

EWA Workshop

Fish Actions Across Seasons in the Face of Uncertainty

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Roger Guinee

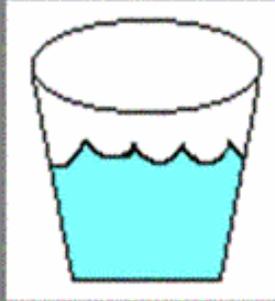
U.S. Fish and Wildlife Service

Fish Actions Across Seasons in the Face of Uncertainty

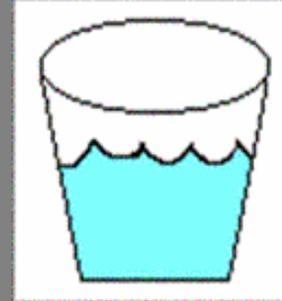
WATER FOR FISH AND WILDLIFE RESOURCES



**EWA
Bay-Delta
fish protection**



**3406(b)(2)
Dedicate & Manage
800,000 AF**



**3406(b)(3)
Water acquisition
for fish & wildlife**

Fish Actions Across Seasons in the Face of Uncertainty

- Proposed Fish Actions
- CVP/SWP Forecast Process
- Planning Process
- Uncertainty
- Implementation Process
- Accounting Process

Technical Basis For EWA Fish Actions

- Published literature, CDFG reports, IEP investigations, etc.
- Biological opinions for delta smelt and listed salmonids
- Delta smelt (DSRAM) and salmon decision trees based on real-time monitoring.
- EWA fish actions are monitored, evaluated and may be modified based on best science available.

Technical Basis For (b)(2) and WAP Fish Actions

- Rationale and scientific basis for AFRP flow objectives include AFRP documents, CDFG reports, IEP investigations and other restoration programs
- Salmon decision tree based on real-time monitoring
- (b)(2) and WAP fish actions are monitored, evaluated and may be modified based on best science available.

Anadromous Fish Restoration Program's Doubling Goals and Flow Objectives

- Develop and implement AFRP doubling program which identified flow-related limiting factors
- Help meet AFRP flow objectives on CVP-controlled streams and Delta fish actions
- AFRP Delta fish actions to protect salmonids are often consistent with EWA Delta objectives

EWA

Larger systems with available water from willing sellers. Mostly Delta Actions.

EWP

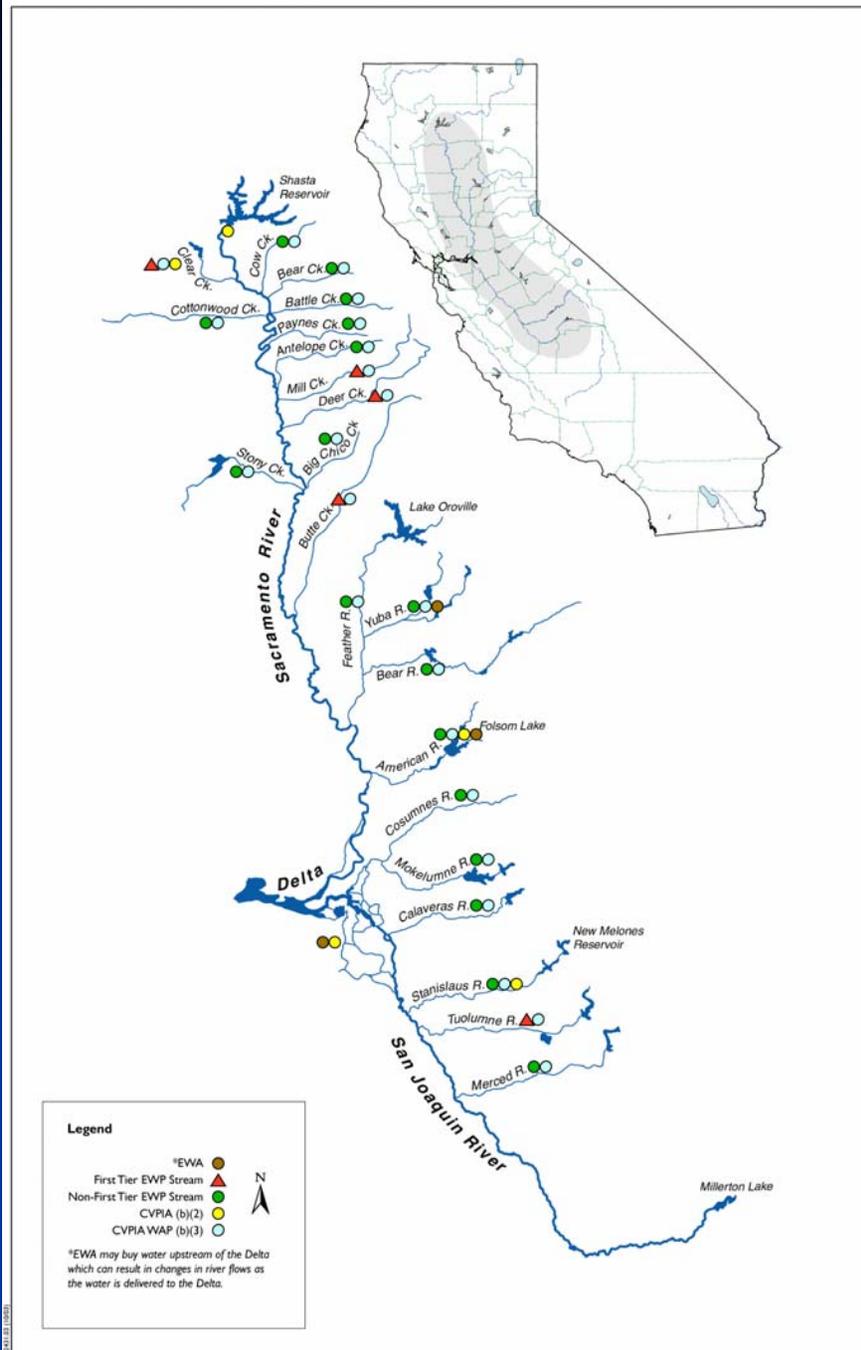
Smaller streams with at-risk species present. Tier 1 streams shown.

B2 water

CVP controlled streams only. Upstream and Delta Actions.

WAP

San Joaquin tributary augmentation in spring and fall.



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Identify Proposed Fish Actions - EWA, B2, WAP

- Improve flows in CVP-controlled streams (b)(2) water
 - ❖ Clear Creek (Oct-Sep)
 - ❖ Sacramento River (Oct-April 15)
 - ❖ American River (Oct-May)
 - ❖ Stanislaus River (Oct-June)
- Protect fish and improve habitat conditions in the Delta by closing DCC gates and reducing CVP and SWP exports (Nov-June) (using EWA and (b)(2) water)
- Implement VAMP (using EWA, (b)(2) and WAP)

EWA and (b)(2) Relationship

- Both (b)(2) and EWA provide benefits to fish and wildlife.
- (b)(2) is CVPIA program and is usually applied on CVP streams and to reduce CVP exports in the Delta.
- EWA is CBDA program and acquires water primarily to reduce SWP exports in the Delta.
- One important difference between (b)(2) and EWA is that EWA is based on a “no harm” principle, while the timing and location of (b)(2) use may have impacts on CVP water users - typically south of the Delta.

CVP/SWP Forecast Process

- Project Agencies develop preliminary 12-month baseline forecast using spreadsheet model
- Hypothetical 1992 baseline operation for (b)(2) fish actions created using forecasted hydrology (90% and 50% exceedance)

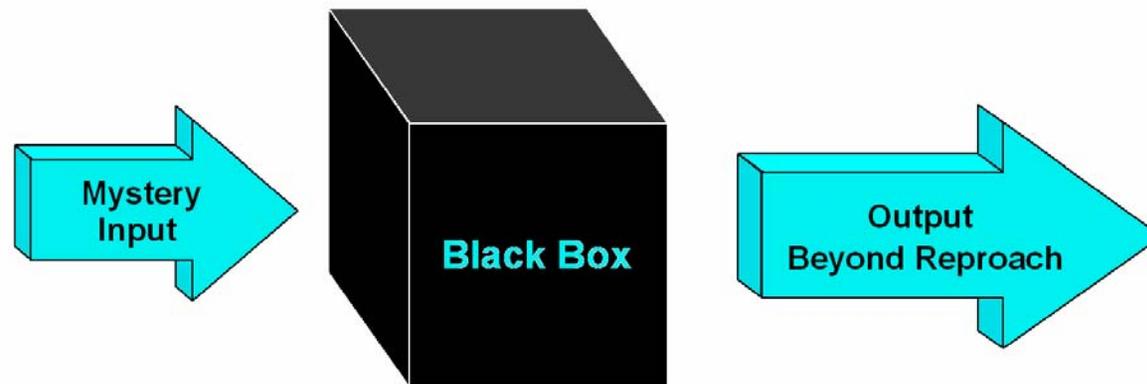
1992 Base Case Assumptions

- Clear Creek
 - 1960 MOA with CDFG
- Upper Sacramento
 - 1992 Winter Run Biological Opinion (Temperature Operations) & WR 90-5
 - COE Flood Control Requirement
- American River
 - “Modified D-893”
- Stanislaus River
 - 1987 Instream Flow Agreements with CDFG & D-1422
- Delta
 - 1978 SWRCB’s D-1485
 - 1986 COA

CVP/SWP Forecast Process

- Next, the CVP/SWP develops a proposed operations forecast (90% and 50%) to meet the 1995 WQCP
 - Assumptions upstream are somewhat similar to base case
 - Delta assumptions include WQCP and VAMP
- Then, Management Agencies coordinate with Project Agencies on developing a third forecast with placeholders for (b)(2) fish actions and
- a fourth forecast with placeholders for EWA fish actions (this is an iterative process)

Iterative Process



Attention all litigants, this is a JOKE!

Current Planning Process for EWA, (b)(2), and WAP Fish Actions

- Who – Management Agencies (FWS, DFG, NMFS) and Project Agencies (USBR and DWR), and meetings with interested parties
- Coordination – The B2IT, EWAT and WOMT meets weekly
 - DAT, CALFED Ops, and biannual workshops with interested parties
- Process –
 - Forecasting EWA and (b)(2) use – with CVO 12 month spreadsheet tool
 - 1992 base case 90% Exceedance Forecast 50% Exceedance Forecast
 - With WQCP 90% Exceedance Forecast 50% Exceedance Forecast
 - With (b)(2) 90% Exceedance Forecast 50% Exceedance Forecast
 - With EWA 90% Exceedance Forecast 50% Exceedance Forecast

Uncertainty

- Real-time monitoring – when will the fish be detected in the rivers and the Delta?
- hydrology – changes daily, weekly, monthly
- how much will fish actions cost? – depends on magnitude, duration and hydrology
- how much environmental water is available? – depends on budget and fish action costs to date
- surprises? – unforeseen circumstances (X2, dam or levee break, late storms, etc.)

Implementing EWA, (b)(2), and WAP Fish Actions

- Who – Management Agencies, Project Agencies and meetings with interested parties
 - Coordination – The B2IT, EWAT, DAT, WOMT, AROG, CALFED Ops, etc., biannual workshops
 - How – Fish actions are implemented based on:
 - fish objectives, real-time monitoring, decision trees,
 - actual hydrology, operations,
 - environmental water available
- Actions are adjusted at least monthly based on the above and prelim accounting to stay within environmental water budget

Accounting for EWA, (b)(2), and WAP Fish Actions

Accounting (b)(2) – Interior use “no more, no less than 800,000 AF”

- USBR records actual daily CVP operations. These are the “with (b)(2)” CVP operations. USBR also develops corresponding hypothetical daily “without (b)(2)” CVP operations.
 - Increases in releases with (b)(2) versus without (b)(2) are accounted as debits.
 - Decreases in exports with (b)(2) versus without (b)(2) are accounted as debits.

An effort is made to separate out (b)(1) modifications of CVP operations. Anticipated impact must be zero to be (b)(1).

Accounting for EWA and WAP compares daily operations with (b)(2) actions to daily operations with EWA and WAP actions.

Water Year Begins in October and goes through September

- EWA accounting year is also Oct-Sept.
- B2 accounting year is also Oct-Sept.
 - Consistent with the life cycle of fall-run chinook salmon and steelhead
 - Contributes to meeting the AFRP restoration and doubling goal

October

- Management Agencies identify proposed fish actions that can be implemented using EWA, (b)(2) and WAP water.
- Project Agencies develop preliminary 12-month baseline forecast of CVP/SWP operations using a spreadsheet model.

November

- **Update** 12-month CVP/SWP forecasts
- **Continue implementing and adjusting** EWA, (b)(2), WAP actions and placeholders based on fish objectives, monitoring, environmental water available, etc.
- **Preliminary accounting**

December

- Update 12-month CVP/SWP forecasts
- Continue implementing and adjusting EWA and (b)(2) actions and placeholders
- **Update preliminary accounting**
- **Public workshop with interested parties re: upcoming year's plan of operations with EWA and (b)(2) fish actions**

January

- Update 12-month CVP/SWP forecasts
- Continue implementing and adjusting EWA and (b)(2) actions
- **EWA and (b)(2) placeholders modified based on previous month's use**
- **Update preliminary accounting**

February

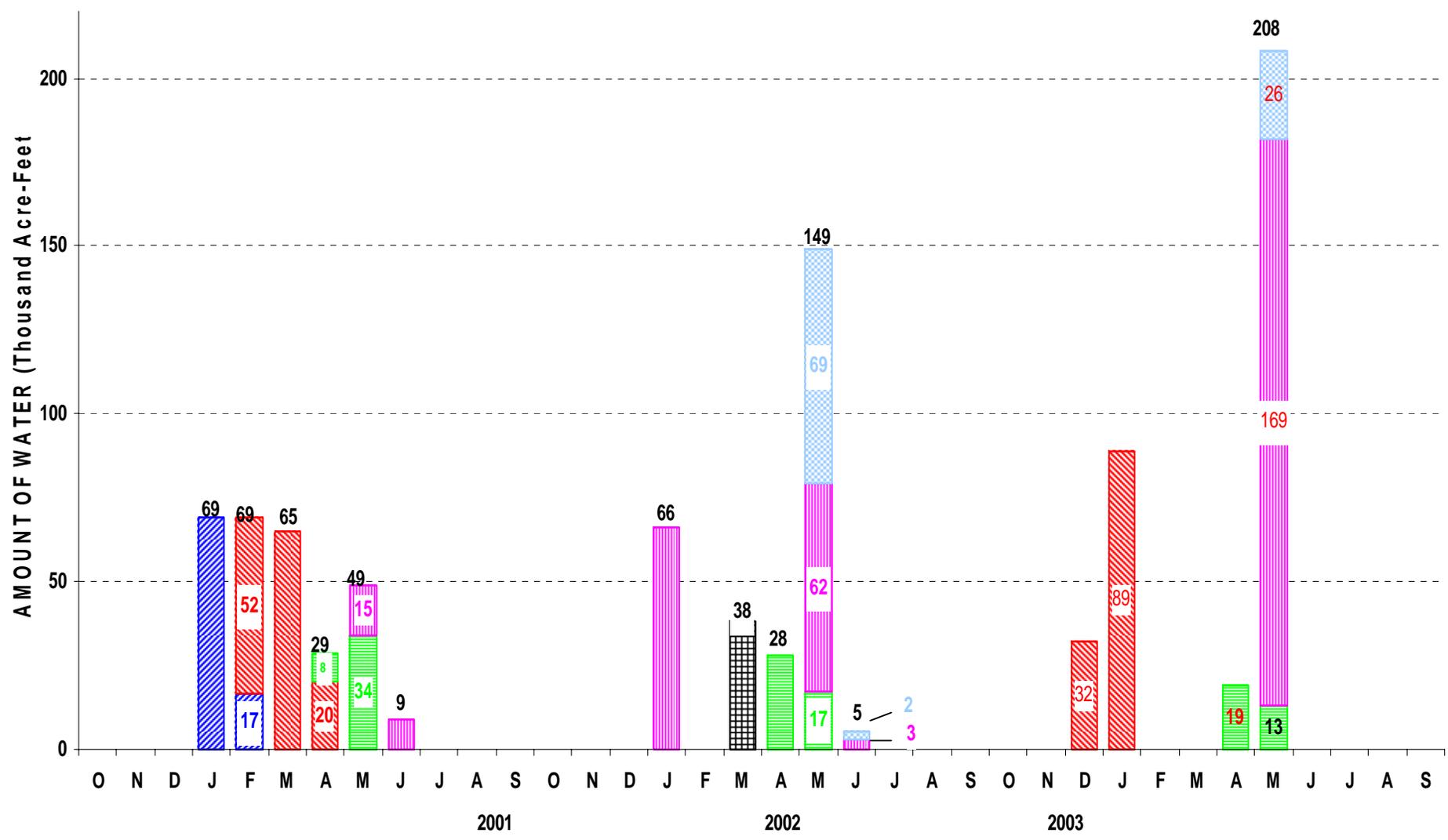
- Update 12-month CVP/SWP forecasts
- Continue implementing and adjusting EWA and (b)(2) actions
- EWA and (b)(2) placeholders modified
- Update preliminary accounting
- **Begin communicating with SJRG on planning for VAMP (April 15 – May 15)**

March

- Update 12-month CVP/SWP forecasts
- Continue implementing and adjusting EWA and (b)(2) actions
- EWA and (b)(2) placeholders modified
- Update preliminary accounting
- **Continue planning VAMP (4/15 – 5/15) and post-VAMP export reductions**

EWA EXPENDITURES OCTOBER 2000 - SEPTEMBER 2003

▨ Salmon/Steelhead
 ▨ Salmon/Steelhead/Delta Smelt
 Delta (Conversion)
 ▨ VAMP
 ▨ Salmon/Delta Smelt
 ▨ Salmon/Delta Smelt (CVP)

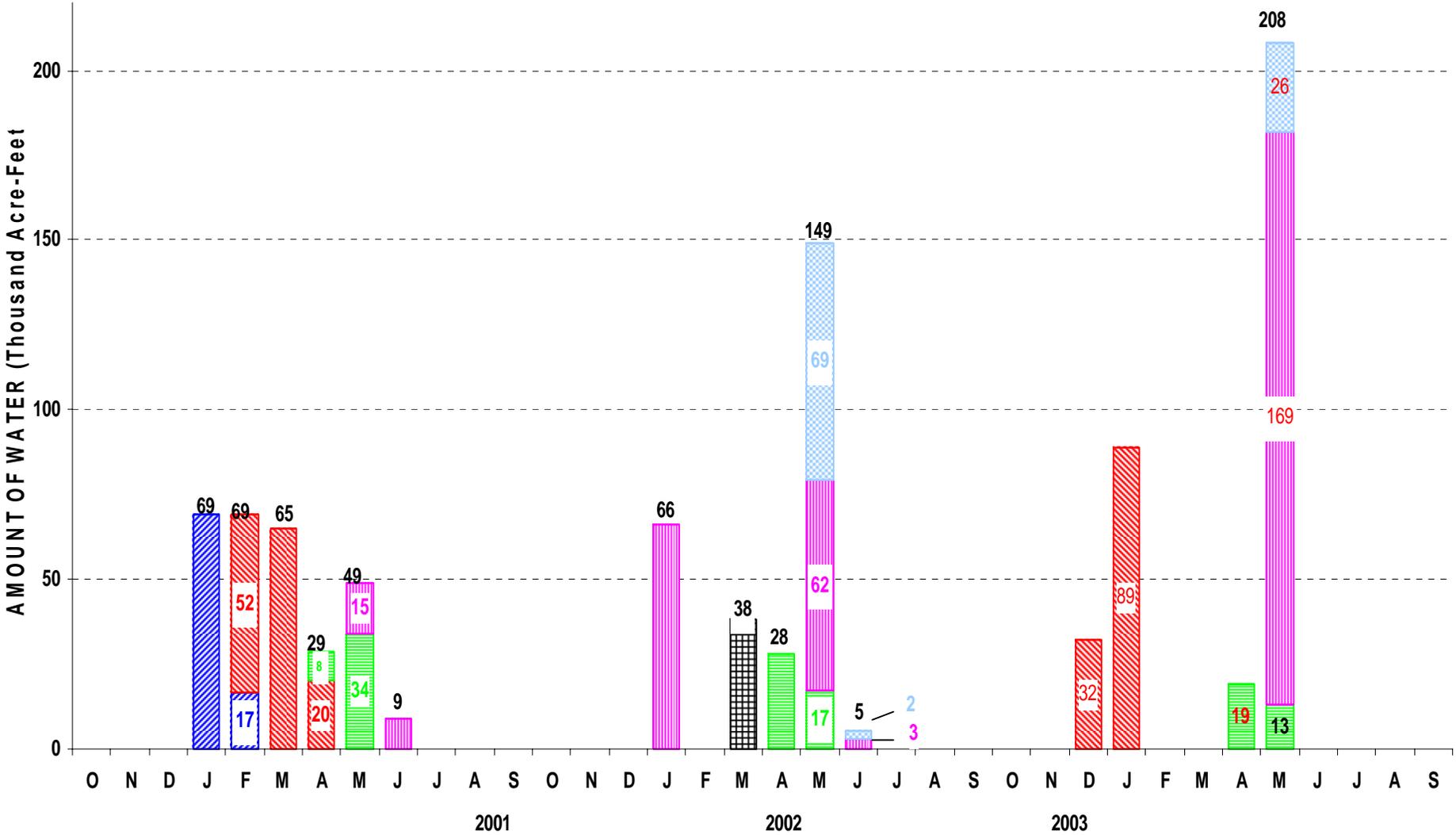


April - May

- Update 12-month CVP/SWP forecasts
- Continue implementing and adjusting EWA, (b)(2) and WAP actions
- EWA and (b)(2) placeholders modified
- Update preliminary accounting
- **Implement VAMP (4/15 – 5/15) and post-VAMP export reductions**

EWA EXPENDITURES OCTOBER 2000 - SEPTEMBER 2003

▨ Salmon/Steelhead
 ▨ Salmon/Steelhead/Delta Smelt
 ▨ Delta (Conversion)
 ▨ VAMP
 ▨ Salmon/Delta Smelt
 ▨ Salmon/Delta Smelt (CVP)



June

- Update 12-month CVP/SWP forecasts
- Continue implementing and adjusting EWA and (b)(2) actions
- EWA and (b)(2) placeholders modified
- Update preliminary accounting
- **Conclude final EWA fish actions**

July - September

- Continue implementing and adjusting (b)(2) fish actions
- Update preliminary (b)(2) accounting
- **Finalize EWA accounting**
- **Transfer EWA water into San Luis Reservoir**
- **Prepare for Sept EWA workshop and November EWA Technical Review Panel**

SUMMARY

Fish Actions Across Seasons in the Face of Uncertainty

- Flexibility of EWA
- Communication
- Coordination