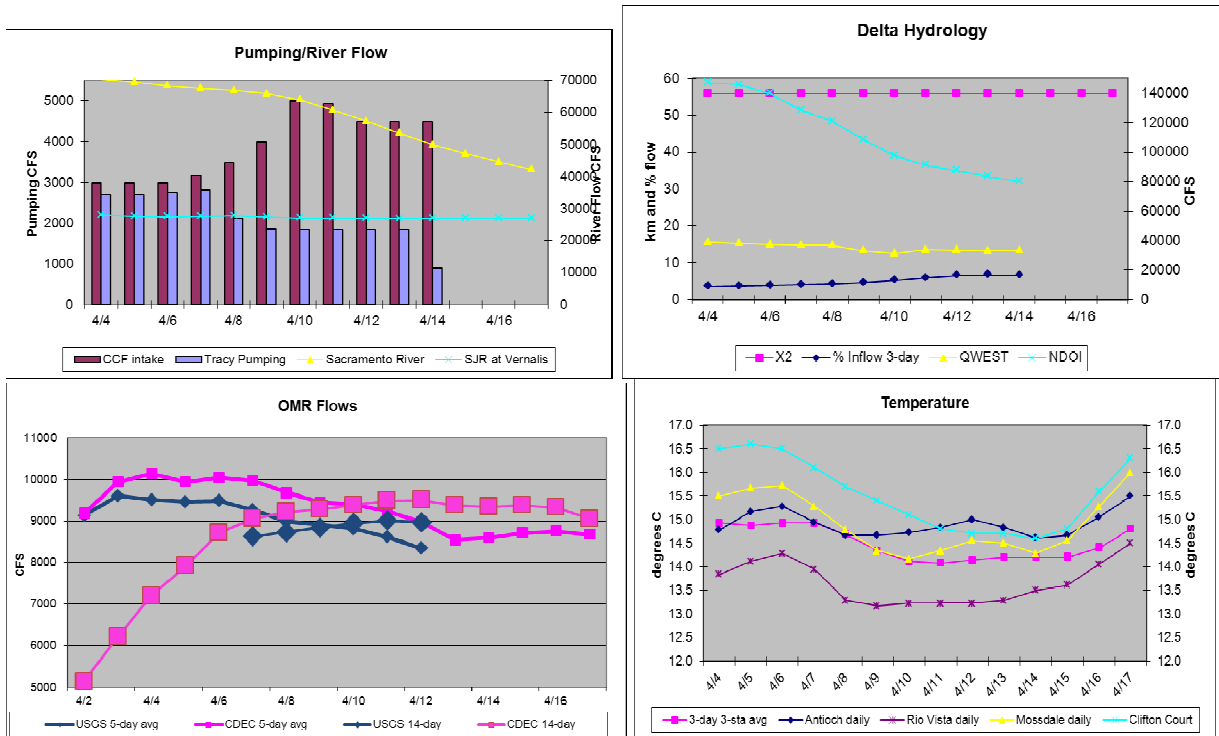


SMELT WORKING GROUP
Monday, April 18, 2011

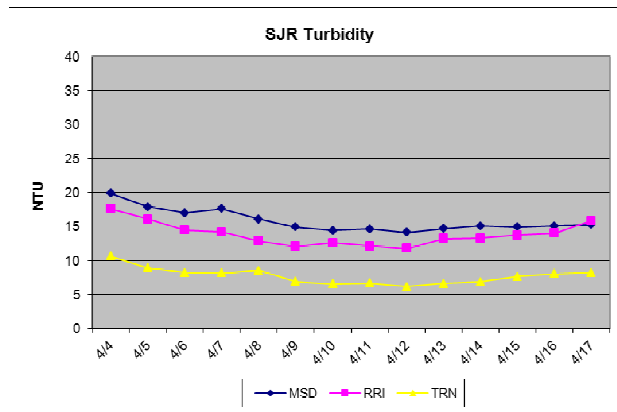
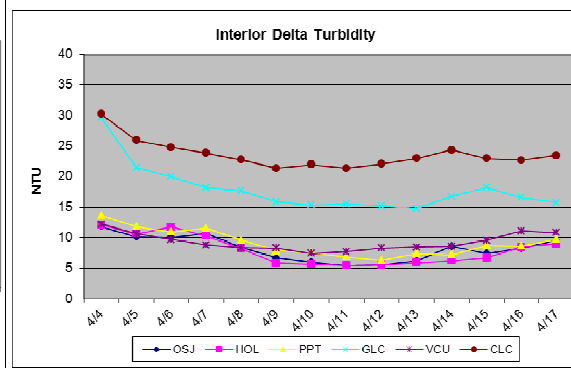
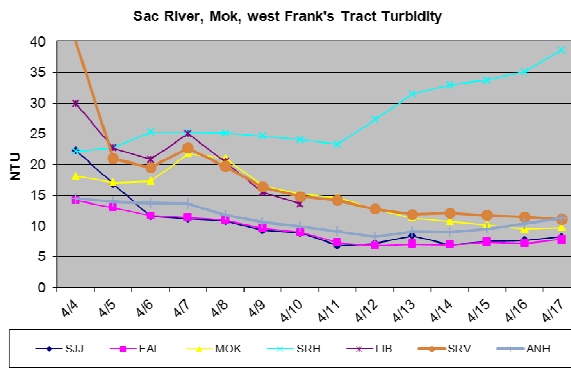
The Working Group will continue to monitor salvage, survey data, and hydrological conditions and will reconvene April 25. No recommendations were made.

1) Current environmental data.

- **Water temperature** for the 3 station average is 14.8°C.
- **OMR** USGS tidally-averaged OMR was 7,580 cfs on April 12, 2011. The 5-day average OMR was 8,972 cfs. The OMR average estimate from CDEC on April 17 was 7,524 cfs. The 5-day CDEC OMR is 9,053 cfs.
- **Flow** Sacramento River inflow is 42,348 cfs and San Joaquin 26,950 cfs. X₂ calculation from CDEC is less than 56km. For April 14, the E/I ratio was 6.5%, QWEST was 33,202 cfs, and NDOI was 80,010 cfs. The graphs below show the most recent trends in Delta hydrology and water quality that were evaluated by the Working Group.



- **Turbidity** Turbidities are generally at a steady state.



2) Delta fish monitoring:

20mm Survey #3 was in the field last week. 42 of 47 stations were sampled. No juvenile delta smelt were collected, although sample processing is incomplete and ongoing. Processing for the central and south delta stations has been completed with no delta smelt collected. One adult delta smelt was collected in the Sacramento Deep Water Shipping Channel. 20mm Survey #4 is scheduled to begin the week of April 25. Spring Kodiak Trawl #5 will be in the field the week of May 2. The final 2010 FMWT Index is 29 for delta smelt and 191 for longfin smelt. The 2010 Delta Smelt Recovery Index (based on September and October) is 11. More information on the Recovery Index can be found on the Bay-Delta Office's web site at <http://www.fws.gov/sfbaydelta/> under "hot topics." Results from larval surveys, SKT, and 20mm Surveys are available online at: <http://www.dfg.ca.gov/delta/>

3) Salvage

No longfin smelt were salvaged from January 15 through April 17. Four adult delta smelt were salvaged at the CVP on January 15 and 17, February 24, and March 15, 19, and 20, and 12 were salvaged at the CVP on March 22, 8 on March 23, 4 on March 30, 2.1 on April 1, and 1 on April 5 for a seasonal cumulative total of 51 fish. No salvage has been reported for longfin smelt or delta smelt at the SWP since June 2010. No larvae or juveniles for either delta smelt or longfin smelt has been reported at either facility for the season. Criteria for the implementation of an action were not met or exceeded.

Incidental take for juvenile delta smelt at least 20mm in size is as follows:

	Concern Level	Authorized Take
April	9	13
May	378	567
June	958	1436
July	1086	1630

Numbers are estimated salvage for the SWP and the CVP combined. The monthly numbers are cumulative. For example, the authorized take for July includes the salvage from April, May, and June.

4) Expected Project Operations

Combined CVP/SWP exports are around 6,300 cfs as of April 18. The CVP and SWP have filled their shares of San Luis Reservoir.

5) Particle Tracking Modeling

The Working Group did not request PTM runs for this week.

6) Discussion for Recommendation

The Working Group reviewed and discussed all relevant data from fish surveys, Delta monitoring, salvage, and planned Project operations. No recommendation was made.

RPA Component 1, Action 1 is intended to protect pre-spawning adults during the first flush, as they move into their spawning areas. The WY 2011 first flush has likely passed through the Delta. Component 1, Action 2 (pp 280-281 and Attachment B, pp 352-356) may be implemented following the conclusion of Action 1, or the first flush. Criteria for the implementation of Action 2 are more varied and more flexible than those for Action 1. Action 3 is intended to minimize the entrainment of larval delta smelt. Criteria for the implementation of Action 3 are based upon the onset of spawning or the presence of larvae in the system. Risk of entrainment is estimated based upon survey data, Delta conditions, and the occurrence of salvage.

The 2010 FMWT index for delta smelt is 29. This means that the authorized incidental take of adults is 210 (estimated) and the concern level is 157 (estimated), cumulative for the December through March period. Under the low-entrainment risk scenario for the implementation of Action 2, the salvage criterion is a Daily Salvage Index greater than or equal to 1 (i.e., 29, estimated; B.O. p 338).

The Working Group will continue to evaluate the risk of entrainment according to the guidance provided in the RPA, as in previous years. The recent OCAP settlement does not change any of the parameters that the Working Group is required to discuss (B.O., pp 358-368). However, the

newly-created Delta Condition Team (DCT) may provide additional information for the Working Group's consideration. The settlement additionally provides that the Service may set OMR flows more negative than -5,000 cfs; flows as negative as -6,100 cfs are allowed on an experimental basis if the "best available science and consideration of all factors...indicate that such flows would be adequately protective" of delta smelt. This rate of flow could apply if the risk of entrainment is believed to be low, based upon evaluation of physical and biological monitoring results.

The 3-day, 3-station average water temperature surpassed 12°C on March 10, 2 spent female delta smelt were detected in SKT survey 3, and 1 delta smelt larva was collected during the 20mm Survey #1, any of which meet or exceed the criteria for the implementation of Action 3, entrainment protection for larval smelt. The temperature criterion may indicate that protections are needed based upon the assumption that delta smelt spawning is in progress, whereas the observation of spent females and/or larvae provides direct evidence of spawning. Peak daily adult salvage exceeding a one:one ratio to the FMWT Index may also indicate that the risk of entrainment is unacceptably high (B.O., pp 346-347).

The Working Group estimated that the overall risk of entrainment for larvae and adults was low given the distributional data from recent surveys. Turbidity throughout the delta has remained relatively clear for the past couple of weeks. Hydrology remains favorable, indicating a low level of risk for entrainment. Apparent abundance remains very low, which raises the concern level for the species into the moderate range. The risk of delta smelt entering the central and south Delta is expected to remain low, due to anticipated export pumping and flows for the San Joaquin and Sacramento Rivers.

The Working Group did not receive any advice from the DCT.

The Working Group believes that, based upon what is known of Delta conditions and delta smelt distribution, a modification of Project operations to protect delta smelt is not yet warranted.

CDFG staff requested that the Working Group discuss and comment on the potential to add stations 334 and 335 to the 20mm Survey for the remainder of the year. The Working Group discussed the high outflow and relatively fresh state of the delta so far this year and decided that additional data from these stations in the eastern San Pablo Bay would assist discussions and assessment of risk.

WEEKLY ADVICE FOR THE DEPARTMENT OF FISH AND GAME FOR LONGFIN SMELT

Recommendation for week of April 18, 2011:

The Smelt Working Group does not have any advice based on longfin smelt information. San Joaquin River at Vernalis flows and Sacramento River flows at Rio Vista are both above levels that indicate virtually no risk entrainment.

Basis for recommendation:

The 2009 State Water Project 2081 for longfin smelt states that advice to the DFG Director shall be based on:

1. Adult Salvage – total adult (≥ 80 mm) longfin smelt salvage (State Water Project + Central Valley Project) for December through February > 5 times the Fall Midwater Trawl longfin smelt annual abundance index.
2. Adult abundance, distribution or other information indicates that OMR flow advice is warranted.
3. Larva distribution in the Smelt Larva Survey or the 20mm Survey finds longfin smelt larvae present at 8 of 12 Central and South Delta sampling stations in 1 survey (809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, and 919).
4. Larva catch per tow exceeds 15 longfin smelt larvae or juveniles in 4 or more of the 12 survey stations listed.

As of April 3, no longfin smelt have been salvaged since the first longfin smelt of the season was salvaged on January 14, 2011 and none have been collected in the central or south Delta in fish surveys in March or April. No advice is warranted based on this criterion.

Longfin smelt larvae were detected during the Smelt Larva Survey #1 (January 18-19), providing evidence of spawning, which initiated SWP Longfin Smelt ITP section 5.2 to protect larval and juvenile longfin smelt. However, OMR restrictions under section 5.2 are not required when river flows are: 1) greater than 55,000 cfs on the Sacramento River at Rio Vista; or 2) greater than 8,000 cfs on the San Joaquin River at Vernalis.

San Joaquin River flow at Vernalis surpassed 8,000 cfs flow criterion on February 19th and has remained above it since (Figure 1). Sacramento River flow at Rio Vista surpassed the 55,000 cfs flow criterion about March 18 and has remained above it until about April 12 (Figure 2). As of April 17, Qwest was about 31,000 cfs (Delta Hydrologic Conditions), indicating strong westward flows and little risk of entrainment for longfin smelt larvae.

The last Smelt Larva Survey data available (#5, March 22-23) indicated that recently hatched larvae were transported westward out of the central Delta, though a few larvae continued to hatch within the Delta. The most recent 20mm Survey (#3) samples have not been completely processed; incomplete results show only a single longfin smelt larva within the Delta, though much of the north Delta was not sampled due to boat problems (Table 1). Nonetheless, the risk to longfin smelt larvae is very low. No additional advice to protect larvae is warranted at this time based on criteria 3 and 4.

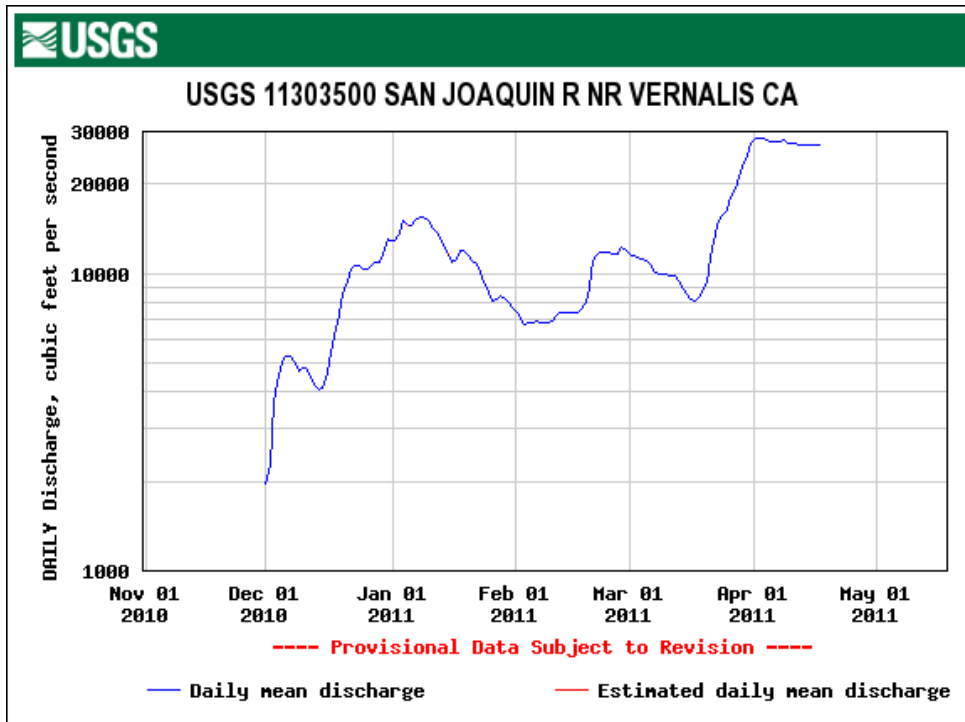


Figure 1. Tidally averaged San Joaquin River flow measured near Vernalis, December 1, 2010 through April 17, 2011.

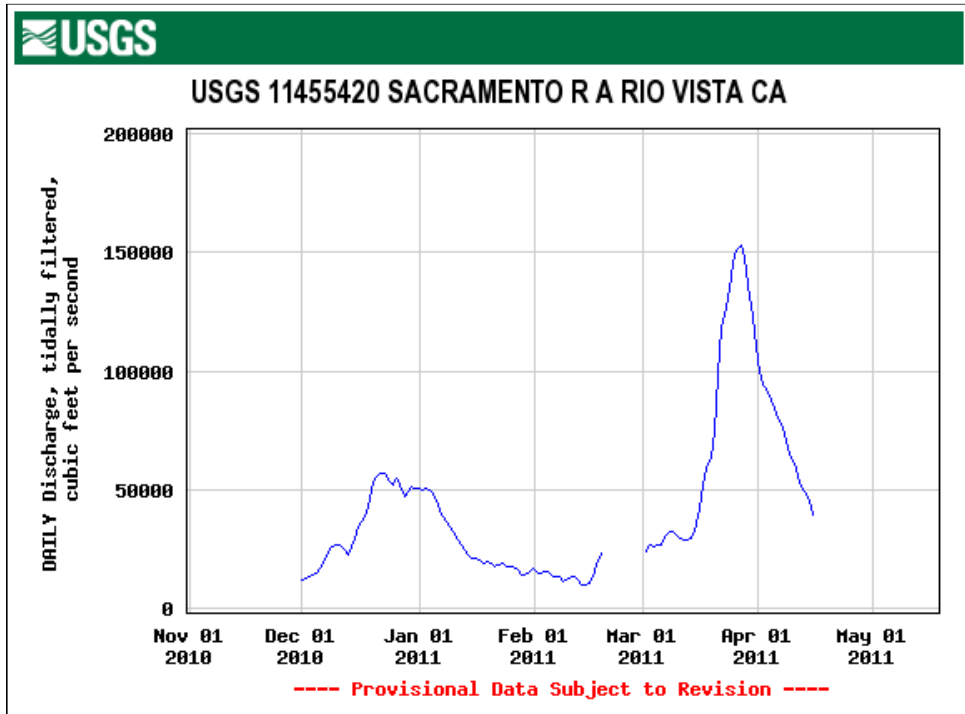


Figure 2. Tidally averaged Sacramento River flows measured at Rio Vista, December 1, 2010 through April 15, 2011

Table 1. Longfin smelt catch per station from 2011 20mm Survey, Survey 3 (sample processing incomplete).

Year	Survey	Station	Date	# Tows Processed	Species	Total Catch
2011	3	323	13-Apr-11			
2011	3	340	13-Apr-11			
2011	3	342	13-Apr-11			
2011	3	343	13-Apr-11			
2011	3	344	13-Apr-11			
2011	3	345	13-Apr-11			
2011	3	346	13-Apr-11			
2011	3	405	14-Apr-11			
2011	3	411	14-Apr-11			
2011	3	418	14-Apr-11			
2011	3	501	12-Apr-11	1	No Longfin Catch	0
2011	3	504	12-Apr-11	1	No Longfin Catch	0
2011	3	519	12-Apr-11			
2011	3	602	12-Apr-11			
2011	3	606	12-Apr-11			
2011	3	609	12-Apr-11			
2011	3	610	12-Apr-11			
2011	3	508	13-Apr-11			
2011	3	513	13-Apr-11			
2011	3	520	13-Apr-11			
2011	3	801	13-Apr-11	3	No Longfin Catch	0
2011	3	804	12-Apr-11	3	No Longfin Catch	0
2011	3	703	12-Apr-11	3	No Longfin Catch	0
2011	3	704	12-Apr-11	3	No Longfin Catch	0
2011	3	705	12-Apr-11	3	No Longfin Catch	0
2011	3	706	12-Apr-11	3	No Longfin Catch	0
2011	3	707	11-Apr-11	3	No Longfin Catch	0
2011	3	711	11-Apr-11	3	No Longfin Catch	0
2011	3	716	11-Apr-11	3	No Longfin Catch	0
2011	3	718	NOT SAMPLED			
2011	3	719	NOT SAMPLED			
2011	3	720	NOT SAMPLED			
2011	3	723	11-Apr-11	3	Longfin Smelt	1
2011	3	724	NOT SAMPLED			
2011	3	726	NOT SAMPLED			
2011	3	809	11-Apr-11	3	No Longfin Catch	0
2011	3	812	12-Apr-11	3	No Longfin Catch	0
2011	3	815	12-Apr-11	3	No Longfin Catch	0
2011	3	901	11-Apr-11	3	No Longfin Catch	0
2011	3	902	11-Apr-11	3	No Longfin Catch	0
2011	3	906	12-Apr-11	3	No Longfin Catch	0
2011	3	910	11-Apr-11	3	No Longfin Catch	0
2011	3	912	11-Apr-11	3	No Longfin Catch	0
2011	3	914	11-Apr-11	3	No Longfin Catch	0
2011	3	915	11-Apr-11	3	No Longfin Catch	0
2011	3	918	11-Apr-11	3	No Longfin Catch	0
2011	3	919	12-Apr-11	3	No Longfin Catch	0

Processing through 4/15/11

The Smelt Working Group will reconvene on Monday, April 25 at 10 am to review the updated environmental, salvage, and survey data.