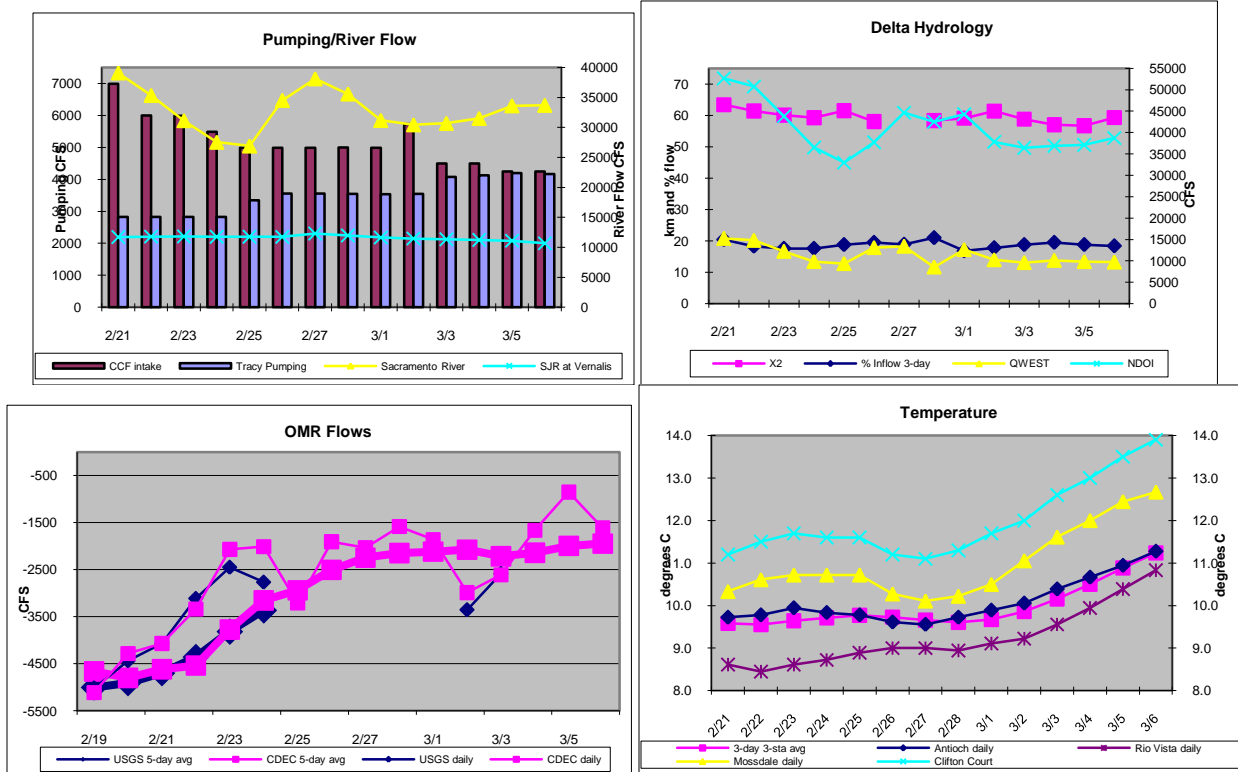


SMELT WORKING GROUP
Monday, March 7, 2011

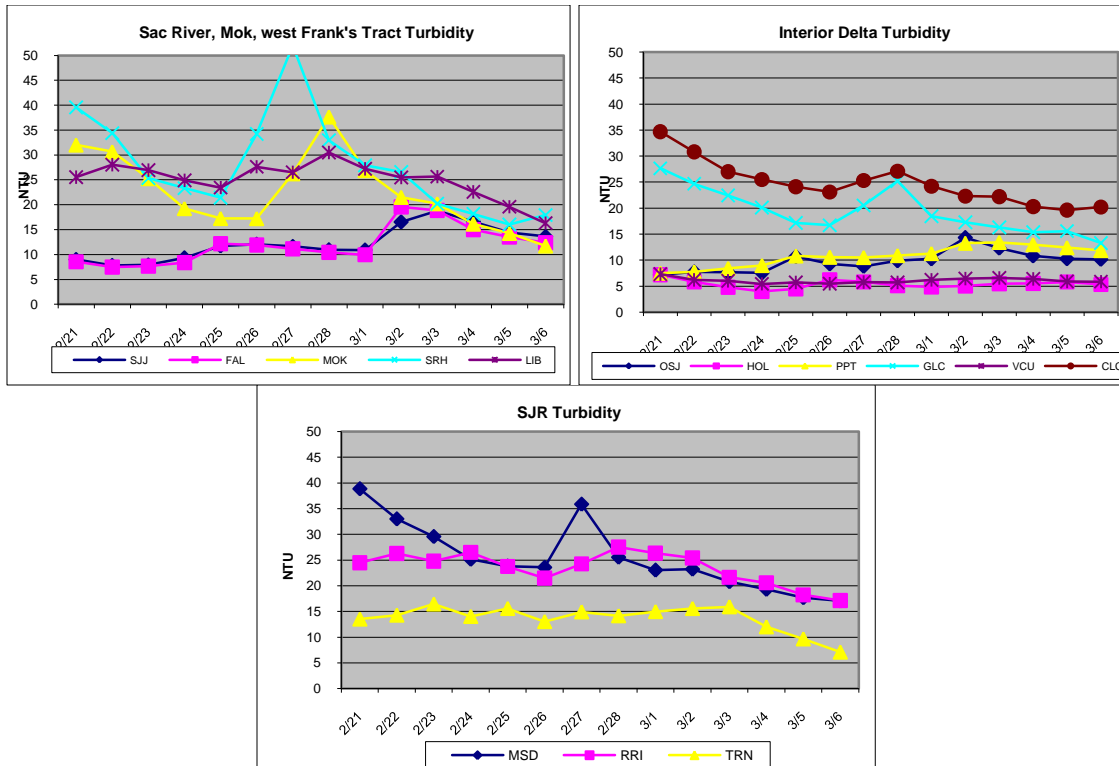
The Working Group will continue to monitor salvage, survey data, and hydrological conditions and will reconvene March 14. No recommendations were made.

1) Current environmental data.

- **Water temperature** for the 3 station average is 11.2°C.
- **OMR** USGS tidally-averaged OMR was -2,582 cfs on March 3, 2011. The 5-day average OMR was unavailable. The OMR average estimate from CDEC on March 6 was -1,614 cfs. The 5-day CDEC OMR is -1,946 cfs.
- **Flow** Sacramento River inflow is 33,688 cfs and San Joaquin 10,671 cfs. X₂ calculation from CDEC is 59.3 km. The E/I ratio is 18.4%, QWEST is 9,702 cfs, and NDOI is 38,715 cfs. The graphs below show the most recent trends in Delta hydrology and water quality that were evaluated by the Working Group.



- **Turbidity** Delta turbidities remain low, except for localized short-term increases due to windy conditions.



2) Delta fish monitoring:

Smelt Larva Survey #4 was completed last week. No delta smelt were collected. Longfin smelt larva were collected mostly downstream of the confluence. The final SLS will be the week of March 21. Spring Kodiak Trawl #3 is in the field this week. 20mm Survey #1 is in the field next week. 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 18 through March 6. Four adult delta smelt were salvaged at the CVP on January 15 and 17 and on February 24, for a total of 12 fish. No salvage has been reported for longfin smelt or delta smelt at the SWP since June 2010. Criteria for the implementation of an action were not met or exceeded.

4) Expected Project Operations

Combined CVP/SWP exports are around 8,600 cfs as of March 6. The CVP filled their share of San Luis Reservoir on February 6 and have reduced their pumping to match demand, which currently is capacity for the CVP. The SWP expects to fill San Luis Reservoir on March 9. The projects are operating to meet the -2,500 cfs OMR flow requirement (as per the NMFS

Biological Opinion) through today. Pending salvage data for today, the projects plan to operate to meet -5,000 cfs OMR flow as of March 10.

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.

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 estimated that the overall risk of entrainment was low given the distributional data from recent surveys. Hydrology and turbidity remain 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 low central and south Delta turbidity and the anticipated level of flow for the San Joaquin River.

The 3-day, 3-station average is approaching 12 degrees C, the point at which Action 3, entrainment protection of larval smelt, may be initiated based upon the assumption that delta smelt spawning is in progress. Once criteria for the implementation of Action 3 are met or exceeded, the Working Group will 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 (*see* 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 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.

The Working Group held a detailed discussion of the factors that influence entrainment of adult delta smelt at the SWP and CVP facilities. The discussion included first flush dynamics and annual OMR-salvage relationships that support RPA Actions 1 and 2. New analyses of the salvage data (salvage/previous FMWT) show that entrainment risk for adult smelt increases under the following conditions: 1) when OMR flows are more negative than -5,000 cfs, 2) when turbidity increases from about 10 to 20 NTU, and 3) when X2 is between 55 and 75 km. It was noted that water clarity in the Delta has increased in recent years and this may be one mechanism that has contributed to lower entrainment in recent years.

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

Recommendation for week of March 7, 2011:

The Smelt Working Group does not have any advice based on longfin smelt information. San Joaquin River at Vernalis flows surpassed 8,000 cfs on Saturday February 19 and continues above that level.

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, 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 February 21, 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 February. 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 and initiating 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. Sacramento River flow at Rio Vista was briefly

above 55,000 cfs December 21-23 and San Joaquin River flow surpassed 8,000 cfs on December 20 and dropped below the 8000 cfs on January 31. San Joaquin River flow surpassing 8,000 cfs once again on February 19th and increased above 12,000 cfs on February 27, then began a slow decline to 10,300 cfs on March 6 (Figure 1). Sacramento River flow has fluctuated well below the 55,000 cfs criterion level (Figure 2).

San Joaquin River flows remain above the 8,000 cfs threshold, indicating little risk of entrainment for longfin smelt larvae. During Smelt Larva Survey (SLS #3, February 14 and 15), the larva distribution trigger was surpassed (criteria #3 above) and **OMR flow advice was warranted. However, no advice is given, because Qwest remained positive and San Joaquin River flows surpassing the 8000 cfs threshold, relaxing longfin smelt larval concerns.** During Smelt Larva Survey 4, longfin smelt larvae were only caught at 4 of 12 central and south Delta criteria stations, with only one remaining to be processed (Table 1). The low frequency of detection and low catches at positive stations indicate that the strongly positive Qwest (>8,500 cfs since February 19) has transported previously hatched larvae westward and that recent hatching has not replenished larva numbers within the central and south Delta. No additional advice to protect larvae is warranted at this time based on criteria 3 and 4.

Barker Slough export pumping advice shall apply January 15 through March 31 of dry and critically dry years. Currently the Sacramento River is classified as below normal (<http://cdec.water.ca.gov/cgi-progs/reports/EXECSUM>), so no Barker Slough advice is warranted.

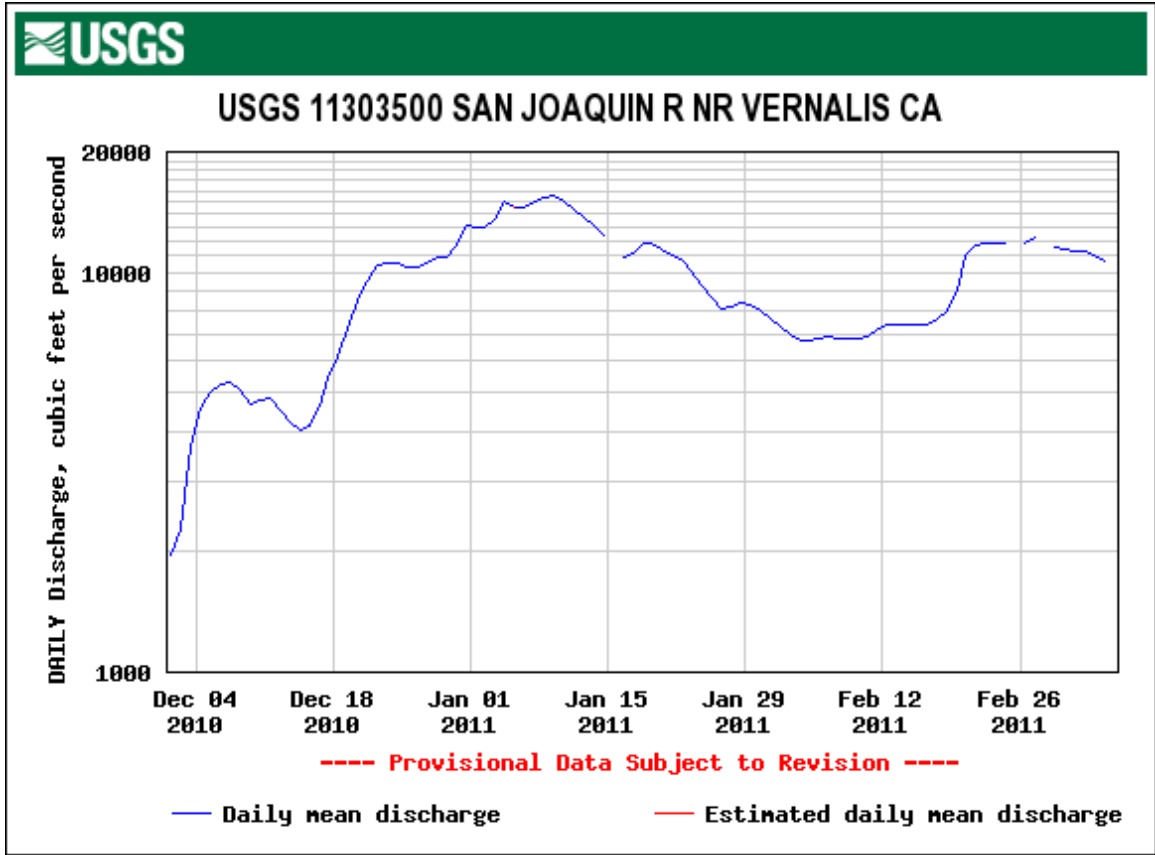


Figure 1. Tidally averaged San Joaquin River flow measured near Vernalis, December 1, 2010 through March 6, 2011.

No recent flow information calculated

Figure 2. Tidally averaged Sacramento River flows measured at Rio Vista, December 1, 2010 through March 6, 2011.

Table 1. Longfin smelt catch per station from 2011 Smelt Larva Survey, Survey 4 (sample processing almost complete).

Year	Survey	SLS Station	Sample Status	Species	Smelt Catch
2011	4	405	Processed	Longfin Smelt	137
2011	4	411	Processed	Longfin Smelt	297
2011	4	418	Not yet processed		
2011	4	501	Processed	Longfin Smelt	46
2011	4	504	Processed	Longfin Smelt	65
2011	4	508	Processed	Longfin Smelt	51
2011	4	513	Processed	Longfin Smelt	40
2011	4	519	Processed	Longfin Smelt	39
2011	4	520	Processed	Longfin Smelt	23
2011	4	602	Processed	Longfin Smelt	61
2011	4	606	Not yet processed		
2011	4	609	Processed	Longfin Smelt	51
2011	4	610	Processed	Longfin Smelt	10
2011	4	703	Processed	Longfin Smelt	3
2011	4	704	Processed	Longfin Smelt	14
2011	4	705	Processed	Longfin Smelt	13
2011	4	706	Processed	Longfin Smelt	14
2011	4	707	Processed	Longfin Smelt	28
2011	4	711	Processed	Longfin Smelt	2
2011	4	716	Processed	Longfin Smelt	13
2011	4	723	Processed	Longfin Smelt	16
2011	4	801	Processed	Longfin Smelt	10
2011	4	804	Processed	Longfin Smelt	1
2011	4	809	Processed	Longfin Smelt	2
2011	4	812	Not yet processed		
2011	4	815	Processed	Longfin Smelt	2
2011	4	901	Processed	Longfin Smelt	3
2011	4	902	Processed	Longfin Smelt	1
2011	4	906	Processed		No Smelt Catch
2011	4	910	Processed		No Smelt Catch
2011	4	912	Processed		No Smelt Catch
2011	4	914	Processed		No Smelt Catch
2011	4	915	Processed		No Smelt Catch
2011	4	918	Processed		No Smelt Catch
2011	4	919	Processed		No Smelt Catch

SWP ITP Criteria Stations

Processing through 3/2/11

The Working Group will reconvene on Monday, March 14 at 10am to review the updated flow, turbidity, and other appropriate data.