

Concern	Tools	System Status		Priority
		Historic	1A Baseline WQCP	
Yearling salmon migrants Oct-Jan	<ul style="list-style-type: none"> <li>Increase inflow</li> <li>Reduce export</li> <li>Close DCC</li> </ul>		OK	Evaluation Deer and Mill escapement = 1200 Sacto R escapement = 23,000 Low take.
Winter run survival Dec-Mar	<ul style="list-style-type: none"> <li>Increase inflow</li> <li>Reduce export</li> <li>Close DCC</li> <li>Reduce export</li> </ul>		B	<ul style="list-style-type: none"> <li>Winter run escapement 1800</li> </ul>
Delta Smelt Adults Jan-Mar	<ul style="list-style-type: none"> <li>Reduce export</li> </ul>		OK	<ul style="list-style-type: none"> <li>Despite 83 FMWT index of 250, because salvage very low</li> </ul>
Steelhead Feb-May	<ul style="list-style-type: none"> <li>Reduce export</li> </ul>		OK	
X2 Feb - June	<ul style="list-style-type: none"> <li>Increase inflow</li> <li>Reduce export</li> </ul>		OK	
Salmon Fry Feb-Mar	<ul style="list-style-type: none"> <li>X2 placement</li> </ul>		OK	
DS Young Apr-Jul	<ul style="list-style-type: none"> <li>Reduce exports</li> </ul>		OK	
San Joaquin smolts Apr-Jun	<ul style="list-style-type: none"> <li>Reduce exports</li> <li>Increase SJ flow</li> <li>Close HOR</li> </ul>	5000-10000 3000-4000 Open	A/B	SJ fall run escapement = 33,000 A - VAMP Extension: B - 15 days before and B - 15 days after; salmon salvage high in period.
Striped Bass Young	<ul style="list-style-type: none"> <li>X2 placement</li> <li>Increase Sac flow</li> <li>Reduce exports</li> </ul>		C	Index = 26.3 Peak take mid May - early July
Splittail May-Jul	<ul style="list-style-type: none"> <li>Reduce exports</li> <li>Close HOR</li> </ul>		B	Medium June to July, wet years are available because smelt are downstream.

**1984 Gaming**

**Old Game 1A**

- SWP can take advantage of Keswick summer temp releases - not in COA.
- No upstream b(2) cost in this year.
- No adjustments to Freeport flows. Start in with historic inflows.
- Water quality control plan allowed 6.5 MAF. DWRSIM allowed 6.2 MAF.
- Subnormal snow melt D-1485 wet year. Adjust outflow limits in model to reflect this.

**Fall Oct-Jan**

- No Action:** restrict exports early Dec. Hit is b(2) = 0 TAF. (note likely to reduce delivery allocations.)  
 Purpose: protect salmon yearlings.

**Spring April-June**

- Action:** Three month VAMP Mar-May. 1500 in VAMP - 3000 in extensions. Action had b(2) hit of 626 TAF.
- Action:** Ability to back water into Oroville, Shasta, and Trinity to save some water, thus reducing San Luis cost - saves water but not b(2) accounting change.
- End Condition:** San Luis at end of September was down by entire CVP amount unless JPOD was used. Energy costs were high. No delivery impact - full 626 b(2) hit but up to 200 water savings by cutting reservoir releases during the extended VAMP.

**New 1B-1984**

- Initial conditions: storages high - near flood control.
- Upstream b(2): Stanislaus is 60 TAF for additional 500 cfs Oct-Jan; 45 TAF on American is made up when Folsom fills by end of January, thus no upstream b(2) costs. No upstream Sacramento b(2) costs.
- WQCP cost to b(2) was 48 TAF.

<b>October</b>	<b>B(2) Actions:</b> Stanislaus and American River flow enhancement
<b>November</b>	<b>B(2) Actions:</b> Stanislaus and American River flow enhancement
<b>December</b>	<b>B(2) Actions:</b> Stanislaus and American River flow enhancement
<b>January</b>	<b>B(2) Actions:</b> Stanislaus and American River flow enhancement
<b>February</b>	No Actions.
<b>March</b>	<b>B(2) Actions:</b> hold exports to 5000 cfs. Cost of 167 TAF to b(2)
<b>April</b>	<b>B(2) Actions:</b> <ol style="list-style-type: none"> <li>VAMP export restriction to 2250 cfs 16<sup>th</sup> on.</li> <li>Hold exports to 3000 cfs for first 15 days. TAF Cost = 313 TAF</li> </ol>
<b>May</b>	<b>B(2) Actions:</b> <ol style="list-style-type: none"> <li>VAMP export restriction to 2250 cfs through 15<sup>th</sup> - Cost 88 TAF Cost to VAMP</li> <li>Late May actions to limit export to 3000 cfs has 249 TAF cost to b(2).</li> </ol>
<b>June</b>	No Action.
<b>July</b>	No Action.
<b>August</b>	No Action.
<b>September</b>	No Action.

**Summary of Year:**

- Exports: 4.4 MAF (Historic 3.8 MAF)
- Deliveries: 6.2 MAF (Historic 4.9 MAF)

- Outflow: 27.1 MAF (Historic 30.7 MAF)
- Storage: No upstream change; San Luis down 450 TAF.
- Fish Template priorities: All A's and B's fully met, except splittail B in June due to lack of b(2) assets.. C priority for striped bass.
- Upstream AFRP Costs: 60 TAF
- Delta WQCP b(2): 48 TAF.
- In-Delta b(2) export reductions: 840 TAF.

**Performance of Assets:**

- Expanded Banks not used until summer – essential in maintaining San Luis
- Shasta expansion was of little benefit, but carried from previous year.
- Delta Island storage – able to use 200 TAF of storage to improve San Luis by 200 TAF, but were unable to refill.
- Groundwater storage recharged in fall and winter, then discharged to benefit San Luis in spring-summer.

**EWA suggestions:**

- June export reduction for splittail would be likely action to consider with an EWA account.
- Some borrowing power would benefit fish by allowing more protections. Otherwise b(2) provides all the necessary protections per the fish template.