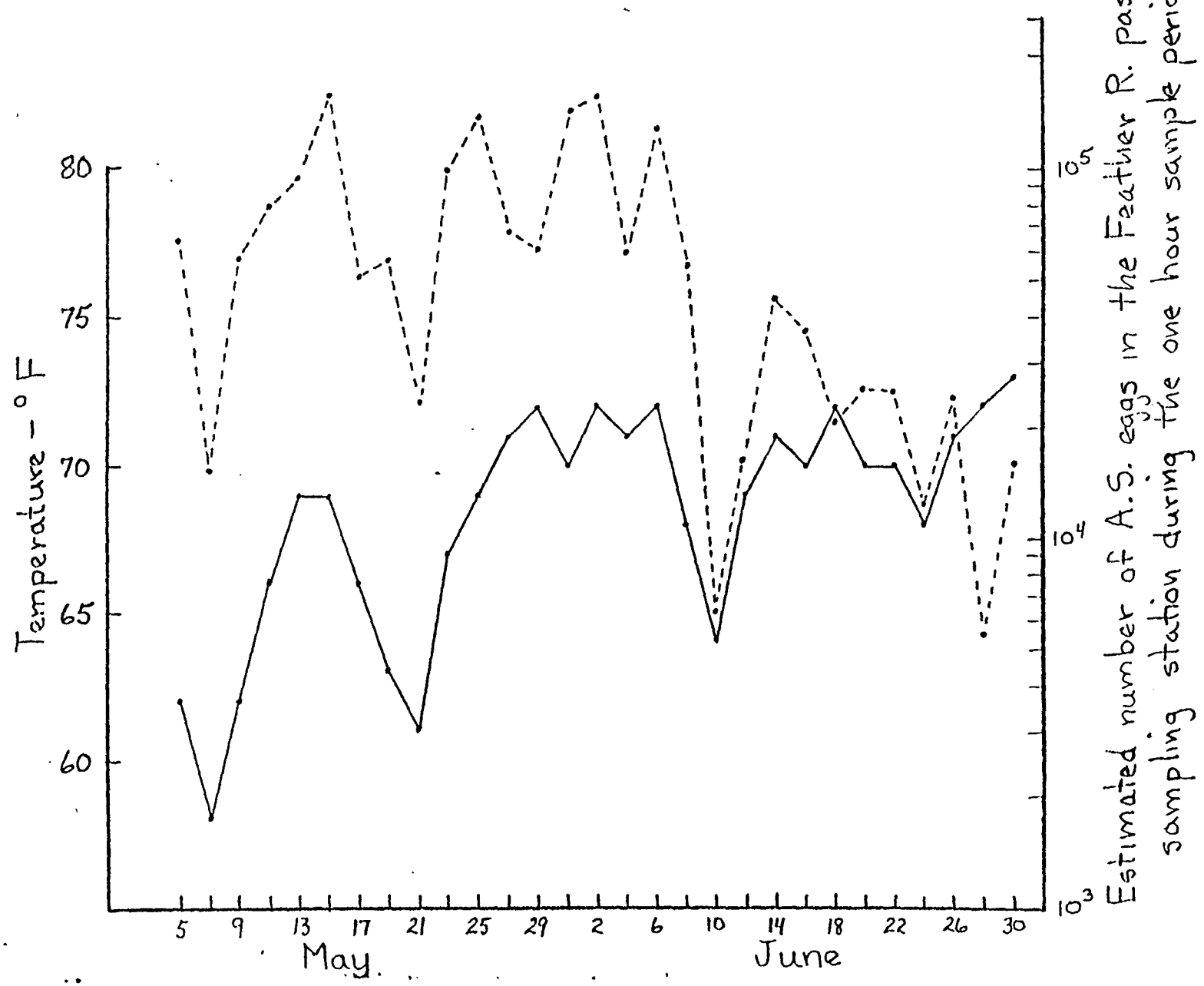

Figure 47. Apparent relationship between water temperature and abundance of American shad eggs at Star Bend, Feather River, 1972.

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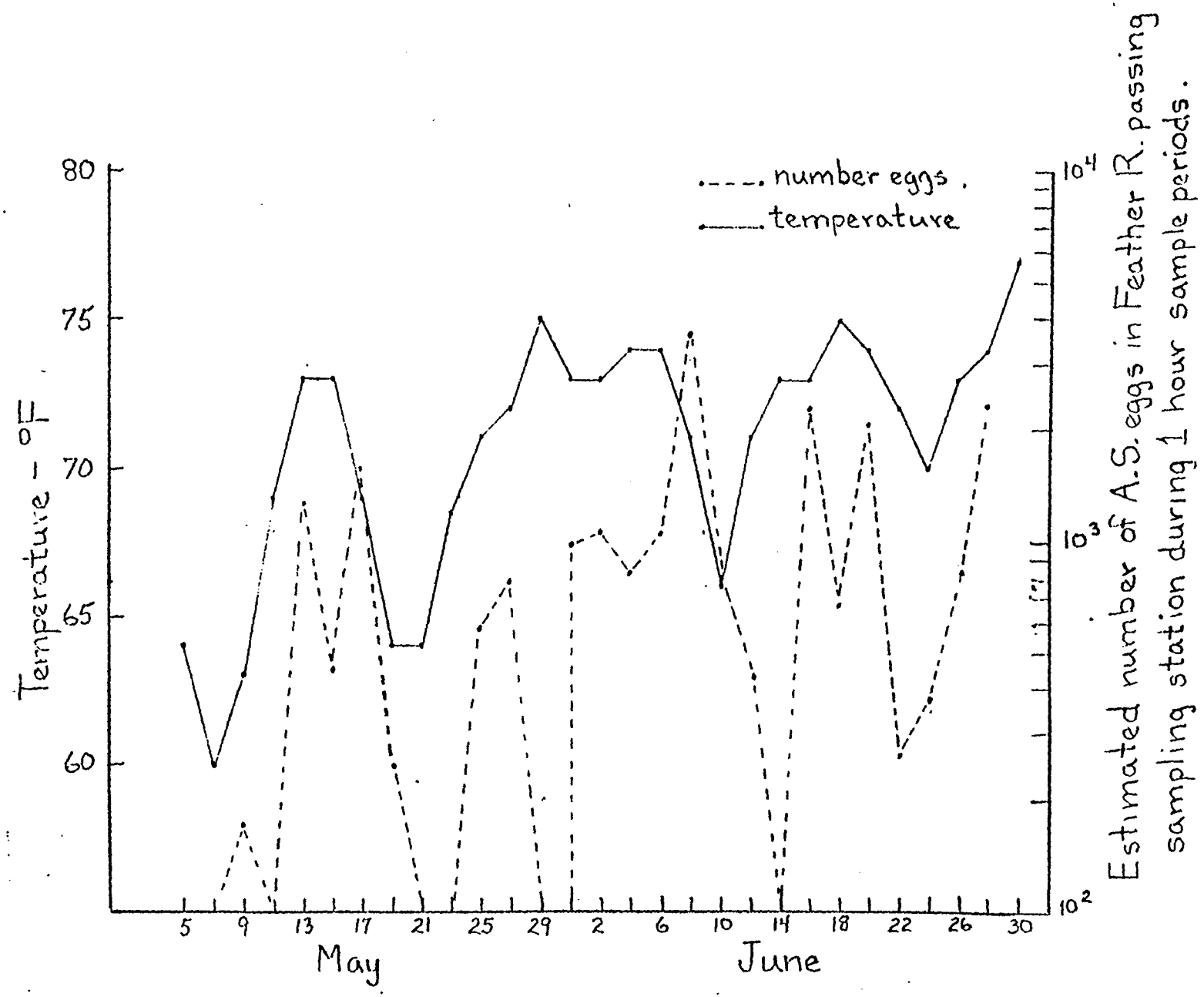

Figure 48. Apparent relationship between water temperature and abundance of American shad eggs at Verona, Feather Ri[redacted] 1[redacted]

C—0 6 7 1 7 0

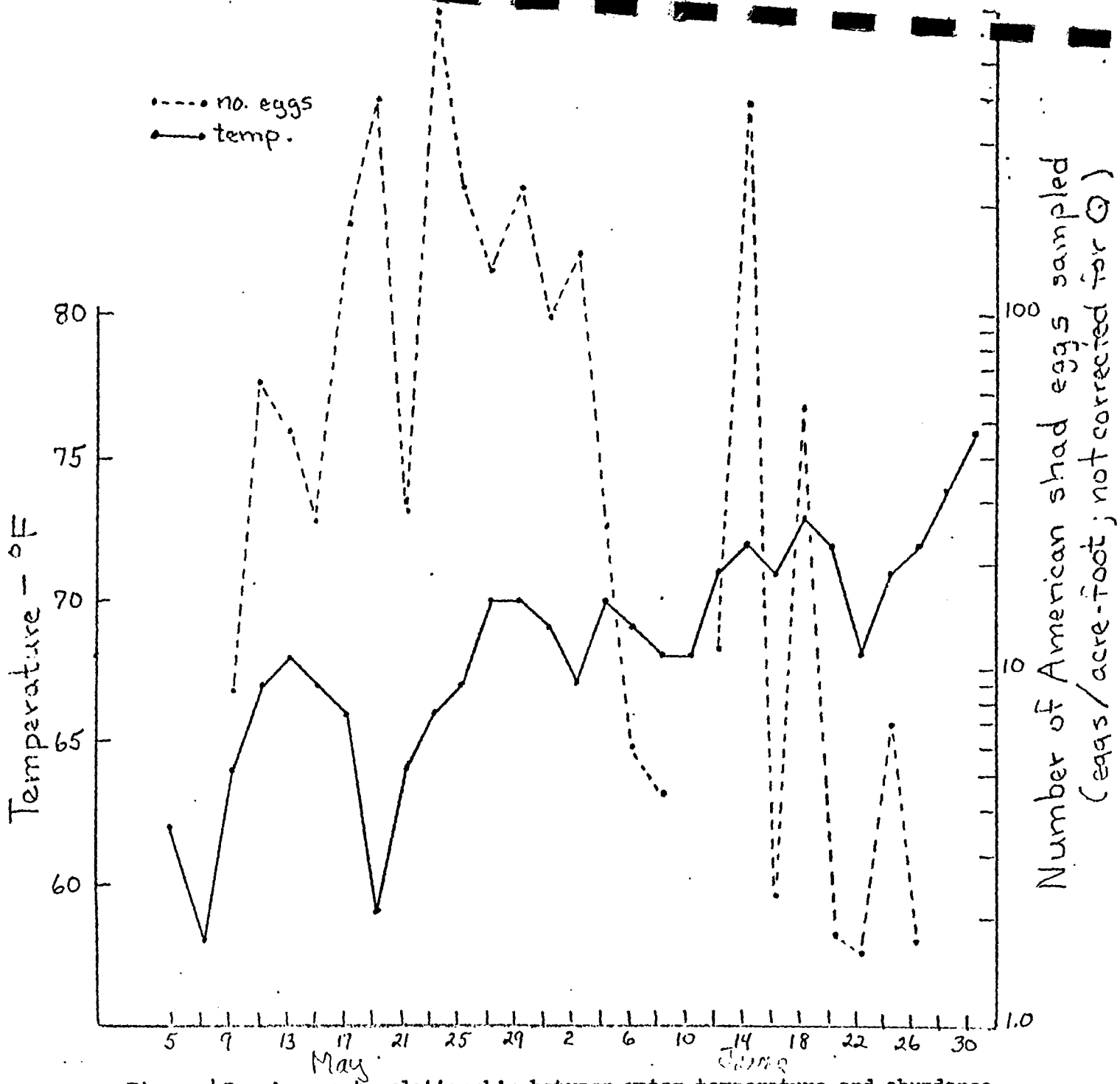

Figure 49. Apparent relationship between water temperature and abundance of American shad eggs at Yuba River, 1972.

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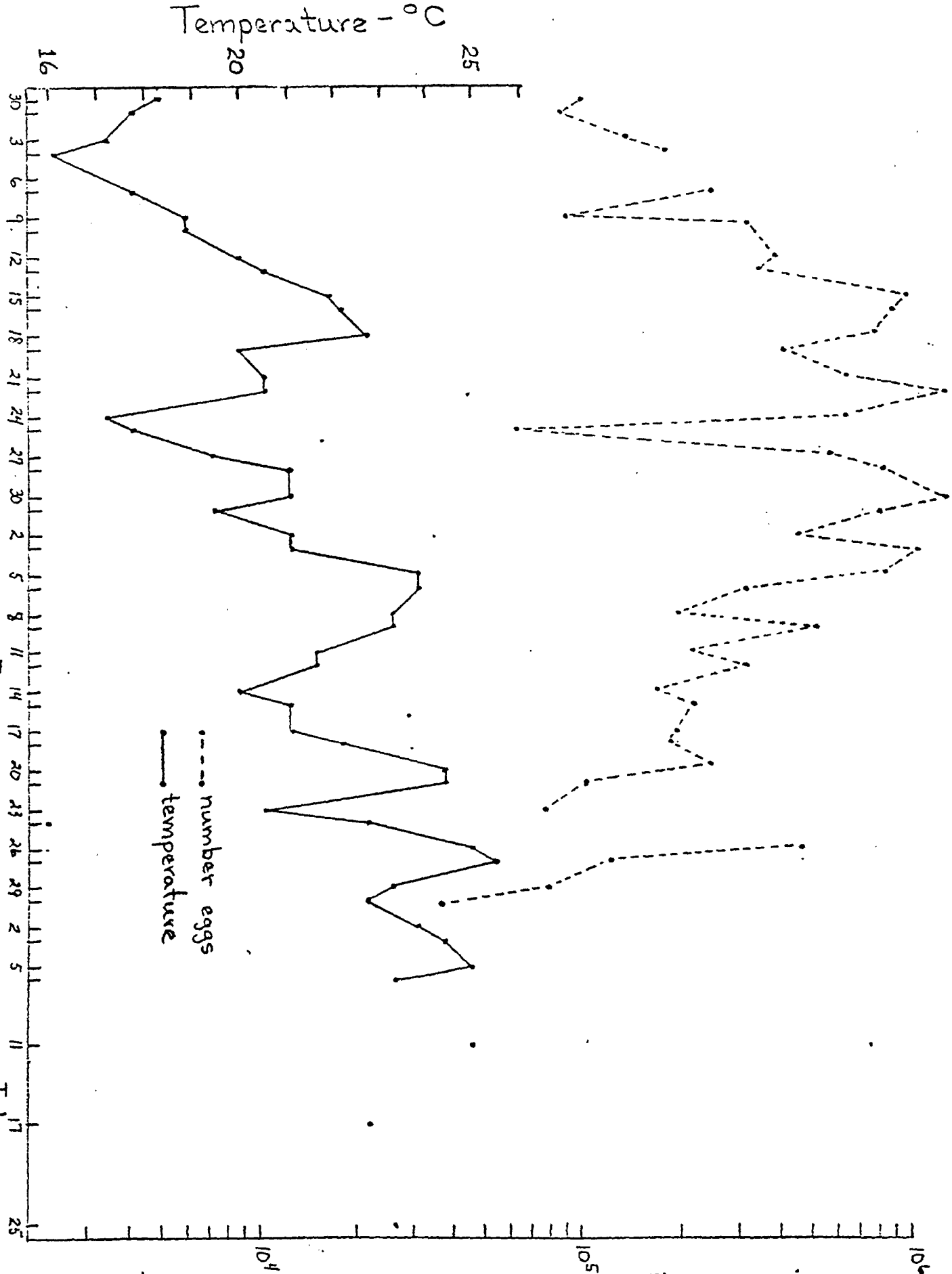
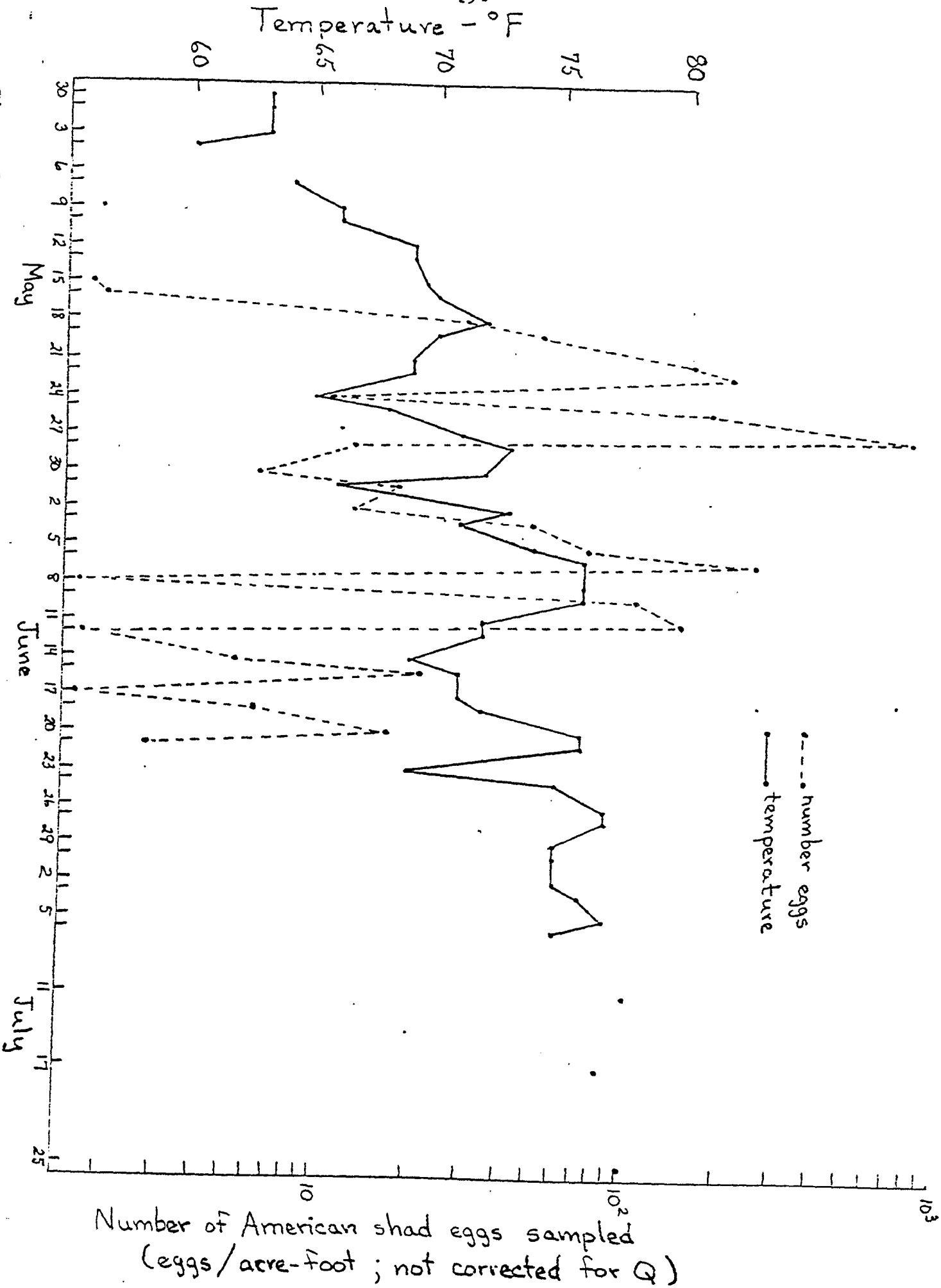
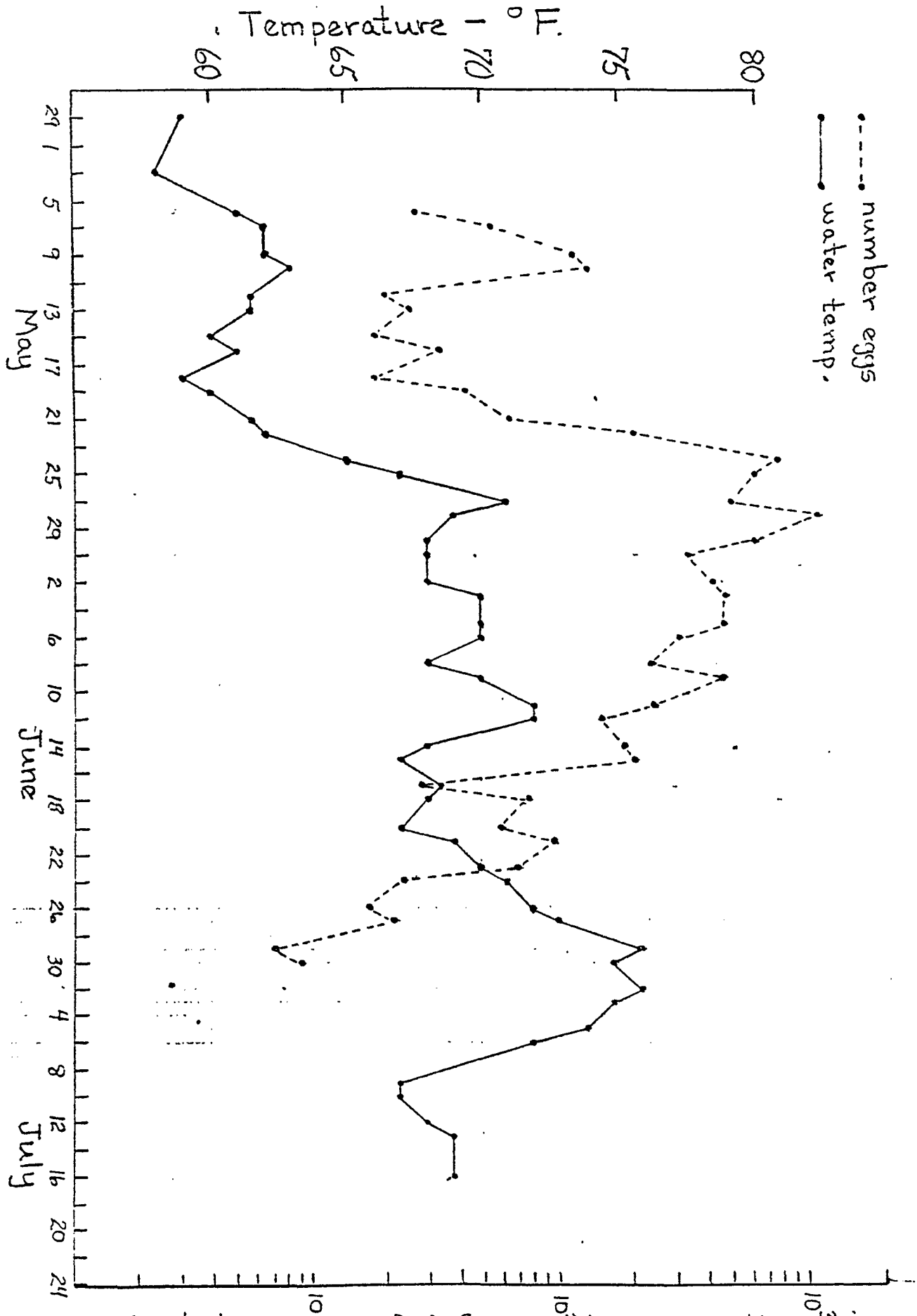


Estimated number of A.S. eggs in Feather River passing sampling station during 1 hour periods.

C—067172


Temperature - °F
60
65
70
75
80
May
June
July
number eggs
temperature
10
10^2
10^3
Number of American shad eggs sampled
(eggs / acre-foot ; not corrected for Q)

C-067173



Estimated number of A.S. eggs in the Feather River passing sampling station during 1 hour periods.

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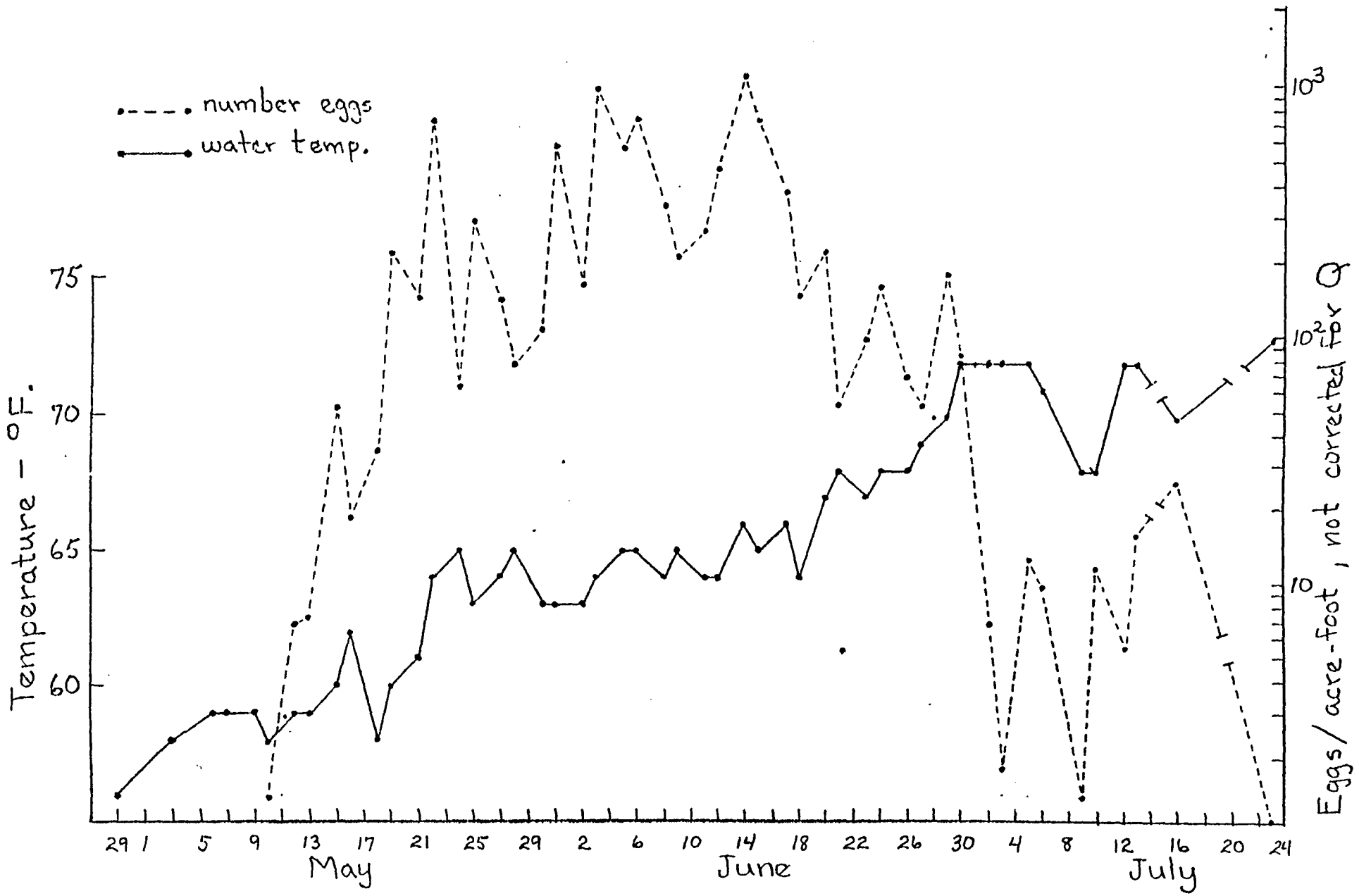

Figure 53. Apparent relationship between water temperature and abundance of American shad eggs in Yuba River, 1974.

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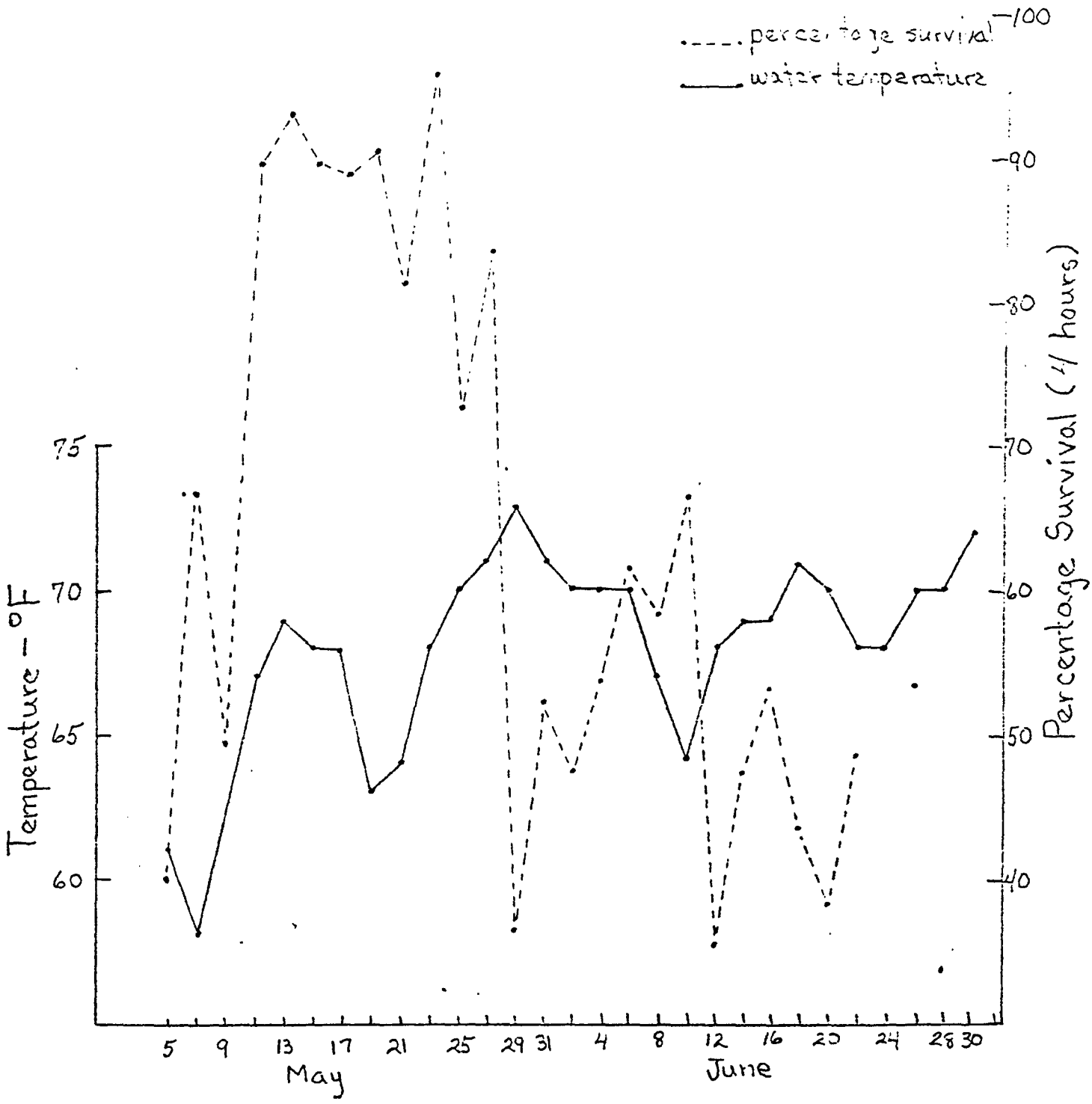

Figure 54. Apparent relationships between water temperature, time, and percentage survival to 4 hours of American shad eggs (Yuba City, Feather River, 1972).

C—067176

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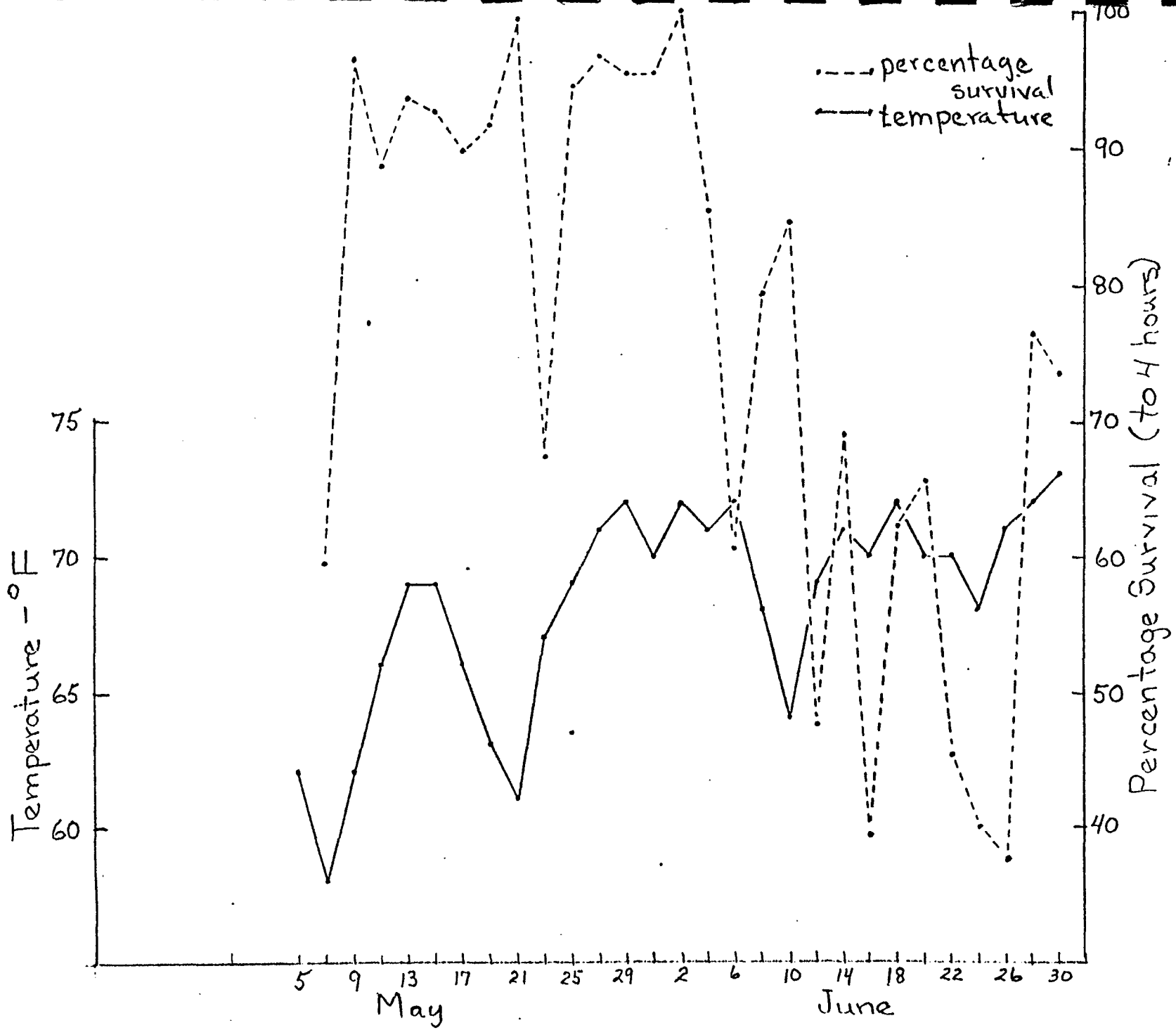

Figure 55. Apparent relationships between water temperature, time, and American shad egg survival to 4 hours (Star Bend, Feather River, 1972).

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C-067177

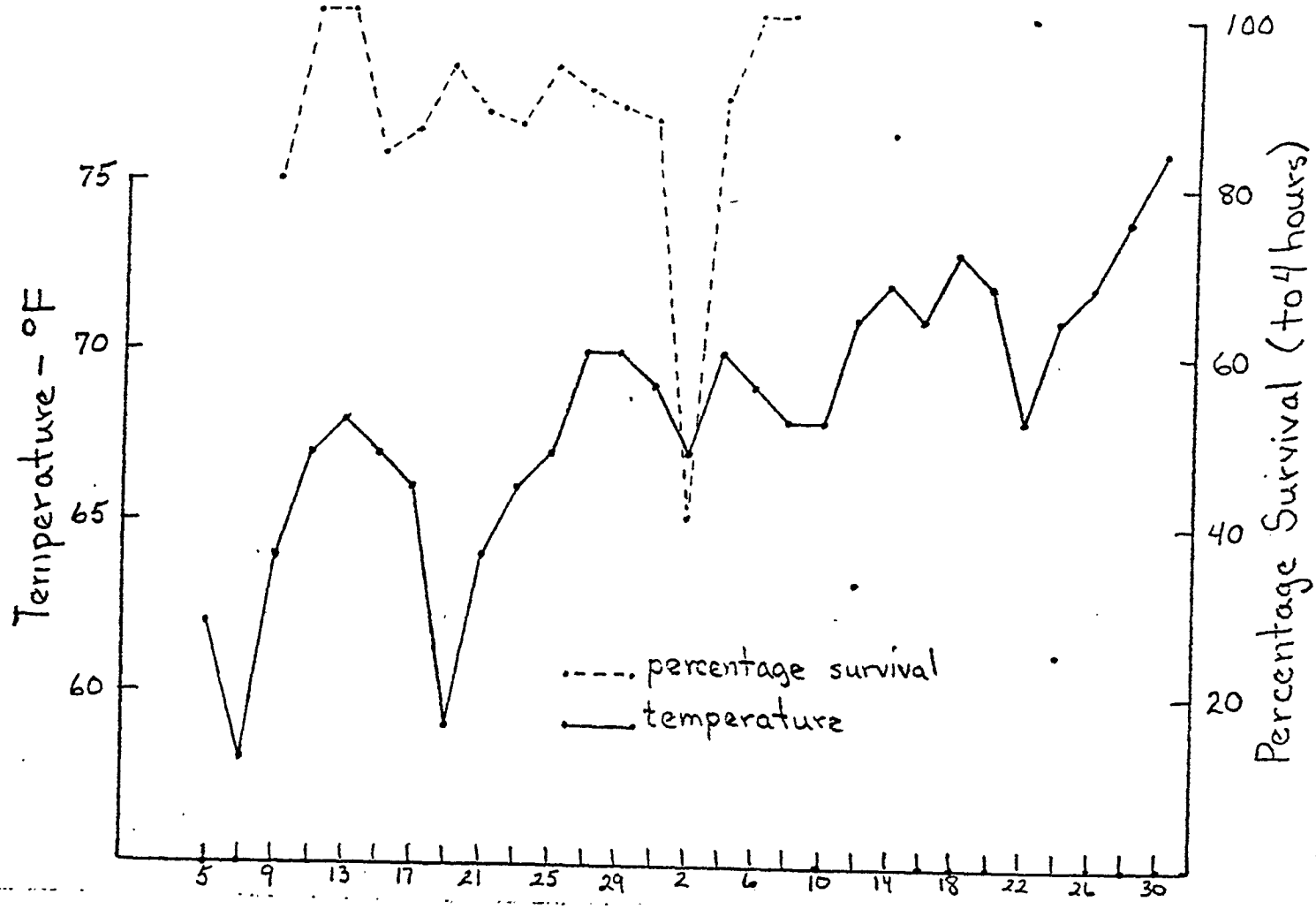


Figure 56. Apparent relationships between water temperature, time, and percentage survival to 4 hours of American shad eggs (Yuba River, 1972).

C—067178

C-067178

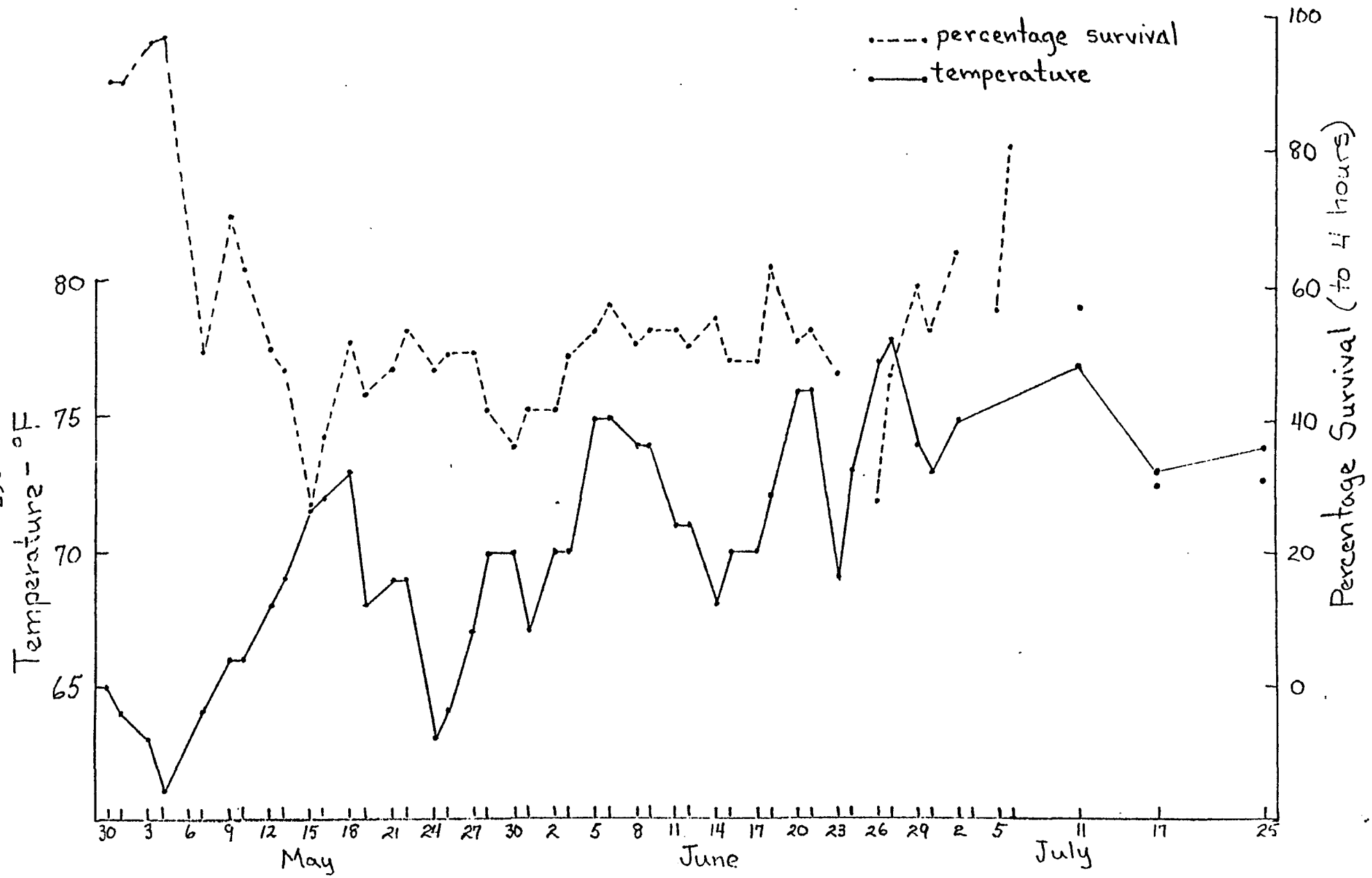


Figure 57. Apparent relationships between water temperature, time, and American shad egg survival to 4 hours (Yuba City, Feather River, 1973).

C-067179

C-067179

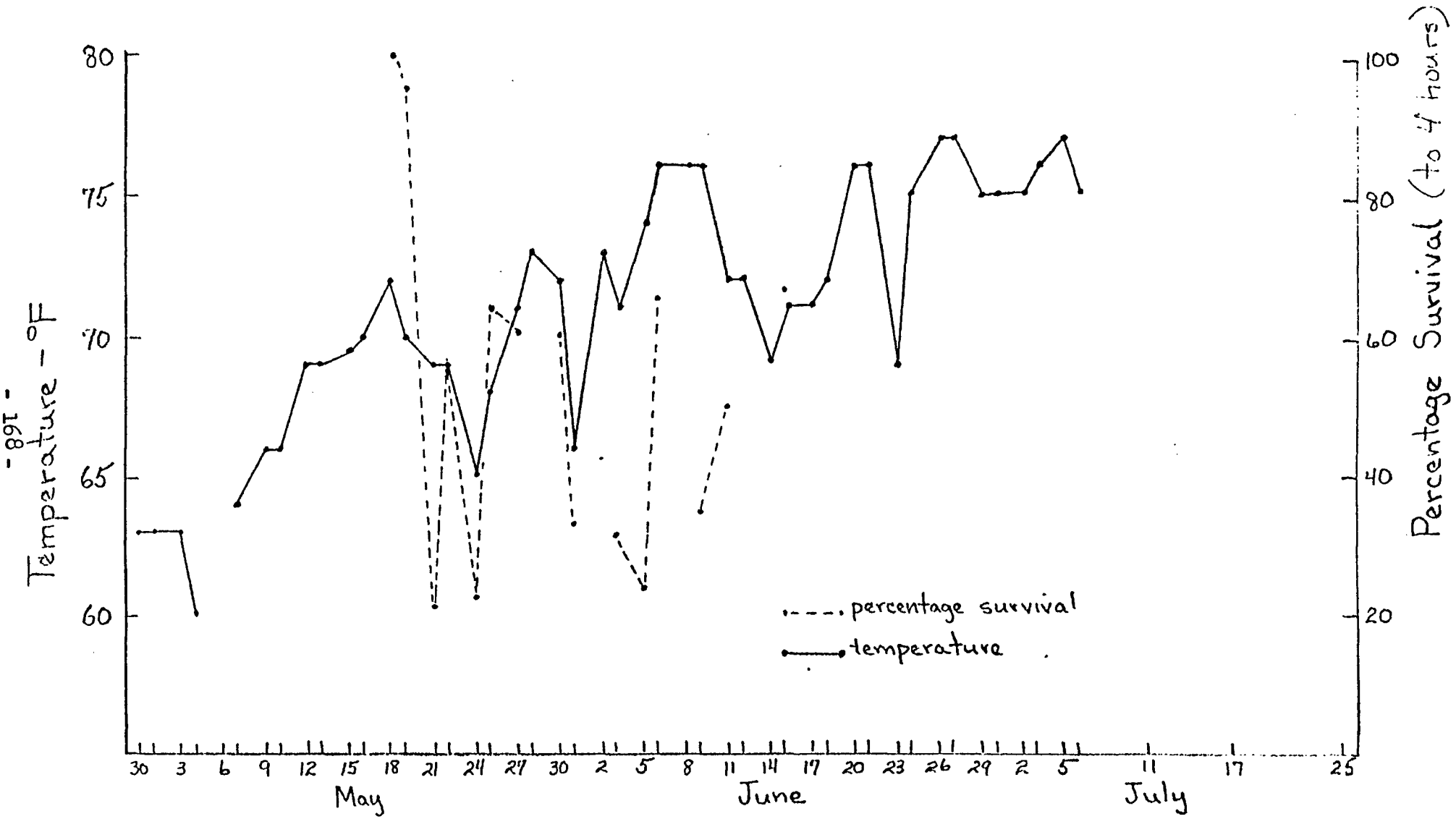


Figure 58. Apparent relationships between water temperature, time, and American shad egg survival to 4 hours (Yuba River, 1973).

C-067180

C-067180

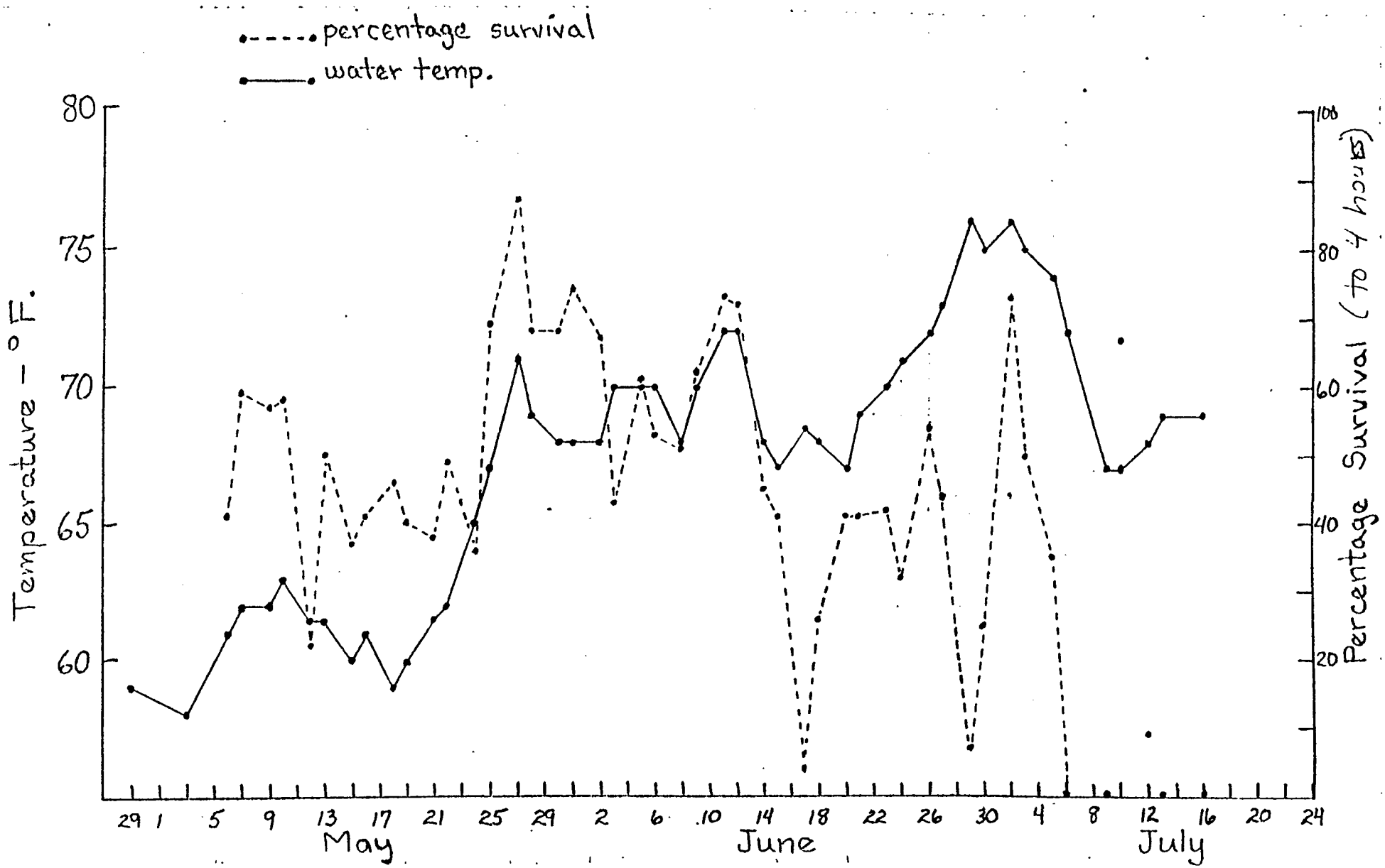


Figure 59. Apparent relationships between water temperature, time, and American shad egg survival to 4 hours (Yuba City, Feather River, 1974).

C-067181

C-067181

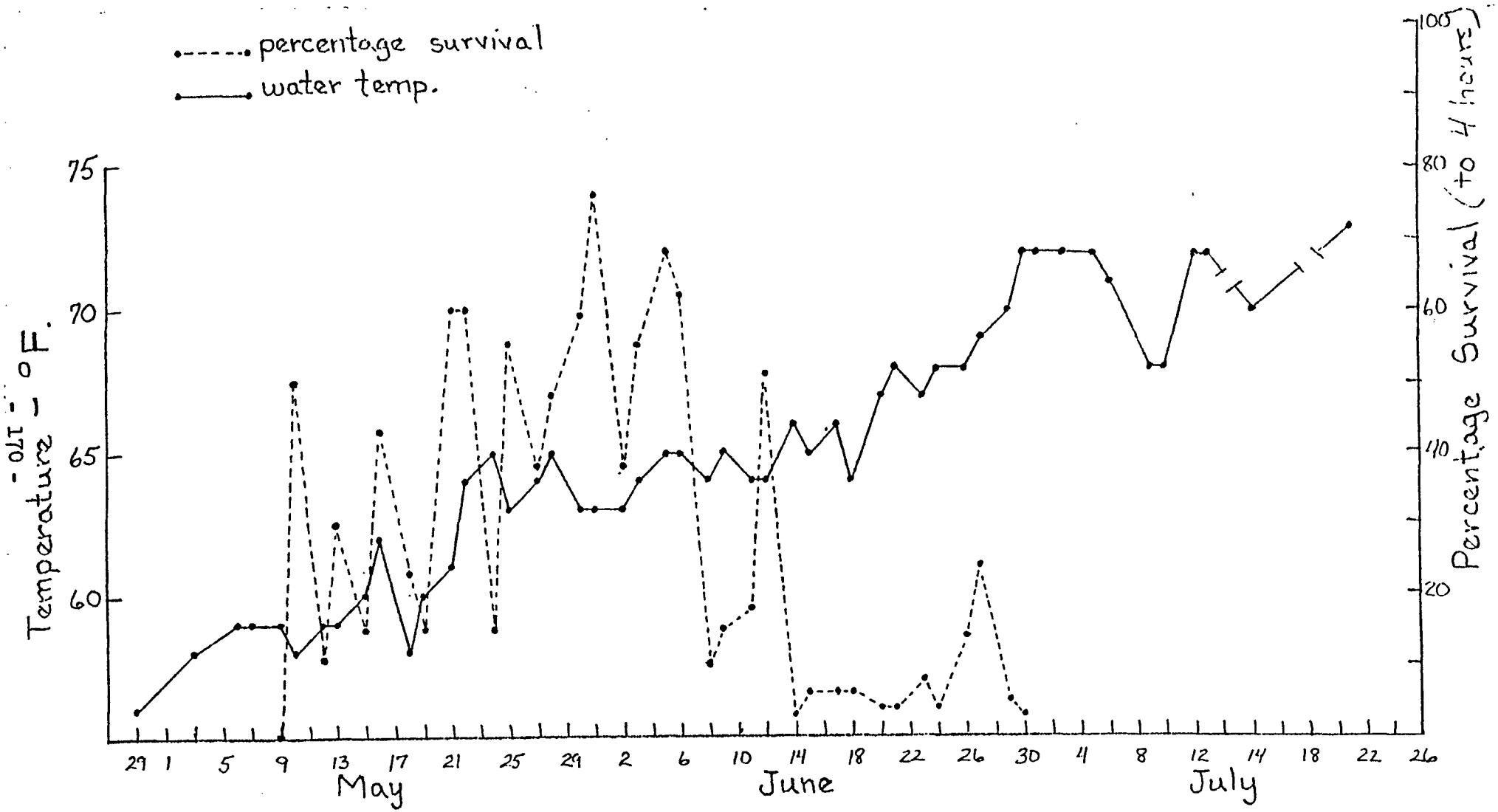


Figure 60. Apparent relationships between water temperature, time, and American shad egg survival to 4 hours (Yuba River, 1974).

C-067182

C-067182

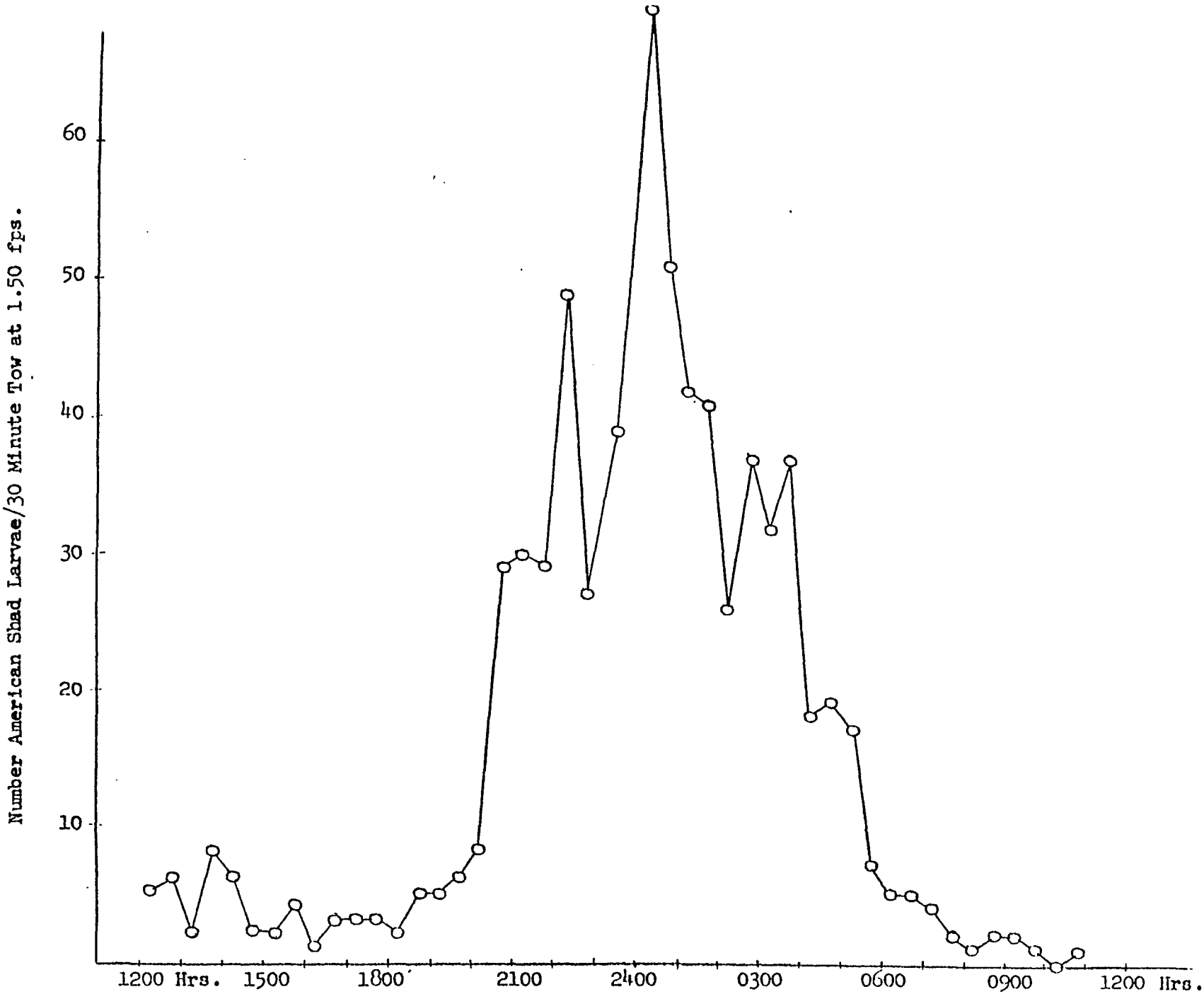


Figure 61. Twenty-four hour net tow at Yuba City, June 23 at 1200 hours to June 24 at 1100 hours, surface tows.

C-067183

C—0 6 7 1 8 3

C-067184

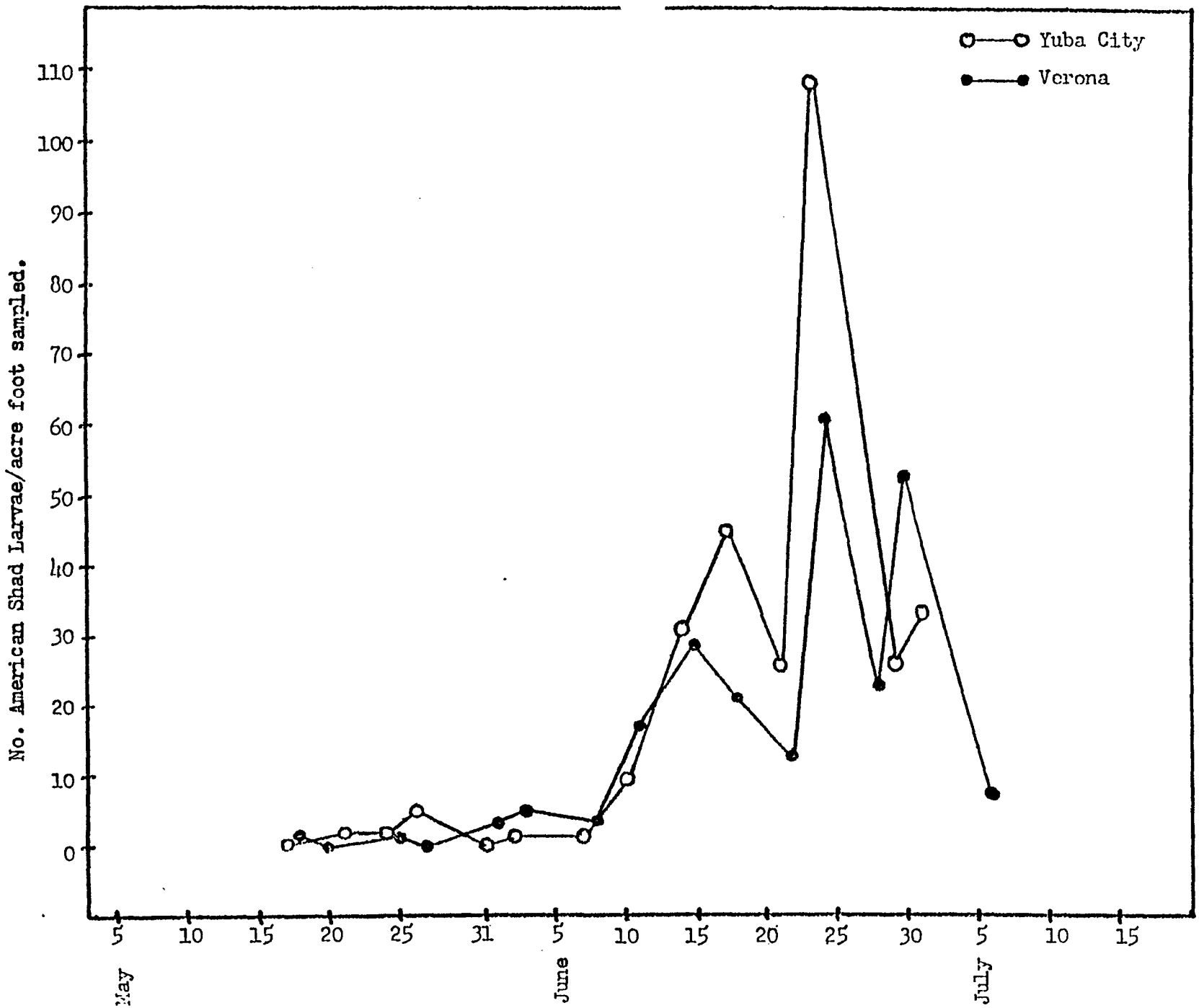


Figure 62. Number of American shad larvae/acre foot sampled at Verona and Yuba City from surface tows between 2000 and 2300 hours, 1971.

C—067184

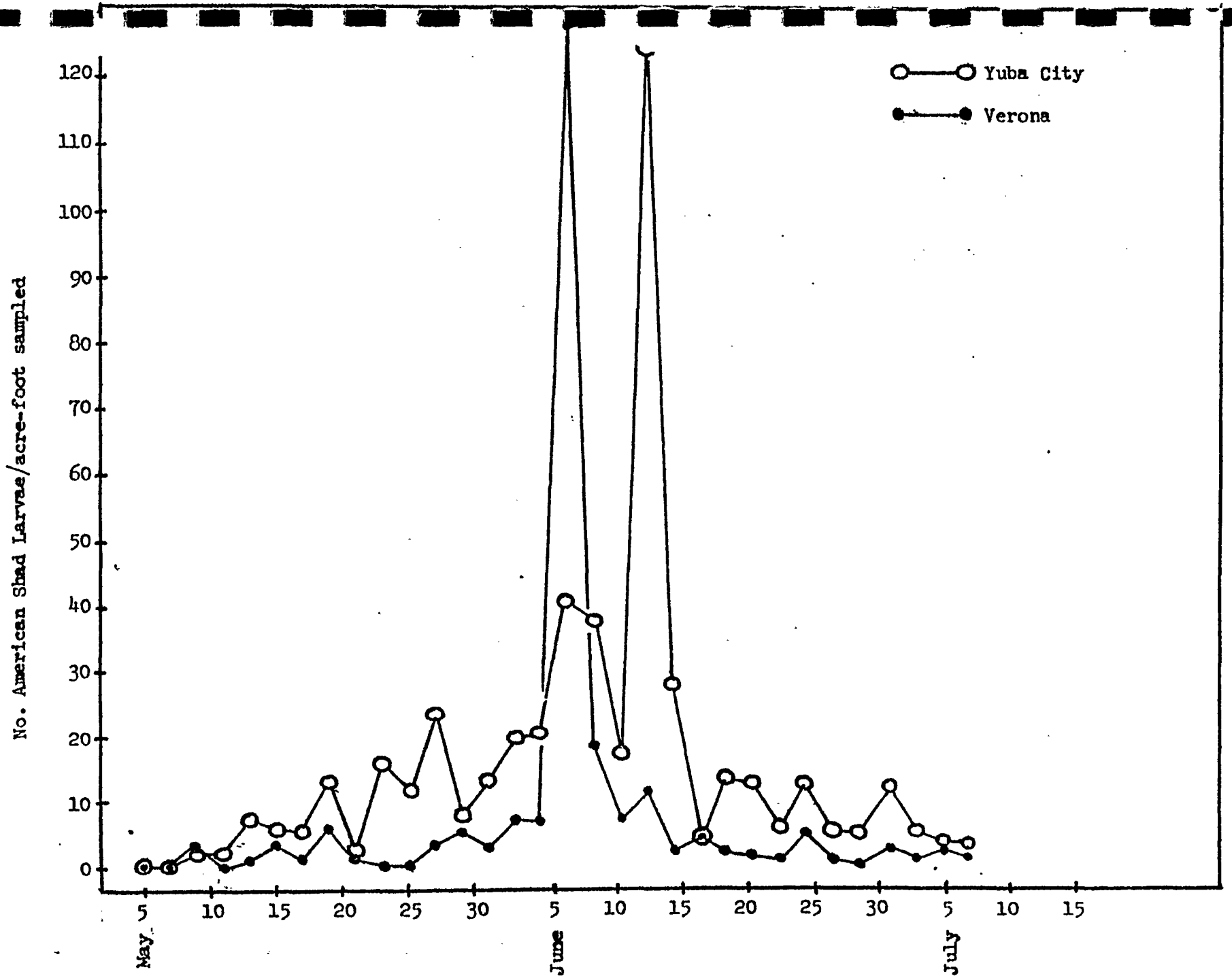


Figure 63. Number of American shad larvae/acre-foot sampled at Verona and Yuba City from surface tows between 2100 and 0300 hours, 1972.

C-067185

C-067185

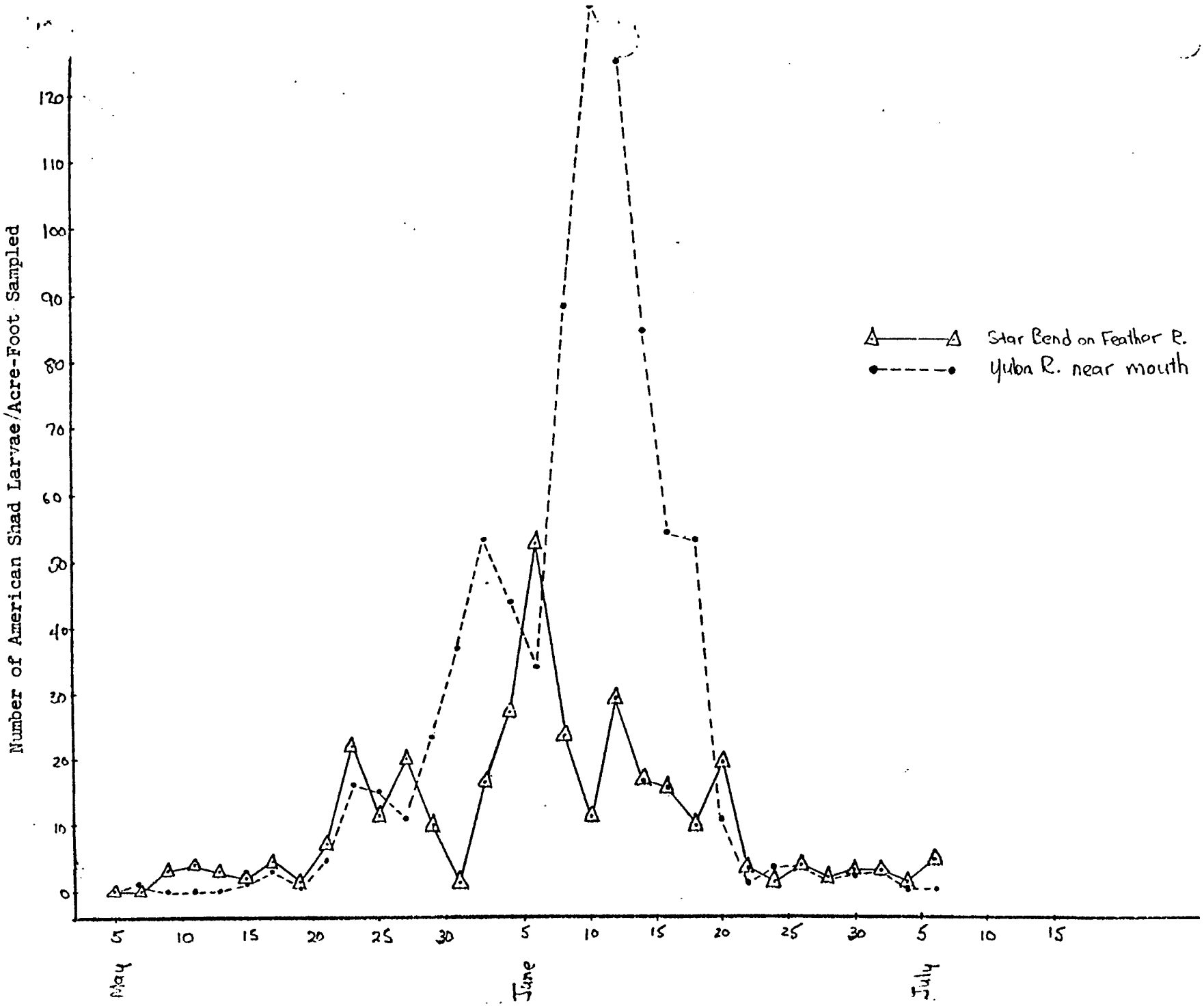


Figure 64. Number of American shad larvae/acre-foot sampled at Star Bend (Feather River) and the Yuba River (near mouth) between 2100 and 0300 hours, 1972.

C-067186

C-067186

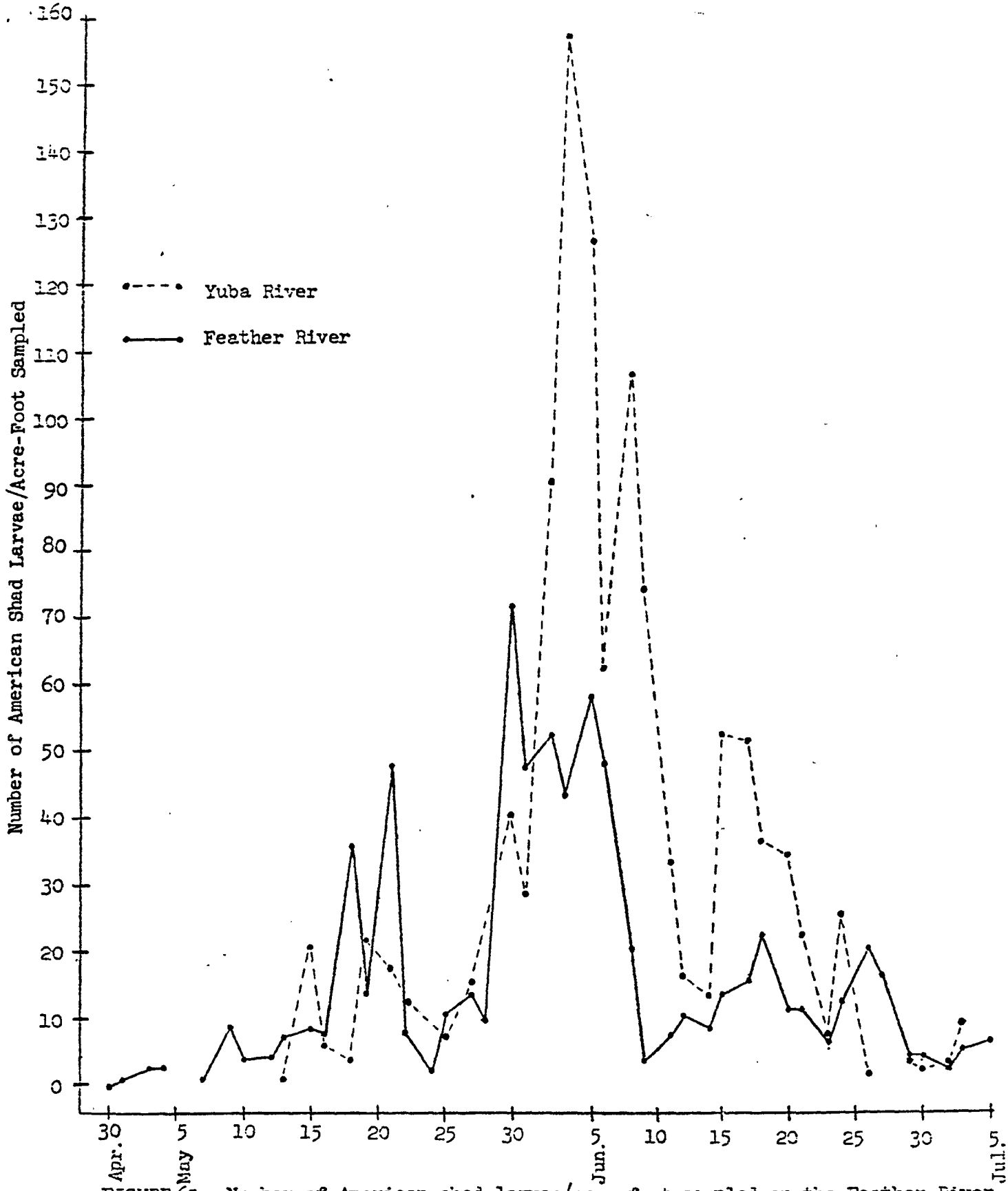


FIGURE 65. Number of American shad larvae/acre-foot sampled on the Feather River at Yuba City and the Yuba River at Marysville. Data from surface tows. between 2100 and 2300 hours, 1973.

C—067187

C-067187

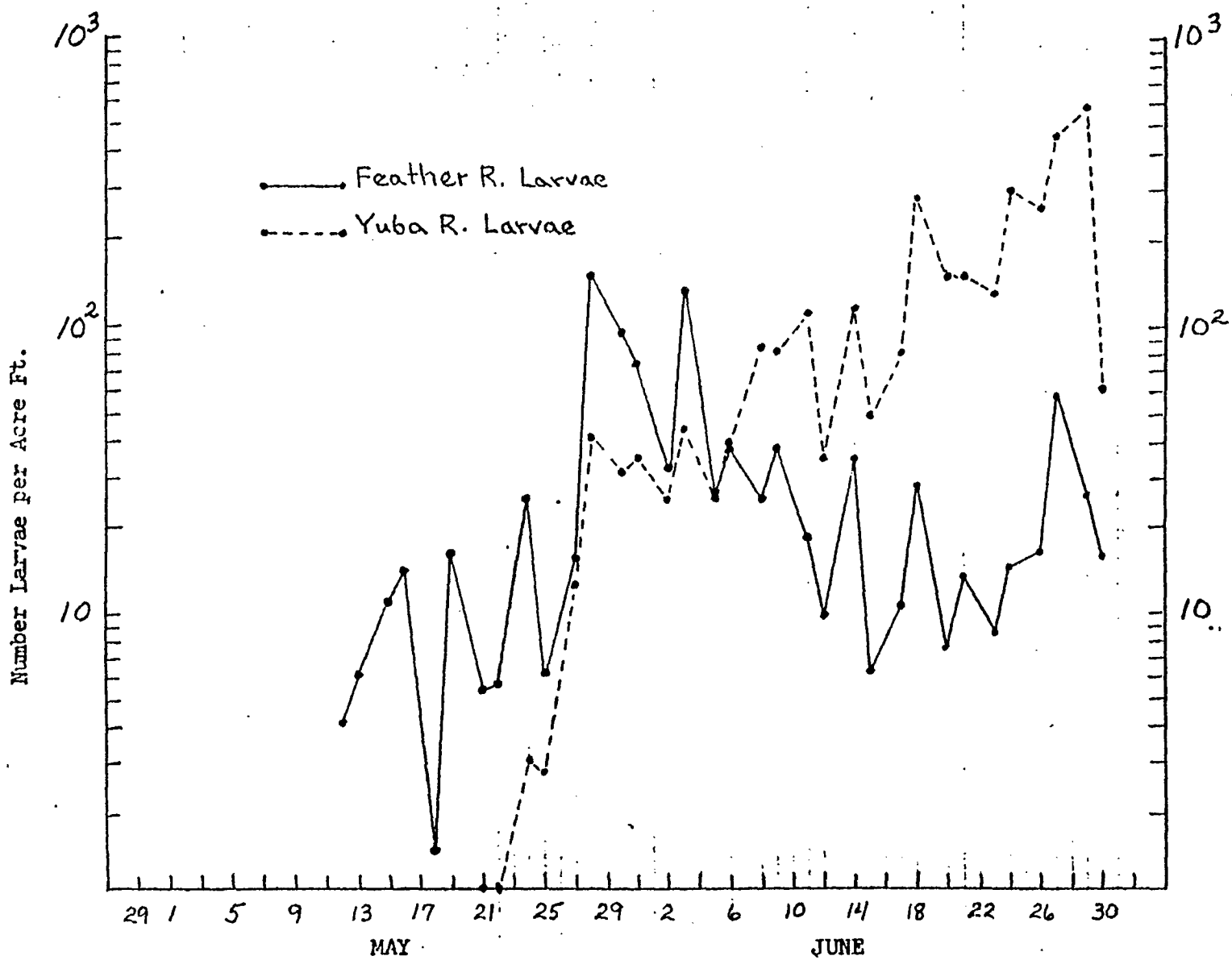


Figure 66. Number of American shad larvae/acre-foot sampled on the Feather River at Yuba City and the Yuba River at Marysville. Data from surface tows between 2100 and 2300 hours, 1974.

C-067188

C-067188

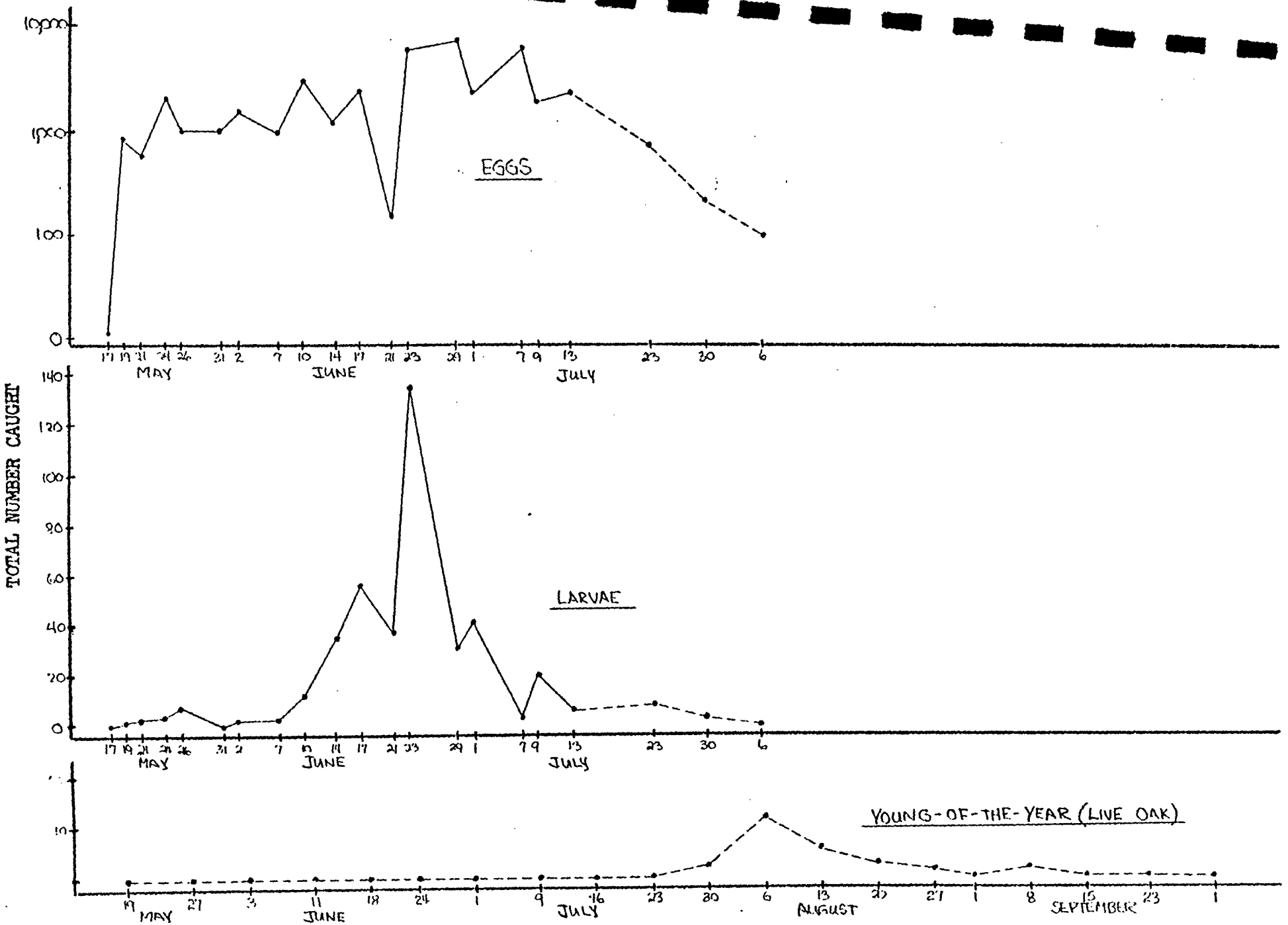
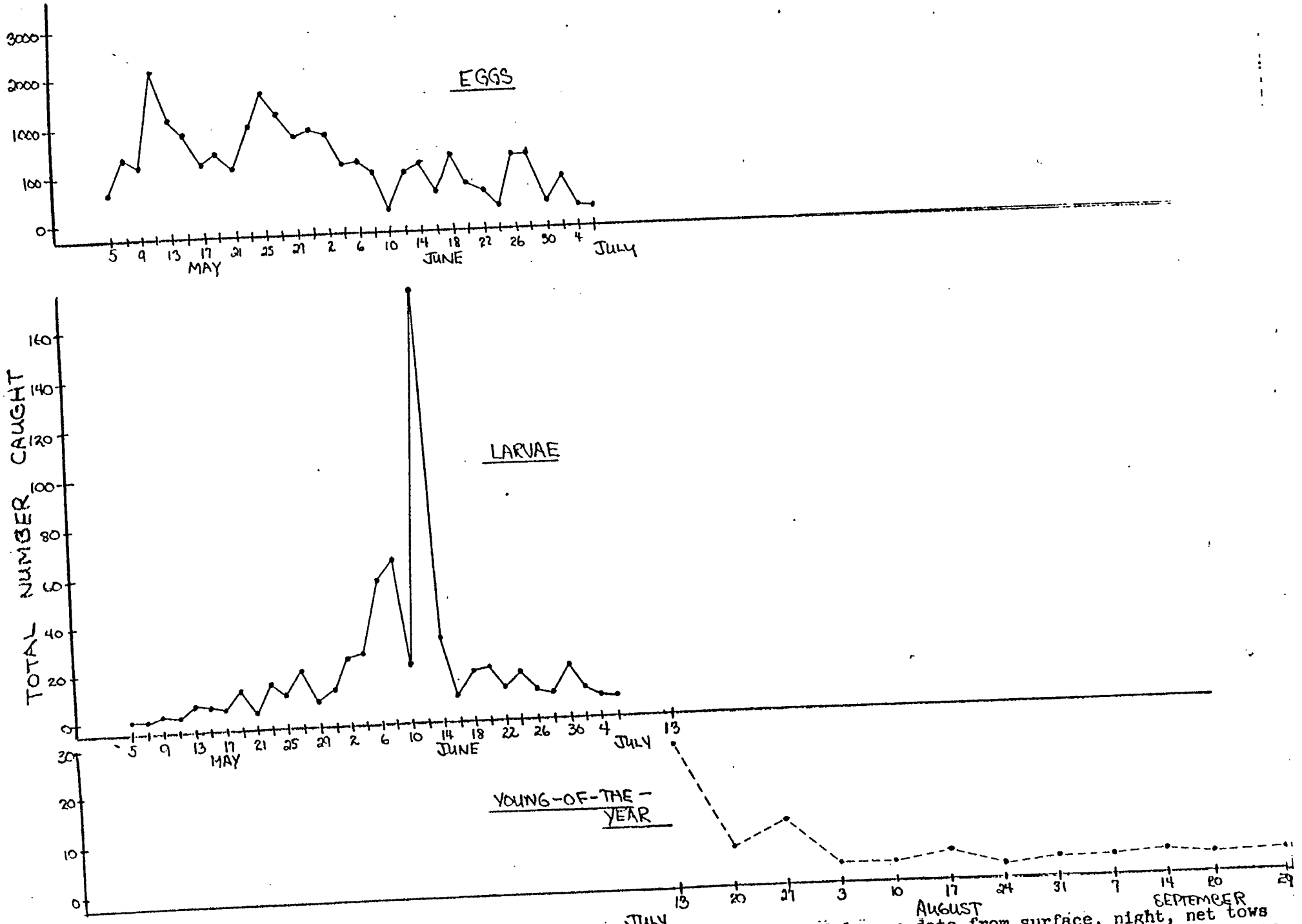


Figure 67. American shad catch summary, Feather River, 1971. Egg and larvae data from surface night net tows at Yuba City. Young-of-the-year from one night fyke net sets at Live Oak.

C-067189

C—067189



[redacted] Fi[redacted] 68 [redacted] American shad catch summary, Feather River, 1972. Egg and larvae data from surface, night, net tows [redacted] Cit[redacted] Yo[redacted] of [redacted] yea[redacted] ata [redacted] from one night sets using a floating fyke net at Shanghai Rapids. [redacted]

C-067190

C-067190

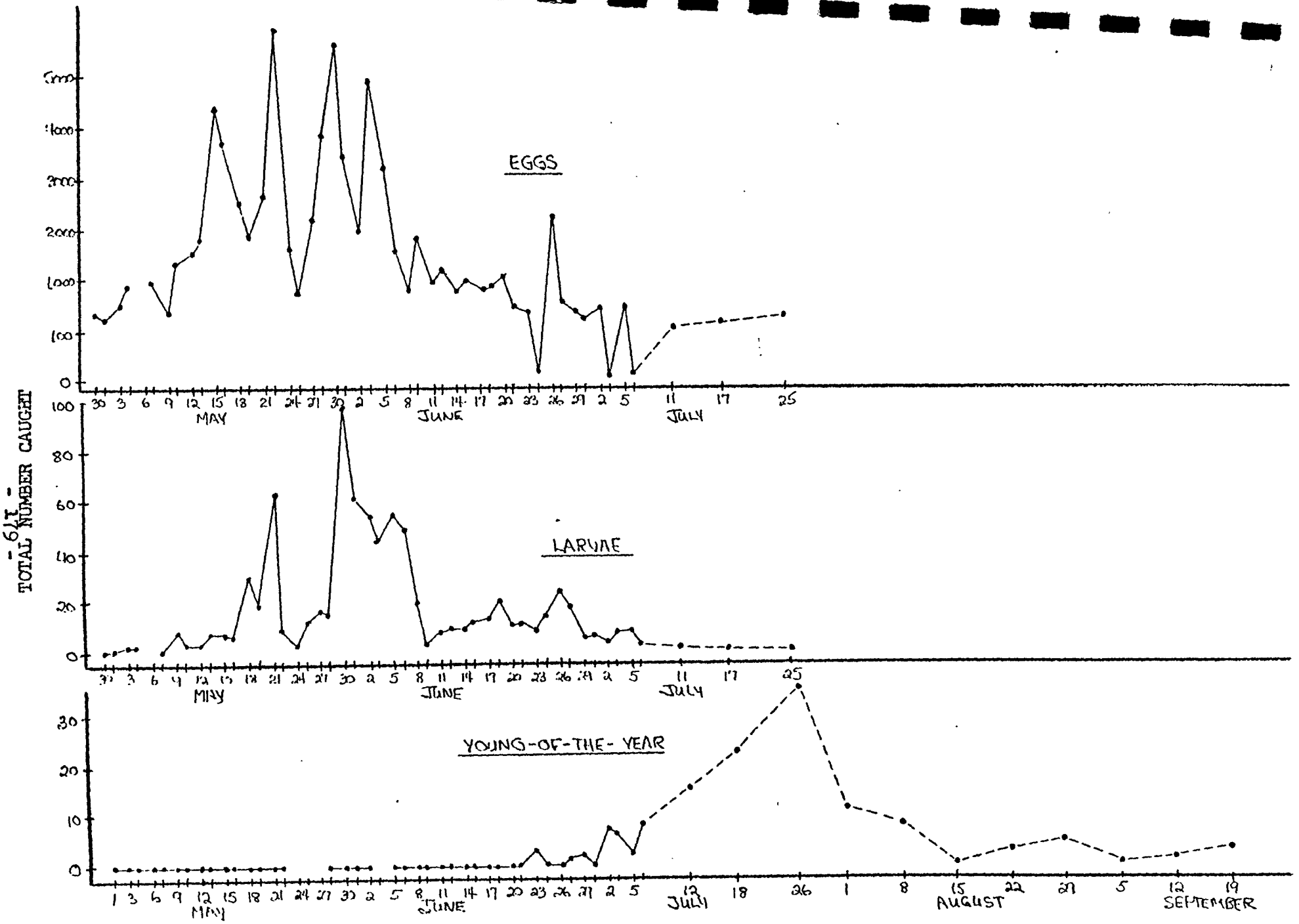


Figure 69. American shad catch summary, Feather River, 1973. Egg and larvae data from surface night net tows at Yuba City. Young-of-the-year data from night fyke net sets at Shanghai Rapids.

C-067191

C-067191

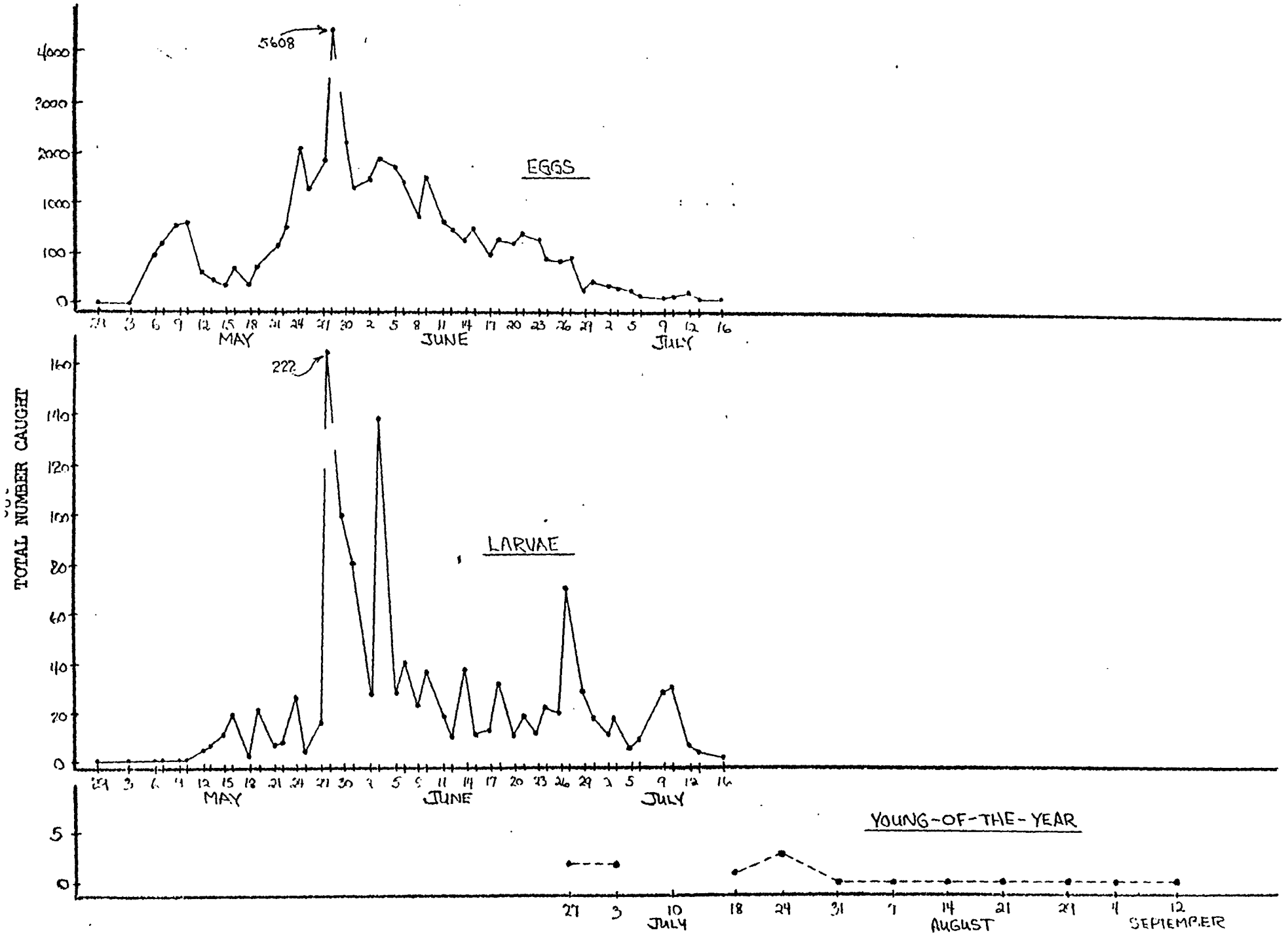


Figure 70. American shad catch summary, Feather River, 1974. Egg and larvae data from surface night net tows at Yuba City. Young-of-the-year data from night fyke net sets at Shanghai Rapids.

C-067192

C-067192

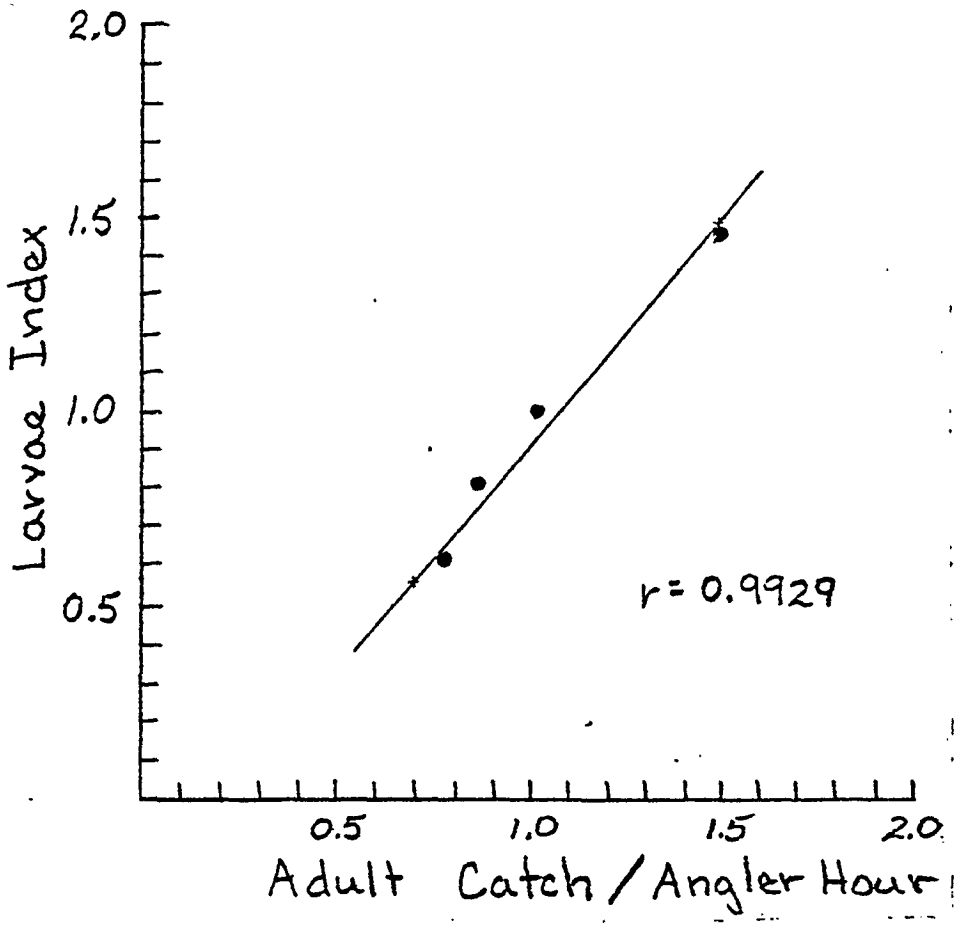


Figure 71. Relationship of angler catch rates of adult American shad with the larvae index, 1971-1974.

C—067193

C-067193

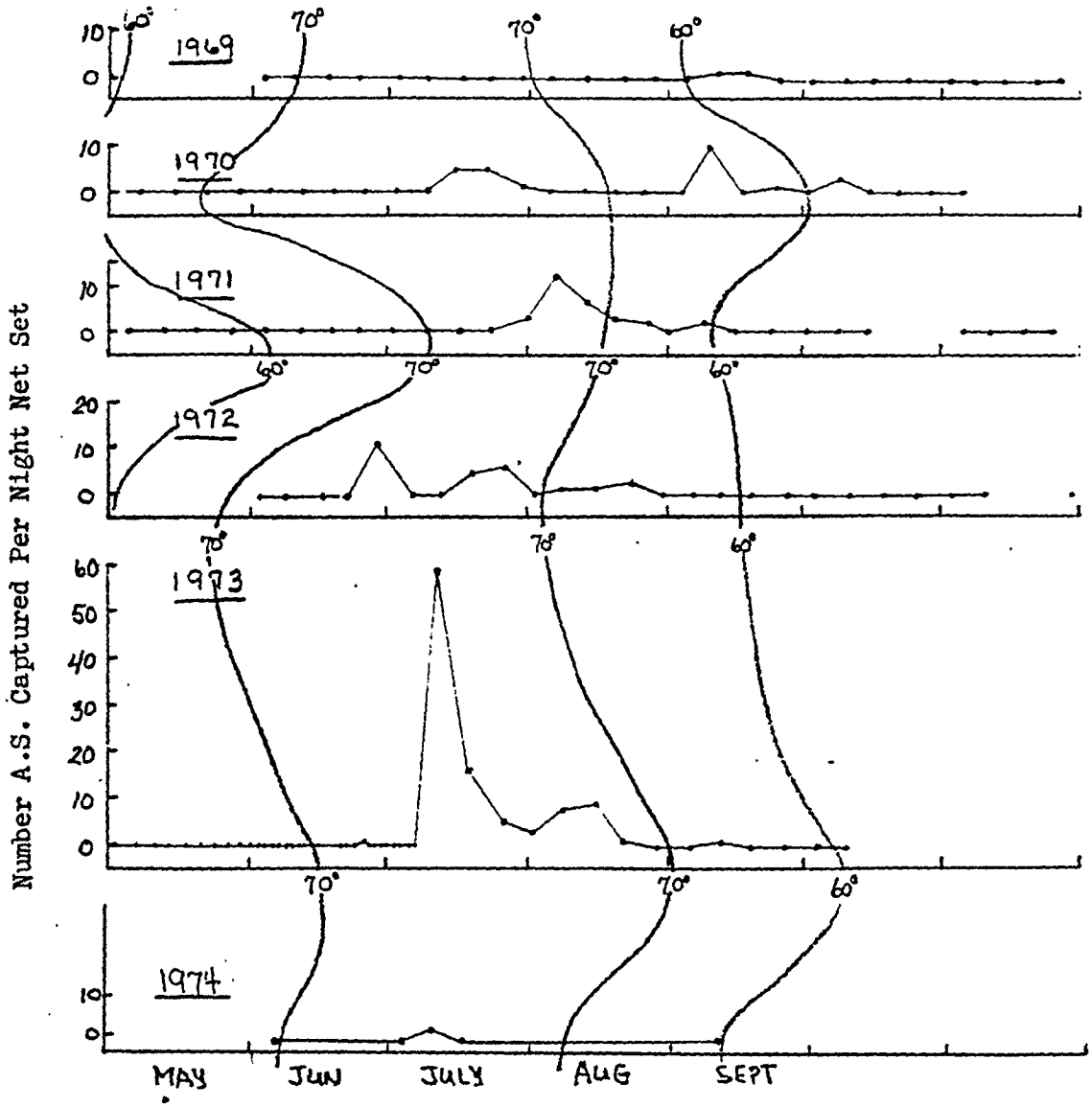


Figure 72. Nightly catch of small young-of-the-year American shad taken with fyke-nets at Live Oak, Feather River.

C—067194

C-067194

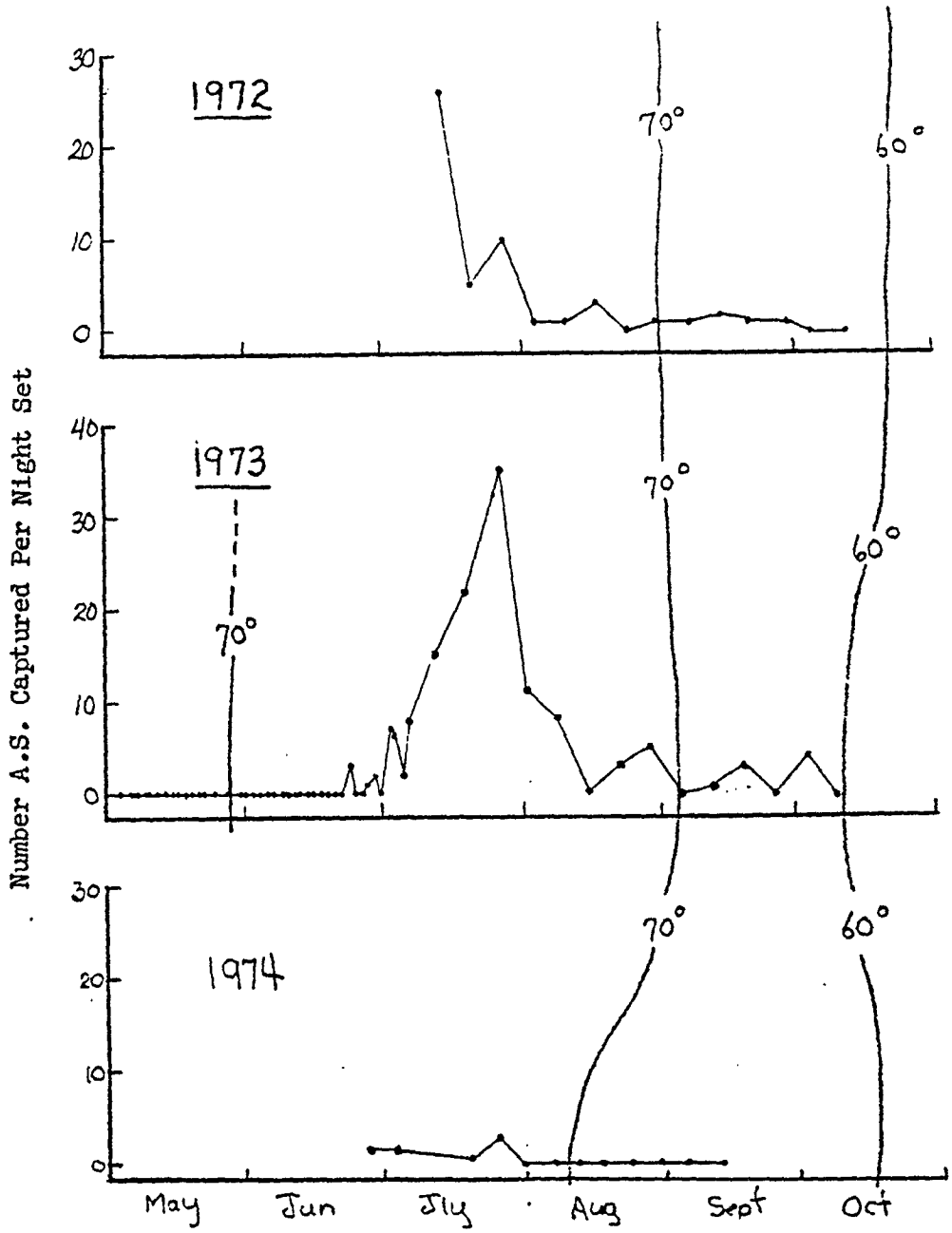


Figure 73. Fyke-net catches of young-of-the-year American shad taken near Shanghai Bend, Feather River, 1972-1974.

C—067195

C-067195

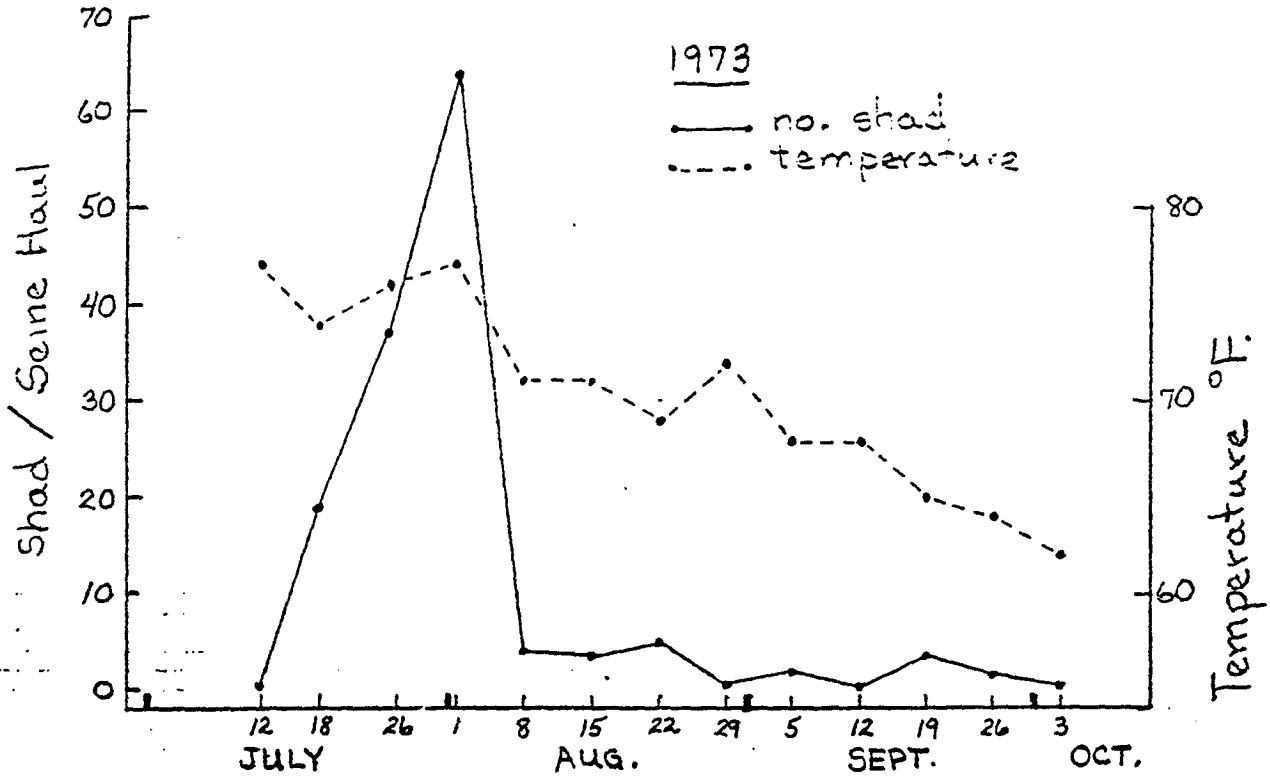


Figure 76. Number of American shad taken in seine haul catches and river temperatures at Shanghai Bend, 1973.

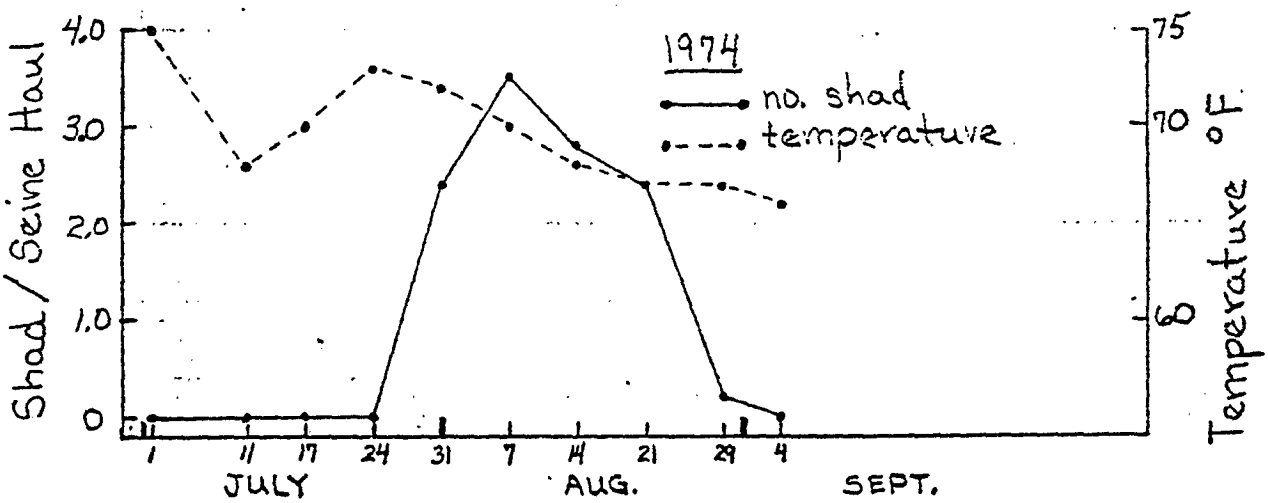


Figure 77. Number of American shad taken in seine haul catches and river temperatures at Shanghai Bend, 1974.

C—067196

C-067196

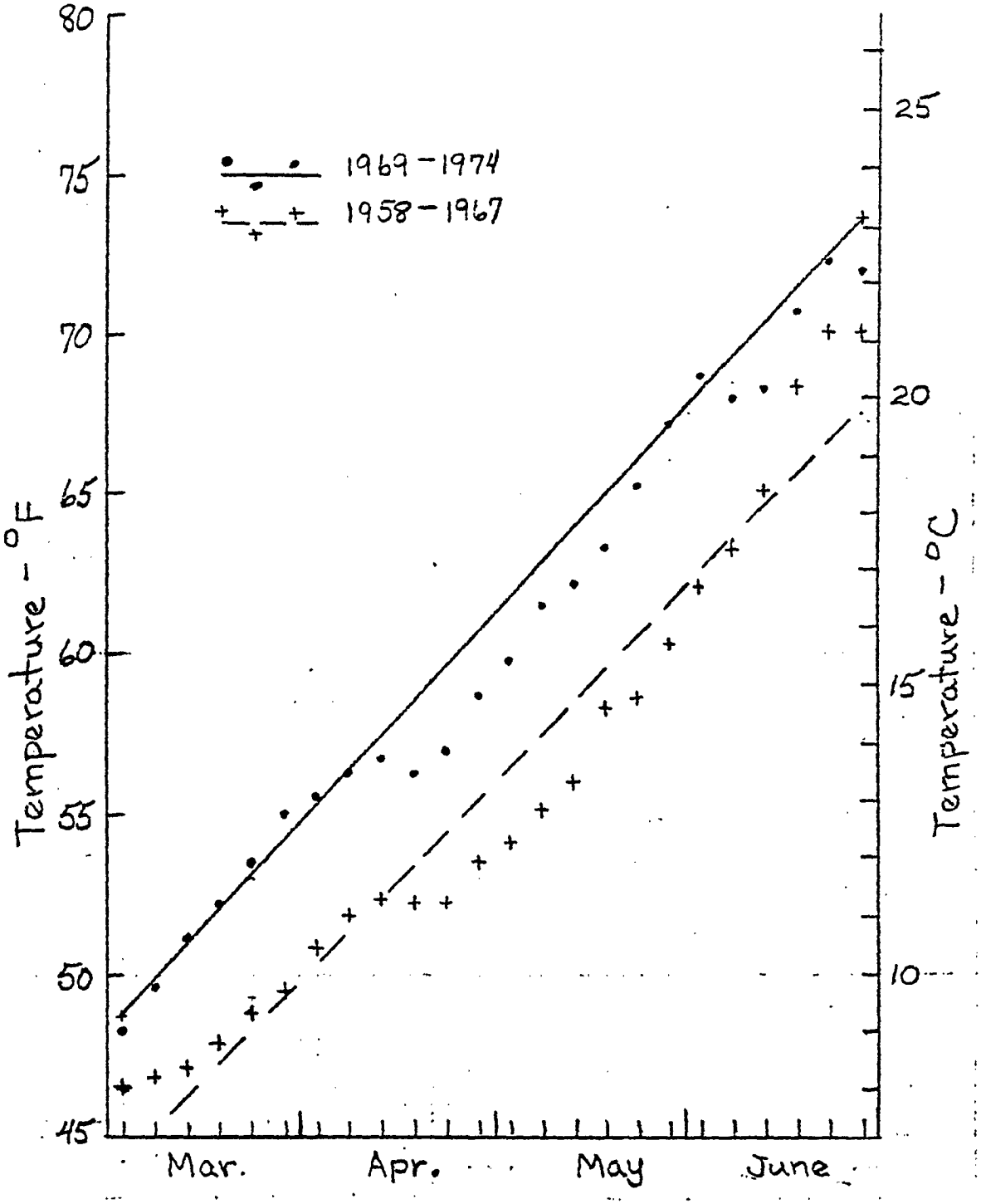


Figure 78. Mean maximum daily temperatures, by five day intervals, of the Feather River below Oroville and regression lines for all data (1958-1967, n = 240; 1969-1974, n = 144).

C — 0 6 7 1 9 7

C-067197

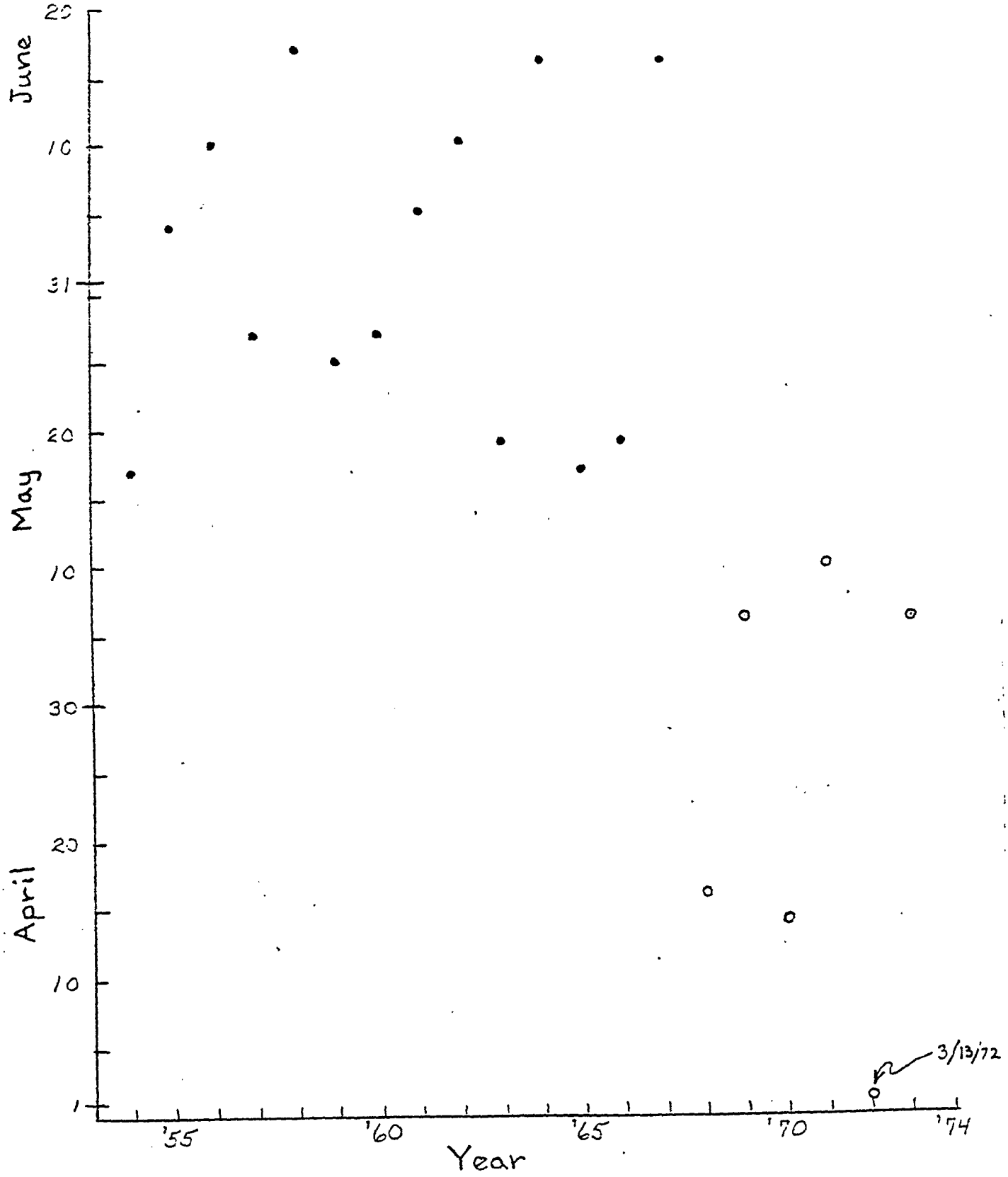


Figure 79. Date when Feather River (near Oroville) first reached 15.5°c (dots are pre-project and circles post-project temperatures).

C—067198

C-067198

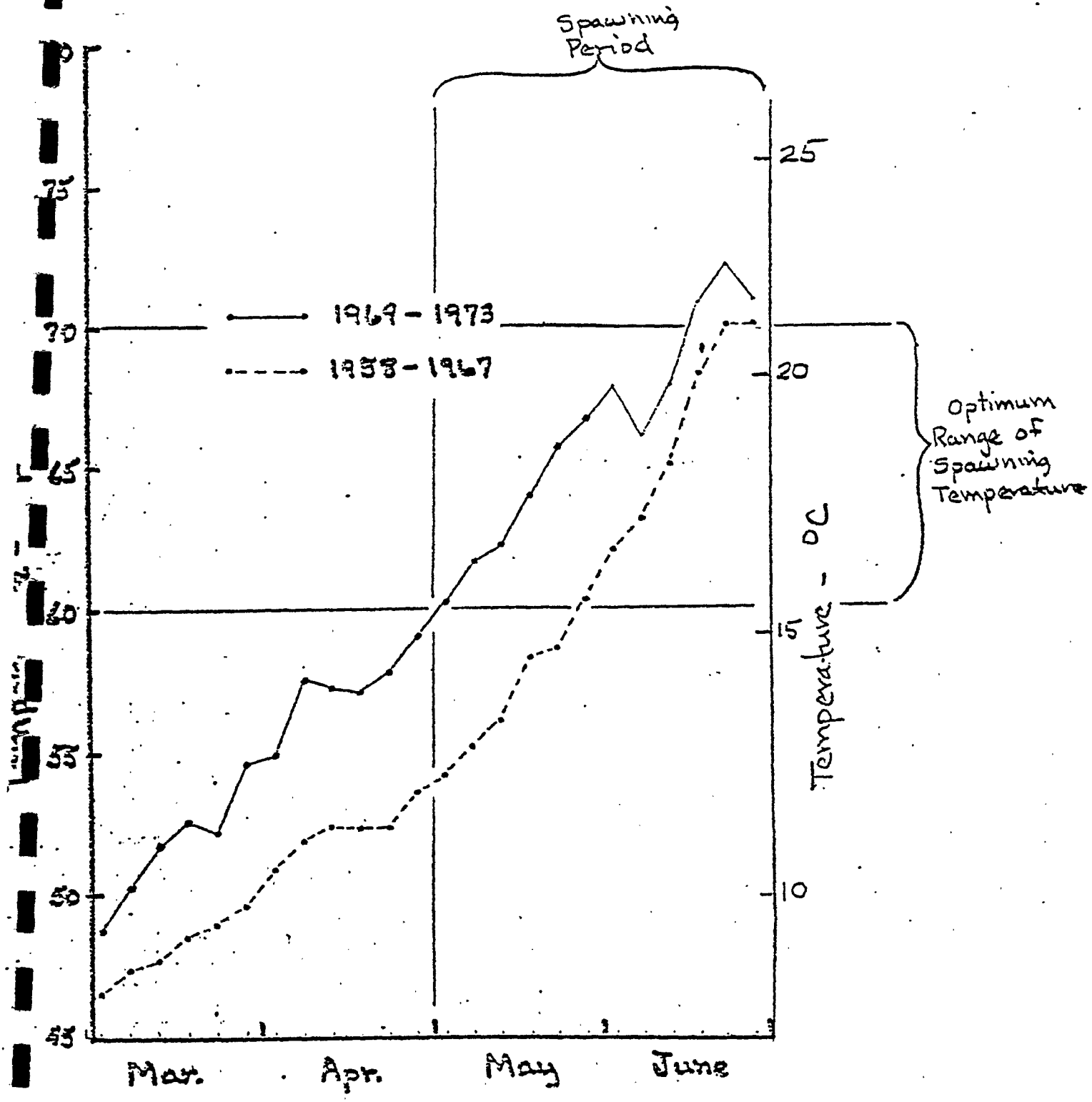


Figure 80. Mean maximum daily temperatures, by five day intervals, of the Feather River below Oroville.

C—067199

C-067199

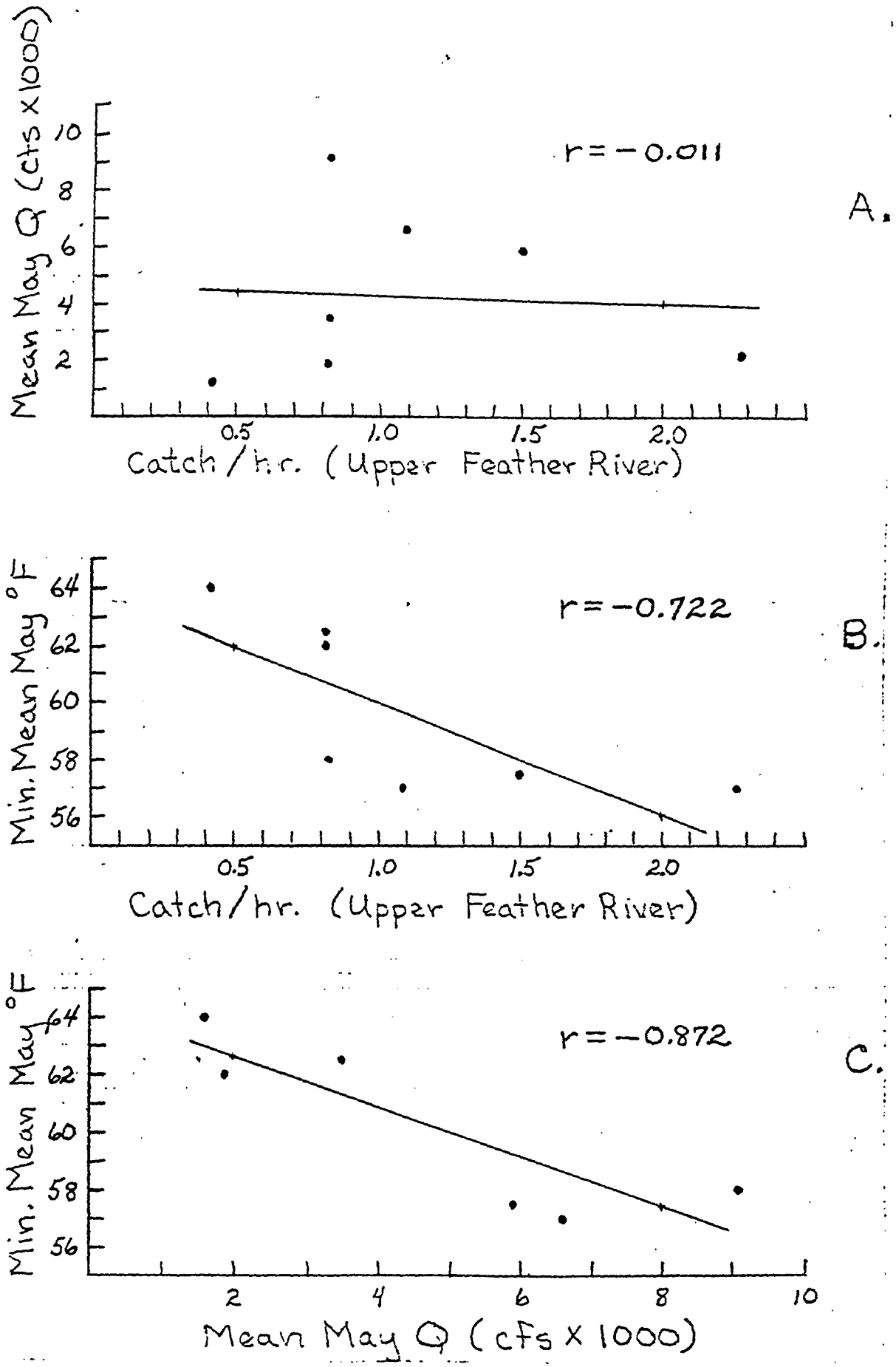


Figure 81. Relationship of angler catch of shad to mean Feather River Flow in May (A), to mean minimum river temperature (B), and of river flow to river temperature (C).

C — 0 6 7 2 0 0

C-067200

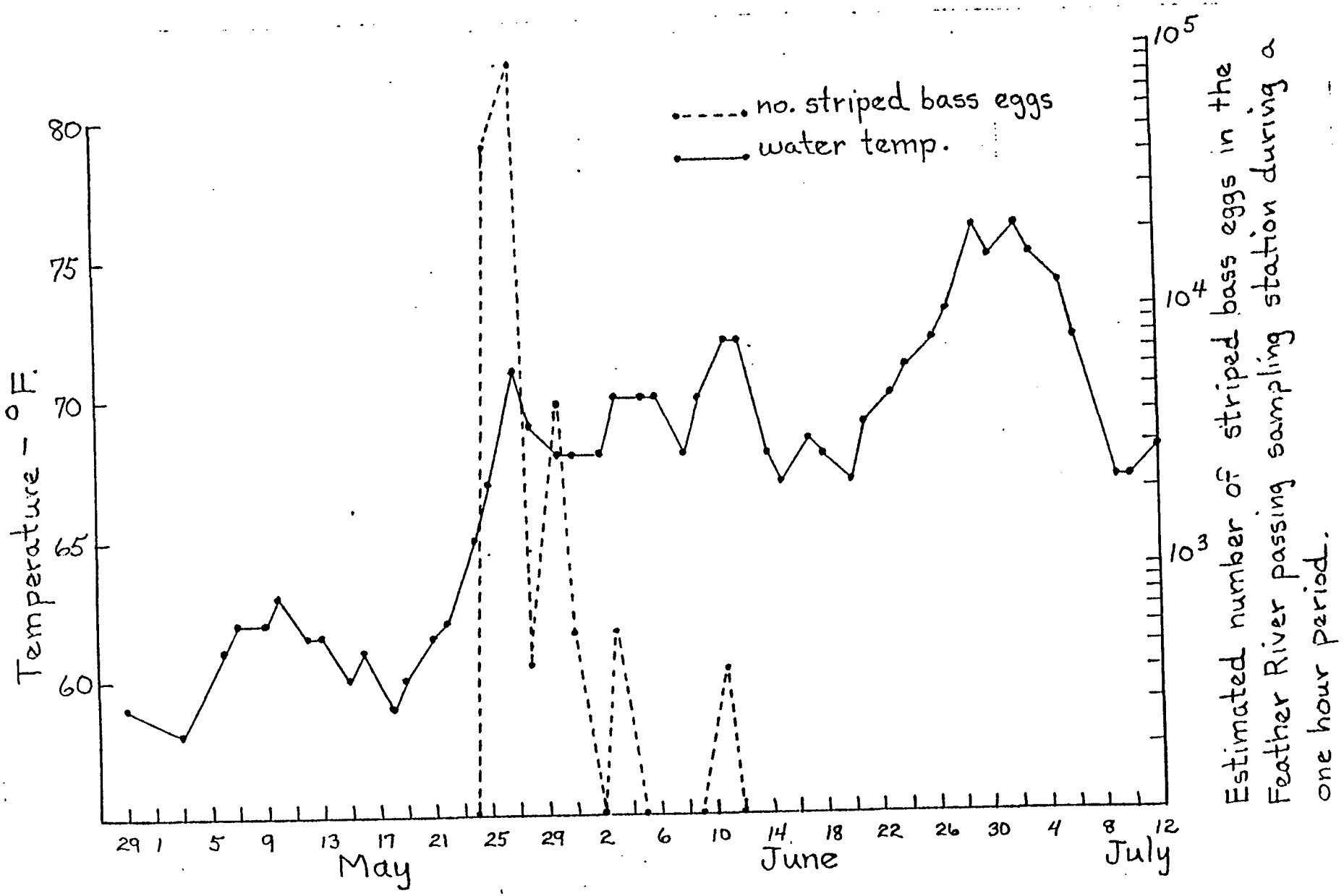


Figure 82. Number of striped bass eggs and water temperature taken in the Feather River at Yuba City, 1974.

C-067201

C-067201

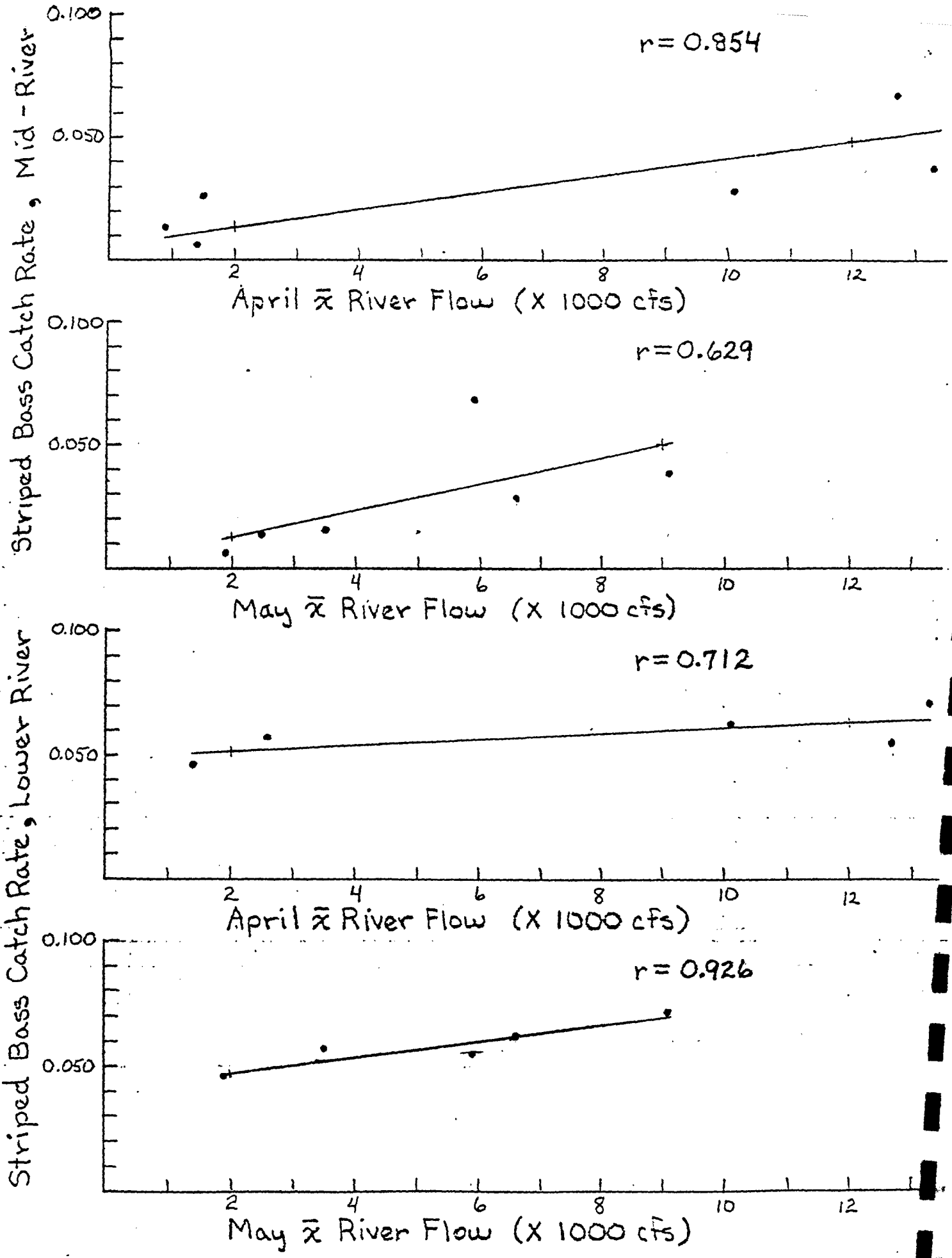


Figure 83. Relationships between Q and striped bass catch rates.

C—067202

C-067202

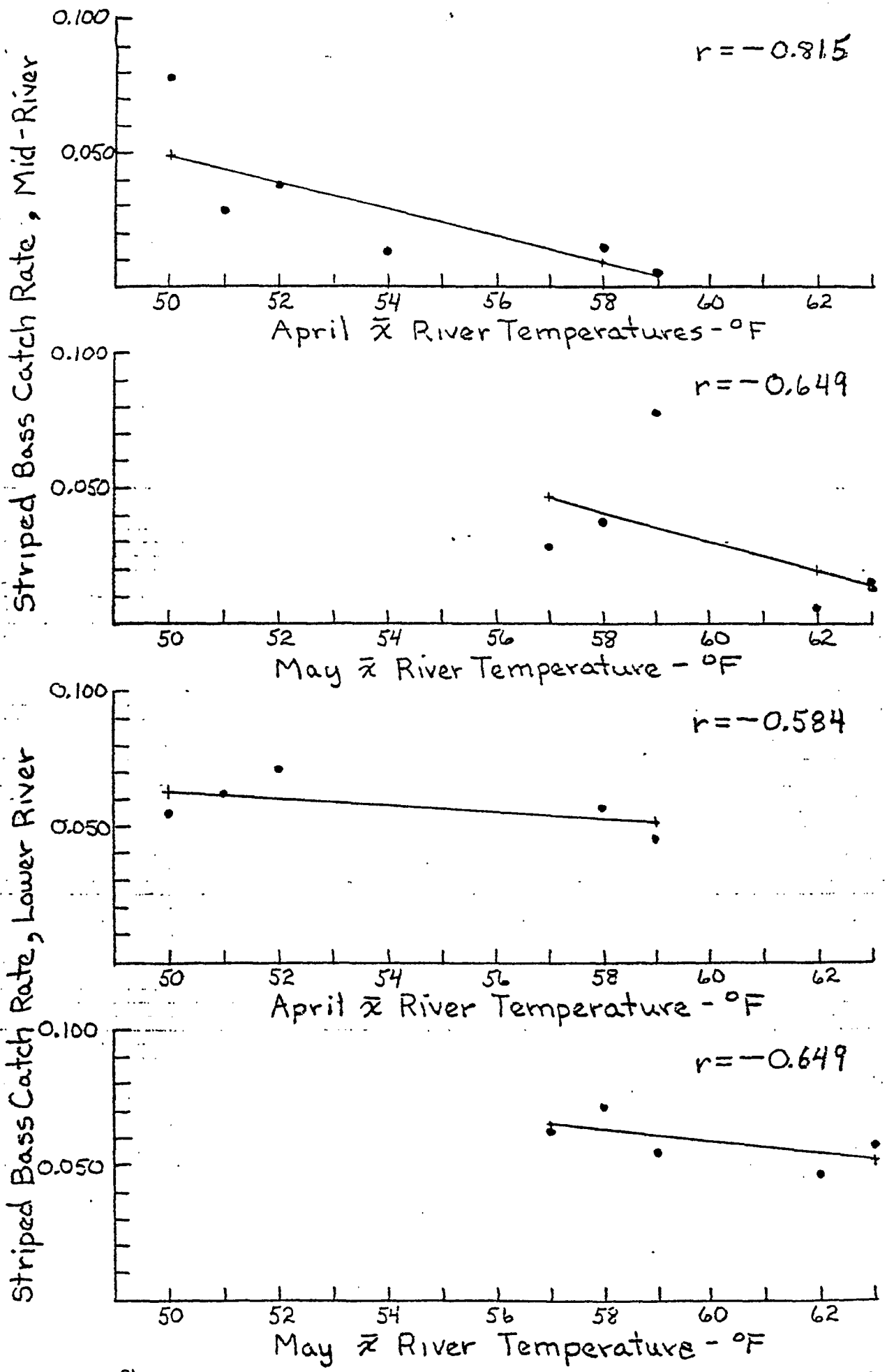


Figure 84. Relationships between river temperature and striped bass catch rates.

C — 0 6 7 2 0 3

C-067203

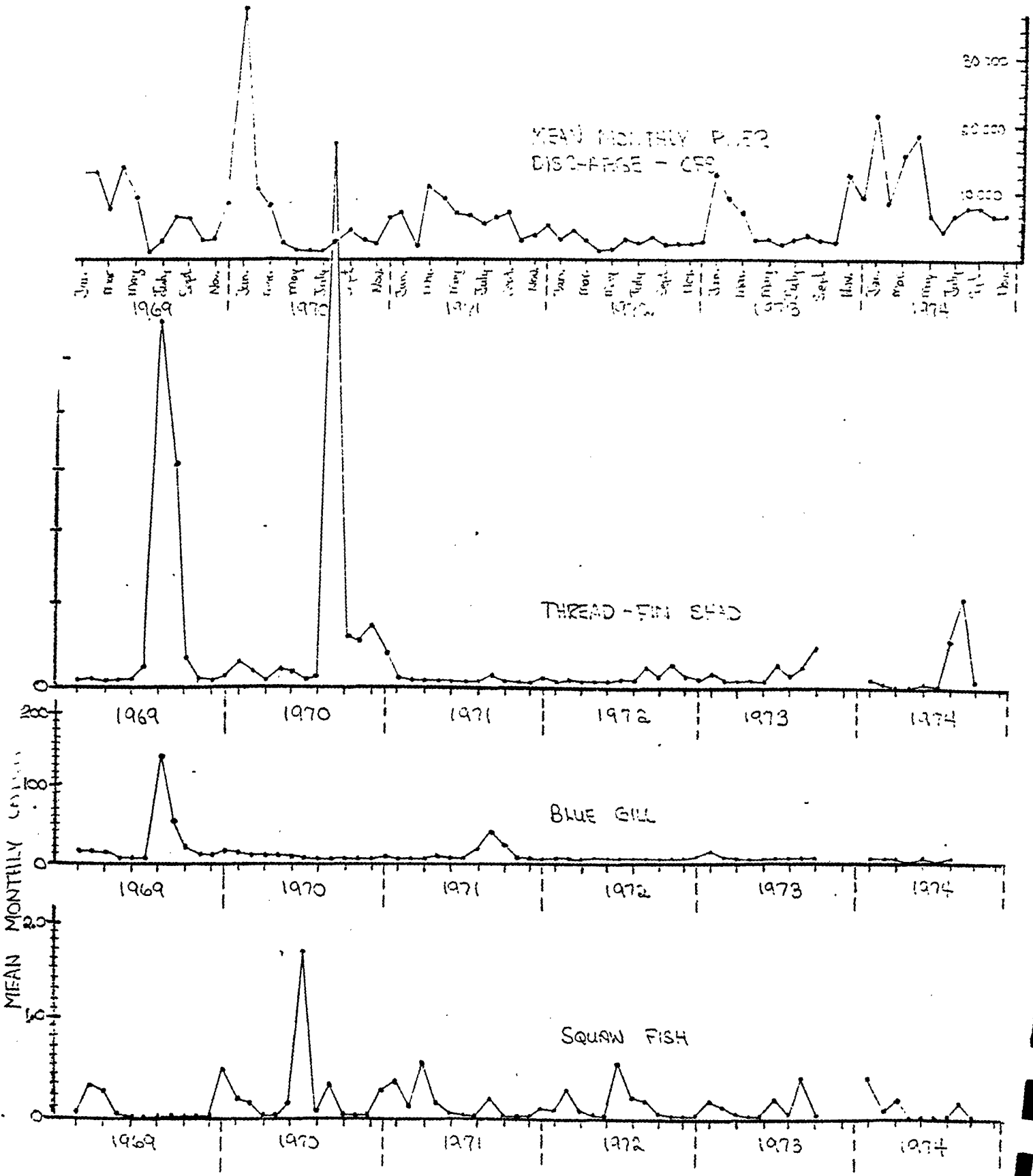


Figure 85. Fyke-net catches of selected fish with river flow at Live Oak, Feather River. Fork lengths of fish shown were 150 millimeters or less.

C—067204

C-067204

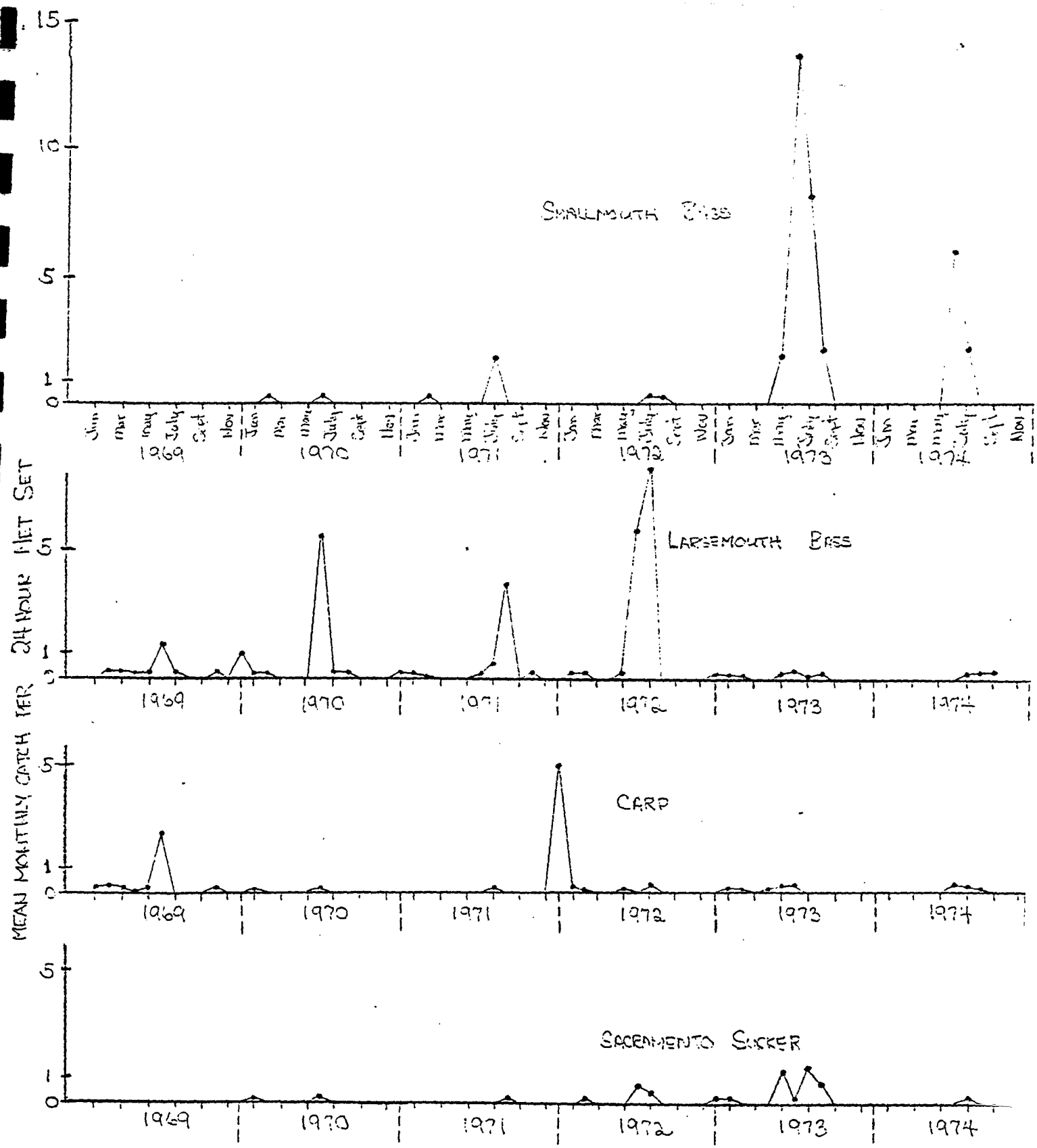


Figure 86. Fyke-net catches of selected fish at Live Oak, Feather River. Fork lengths of fish shown were 150 millimeters or less.

C—067205

C-067205

Figure 87. Location of principle spawning riffles in the upper or low-flow section of the Feather River (Nos. 1-10 are riffle locations).

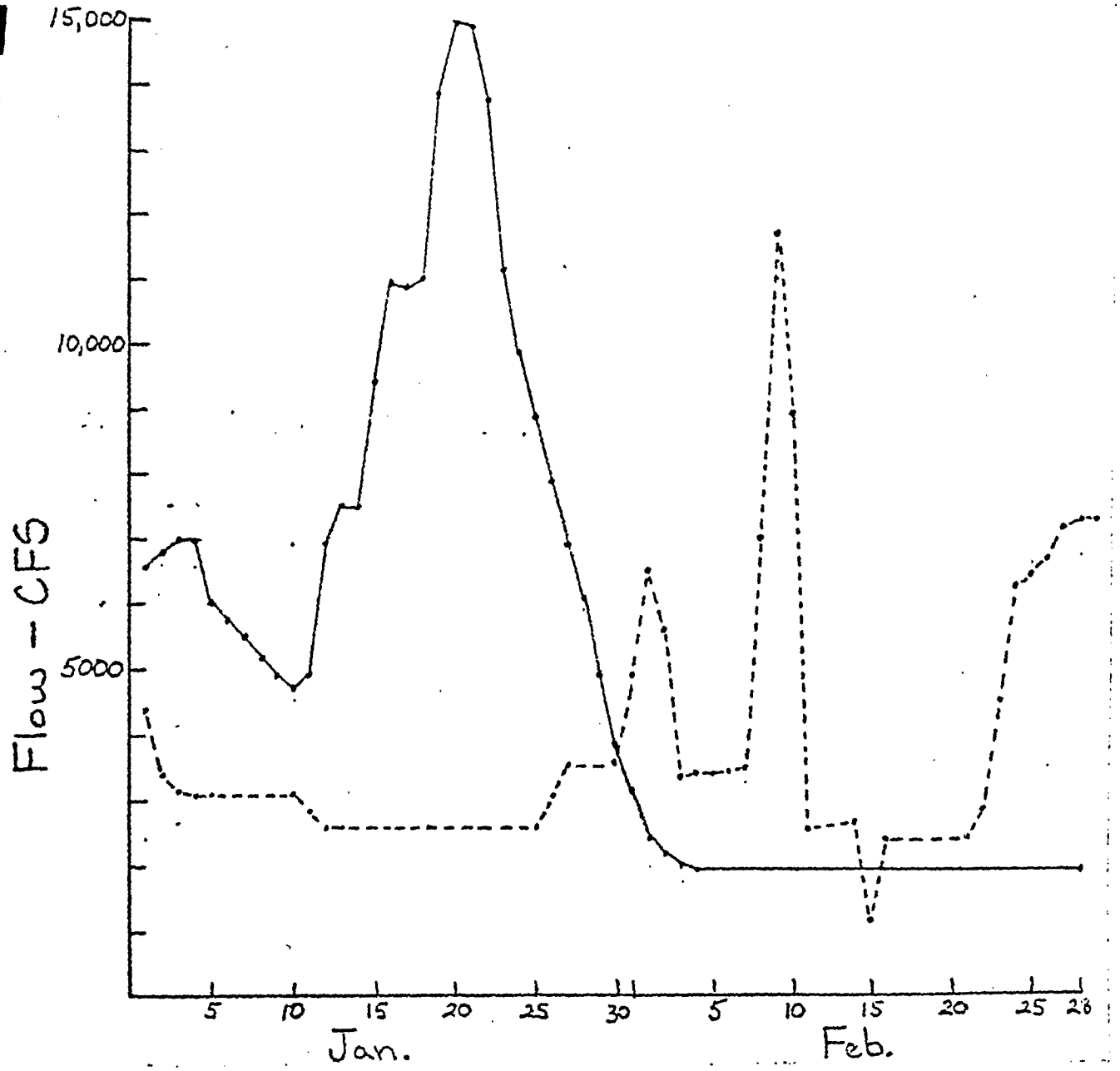


Figure 88. Flows in Feather River for January-February 1971 (solid line) and 1972 (dotted line).

C —0 6 7 2 0 7

C-067207

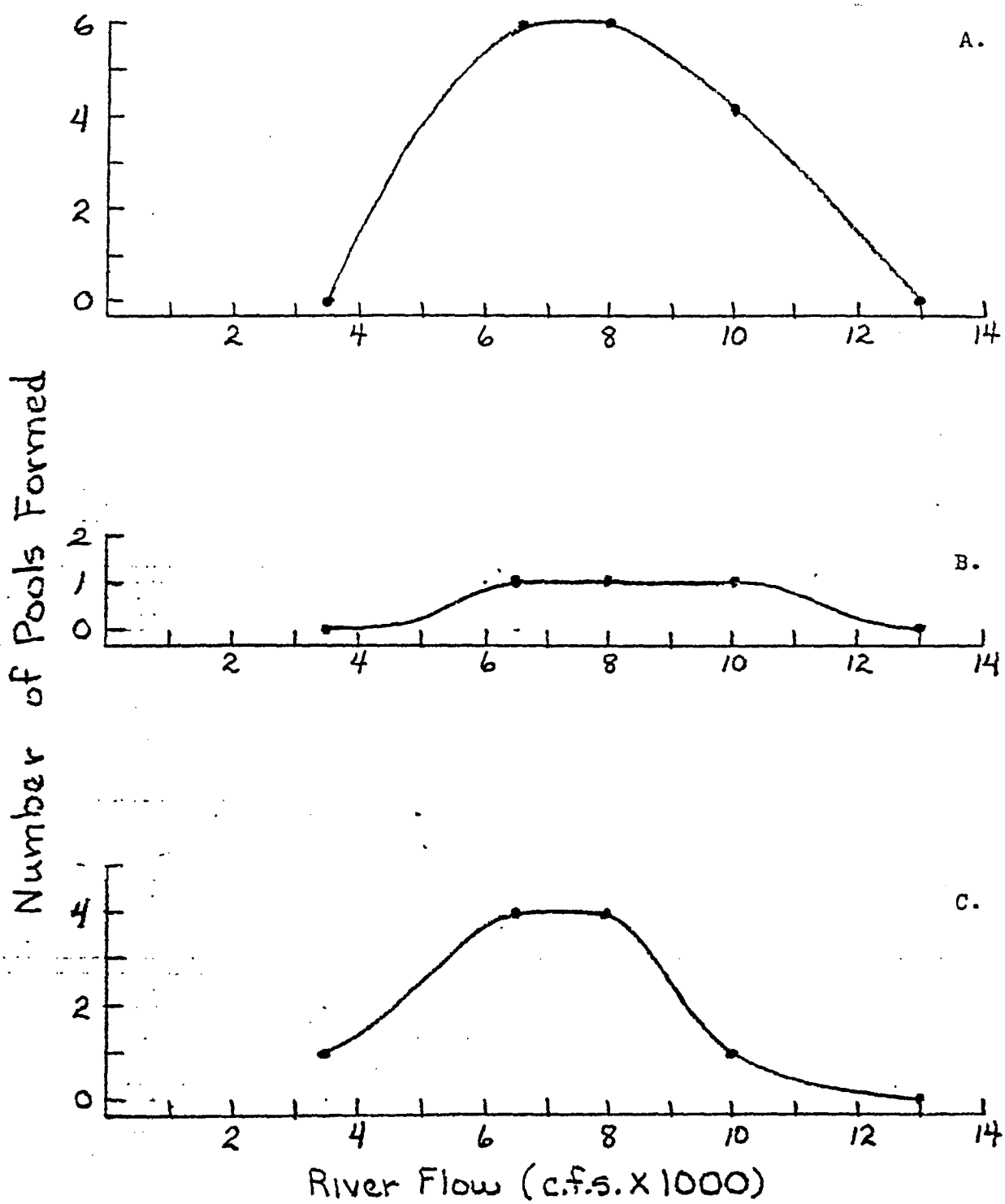


Figure 89. Relationship of river flow and the number of pools that trap salmon (A = Big Hole area; B = Hour Riffle; C = Big Riffle).

C—067208

C-067208

C-067209

River Section	1968			1969			1970			1971			1972			1973			1974		
	No. Trips	Carcasses Recovered	Population Estimate	No. Trips	Carcasses Recovered	Population Estimate	No. Trips	Carcasses Recovered	Population Estimate	No. Trips	Carcasses Recovered	Population Estimate	No. Trips	Carcasses Recovered	Population Estimate	No. Trips	Carcasses Recovered	Population Estimate	No. Trips	Carcasses Recovered	Population Estimate
1. Oroville to Thermalito Outlet	8	2,595	6,500	10	9,244	18,500	11	9,075	16,500	11	10,007	18,200	12	9,231	16,800	12	13,762	25,500	14	8,302	21,6
2. Thermalito to Gridley Bridge	8	684	4,600	10	4,485	30,200	10	5,554	37,400	10	3,117	22,100	10	3,834	22,700	11	3,270	34,400	13	4,948	34,9
3. Gridley Bridge to Honcut Creek	8	166	1,100	10	1,138	7,500	10	648	4,270	10	469	3,200	10	649	3,700	11	531	5,200	12	434	2,8
Totals		3,495	12,200		14,867	56,200		15,277	58,170		13,593	43,500		13,714	43,200		17,563	65,100		13,684	59,3
Count to Hatchery			5,944			4,378			3,355			3,541			3,635			8,477			5,4
Count to Spawning Channel																					1,2
Total Population			18,144			60,578			61,525			47,041			46,835			73,577			65,9

Table 1. Feather River fall-run king salmon carcass recovery summary, hatchery fish counts and total salmon population estimates, 1968-1974.

C—067209

MEAN FLOW (X1000)

Year	September Low	September High	October Low	October High	November Low	November High
1/ 1968	0.4	0.8	0.4	0.9	0.4	0.8
1969	0.4	6.2	0.4	2.9	0.4	3.1
1970	0.4	4.3	0.4	3.0	0.4	2.8
1971	0.4	7.1	0.4	3.0	0.4	4.0
1972	0.4	3.3	0.4	3.0	0.4	2.1
1973	0.4	3.3	0.4	2.9	2.2	2/13.3
3/ 1974	0.4	7.4	0.5	6.3	0.8	6.6

Table 2. Flow in the low and high flow reaches of the Feather River during carcass recovery seasons 1968-1974. (1/ Lake filling; 2/ Severe early storm; 3/ Extraordinary reservoir drawdown).

River Section	1968	1969	1970	1971	1972	1973	1974	$\bar{x}$
Upper	35.8	30.5	26.8	38.7	35.9	34.6	34.6	33.8
Middle	25.4	49.8	60.8	47.0	48.5	46.8	53.0	47.3
Lower	6.1	12.4	6.9	6.8	7.9	7.1	4.2	7.3
Hatchery	32.7	7.3	5.5	7.5	7.7	11.5	8.2	11.5

Table 3. Percent of total king salmon population using various reaches of the Feather River and Hatchery.

C—067210

C-067210

Pre-Project Salmon Counts (X1000)		Post-Project Salmon Counts (x1000)					
Year	Total	Year	Total A	Hatchery	Total B Total A (-) Hatchery	Hatchery Cont. to River	Total C Total B (-) H.C.R.
1953	28	1968	18	6	12	-	12.0
54	68	69	61	4	57	0.1	57.0
55	86	70	62	3	59	1.5	57.5
56	18	71	47	4	43	2.3	40.7
57	10	72	47	4	43	6.4**	36.6
58	32	73	74	8	66	12.8**	53.2
59	76	74	66	5	61	8.0**	53.0
1960	80						
61	41						
62	19						
63	34						
64	38						
65	23						
66	21						
67	12						
Mean	39.1		53.6		48.7		44.3

t=1.33*

Table 4. Comparison of pre- and post-Oroville Project fall run king salmon population levels. (*Not significant at 0.01 level, **1.6 times the total Hatchery count).

C-067211

C—067211

YEAR	RIVER RETURNS: MARKED RETURNS, Lo-Flow $0.6x_n$	x_n	Hi-Flow $0.15y_n$	y_n	UNMARKED RETURNS (z_n)	TOTALS $x+y+z$	HATCHERY RETURNS: #MARKED (A_n)	#UNMARKED (B_n)	TOTALS $(A+B)$	CUMULATIVE TOTALS
1969	8	13	0	0	62	75	35	166	201	276
1970	148	247	9	60	1454	1761	285	1351	1636	3397
1971	206	344	5	33	1788	2165	134	635	769	2934
1972	5	8	3	20	133	161	7	33	40	201
TOTALS						4162			2646	6808

Given: $0.6\ x_n$=marked returns to river (lo-flow) found during creamer
$0.15y_n$=marked returns to river (hi-flow) found during creamer

$$\frac{z_n=x_n+y_n}{50,000} = \frac{z_n}{237,000}; \text{ or, } z_n = \frac{(x_n+y_n)\ (237,000)}{50,000} = \text{unmarked in river}$$

A_n= marked returns in hatchery

$$B_n: \frac{A_n}{50,000} = \frac{B_n}{237,000}; \text{ or, } B_n = \frac{(A_n)\ (237,000)}{50,000} = \text{unmarked in hatchery}$$

Then: Ratio of hatchery to river returns is 4162/2646 = 1.573 or 160.0%

Table 5. Results of Feather River Hatchery-king salmon marking experiment (Ad-Rp) in 1968. (50,000 marked and 237,000 unmarked released at Feather River, 1969.)

C-067212

C-067212

	RIVER RETURNS						HATCHERY RETURNS			CUMULATIVE TOTALS
	MARKED RETURNS				UNMARKED RETURNS	TOTALS	MARKED	UNMARKED	TOTALS	
	Lo-Flow		Hi-Flow							
YEAR	$0.6x_n$	x_n	$0.15y_n$	y_n	(Z_n)	x+y+z	(A_n)	(B_n)	$(A_n + B_n)$	
1971	34	57	2	13	151	221	71	153	224	445
1972	47	78	1	7	184	269	39	84	123	392
1973	19	32	7	47	170	249	21	45	66	315
1974	34	77 7*	5	33	238 15	370	28	60	88	458
TOTALS						1,109			501	1,610

*Feather River Spawning Channel (in river) actual count; data treated in same manner as Hatchery returns.

If: $0.6\ x_n$ = marked returns to river (lo-flow) found during creamer
$0.15y_n$ = marked returns to river (hi-flow) found during creamer

$$z_n = \frac{(x_n+y_n)(108,000)}{50,000}$$ = unmarked returns to river

A_n = marked returns to hatchery

$$B_n \quad \frac{(A_n)(108,000}{50,000}$$ = unmarked returns to hatchery

Then: Ratio of hatchery to river returns in 739/413 = 1.789 or 180.0%

Table 6. Results of Feather River Hatchery king salmon marking experiment (An-Lp) in 1970 (50,000 marked and 108,000 unmarked released at Feather River, 1971).

C-067213

C-067213

Sex	Number Marked	Marks Recovered In Survey	Carcasses Recovered In Survey	Carcasses Recovered On Weir	Marks Recovered On Weir
Female	200	7	1,613	60	3
Male	142	4	1,183	42	0
Jacks	67	3	455	65	1
Skeletons	---	-	194	12	0
	409	14	3,445	179	4

Table 7. Summary of salmon marked and released, and of carcass recoveries, 1968.

Year	n	t	s	N	Hatchery Total	Total Fish in Section
1969	9,244	1,267	757	15,472	4,378	19,850
1970	9,075	753	469	14,570	3,355	17,925
1971	10,007	571	326	17,528	3,541	21,069

Table 8. Population estimates and parameters used in determining population levels in section one of the Feather River.

C—067214

C-067214

Year	n	t	s	N
1969	5,623	558	78	40,226
1970	6,202	730	107	42,313

Table 9. Population estimates and parameters used in determining population levels in sections two and three of the Feather River.

River Section	Year	Number Released	Number Recovered	Percent Recovered
1	1969	1,267	757	59.7
	1970	753	469	62.3
	1971	571	326	57.1
2 & 3	1969	558	78	14.0
	1970	730	107	14.7

Table 10. Percent recovery of marked king salmon carcasses by river section and year.

C—067215

C-067215

Trip Number	106 white	280 orange	292 blue	210 red	121 yellow	118 white	80 orange	60 blue	0	0
1	-									
2	20	-								
3	32	105	-							
4	1	72	114	-						
5	6	7	84	98	-					
6		1	2	21	31	-				
7			5	9	20	31	-			
8				3	2	22	23	-		
9						11	12	14	-	
10						1	3	7		-

Total released 1267
Total recovered 757
Percent recovered 59.7

Table 11. 1969 summary of marked carcasses released (number above stair-line) and recovered in river section one.

Trip Number	24 orange	114 blue	116 red	99 yellow	128 white	121 orange	85 blue	41 red	25 yellow	0	0
1	-										
2	8	-									
3	7	36	-								
4	1	25	52	-							
5	1	7	23	44	-						
6		1	2	14	51	-					
7			3	5	25	44	-				
8				1	2	21	23	-			
9					7	7	24	15	-		
10					1	0	2	8	8	-	
11								1	6	-	-

Total released 753
Total recovered 469
Percent recovered 62.3

Table 12. 1970 summary of marked carcasses released (number above stair-line) and recovered in river section one.

C—067216

C-067216

Trip Number	47 red	54 yellow	78 orange	80 white	84 red	79 yellow	82 orange	67 white			
1	-	-	-	-	-	-	-	-	-	-	-
2	19	21	39	35	27	27	29	20	-	-	-
3	12	4	5	8	14	15	19	15	-	-	-
4			6	0	4		3	3	-	-	-
5				1							
6											
7											
8											
9											
10											
11											

Total released 571
Total recovered 326
Percent recovered 57.1

Table 13. 1971 summary of marked carcasses released (number above stair-line) and recovered in river section one.

Trip Number	8 white	98 orange	187 blue	85 red	61 yellow	43 white	36 orange	40 blue		
1	-	-	-	-	-	-	-	-	-	-
2	0	0	10	1	1	0	0	1	-	-
3	2	12	26	13	4	1	0	0	-	
4	0		1	1		0	0	0		
5	1		2	1		1				
6										
7										
8										
9										
10										

Total released 558
Total recovered 78
Percent recovered 14.0

Table 14. 1969 summary of marked carcasses released (number above stair-line) and recovered in river sections two and three.

C—067217

C-067217

Trip Number	2 orange	23 blue	118 red	159 yellow	135 white	161 orange	78 blue	54 red		
1	-									
2	0	-								
3	0	0	-							
4	0	0	0	-						
5		0	14	5	-					
6			1	24	2	-				
7			2	1	32	6	-			
8					1	14	2	-	0	
9						0	0	0	-	0
10							0	3	-	-

Total Released	730
Total Recovered	107
Percent Recovered	14.7

Table 15. 1970 summary of marked carcasses released (number above stair-line) and recovered in river sections two and three.

Week After Tagging	Number Fish Recovered	Percent	Cumulative Percent
1	436	57.6	57.6
2	270	35.7	93.3
3	35	4.6	97.9
4	16	2.1	100.0
Totals	757	100.0	

Table 16. 1969 summary of recoveries of marked carcasses by weeks after release in river section one.

C—067218

C-067218

Week After Tagging	Number Fish Recovered	Percent	Cumulative Percent
1	281	59.9	59.9
2	153	32.6	92.5
3	27	5.8	98.3
4	7	1.5	99.8
5	1	0.2	100.0
Totals	469	100.0	

Table 17. 1970 summary of recoveries of marked carcasses by weeks after release in river section one.

Week After Tagging	Number Fish Recovered	Percent	Cumulative Percent
1	217	66.6	66.6
2	92	28.2	94.8
3	16	4.9	99.7
4	1	0.3	100.0
Totals	326	100.0	

Table 18. 1971 summary of recoveries of marked carcasses by weeks after release in river section one.

C—0 6 7 2 1 9

C-067219

Week After Tagging	Number Fish	Percent	Cumulative Percent
1	13	16.7	16.7
2	58	74.4	91.1
3	2	2.6	93.7
4	5	6.4	100.1
Total	78	100.1	

Table 19. 1969 summary of recoveries of marked carcasses by weeks after release in river sections two and three.

Week After Tagging	Number Fish	Percent	Cumulative Percent
1	15	14.0	14.0
2	87	81.3	95.3
3	3	2.3	98.1
4	2	1.9	100.0
Total	107	100.0	

Table 20. 1970 summary of recoveries of marked carcasses by weeks after release in river sections two and three.

C—067220

C-067220

Riffle Below Release	Number of Fish	Percent of Total Recoveries
0	243	74.5
1	48	14.7
2	26	8.0
3	3	0.9
4	6	1.8
5	0	--
Totals	326	99.9

Table 21. Summary of salmon carcass returns by recovery riffle, 1971.

Riffle Below Release Site	Number of Fish Recovered	Percent
0	159	75.0
1	31	14.6
2	17	8.0
3	2	0.9
4	3	1.4
Totals	212	99.9

Table 22. Summary of female salmon carcass returns by recovery riffle, 1971.

C—067221

C-067221

Riffle Below Release Site	Number of Fish Recovered	Percent
0	67	72.0
1	13	14.0
2	8	8.6
3	2	2.2
4	3	3.2
Totals	93	100.0

Table 23. Summary of male salmon carcass returns by recovery riffle, 1971.

Riffle Below Release Site	Number of Fish Recovered	Percent
0	16	76.1
1	4	19.0
2	1	4.8
Totals	21	99.9

Table 24. Summary of immature salmon carcass returns by recovery riffle, 1971.

C—067222

C-067222

Sex	Number Tagged	Number Recovered	Percent Recovered
Female	312	212	67.9
Male	188	93	49.5
Jacks	72	21	29.2

Table 25. **Percent of marked carcasses recovered by sex in section one of the Feather River, 1971.**

Period	Wk#	Fish Total	∑totals
8/4 - 8/10	1	--	--
8/11 - 8/17	2	--	--
8/18 - 8/24	3	91 (4 days only)	91
8/25 - 8/31	4	157	248
9/1 - 9/7	5	80	328
9/8 - 9/14	6	104	432
9/15 - 9/21	7	176	608
9/22 - 9/28	8	1,052	1,660
9/29 - 10/5	9	729	2,389
10/6 - 10/12	10	1,485	3,874
10/13 - 10/19	11	1,004	4,878
10/20 - 10/26	12	878	5,756
10/27 - 11/2	13	692	6,448
11/3 - 11/9	14	90 (3 days only)	6,538
11/10 - 11/16	15	--	
		6,538	

Table 26. **Weekly summary of adult king salmon counted through a weir on the Feather River, 1969.**

C —0 6 7 2 2 3

C-067223

Period	Week No.	Fish Total	Cummulative Totals	Correction	Cummulative Corrected Totals
8/3 - 8/9	1	158 (3 days)	158		
8/10 - 8/16	2	145	303		
8/17 - 8/23	3	109	412		
8/24 - 8/30	4	247	659		
8/31 - 9/6	5	122	781		
9/7 - 9/13	6	84	865		
9/14 - 9/20	7	111	976		
9/21 - 9/27	8	233	1,209	30	1,239
9/28 - 10/4	9	712	1,921		1,951
10/5 - 10/11	10	2,092	4,013	32	4,075
10/12 - 10/18	11	1,876	5,889	265	6,216
10/19 - 10/25	12	2,641	8,530		8,857
10/26 - 11/1	13	2,135	10,665	502	11,494
11/2 - 11/8	14	2,243	12,898	15	13,752
11/9 - 11/15	15	742	13,640		14,494
11/16 - 11/22	16	447	14,087	50	14,991
11/23 - 11/29	17	121	14,208	42	15,154
11/30 - 12/6	18	37 (3 days)	14,245	37	15,228
			14,255	973	15,228

Table 27. Weekly summary of adult king salmon counted through a weir on the Feather River, 1970.

C—067224

C-067224

Period	Week No.	Fish Total	Cummulative Totals	Corrected	Cummulative Corrected Totals
--	1	--	--		
8/9 - 8/15	2	280	280		
8/16 - 8/22	3	249	529		
8/23 - 8/29	4	222	751		
8/30 - 9/5	5	94	845		
9/6 - 9/12	6	107	952		
9/13 - 9/19	7	320	1,272		
9/20 - 9/26	8	473	1,745	12	1,757
9/27 - 10/3	9	1,067	2,812		2,824
10/4 - 10/10	10	1,882	4,694		4,706
10/11 - 10/17	11	2,841	7,535	970	8,517
10/18 - 10/24	12	1,885	9,420	357	10,759
10/25 - 10/31	13	1,602	11,022	70	12,431
11/1 - 11/7	14	1,133	12,155	110	13,674
11/8 - 11/14	15	696	12,851	93	14,463
11/15 - 11/21	16	598	13,449	30	15,091
11/22 - 11/28	17	379	13,828	30	15,500
11/29 - 12/5	18	366	14,194	0	15,866
12/6 - 12/13	19	85	14,279	0	15,951
			14,279	1,672	15,951

Table 28. Weekly summary of adult king salmon counted through a weir on the Feather River, 1971.

C—067225

C-067225

	1969	1970	1971
Counter Totals (Adult K.S.)	6,532	14,245	14,279
Error Estimate	(Approx. 6,500) Unknown	973	1,672
Total Adult K.S.	13,000	15,218	15,951
Percent Precocious Fish in Run (Correction Factor)	34.6 (0.654)	27.9 (0.721)	33.2 (0.668)
Total Run = $\frac{\text{Total Adults}}{\text{Correction Factor}}$	19,878	21,110	23,879

Table 29. Summary of Electronic Fish Counter data 1969-1971.

Period	Week No.	Male Grilse K.S.	Male K.S.	Female K.S.	Total K.S.	Cummulative K.S.	AS	PSL
8/4 - 8/10	1							
8/11 - 8/17	2							
8/18 - 8/24	3						6	2
8/25 - 8/31	4						22	4
9/1 - 9/7	5						20	3
9/8 - 9/14	6	0	1	0	1	1	10	0
9/15 - 9/21	7	0	0	0	0	1	6	0
9/22 - 9/28	8	3	0	0	3	4	12	0
9/29 - 10/5	9	3	0	0	3	7	7	1
10/6 - 10/12	10	4	3	3	10	17	11	0
10/13 - 10/19	11	32	6	12	50	67	2	0
10/20 - 10/26	12	145	61	45	251	318	21	0
10/27 - 11/2	13	335	161	56	552	870	26	0
11/3 - 11/9	14	253	88	49	390	1,260	28	0
11/10 - 11/16	15	152	66	39	257	1,517	9	0
Totals		927	386	204	1,517		180	10

Table 30. Weekly summary of carcasses of three fish species found on a weir across the Feather River, 1969.

C—067226

C-067226

Period	Week No.	Male Grilse K.S.	Male K.S.	Female K.S.	Total K.S.	Cummulative K.S.	AS	PSL
8/3 - 8/9	1						24	15
8/10 - 8/16	2						59	36
8/17 - 8/23	3						97	25
8/22 - 8/30	4						98	16
8/31 - 9/6	5						89	16
9/7 - 9/13	6						79	12
9/14 - 9/20	7	3	0	0	3	3	59	5
9/21 - 9/27	8	0	0	0	0	3	47	6
9/28 - 10/4	9	0	0	0	0	3	44	11
10/5 - 10/11	10	3	1	0	4	7	26	3
10/12 - 10/18	11	28	10	3	41	48	50	0
10/19 - 10/25	12	152	56	11	219	267	87	0
10/26 - 11/1	13	187	84	26	297	564	90	0
11/2 - 11/8	14	202	114	40	356	920	22	0
11/9 - 11/15	15	121	76	29	226	1,146	4	0
11/16 - 11/22	16	110	81	32	223	1,369	4	0
11/23 - 11/29	17	36	56	19	111	1,480	0	0
11/30 - 12/6	18	14	23	18	55	1,535	1	0
12/7 -	19	0	0	0	0			
Totals		856	501	178	1,535		880	146

Table 31. Weekly summary of carcasses of three fish species found on a weir across the Feather River, 1970.

C—067227

C-067227

Period	Week No.	Male Grilse K.S.	Male K.S.	Female K.S.	Total K.S.	Cummulative K.S.	AS	PSL
	1							
8/9 - 8/15	2	1			1	1	18	11
8/16 - 8/22	3	1		1	2	3	21	14
8/23 - 8/29	4	1	1	1	3	6	29	15
8/30 - 9/5	5	1	0	0	1	7	19	6
9/6 - 9/12	6	0	0	0	0	7	17	8
9/13 - 9/19	7	2	0	1	3	10	11	10
9/20 - 9/26	8	5	1	1	7	17	21	7
9/27 - 10/3	9	6	0	1	7	24	9	3
10/4 - 10/10	10	7	2	5	14	38	15	4
10/11 - 10/17	11	53	10	20	83	121	25	8
10/18 - 10/24	12	118	112	13	243	364	49	6
10/25 - 10/31	13	153	153	32	338	702	29	3
11/1 - 11/7	14	141	111	30	282	984	6	1
11/8 - 11/14	15	57	71	22	150	1,134	0	1
11/15 - 11/21	16	64	55	22	141	1,275	3	0
11/22 - 11/28	17	50	42	14	106	1,381	0	1
11/29 - 12/5	18	49	50	17	116	1,497	2	0
12/6 - 12/13	19	48	29	12	89	1,586	1	1
		757	637	192	1,586		275	99

Table 32. Weekly summary of carcasses of three fish found on a weir across the Feather River, 1971.

C—067228

C-067228

Species	1969	1970	1971
Entosphenus tridentatus	10	146	99
Alosa sapidissima	180	880	275
Dorosoma petenense	0	1	0
Oncorhynchus keta	0	2	1
Oncorhynchus kisutch	0	3	7
Oncorhynchus nerka	0	0	1
Salmo gairdnerii	14	6	4
Salmo trutta	6	18	7
Carassius auratus	0	6	0
Cyprinus carpio	10	28	10
Mylopharodon conocephalus	5	4	0
Orthodon microlepidotus	1	2	0
Ptychocheilus grandis	6	3	5
Catostomus occidentalis	8	9	9
Ictalurus catus	2	10	17
Ictalurus nebulosus	2	1	0
Morone saxatilis	5	13	11
Lepomis cyanellus	0	1	1
Lepomis macrochirus	1	8	3
Micropterus dolomieui	2	3	0
Micropterus salmoides	0	1	0
Hysterocarpus traskii	2	1	2

Table 33. Number of carcasses by species (other than king salmon) taken from a weir across the Feather River in 1969, 1970, and 1971.

C—067229

C-067229

Year	River Section	Carcass Recovery Estimate	Mark and Recover Estimate	Difference	Percent Difference
1969	Low Flow	22,878	19,850	+3028	+15.2
1970	" "	19,855	17,925	+1930	+10.8
1971	" "	21,741	21,069	+ 672	+ 3.2
1969	High Flow	37,700	40,226	-2566	- 6.4
1970	" "	41,670	42,313	- 643	- 1.5

Table 34. Comparison of king salmon population estimates by carcass recovery and mark and recovery methods.

Year	River Section	Carcass Recovery Estimate	Electronic Counter Estimate	Difference	Percent Difference
1969	Low Flow	22,878	19,878	N.A.	N.A.
1970	" "	19,855	21,110	-1,255	-5.9
1971	" "	21,741	23,879	-2138	-9.0

Table 35. Comparison of king salmon population estimates by carcass recovery and electronic fish counter methods.

C—067230

C-067230

Riffle Name	Number of Samples	Gravel Size Interval 12-6"	6-3"	3-1"	1"<
Hatchery	4	0	33	48	19
Hour	10	0	23	54	23
Goose	7	0	18	38	44
Herringer	10	0	2	42	56

Table 36. Mean percent of gravel in several gravel size intervals from four riffle areas in the Feather River.

Range of Gravel Size (inches)	Percent of Size Interval in Sample						
12-6"	0	(1)	30	(2)	40	(3)	100
6-3"	0	(3)	20	(2)	40	(1)	100
3-1"	0	(1)			50	(2)	80 (3) 100
1"<	0	(1)	20	(2)	40	(3)	100

(1) = Good (2) = Fair (3) = Poor

Table 37. Rating table for gravel quality (Warner, 1955).

C—067231

C-067231

Riffle Name	Gravel Size 12-6"	6-3"	3-1"	1"<	Total	Mean	Rating
Hatchery	(1)	(2)	(1)	(1)	5	1.25	Good
Hour	(1)	(2)	(2)	(2)	7	1.75	Fair
Goose	(1)	(3)	(1)	(3)	8	2.00	Fair
Herringer	(1)	(3)	(1)	(3)	8	2.00	Fair

Table 38. Gravel size rating of four riffles in the Feather River ((1) = Good, (2) = Fair, (3) = Poor).

Riffle	Date	Number Standpipes	Mean Intergravel Oxygen	Surface Water Oxygen	Mean Intergravel Temp.	Surface Water Temp.	Mean Seepage Velocity
Hatchery	10/4/68	10	10.8 ppm	11.15 ppm	12.5°	12.4°	3.16 ft/hr.
Hour	10/1	3	8.7	9.3	18.7	18.9	1.64
"	10/2	6	9.0	8.9	17.8	17.8	2.65
"	10/17	9	10.1	9.6	14.7	15.4	2.93
"	11/25	8	11.2	10.9	11.7	11.4	3.28
Goose	10/7	4	8.7	10.0	17.4	17.3	3.32
"	10/9	9	10.4	10.3	16.2	15.7	2.34
"	10/18	9	11.5	10.1	15.6	14.8	2.74
"	11/19	19	9.4	11.1	12.0	11.9	1.53
Herringer	9/11	6	8.3	9.6	22.1	22.0	1.47
" "	9/13	3	8.7	9.2	21.0	21.0	0.94
" "	10/16	4	9.6	10.3	14.8	14.7	2.06
" "	10/19	2	9.3	10.2	15.5	15.4	2.59
" "	10/20	3	7.7	9.9	15.1	15.2	--
" "	11/22	9	8.4	11.0	11.7	11.4	--

Table 39. Mean-intergravel oxygen concentrations, temperatures, and seepage velocities taken from water samples out of standpipes buried in Feather River gravels. Surface water oxygen concentrations and water temperatures are included.

C—067232

C-067232

	No. Redds	Sac Fry	Eggs Live	Eggs Dead	Gross Survival
Upper Area					
1968	5	100	596	51	93.2
1969	24	26	528	1,200	30.5
1970	36	586	1,356	583	76.9
1971	48	63	1,201	1,444	46.8
1972	56	3,012		1,277	70.2
1973	24	1,101		2,228	33.1
*1974	60	531	3,448	2,440	62.0
Upper Area (in-river spawning channel)					
1974	20	136	689	381	68.4
Middle Area					
1968	19	167	144	47	86.9
1969	29	50	295	79	81.4
1970	10	2	237	54	81.6
1971	25	1	125	50	71.6
1972	13	46	26	2	97.3
**1973	--	--	--	--	--
**1974	--	--	--	--	--
Lower Area					
1968	18	5	439	22	95.15
1969	13	12	60	1	98.7
1970	4	78	115	38	83.6
*1971	--	--	--	--	--
1972	--	--	--	--	--
**1973	--	--	--	--	--
**1974	--	--	--	--	--

**Not sampled - high water throughout season
*Not enough redds found to sample - all found had NO eggs (false redds?)

Table 40. Summary of redds sampled by area, and cumulative totals of eggs and fry found.

C—067233

C-067233

Year	Upper River	Middle River	Lower River
1968	93.2	86.9	95.2
1969	30.5	81.4	99.0
1970	76.9	81.6	83.6
1971	46.8	71.6	--
1972	70.2	97.3	--
1973	33.1	--	--
1974	62.0	--	--

Table 41. Summary of mean percent gross king salmon egg survival from selected riffle areas.

Year	Upper River	Middle River	Lower River	Hatchery	Total
1968	6,500	4,600	1,100	5,900	18,100
1969	18,500	30,200	7,500	4,400	60,600
1970	16,500	37,400	4,300	3,400	61,500
1971	18,200	22,000	3,200	3,500	47,000
1972	16,800	22,700	3,700	3,635	46,835
1973	25,500	34,400	5,200	8,477	73,577
1974	22,818	34,900	2,800	5,428	65,946

Table 42. Estimate number of king salmon spawning in four areas of the Feather River.

C—067234

C-067234

Gravel Quality	Age in Weeks 2		3		4		6		9	
Good	88 98 99	95	45 97 96	95	84 88 95	89	38 94 81	85	60 96 93	83
Fair	23 62 13	32	17 13 13	14	30 18 69	39	6 8 9	8	12 25 --	19
Poor	84 86	85	80 92	86	3 4	4	33 --	33	6 3	4.5

Table 43. Comparison of percent gross egg survival from buried bags of eggs in three gravel types, 1968 (mean percent survival is underlined).

River Area	Egg Age in Weeks 2		4		6
Upper (Hatchery Riffle)	73 46	60	17 50	33	50 5
Middle (Big Riffle)	86 85	85	71 61	66	-- --
Lower (Herringer Riffle)	86 17	52	86 90	88	37 5

Table 44. Comparison of percent gross egg survival from buried bags of eggs in three river areas, 1970 (mean percent survival is underlined).

C—067235

C-067235

Given Q (c.f.s.)	400	800
Assumed Eggs/♀	5,000	5,000
Observed Survival to Hatching	45%	62%
Expected Number Fry that Hatch	2,250	3,100
Theoretical Survival Fry to Adult	0.2%	0.2%
Expected Number Adults Produced	4.5	6.2
Assumed Escapement Ratio	1:3	1:3
Calculated Number Adults Returned to River (per 5,000 eggs)	1.12	1.55
Calculated Number Adults Captured in Commercial and Sport Catch	3.38	4.65
Potential Percent Increase in Salmon	--	37.6

Table 45. Production of adult salmon at two flows in the low flow reach of the Feather River.

C—067236

C-067236

Year Class	Sample Period Start - End	Number Marked (Mark)	Source	24-Hour Loss	Number Released	Release Location
1968	1/6/69 - 5/4/69	12,130 (top)	wild	--	12,130	Oroville
		7,249 (bottom)	wild	--	7,249	Oroville
1969	12/17/69 - 2/28/70	45,079 (top)	hatchery	777	44,302	Oroville
		3,481 (bottom)	wild	--	3,481	Oroville
1970	12/31/70 - 3/20/71	36,295 (top)	hatchery	311	35,984	Oroville
		43,940 (bottom)	hatchery	557	43,383	Gridley Bridge
1971	1/10/72 - 3/19/72	10,236 (top)	hatchery	57	10,179	Honcut Creek
		83,041 (bottom)	hatchery	2,114	80,927	Gridley Bridge
1972	1/8/73 - 3/11/73	70,748 (top)	hatchery	162	70,586	Gridley Bridge
1973		NONE MARKED				

Table 46. Summary of fish marked for use in the outmigrant enumeration study.

C-067237

C-067237

Year Class	Number Marks Released	Number Marks Recovered	Number Wild Fry Captured	Population Estimate	95% Confidence Interval
1968	19,379	20	11,300	10,949,135	6-17 million
1969	47,783	42	18,456	21,338,651	15-29 million
1970	79,367	365	199,750	40,965,000	36-44 million
1971	80,927	140	83,684	*24,500,000	N.A.
1972	70,586	67	14,405	15,176,000	11.7-18.9
1973	None Marked				

*Estimate by ratio not standard formula (excessive predation).

Table 47. Summary of mark and recovery program for enumeration of king salmon fry outmigrations, 1969-1973.

	Mean Monthly Flow								
	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June
Adult Return 3 Years Later	0.141	-0.248	0.266	0.127	0.258	0.435	0.171	0.429	0.282
Adult Return 4 Years Later	0.245	0.332	0.469	0.224	-0.156	0.052	0.317	0.172	-0.240

Table 48. Correlation coefficients between mean Feather River flows and adult salmon returns 3 and 4 years later for the years 1949 to 1973 (underlined coefficients significant at the .05 percent level).

C—067238

C-067238

Time Period	(1)* 1968	(2) 1969	(3) 1970	(4) 1971	(5) 1972	(6) 1973	(7) 1974
≤ 8/25	195	233	187	--	--	--	--
25-31	0	243	3	484	--	149	--
9/1-5	0	0	0	0	--	0	198
6-10	3	0	0	0	83	0	0
11-15	12	0	0	0	0	0	0
16-20	315	0	0	0	0	20	0
21-25	92	4	0	7	0	50	0
26-30	60	38	0	55	83	84	0

*(1) Ladder open all year.
(2) " " " "
(3) Ladder opened 8/13.
(4) " " 8/30.
(5) " " 9/6.
(6) " " 8/26.
(7) " " 9/3.

Table 49. Summary of king salmon that entered Feather River Hatchery during part of the years 1968-1974.

Year	Count
1963	600 (Estimate)
1964	3,362
1965	1,189
1966	305
1967	Begin Hatchery Operation

Table 50. Spring run salmon interim fish facility counts at Fish Diversion Dam near Oroville.

C—067239

C-067239

	No. Trips	No. K.S. Carcasses	No. Live Salmon Seen	Total Run (Hatchery Count)
1968	11	1	23	459
1969	(Weir*) 1	0	--	345
1970	8	1	1	235
1971	8	2	2	484
1972	9	4	47	256**
1973	8	4	19	205
1974	9	8	4	198

**Not included are 32 K.S. assumed spring-run found during fall carcass survey.

* Weir placed 1½ miles above Thermalito A. Outfall.

Table 51. Summary of spring salmon carcass recovery program.

	June		July		August		Sept.	
	Range	Mean	Range	Mean	Range	Mean	Range	Mean
1968	67-54	62	67-57	63	65-57	61	62-52	57
1969	60-54	57	62-57	60	63-53	60	56-52	54
1970	61-56	59	62-59	60	63-55	61	58-51	54
1971	59-52	55	63-58	60	63-55	60	57-51	54
1972	63-55	58	63-56	60	63-53	60	57-50	53
1973	60-55	58	63-56	60	62-54	59	57-50	53
1974	61-53	57	63-59	61	63-54	59	58-52	55

Table 52. Monthly mean and range of Feather River water temperatures near Oroville.

C—067240

C-067240

Holding Area In Hatchery	Total Number	Mortality	Percent Survival
Fish Ladder	26	26*	0
Spawning Channel	24	16**	33
Circular Holding Tank	17	6	65

*Nine salmon were returned to river because of fungus.
**Six salmon jumped out of the spawning channel.

Table 53. Results of spring run king salmon holding experiments, 1968.

Location	1968	1969	1970
Gridley Bridge	x	x	
Airport (Yuba City)		x	x
Boyd's Pump		x	x
White Oak Ranch	x		
Verona			x

Table 54. Locations of egg-pump sampling sites on the Feather River, 1968-1970.

C—067241

C-067241

Day Checked	GRIDLEY BRIDGE #Shad Eggs	GRIDLEY BRIDGE #S. Bass Eggs	GRIDLEY BRIDGE Water Temp.	WHITE OAK #Shad Eggs	WHITE OAK #S. Bass Eggs	WHITE OAK Water Temp.	NET TOW Boyd	NET TOW Gridley
April 9	Installed							
10	0	0		Installed				
11	0	0	64	0	0	61		
12	0	0	62					
13								
14								
15	0	0	61	0	0	59		
16				0	1	59		
17	0	0	58					
18	0	0	57	0	0	56		
19								
20	0	0	57	0	0	56		
21								
22	0	0		0	0			
23								
24	0	0		0	0	Water was shut off		
25								
26	0	0		0	0			
27								
28	0	0	60	0	0	63		
29								
30	0	0	61	0	0	64	1 Unk.	
May 1								
2	0	0	61	0	0	63	1 SB	
3								
4	0	0	60	0	0	62	3 AS	
5								
6	0	0		0	0			0
7				Pump taken out				
8	0	0					0	0
9								
10	0	0					0	0
11								
12	0	0	61				0	0
13								
14	0	0	59				11 AS	0
15								
16	0	0	61				0	0
17								
18	0	0	62				0	0
19								
20	0	0					0	0
21								
22	0	0					0	0
23								
24	0	0					1	0
25								
26	0	0					0	0
27								
28	0	0					0	0

Table 55. Numbers of eggs collected at several egg-pump sampling sites in 1968.

C—067242

C-067242

		GRIDLEY BRIDGE			NET TOW	
		#Shad Eggs	#S. Bass Eggs	Water Temp.	Boyd	Gridley
May	29					
	30	0	0	64		
	31					
June	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9	0	0	78		
	10					
	11	0	0	69		
	12					
	13	0	0	71	68 AS	
	14					
	15	Pump taken out			0	

Table 55. Numbers of eggs collected at several egg-pump sampling sites in 1968 - Continued.

C—067243

C-067243

Date	Location	Temp. °F	Striped Bass	AMERICAN SHAD Cloudy (C) Shells (S)	Figs:* A-D	Figs: G, M, L	P-S	Unknown Larvae
5/8/69	Boyd	60.0						
	Airport	61.0						
	Gridley	61.5						
5/11/69	Boyd	62.0		2S				
	Airport	-		1C				
	Gridley	Sample Not Taken		None				
5/14/69	Boyd	67.5		3S		3		
	Airport	59.0		2C				
	Gridley			None				
5/16/69	Boyd	57.0		2S				
	Airport	59.0		7C		1		
	Gridley	-						
5/17/69	Boyd	60		5C 3S	1	1		1
	Airport	61		3C 3S	0	1		
	Gridley	60		None				
5/19/69	Boyd	58		29C	2			
	Airport	61		4C	0			
	Gridley	63		None	0			
5/21/69	Boyd	58		29C	1			
	Airport	61		8C	0			
	Gridley	61		1C 3S				
5/23/69	Boyd	57		53C 28S	6	2		
	Airport	61		5C 4S	0			
	Gridley	61		1S				
5/24/69	Boyd	58		40C 11S	3		1	4
	Airport	61		5C 12S	0			1
	Gridley	62		2S				
5/26/69	Boyd	59		67C 29S	8	1		4
	Airport	62		4C	1			1
	Gridley	-		-				
5/27/69	Boyd	59		53C 18S	12			1
	Airport	62		5C	0			1
	Gridley	62		-				
5/29/69	Boyd	61		107C 40S	19	1		
	Airport	61		11C 24S	0			
	Gridley	60		-				
5/31/69	Boyd	62		243C 100S	45	1		
	Airport	66		15C 3S	3	2		
	Gridley	-		-				
6/2/69	Boyd	64		325C NC	72	5		
	Airport	67		26C	0			
	Gridley	67		0				
6/4/69	Boyd	63		326C NC	75	1	1	
	Airport	66		18	1			
	Gridley	65		0	0			

*From Leach (1925)

Table 56. Numbers of eggs collected at several egg-pump sampling sites, 1969.

C—067244

C-067244

Date	Location	Temp. °F	Striped Bass	AMERICAN SHAD Cloudy (C) Shells (S)		Figs:* A-D	Figs: G, M, L	P-S	Unknown Larvae
6/6/69	Boyd	63		361C	NC	47	2		
	Airport	67		43C		4			
	Gridley	67		2C		0			
6/8/69	Boyd	62		299C		44	2		
	Airport	67		37		0			
	Gridley			-					
6/10/69	Boyd	63		210C		12			
	Airport	66		1C		0			
	Gridley	62		0		0			
6/12/69	Boyd	65		48C		4	1		
	Airport	68		0					
	Gridley	66		0					
6/15/69	Boyd	70		3C		0	1		
	Airport	74		1C		0			
	Gridley	72		0					
6/17/69	Boyd	69		8C		0			
	Airport	74		2C		0			
	Gridley	73		0					
6/20/69	Boyd	70		5C		0			
	Airport	71		0					
	Gridley	69		0					
6/22/69	Boyd	72		5C		1			
	Airport	73		0					
	Gridley	-		0					
6/24/69	Boyd	74		3C		0			
	Airport	73		1C					
	Gridley	73		0					
6/26/69	Boyd	74		12C		2			
	Airport	72		0					
	Gridley	69		0					
6/30/69	Boyd	72		1C		0			
	Airport	-		0					
	Gridley	71		0					

*From Leach (1925)

Table 56. Numbers of eggs collected at several egg-pump sampling sites, 1969 - Continued.

C—067245

C-067245

Date	Location	Temp. °F	Striped Bass Eggs & Larvae	AMERICAN SHAD Cloudy (C) Shells (S)	Figs:* A-D	Figs: G, M, L	P-S	Unknown Larvae
4/23	Airport	59	0	0				
	Boyd	59	0	0				
4/24	Airport	59	0	0				
	Boyd	59	0	0				
4/25	Airport	59	0	0				
	Boyd	59	0	0				
4/26	Airport	59	0	0				
	Boyd	59	0	0				
4/27	Airport	59	0	0				
	Boyd	58	0	0				
4/28	Airport	58	0	0				
	Boyd	59	0	0				
4/29	Airport	60	0	0				
	Boyd	59	0	1C				
4/30	Airport	62	0	0				
	Boyd	59	0	1C				
5/1	Airport	63.5	0	0				
	Boyd	59	0					
	Verona	No Sample						
5/2	Airport	64	0	0				
	Boyd	59	0	3C				
	Verona	No Sample						
5/3	Airport	66	0	0				
	Boyd	58	0	3C				
	Verona	No Sample						
5/4	Airport	67	0	0				
	Boyd	60	0	3C	4			
	Verona	No Sample						
5/5	Airport		0	0				
	Boyd	58	0	2C	3			
	Verona	No Sample						
5/6	Airport	62	0	0				
	Boyd	57	0	3C	1			
	Verona	No Sample						
5/7	Airport	64	0	0				
	Boyd	58	0	0	1			
	Verona	No Sample						
5/8	Airport	61	0	0				
	Boyd	56	0	1C				
	Verona	No Sample						
5/9	Airport	62	0	0				3
	Boyd	61	0	1C				1
	Verona	No Sample						

*From Leach (1925)

Table 57. Numbers of eggs collected at several egg-pump sampling sites in 1970.

C—067246

C-067246

Date	Location	Temp. °F	Striped Bass Eggs & Larvae	AMERICAN SHAD Cloudy (C) Shells (S)	Figs:* A-D	Figs: G, M, L	P-S	Unknown Larvae
5/10	Airport	62	0	1S				3
	Boyd	61	0	9C				
	Verona	64	No Sample					
5/11	Airport	63	0	0				
	Boyd	56	0	17C	7S			
	Verona	63	No Sample					
5/12	Verona	No Sample						
	Boyd	55	0	4C	3S			
	Airport	62	0	0				
5/13	Verona	No Sample						
	Boyd	57	0	1S				1
	Airport	63	0	0				
5/14	Verona	60	0	0				
	Boyd	58	0	1C	1S			
	Airport	66	0	1S				1
5/15	Verona	62	0	0				
	Boyd	No Sample						
	Airport	67	0	0				
5/16	Verona	64	0	0				
	Boyd	No Sample						
	Airport	69	0	0				
5/17	Verona	66	0	2C				
	Boyd	61	0	0				
	Airport	71	0	0				
5/18	Verona	63	0	1C	2S			
	Boyd	62	0	20C				
	Airport	69	0	0				
5/19	Verona	63	0	3S	2			
	Boyd	61	0	14C	5S	1		
	Airport	66	0	1C	1S			
5/20	Verona	63	0	2C	1S	1		
	Boyd	61	0	12C	2S	3		
	Airport	66	0	1C	1S			
5/21	Verona	65	0	1C				
	Boyd	63	0	8C	6S			
	Airport	69	0	1C				
5/22	Verona	66	0	2C				
	Boyd	64	0	16C	2S	1		
	Airport	70	0	0	0	1		166
5/23	Verona	69	0	3C		1		
	Boyd	65	0	27C	3S	5		
	Airport	71	0		1S			
5/24	Verona	69	0	3C	2S			
	Boyd	65	0	35C	7S	4		
	Airport	70	0	0		2		

Table 57. Numbers of eggs collected at several egg-pump sampling sites in 1970 - Continued.

C—067247

C-067247

Date	Location	Temp. °F	Striped Bass Eggs & Larvae	AMERICAN SHAD Cloudy (C) Shells (S)		Figs:* A-D	Figs: G, M, L	P-S	Unknown Larvae
5/25	Verona	68	0	1C	1S	2			
	Boyd	66	0	19C	4S	3			
	Airport	72	0		1S				
5/26	Verona	68	0	4C	1S				
	Boyd	67	0	14C	3S				
	Airport	72	0	0					
5/27	Verona	67	0	3C					
	Boyd	68	0	10C	7S	1			
	Airport	70	0	1C	2S				
5/28	Verona	68	0	0					
	Boyd	70	0	6C					
	Airport	71	0		1S				
5/29	Verona	71	0	0					
	Boyd	72	0	5C	6S				
	Airport	73	0		1S				
5/30	Verona	72	0			1			
	Boyd	70	0	5C	1S				
	Airport	74	0	0					
5/31	Verona	69	0	0					
	Boyd	64	0	27C	4S				
	Airport	72	0		1S				
6/1	Verona	67	0	1C	4S				
	Boyd	65	0	4C					
	Airport	75	0	0					
6/2	Verona	70	0	5C	2S				
	Boyd	75	0	4C	1S				
	Airport	75	0	0					
6/3	Verona	75	0	2C	1S				
	Boyd	77	0	6C	4S				
	Airport	78	0		1S				
6/4	Verona	77	0	1C					
	Boyd	74	0	19C	3S				
	Airport	77	0	0					
6/5	Verona	75	0	1C					
	Boyd	65	0	7C	7S			1	1
	Airport	74	0	0					
6/6	Verona	69	0	1C	3S				
	Boyd	70	0		1S				1
	Airport	73	0	1C					1
6/7	Verona	72	0	0					
	Boyd	72	0	1C					1
	Airport	73	0	0					
6/8	Verona	67	0		1S			1	
	Boyd	65	0		1S				
	Airport	67	0	0					

Table 57. Numbers of eggs collected at several egg-pump sampling sites in 1970 - Continued.

C—067248

C-067248

Date	Location	Temp. °F	Striped Bass Eggs & Larvae	AMERICAN SHAD Cloudy (C) Shells (S)	Figs:* A-D	Figs: G, M, L	P-S	Unknown Larvae
6/9	Verona	65	No Sample					
	Boyd	64	0	1C	1S			
	Airport	65	0	0				
6/10	Verona	66	0	2C				
	Boyd	67	0	1C				
	Airport	66	0					
6/11	Verona	70	0		1S			
	Boyd	67	0	6C	1S			
	Airport	72	0					
6/12	Verona	68	0	1C				
	Boyd	68	0					
	Airport	69	0		1S			
6/13	Verona	69	0	0				
	Boyd	67	0		1S			
	Airport	70	0					
6/14	Verona	69	0					
	Boyd	67	0	1C	1S			
	Airport	69	0					
6/15	Verona	70	0	1C	0			
	Boyd	68	0		3S			
	Airport	70	0		1S			
6/16	Verona	70	0	0				
	Boyd	69	0	0				
	Airport	Pump Taken Out 6/15/70						
6/17	Verona	73	0	0				
	Boyd	70	0	0				

Table 57. Numbers of eggs collected at several egg-pump sampling sites in 1970 - Continued.

C—067249

C-067249

Location	1970	1971	1972	1973	1974
Live Oak	X				
Yuba City	X	X	X	X	X
Yuba River			X	X	X
Boyd's Pump	X				
Star Bend			X		
Verona	X	X	X		

Table 58. Location of net-tow sampling sites, 1970-1974.

Year	Number of Larvae Sampled Weighted by Flow	Index Value
1971	97.4×10^5	1.00
1972	60.8×10^5	0.62
1973	69.4×10^5	0.71
1974	141.9×10^5	1.46

Table 59. American shad "Index of Spawning Abundance" computed from data from Yuba City-Marysville Site, Feather River, 1971-1974.

C—067250

C-067250

Location	1969	1970	1971	1972	1973	1974
Live Oak	X	X	X	X	X	X
Verona		X	X	X		
Shanghai Riffle				X	X	X
Yuba River					X	

Table 60. Fyke-net locations used for sampling young-of-the-year American shad, 1969-1974.

Location	1972	1973	1974
Shanghai Riffle	X	X	X
Verona	X		

Table 61. Locations of beach seine sites used for sampling young-of-the-year American shad, 1972-1974.

C—067251

C-067251

Year	Season	Schedule		Total Days Sampled
		Weekdays	Weekends	
1967-68	4/27 - 6/15	3 days/week	Sat.-Sun.	27
1968-69	5/11 - 6/14	2 days/week	one day	24
1969-70	5/19 - 6/6	time available		12
1970-71	5/8 - 6/20	3-4 days/week	one day	32
1971-72	4/23 - 6/18	every other day		20
1972-73	4/15 - 6/25	3-5 days/week	Sat.-Sun.	36
1973-74	5/8 - 6/23	3-4 days/week	Sat.-Sun.	60

Table 62. American shad creel census sampling schedule.

C—0 6 7 2 5 2

C-067252

Year	River Area	No. Days Sampled Week	No. Days Sampled Weekend	Sample Period	No. Days In Season	Observed Values No. Anglers	Observed Values No. Angler Hours	Observed Values No. Fish	Estimated Values No. Anglers	Estimated Values Catch/ Angler Hour	Estimated Values Angler Catch
1968	2	8	6	5/24/68 - 6/15	30	373	223	506	798	2.27	7,255
	3	11	6	4/24 - 6/13	50	195	515	625	575	1.21	2,792
	4	4	3	4/27 - 6/11	30	22	12	26	93	2.17	806
Year Totals						590	750	1,157	1,466	1.54	10,853
1969	2	15	6	5/11/69 - 6/14	40	665	351	287	1,268	0.82	4,144
	3	3	4	5/11 - 6/12	30	57	86	76	243	0.88	857
	4	1	3	5/11 - 5/31	30	12	36	12	90	0.31	109
Year Totals						734	473	375	1,601	0.79	5,110
1970	2	5	3	5/21/70 - 6/2		87	55	23	N.A.	0.42	N.A.
	3	0	1	5/30	--	14	7	1	N.A.	N.A.	N.A.
	4	1	1	5/30 - 6/3		21	14	30	N.A.	2.10	N.A.
Year Totals						122	76	54	--	0.71	--
1971	2	12	6	5/14/71 - 6/20	30	626	345	379	1,316	1.10	5,775
	3	17	7	5/8 - 6/21	60	484	340	345	1,212	0.99	4,819
	4	2	3	5/11 - 5/29	40	33	80	62	198	0.77	613
Year Totals						1,143	765	786	2,726	1.03	11,207
1972	2	13	8	4/23/72 - 6/17	50	485	575	474	1,155	0.82	3,807
	3	14	5	4/26 - 6/16	45	467	443	312	1,107	0.74	3,285
	4	11	6	4/29 - 6/16	45	71	50	49	189	0.81	612
Year Totals						1,023	1,068	833	2,451	0.78	7,704
1973	2	14	5	5/1/73 - 6/25	60	379	358	296	1,194	0.83	3,964
	3	19	5	4/20 - 6/18	60	283	167	153	708	0.92	2,605
	4	2	2	4/15 - 5/20	30	28	21	23	210	1.10	924
Year Totals						690	546	472	2,112	0.86	7,493
1974	2	16	12	5/8/74 - 6/23	60	400	250	435	858	1.74	5,972
	3	10	5	5/12 - 6/8	30	136	84	110	272	1.31	1,425
	4	--	--	5/19	--	4	2	0	--	--	--
Year Totals						540	336	545	1,130	1.47	7,397

Table 63. Angler census summary for American shad, 1968-1974.

C-067253

C—067253

± Δ °T	Total Paired Observations	Frequency Where Sign Δ °T = Sign Δ Egg Abundance	Percent Agreement
0	29	15	51.7
1	36	21	58.3
2	35	20	57.1
3	17	14	82.3
4	14	11	78.6
5	6	4	66.7
6	2	2	100.0
7	2	2	100.0

Table 64. Summary of paired observations of changes in water temperature and associated changes in American shad egg abundance.

C—067254

C-067254

ANALYSIS OF COVARIANCE TABLE (COMMON LINE)

Source	S.S.	d.f.	M.S.
Total (S_T)	7,684	384-2 = 382	
Within Lines (S_E)	5,870	384-4 = 380	17.26
Between Lines (S_T-S_E)	1,814	2(2-1) = 2	906

$$F = \frac{MS_{T-E}}{MS_E} = \frac{906}{17.26} = 52.49 \text{ (Reject Hyp.)}$$

ANALYSIS OF COVARIANCE TABLE (COMMON SLOPE)

Source	S.S.	d.f.	M.S.
Total from Both	11,051	384-2-1 = 381	
Regression Lines (S_S)	5,870	384-4 = 380	17.26
Within Each Line (S_E)	5,309	1	5,309
Due to Common Slope (S_S-S_E)			

$$F = \frac{MS_{S-E}}{MS_E} = \frac{5,309}{17.26} = 307.59 \text{ (Reject Hyp.)}$$

ANALYSIS OF COVARIANCE TABLE (SLOPE = 0)

Source	S.S.	d.f.	M.S.
Within groups (Regression Disregarded)(S_O)	24,899		
Within and About Each Line (S_E)	5,870	384-4 = 380	17.26
Due to Regression (S_O-S_E)	19,029	2	9,514.5

$$F = \frac{MS_{O-E}}{MS} = \frac{9,514.5}{17.26} = 551.25 \text{ (Reject Hyp.)}$$

Table 65. Analysis of covariance tables for pre and post Oroville Project river temperatures in the spring months.

Year	Sampling Periods	Frequency Striped Bass Eggs	Total Number of Striped Bass Eggs
1970	57	0	0
1971	41	1	26
1972	32	0	0
1973	51	1	5
1974	49	7	5,408

Table 66. Presence of striped bass eggs in tow net samples.

C—067256

C-067256

Year	River Section	No. Days Sampled Week	No. Days Sampled Weekend	Sample Period	No. Days In Season	Observed Values: No. Anglers	Observed Values: No. Angler Hours	Observed Values: No. Fish	Observed Values: Percent Catch	Estimated Values: No. Anglers	Estimated Values: Catch/ Angler Hour	Estimated Values: No. Fish
	2	No Data										
1968	3	19	10	4/18/68 - 6/11	60	244	692	10	45.5	504	0.014	28
	4	12	3	5/8 - 6/7	30	65	89	12	54.5	129	0.135	70
Year Totals						309	781	22		633	0.028	98
	2	No Data										
1969	3	19	10	4/16/69 - 6/22	60	489	1,368	53	32.3	1,014	0.039	158
	4	19	10	4/16 - 6/22	60	601	1,569	111	67.7	1,206	0.071	342
Year Totals						1,090	2,937	164		2,220	0.056	500
	2											
1970	3			NOT SAMPLED								
	4											
Year Totals												
	2	No Data										
1971	3	14	8	3/30/71 - 5/29	60	722	1,692	49	23.1	1,968	0.029	228
	4	14	8	3/30 - 5/29	60	719	2,641	163	76.8	1,962	0.062	487
Year Totals						1,441	4,333	212		3,930	0.049	715
	2	13	6	3/6/72 - 5/9	40	222	350	1	2.3	468	0.003	6
1972	3	13	6	3/6 - 5/9	40	181	309	2	4.5	380	0.006	9
	4	13	6	3/6 - 5/9	40	395	899	41	93.2	832	0.046	153
Year Totals						798	1,558	44		1,680	0.028	168
	2	11	5	3/18/73 - 6/3	60	72	92	8	7	270	0.087	94
1973	3	26	15	3/26 - 6/17	75	420	784	12	10.5	765	0.015	46
	4	13	6	3/26 - 5/31	60	615	1,637	94	82.5	1,944	0.057	443
Year Totals						1,107	2,513	114		2,979	0.045	583
	2	4	6	4/12/74 - 6/19	60	46	121	0	0	276	--	--
1974	3	33	14	4/11 - 6/23	60	2,003	5,746	395	72.3	2,557	0.069	703
	4	11	8	4/11 - 6/4	50	695	2,764	151	27.7	1,830	0.055	400
Year Totals						2,744	8,631	546		4,663	0.063	1,103

Table 67. Angler census summary for striped bass, 1968-1974.

C-067257

C—067257

River Section	April Q	May Q	April $\bar{x}$ Minimum °T	May $\bar{x}$ Minimum °T
Mid-River	0.854*	0.629	-0.815*	-0.649
Lower River	0.712	0.926*	-0.584	-0.649

Table 68. Coefficients of correlation (r) for catch rates and river discharge and catch rates and river temperature in two reaches of the Feather River (*significant at the 5 percent level).

C—067258

C-067258

Abbreviation		Common Name	Scientific Name
		Petromyzontidae	
	PSL	Pacific lamprey	*Entosphenus tridentatus*
	BL	Brook lamprey	*Lampetra planeri*
		Clupeidae	
I	AS	American shad	*Alosa sapidissima*
I*	TFS	Threadfin shad	*Dorosoma petenense*
		Salmonidae	
	KS	Chinook salmon	*Oncorhynchus tshawytscha*
	SS	Coho salmon	*O. kisutch*
	CS	Chum salmon	*O. keta*
	PS	Pink salmon	*O. gorbuscha*
	RS	Sockeye salmon	*O. nerka*
**	SH	Steelhead trout	*Salmo gairdnerii gairdnerii*
I*	BN	Brown trout	*S. trutta*
		Cyprinidae	
I*	CP	Carp	*Cyprinus carpio*
I*	GF	Goldfish	*Carassius auratus*
*	HCH	Hitch	*Lavinia exilicauda*
*	HH	Hardhead	*Mylopharodon conocephalus*
I*	GSH	Golden shiner	*Notemigonus crysoleucas*
*	SPT	Splittail	*Pogonichthys macrolepidotus*
*	SQF	Sacramento squawfish	*Ptychocheilus grandis*
		Catostomidae	
*	SKR	Sacramento Western sucker	*Catostomus occidentalis occidentalis*
		Ictaluridae	
I*	WCF	White catfish	*Ictalurus catus*
I*	BLB	Black bullhead	*I. melas*
I*	BB	Brown bullhead	*I. nebulosus*
I*	CCF	Channel catfish	*I. punctatus*

Table 69. Common and scientific names of fishes found in Feather River, 1968-1975. Abbreviations found in text included.

C—067259

C-067259

Abbreviation	Common Name	Scientific Name
	Centrarchidae	
I* GSF	Green sunfish	*Lepomis cyanellus*
I* WB	Warmouth bass	*Chaenobryttus gulosus*
I* BG	Bluegill	*Lepomis macrochirus*
I* SMB	Smallmouth bass	*Micropterus dolomieui*
I* LMB	Largemouth bass	*Micropterus salmoides*
I* BCR	Black crappie	*Pomoxis nigromaculatus*
	Percidae	
I* LP	Logperch	*Percina caprodes*
	Embiotocidae	
* TP	Tule perch	*Hysterocarpus traskii*
	Cottidae	
* RSCP	Riffle sculpin	*Cottus gulosus*
	Poeciliidae	
I* GAM	Mosquitofish	*Gambusia affinis*
	Serranidae	
I** SB	Striped bass	*Morone saxatilis*
	Acipenseridae	
WST	White sturgeon	*Acipenser transmontanus*

I Introduced to California
* Resident species
** Normally migratory - but found in river all year

Table 69. Common and scientific names of fishes found in Feather River, 1968-1975. Abbreviations found in text included - Continued.

C—067260

C-067260

	Fish Species								
	LMB	RSCP	CP	HH	HCH	SQF	SKR	SMB	
1968	.0755	1.401	1.636	.155	.091	.136	1.407	.078	Catch per minute of electrical field duration
1974	.047	7.109	4.641	.141	.672	0	3.703	.016	
Calculated t	.246	1.608	1.832	.824	2.317	.921	2.966	.592	
t .05	2.23	2.20	2.20	2.20	2.20	2.20	2.20	2.20	
D.F.	10	11	11	11	11	11	11	11	

All Species Combined: 1969 vs. 1974, $x^2 = 1.73$ where x^2 .05 = 14.07 at 7 D.F.

Table 70. Comparison of electro-fishing catch for the years 1968 and 1974. Sample area is from the Oroville Fish Barrier Dam to Highway 162 Bridge, Feather River. Catch per minute of electric field duration and results of Student's t test are shown.

C—067261

C-067261

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BHL	BCR	GSF
													*FISH SPECIES																	
Year 1969																														
Dec. 30 1968-Jan. 5 1969	5					2															1	2		2						1
Jan. 6-12	6					43				2									5		14	3			1					1
13-19	7		2			51				1			2		15						22	12			7		1			1
20-21	2		1			26													6		3	128			3					2
Jan 27-Feb. 2	6					47							1						6		4		1	1	1		1			
3-9	13				1	193				1			4						14		10	9	1		1		1			1
10-16	14		2		1	42							6						7		6	16					1		1	1
17-23	14					34		1					3						3			12		1						
Feb. 24-March 2	14					10							5						8		2	8								
3-9	16					34							5						20		7	2			2					
10-16	17				3	115				2			7						119		83	4			1		1		1	
17-23	14				2	59							3						74		13	6			1					
24-30	12				2	19													112		8	1								
March 31-April 6	14					12													128	3		1			2					1
7-13	16				3	16													97	1	4	4			2					
14-20	21					2													39		1	2			1					
21-28	16		1		2	3				1									84	12	1	2			1					
April 29-May 5	9		1		1	3				1									175	8										
6-9	4					1													72	2										2
12-16	4		1																77											
20-22	2		1		5														32											
27-29	2		3																39											

Table 71. Fyke net catch summary (net site Feather River at Live Oak).

C-067262

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BHL	BCR	GSF
													*FISH SPECIES																	
June																														
3-5	2					1													60	1	3									
10-12	2	1								17									7	2										
17-19	2		5																						2					
24-26	2		75		11			4													2									
July																														
1-3	2		7																						20					
8-9	1		68																						36					
15-17	2		397		2																				3					
22-23	2		583			4																			19					
29-30	1		3,565			1,038													20						9					
August																														
4-5	1		325			68													410						6					
12-13	1		435			20													126						3					
21-22	1		262			7																								
27-28	1		239			12													7						2					
Sept.																														
3-4	1		113			7													9											
10-11	1	1	1			3													9											
17-18	1	1	1			7													2											
24-25	1		13			12													1											
Oct.																														
1-2	1		5			15				1									12						10					
9-10	1		1			4													7									1		
15-16	1		4		1	1																								
23-24	1					2																			1					
Nov.																														
1-2	1					1																			2					
6-7	1					5																			1					
13-14	1					3													1								1			
20-21	1		3																1											
25-26	1																								1					
Dec.																														
3-4	1	ø																												
17-19	2		32			4							2						8											
22-28	7		69		10	155							3						23			3					1		1	1

Table 71. Fyke net catch summary (net site Feather River at Live Oak) - Continued.

C-067263

C-067263

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BIL	BCR	GSF
													*FISH SPECIES																	
Year 1970																														
Dec. 29 1969-Jan. 4	10		508			56							1		2				22											
5-8	20		1,584		2	544			3				5						199		5	2			3				1	3
11-18	11		35		2	107		1				1	4	8					57			39					2			4
19-25	13		4			42				1			3						15		1	2					1		1	1
Jan. 26-Feb. 1	14		10			41													2		1	20	1							
2-8	13		105		2	131							3						36		8	1							1	
9-15	14		494	1	3	68							2						49		1	3			1					
16-22	14		67			39							3						41						1					
23-27	10		32			18							1		1				16		1	1			3					
March 2-6	8		9			32													35			5								2
9-13	8		7			15													2						1					
16-20	8		21			112			1				1						70		7									
23-27	8		2			32													76	2					2					
March 30-April 3	8		15			26													26	1	2									
6-10	4		3																8	5										
13-17	8		179			2													20	20							1			
20-24	4		149			3													10	18					3					
April 27-May 1	4		85			3													9	10					2					
5-7	2		19																7	4										
12-14	2		14																10						2					
19-21	2		31										2						10						3					
26-28	2					2													2											
June 2-4	2		1		1													1	2											
9-11	2		1		45							2		30																
16-18	2		6		4								2	2				2							1					
23-25	2			1	2					1			3	19																
June 30-July 2	2		26		1							1	12	79																

Table 71. Fyke net catch summary (net site Feather River at Live Oak) - Continued.

C-067264

C-067264

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BHL	BCR	GSF
													*FISH SPECIES																	
July																														
7-9	2		9																1						4					
14-16	2	5	9																							1				
20-22	2	5	2											1											10					
28-30	2	1	4		1														113		1				12					
Aug.																														
3-5	2		76										2					2	224						1					
10-12	2		1,004		1														130						1					
18-19	1		4,875			1													54											
24-25	1		273																39						1					1
Sept.																														
2-3	1		13																13											
8-9	1	10																	11											
16-17	1		237																7						1					
23-24	1	1	12			8																			1					
Sept. 30-Oct. 1	1		49			9													7											
7 - 8	1	3	84			5													2											
14-15	1		16																											
21-22	1		110			2													3											
28-29	1		25																											
Nov.																														
4-5	1		85																4											
12-13	1		119																1											
19-20	1		15																1											
Dec.																														
3-4	1		198		4	21							1	2					7			1								
10-11	1		5			5							1						6											
16-18	2		4			3													1			1								
22-24	4		64		1	6			3										4											
Year 1971																														
Dec. 29-Jan. 3	16		112		1	10													19		1									
4-10	21		69			7													38		2	17								

Table 71. Fyke net catch summary (net site Feather River at Live Oak) - Continued.

C-067265

C-067265

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BHL	BCR	GSF
													*FISH SPECIES																
Jan.																														
11-17	19		6			6							4						41		1	10								
18-24	14					15							12						20		13	14								
25-31	23				2	72							13						70		46	8			1					
Feb.																														
1-7	28			3	1	343							13						263		9	8							5	5
8-14	28					10							1						49		1	2			1					1
15-21	26					2													43		3	8			1					
22-28	25					5													47			6			1					
Feb. 29-March 7	28					1													36			7								
8-14	24					4							22						119			3			2					1
15-21	16					4							16						54		6	2		15	1					1
22-25	12					4							6						4		3									
March 30-April 2	8					1							2						6											
6-8	6					6							1	1					23						1					
14-15	2					1																								
21-22	2																		3											
28-29	1		1			4													6											
May																														
4-5	1		2																3		2									
11-12	1		2																5											
18-19	1		2			4													30											
26-27	1							1											16											
June																														
2-3	1		1		1	2													20											
10-11	1		1																											
17-18	1		1					1																						
23-24	1					1													34		1									
June 30-July 1	1																	1	11											
8-9	1																	2	4											
15-16	1		ø																											
22-23	1		5	6	2					2									3							1				
29-30	1	3	1	2	1	1													10											

Table 71. Fyke net catch summary (net site Feather River at Live Oak) - Continued.

C-067266

C-067266

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BBL	BCR	GSF
													*FISH SPECIES																
August																														
5-6	1	12	22		13	2																								
12-13	1	6	18		3	56						1							96											
19-20	1	3			2	39							1								2				1					
26-27	1	2				11													8		1									
30-31	1		3			6																			1					
Sept.																														
7-8	1	2				10																								
14-15	1		1			7													17											
22-23	1					88													10											
Sept. 30-Oct. 1	1				1	62																			1					
7-8	1					9																								
15-16	1					11																								
Nov.																														
4-5	1					1																								
10-11	1	ø																												
17-18	1	ø																												
23-24	1	ø																												
Nov. 30-Dec. 1	1	ø																												
8-9	1	ø																												
16-17	1	ø																												
22-24	6		14			8				3			1									4								
28-31	7		1			11				67			1								2									
Year 1972																														
Jan.																														
4-9	12				1	18				3			4			1			1		9	23								1
10-16	14				1	2		1		1			1						1		5	13		1						
17-23	14					8				7			1						3			5								
24-30	14					3		1		7			1						1		3	7			2					
Jan. 31 Feb. 6	14					11				4			3						3		4	6								
7-13	14				2	71		1	1				8						16		20	29		10						
14-20	14					5		3				1	2						13		2	18								

Table 71. Fyke net catch summary (net site.Feather River at Live Oak) - Continued.

C-067267

C—067267

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BHL	BCR	GSF
													*FISH SPECIES																	
'eb. 21-27	14					4							3						14			2			1					1
'eb. 28-larch 5	14		2			4							6						66		1	7								
6-12	16					2		1											27		2	12			3					
13-19	21					1													16	2	2	21								
20-24	11																		2	4		12			2					
29-31	5		1			2														3		3								
ıpril 4-7	8					8									1					7	2	15			1					1
10-11	2																			5	1	1								
20-21	1		1																											
25-27	2		3																	1										
'ay 3-4	1					2		7														1			1					
9-11	2		7					6													3	1								
17-19	2									3										2	1				1					
23-25	2		4		1			3																						
'ay 31-'une 2	2				2	1		12												1	1	1			1					
6-8	2				3	1		6											19		1									
14-16	2		1		15			1																						
20-22	2		2		16			1				6	1	7					34											
26-28	2	16			1								3																	
'uly 4-6	2		3		7							1		1					6											
11-12	1		1	2	15			1		1				4					3		1									
18-19	1	5	225		17	1				2			1						6										1	
25-26	1	6	6	1	3	1						1							6											
'ugust 2-3	1		7										1						25											1
8-9	1	1	7																						2					
15-16	1	1	8	2																					2					
22-23	1	2	8																2						1					
30-31	1		7																						3					

Table 71. Fyke net catch summary (net site Feather River at Live Oak) - Continued.

C-067268

C—067268

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BHL	BCR	GSF
													*FISH SPECIES																	
Sept.																														
5-6	1		84																						1					
12-13	1		18			1																								
18-19	1																								1					
26-27	1		2			1																			1					
Oct.																														
2-3	1		1			1																								
10-11	1					1																1								
18-19	1		14			1																								
26-27	1		5			1																			1					1
Nov.																														
3-4	1		5			2													3			1								
9-10	1		2			2													1											
29-30	1		1			2																								
Dec.																														
13-14	1		1			1																								
20-22	4		1		2	45						1										1								
27-29	6		5					1													5	2								
Year 1973																														
Jan.																														
3-7	10		15			2													6		6	6								
8-14	13		216		3	110		19	3	3			7						27	3	40	28		6	1		46			11
15-21	14		69			176		10	1				1						63		7	10					24			4
22-28	14		42		4	206	1					3	2			1			48		7		1							
Jan. 29-Feb. 4	19		20		1	25			1				1						21		14	1								
5-11	21		5			28			1	1			3						20		7			5	1		2			3
12-18	18		1			14				1			2						10		3						2			
19-25	21				1	35								1					83		30	2		10	1					
Feb. 26-March 4	14					35	1						8						160		37	1								
5-11	14					3													17											
12-16	10		1			30	1						1						78		6									
20-23	7		1			9		1											66		1				1					
27-30	4		1																7		2						1			

Table 71. Fyke net catch summary (net site Feather River at Live Oak) - Continued.

C-067269

C-067269

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BHL	BCR	GSF
												*FISH SPECIES																		
April																														
2-6	4					1													5	4										
9-11	2									1									3	3					1					
17-19	2																		23	3	2				1					
25-27	2									1						1			16	4	3				1					
April 30-May 6	6					2											1		118	2					2					
7-13	7											18		10					45	1					1					
14-20	7			3	4							6							49											
21-27	7			42	6	1		3		10		6	1			1			298	2		1			1					
May 28-June 3	7			31	17	2		3		11		2							296											
4-10	7			59	7	1				4		4	2						47											1
11-17	4			50						1			3					1	7		2		1							
18-24	6	1	2	126									2						2		1				1				2	
June 25-July 1	7		1	160								2	2						7						19	1				
2-6	5		1	39	1	1						1		1					13	2				1	34				2	
11-12	1	59	35	16								5		1											7				6	
17-18	1	21	10	2								3		1					13						5				7	
25-26	1	5	1	10								2		1											3					
July 31-August 8	1	3	17	9	1	1						2							9					1	10					
7-8	1	8	15	1															23		1				3				2	
14-15	1	9	3			1							1	2					10						1					
21-22	1	1	8		1							2	1						11						12				2	
28-29	1		4																											
Sept.																														
4-5	1		1																2						2					
11-12	1	1	19			1																			1					
18-19	1		1																											
25-26	1		166			1													1						1					
Oct.																														
2-3	1		Sample No good																											

Table 71. Fyke net catch summary (net site Feather River at Live Oak) - Continued.

C-067270

C-067270

Date	Net Days	AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BHL	BCR	GSF
													*FISH SPECIES																	
Dec.																														
20-21	1		3																											
27-28	1		6			1													1		1	1								
Year 1974																														
Jan.																														
3-4	1		26																											
10-11	1		4																											
16-17	1		2			1							2						12		4	6							1	
24-25	1					1			1										2											
Feb.																														
7-8	2		9										1						2		1									
12-13	2					1													6		2									
21-22	2		3																2			1		1						
Feb. 28-March 1	2		3			3													4											
7-8	2		6										1						4							1			1	
14-15	2		1			1							1						1											
21-22	2					1													9											1
28-29	2					2													11											
April																														
4-5	1													1					8										1	
11-12	1										3								22		2									
18-19	1																		1		1									
24-25	1																		8	1	2					1				
May																														
2-3	1		1			2													1	1					1					
9-10	1		1			1													23	2	1									
15-16	1																		19	1					1					
21-22	1		5																13	2										
30-31	1		3															1	15							1				
June																														
5-6	1										1								12	2										
11-12	1			8															27		1									
20-21	1			6															25											
26-27	1			11						1									36						1					

Table 71. Fyke net catch summary (net site Feather River at Live Oak) - Continued.

C-067271

C-067271

Date	Net Days	*FISH SPECIES AS	TFS	SMB	LMB	BG	WB	RSCP	GAM	CP	GF	SKR	SQF	HH	GSH	HCH	SPT	SB	PW	PSL	AMMO	BL	LP	TP	WCF	CCF	BLB	BHL	BCR	GSF
July																														
2-3	1			2		1					1														1					
9-10	1	2		8		2				1									46											
17-18	1		2		1														5											
23-24	1		29									1							4											
30-31	1		236																1											
Aug.																														
6-7	1		116		1								1						1											
13-14	1		25							1									2						1					
20-21	1		174		1														1											
28-29	1		119																1		1									
Sept.																														
3-4	1		7		1																									
11-12	1		7																		2									

*See Table 69 for abbreviations to names of fishes; king salmon catch data not included; PW = polliwog, or aquatic larvae of toad and frogs.

Table 71. Fyke net catch summary (net site Feather River at Live Oak) - Continued.

C-067272

C-067272

Year	River Area	No. Days Sampled Weeks	No. Days Sampled Weekend	Sample Period	No. Days In Season	Observed No. Anglers	Observed No. Angler Hours	Observed No. Fish Catch	Estimated Angler Use	Estimated Catch/Angler Hour	Estimated No. Fish
1970-71	2, 3, 4	14	5	6/25/70 - 9/21/70	90	92	141	32	432	0.227	392
1971-72	2, 3, 4	10	7	7/3/71 - 8/25/71 6/2/72 - 6/17/72	90	218	348	56	1,152	0.161	742
1972-73	2, 3, 4	55	23	7/14/72 - 10/1/72 3/14/73 - 6/29/73	180	571	1,330	318	1,314	0.239	1,256
1973-74	2, 3, 4	77	55	7/2/73 - 10/28/73 2/8/74 - 6/29/74	270	470	885	142	972	0.160	622
1974-75	2, 3, 4	47	17	7/4/74 - 10/24/74 1/3/75 - 2/26/75	170	330	749	86	877	0.115	403

Table 72. Resident fish angler census summary, Feather River, 1970-1975.

C-067273

C—067273

Season	Sample Date	No. Anglers	No. Angler Hours	Catch Total	Catch/ Angler Hour	Fish Catch by Species SB	WCF	CCF	IMB	SMB	BG	STH	GSF	Total
1970-71	6/25/70 - 9/21/70	92	141	32	0.227	2	4	2	9	4	9	2		32
			Percent of Total Catch			6.3	12.5	6.2	28.1	12.5	28.2	6.2		100%
			Estimated Season Catch			25	49	24	110	49	111	24		392
1971-72	7/3/71 - 8/25/71	218	348	56	0.161	5	47		1	1		2		56
	6/2/72 - 6/17/72		Percent of Total Catch			8.9	83.9		1.8	1.8		3.6		100%
			Estimated Season Catch			66	623		13	13		27		742
1972-73	7/14/72 - 10/1/72	571	1,330	318	0.239	10	246	3	19	3	37			318
	3/14/73 - 6/29/73		Percent of Total Catch			3.1	77.4	0.9	6.0	1.0	11.6			100%
			Estimated Season Catch			39	972	11	75	13	146			1,256
1973-74	7/2/73 - 10/28/73	470	885	142	0.160	8	105	2	1	7	17	2		142
	2/8/74 - 6/29/74		Percent of Total Catch			5.6	73.9	1.4	0.7	4.9	12.0	1.5		100%
			Estimated Season Catch			35	460	9	4	30	75	9		622
1974-75	7/4/74 - 10/24/74	330	749	88	0.115	32	25	6	9	12	1		1	86
	1/3/75 - 2/26/75		Percent of Total Catch			37.2	29.1	7.0	10.4	13.9	1.2		1.2	100%
			Estimated Season Catch			149	118	28	42	56	5		5	403

Table 73. Resident Fish Angler Catch Summary for portions of the years 1970-1975, Feather River.

C-067274

C—067274

Year	River Area	Sample Period	SEASONAL VALUES: No. Days Sampled (Wk/Wknd)	No. Days In Sample Season (Wk/Wknd)	Effective Fishing Season (Wk/Wknd)	OBSERVED: No. Anglers (Wk/Wknd)	No. Angler Hours (Wk/Wknd)	No. Fish Caught (Wk/Wknd)	Catch/ Angler Hour	ESTIMATED: Total Anglers	Total Catch
1970	2	9/3-10/17	5/2	32/13	64/26	146/25	415/66	5/4	0.019	2,194	167
	3	9/11-9/21	2/1	6/4	53/22	26/27	80/86	2/1	0.018	1,283	93
	4	9/11-9/21	2/1	6/4	53/22	5/3	14/15	0/0	(0.018)	199	15
	Total					177/55	509/167	7/5	0.018	3,676	275
1971	2	9/6-10/21	9/2	33/12	64/26	206/98	508/329	17/7	0.029	2,740	318
	3	9/18-10/7	1/1	13/6	54/21	28/23	116/112	2/0	0.009	1,995	71
	4	9/8-10/8	9/1	22/8	54/21	82/7	462/31	12/0	0.024	638	61
	Total					316/128	1,086/472	31/7	0.024	5,373	450
1972	2	8/18-10/19	17/7	44/18	64/26	274/344	407/859	9/64	0.058	2,307	535
	3	8/19-10/12	10/4	38/16	54/21	50/28	109/70	5/2	0.039	417	66
	4	8/22-10/11	14/1	36/14	54/21	74/5	206/10	8/0	0.037	386	58
	Total					398/377	722/939	22/66	0.053	3,110	649
1973	2	8/1-11/1	13/12	64/26	64/26	83/534	228/1,353	13/70	0.052	1,567	326
	3	7/11-11/1	15/9	53/22	53/22	269/934	898/3,022	40/119	0.041	3,232	531
	4		Not Sampled								
	Total					352/1,468	1,126/4,375	53/189	0.044	4,799	857
1974	2	7/12-10/14	18/10	46/19	64/26	534/750	1,387/2,018	81/91	0.051	3,851	785
	3	7/10-10/24	18/8	55/22	53/22	279/387	778/1,453	23/37	0.027	1,886	204
	4		Not Sampled								
	Total					813/1,137	2,165/3,471	104/128	0.041	5,737	989

Table 74. Anglercensus summary for king salmon in the Feather River, 1970-1974 (angler day assumed to be four hours).

C-067275

C—067275

Riffle Number	Riffle Name	Number of Carcasses 1971	1972	1973	1974	Total	Percent
1	Hatchery	785	580	917	469	2,751	6.64
2	Auditorium	1,979	1,547	2,115	952	6,593	15.91
3	Bedrock	2,474	2,493	3,917	2,199	11,083	26.74
4	Matthews	1,711	1,637	2,723	1,543	7,614	18.37
5	Allex	746	920	1,433	983	4,082	9.85
6	Great Western	349	682	759	452	2,242	5.41
7	Robinson	648	542	781	512	2,483	5.99
8	Steep	256	253	388	545	1,442	3.48
9	Weir	992	545	553	521	2,611	6.30
10	Gateway	126	165	128	121	540	1.30
Totals		10,066	9,364	13,714	8,297	41,441	100%

Table 75. Distribution of fall-run king salmon carcasses in the low-flow reach of the Feather River, 1971-1974.

Area Number	Area Name	Number of Carcasses 1971	1972	1973	1974	Total	Percent
1	Sutter Butte	209	247	229	457	1,142	7.53
2	Conveyor Belt	394	391	392	780	1,957	12.90
3	Hour Riffle	981	1,268	1,095	1,311	4,655	30.69
4	Kister and Goose	452	607	424	1,102	2,585	17.04
5	Big	518	689	757	552	2,516	16.59
6	Horse Shoe	563	632	373	746	2,314	15.25
Total		3,117	3,834	3,270	4,948	15,169	100.00

Table 76. Distribution of fall-run king salmon carcasses from Thermalito River Outlet to Gridley Bridge, 1971-1974.

C—067276

C-067276

Area Number	Area Name	Number of Carcasses 1971	1972	1973	1974	Total	Percent
1	Gridley Bridge	233	287	228	174	922	44.26
2	Duck Pond	165	271	208	154	798	38.31
3	Herringer	71	91	95	106	363	17.43
Total		469	649	531	434	2,083	100.00

Table 77. Distribution of fall-run king salmon carcasses from Gridley Bridge to Honcut Creek, 1971-1974.

Location	Number Redds Sampled	Sac Fry	Eggs Live	Eggs Dead	Gross Survival
Dewatered Redds	10	10	200	58	78.4
Submerged Redds	13	46	26	2	97.3

Table 78. King salmon egg and sac fry survival in dewatered and submerged redds from Big Riffle, December 7, 1972.

C—067277

C-067277

Date	Location	No. Yearlings Sampled	No. Yearlings with K.S. Fry	No. Fry Found	No. Yearlings with Insects	No. Empty Stomachs
1/21	Gridley Bridge	10	8	23	0	2
1/21	Live Oak	11	2	5	9	2
1/24	Gridley Bridge	9	4	4	9	0
1/24	Live Oak	11	6	11	10	0
1/25	Live Oak	10	7	27	6	0
1/27	Live Oak	10	7	13	10	0
1/28	Live Oak	6	3	4	6	0
1/29	Live Oak	10	5	8	7	1
1/30	Live Oak	10	5	12	5	1
1/31	Gridley Bridge	10	5	9	3	1
2/3	Live Oak	10	6	9	9	0
2/4	Live Oak	10	5	7	8	0
2/9	Gridley Bridge	10	7	13	7	0
2/11	Live Oak	10	9	24	10	0
2/13	Live Oak	10	5	18	9	1
2/15	Live Oak	10	7	22	10	0
	Totals	157	91	209	118	8
	Mean			1.3 fry/stomach		

Table 79. Stomach analysis of yearling king salmon, 1972.

Month	No. Marked Yearlings Planted	Total No. Yearlings Planted	Location
November 1971	49,000	368,850	Vance Ave.
December 1971	-	103,250	Vance Ave.
January 1972	-	-	-
February 1972	59,520	59,520	Vance Ave.
Totals	108,520	531,620	

Table 80. Yearling king salmon released into the Feather River near Oroville - winter 1971-72.

C—067278

C-067278

Year	No. Days Sampled	No. Marked Fry Released at Gridley	No. Marked Fry Returns at Live Oak	No. Unmarked Fry Taken at Live Oak	Estimated Number Wild Fry
1971	42	43,383	314	-	41.0 million
1972	42	42,767	119	-	24.5 million

Table 81. Program summary of marked king salmon fry released near Gridley Bridge, 1971 and 1972.

Facility	Year	Facility Fish Count	Fish Released From Hatchery	Estimated Angler Catch	Estimated Total Run
Interim	1963	416	Not in Operation	*416	832
	1964	914	" "	*914	1,828
	1965	434	" "	*434	868
	1966	563	" "	*563	1,126
Hatchery	1967	1,005	None Planted	*1,005	2,010
	1968	484	" "	*484	968
	1969	211	" "	*211	422
	1970	78	403,500	*78	156
	1971	288	1,057,750	*288	576
	1972	1,000	952,855	1,184	2,184
	1973	712	1,136,369	1,474	2,186
	1974	747	414,900	2,858	3,605

*Angler catch assumed equal to collection facility count.

Table 82. Summary of adult steelhead counts, hatchery releases of steelhead trout, and angler and total adult fish population estimates in the Feather River, 1963-1974.

C—067279

C-067279

Year	River Area	Sample Period	SEASONAL VALUES: No. Days Sampled (Wk/Wknd)	No. Days In Sample Season (Wk/Wknd)	Effective Fishing Season (Wk/Wknd)	OBSERVED: Number Anglers (Wk/Wknd)	Number Angler Hours (Wk/Wknd)	Number Fish Caught (Wk/Wknd)	Catch/ Angler Hour	ESTIMATED: Total Anglers	Total Catch
1972 to 1973	1	1/2-4/17/73	12/15	60/30	88/32	94/273	209/606	17/23	0.050	1,269	253
	2	8/19/72-3/24/73	27/11	147/63	194/76	147/140	282/315	22/35	0.095	2,022	768
	3	9/2-10/12/72	10/3	29/12	106/44	51/21	129/67	24/5	0.048	571	163
	4	9/20-10/4/72	5/0	11/4	44/17	23/0	93/0	35/0	0.376	N.A.	N.A.
	Totals								0.095	4,140	1,184
1973 to 1974	1	1/2-4/20/73	9/10	77/31	86/34	57/134	99/303	2/12	0.035	997	140
	2	8/26/73-4/20/74	19/17	168/68	192/78	131/229	292/481	15/40	0.071	2,378	675
	3	8/26-10/28/73	9/10	45/19	106/44	63/117	209/380	14/63	0.131	1,257	659
	4			NOT SAMPLED							
	Totals								0.083	4,542	1,474
1974 to 1975	1	1/3-2/26/75	10/5	16/8	86/34	67/55	110/75	6/11	0.092	950	350
	2	8/2/74-2/26/75	22/14	138/68	192/78	162/338	368/870	32/122	0.124	3,297	1,635
	3	8/7-10/24/74	8/8	54/27	106/44	54/121	165/476	23/78	0.158	1,380	873
	4			NOT SAMPLED							
	Totals								0.132	5,627	2,858

Table 83. Angler census summary for steelhead trout in the Feather River, 1972-1975 (angler day assumed to be four hours).

C-067280

C-067280

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