

SMELT WORKING GROUP Monday, March 5, 2012

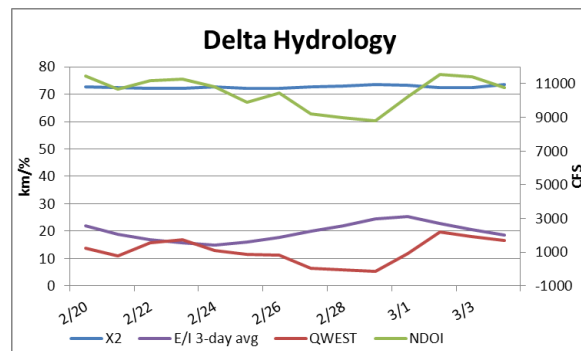
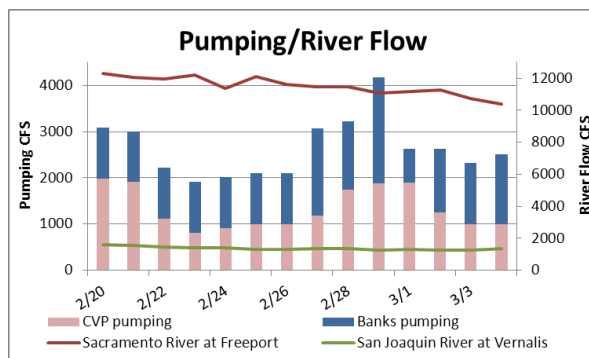
Meeting Summary:

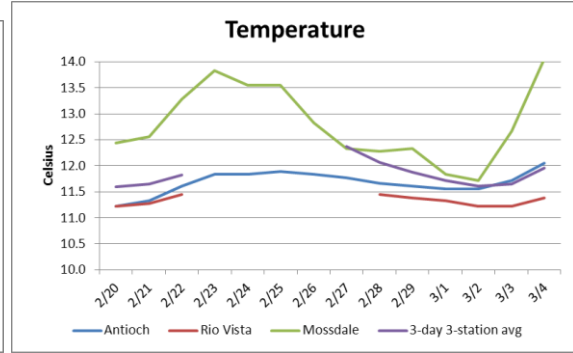
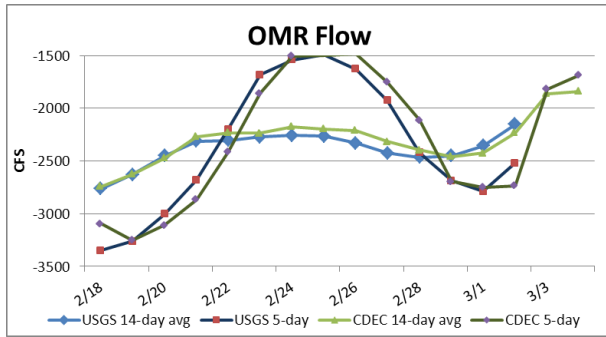
The Working Group agreed that given their present distribution, low levels of salvage, and current Delta conditions, risk of entrainment of delta smelt remains low and therefore, the Working Group recommends that no change in operations is necessary to adequately protect delta smelt from entrainment. The Working Group also agreed that given their present distribution, existing constraining conditions was sufficient to protect longfin smelt. The Working Group will continue to monitor smelt salvage, adult and larval smelt survey data, and delta hydrological conditions and will reconvene March 12, 2012, at 10am.

Reported Data:

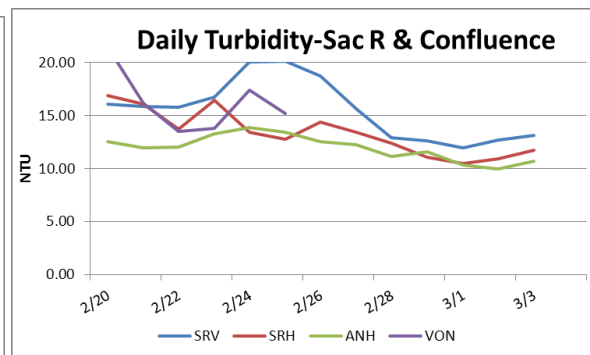
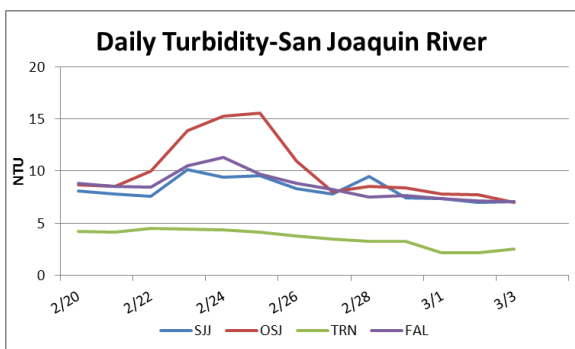
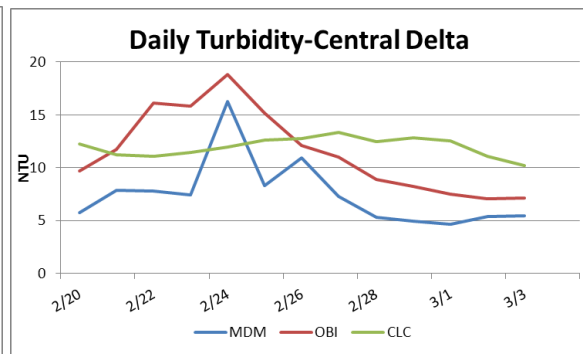
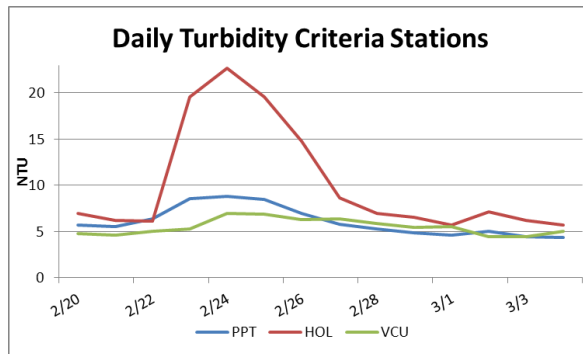
1) Current environmental data:

- **Water temperature** for the 3 station average is 12°C.
- **OMR:** USGS tidally-averaged OMR 5-day average for March 2 was -2,518cfs and the 14-day average was -2,153cfs. CDEC 5-day average on March 4 was -1,686cfs and the 14-day average was -1,839cfs.
- **Flow:** Sacramento River inflow is 10,378cfs and San Joaquin River is 1,342cfs. X_2 calculation from CDEC is 73.58km. The NDOI, Qwest, and E/I were 10,776cfs, 1,681cfs, and 18.4% as of March 4. The graphs below show the most recent trends in Delta hydrology and water quality that were evaluated by the Working Group.





● **Turbidity:**



2) Delta Fish Monitoring:

Smelt Larval Survey #5 and Spring Kodiak Trawl #3 are both in the field this week. All stations catch have been processed from SLS #4. See “WEEKLY ADVICE FOR THE DEPARTMENT OF FISH AND GAME FOR LONGFIN SMELT” for additional details. The annual FMWT Delta Smelt Index for 2011 is 343 (sum of all four months). The 2011 Delta Smelt Recovery Index (based on September and October) is 55. 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 CDFG surveys are available online at: <http://www.dfg.ca.gov/delta/>.

3) Salvage:

The cumulative total for adult delta smelt for WY 2012 is 146. The table below details daily estimated adult delta smelt salvage for the season:

Table 1: Estimated daily adult delta smelt salvage for WY 2012

Delta Smelt				Longfin Smelt			
Date	CVP	SWP	Total	Date	CVP	SWP	Total
1/18	4	0	4	2/29	8	0	8
1/24	4	0	4				
1/25	4	0	4				
1/26	5	0	5				
1/27	2	0	2				
1/28	4	0	4				
1/30	12	0	12				
1/31	1	0	1				
2/1	3	0	3				
2/3	4	0	4				
2/10	4	0	4				
2/13	4	0	4				
2/14	4	0	4				
2/15	1	0	1				
2/17	2	0	2				
2/18	4	0	4				
2/20	4	0	4				
2/21	4	0	4				
2/22	8	0	8				
2/23	0	4	4				
2/24	0	12	12				
2/25	0	4	4				
2/27	4	18	22				
2/28	4	4	8				
2/29	0	10	10				
3/1	0	2	2				

Post-larvae or young juvenile (< 20 mm) longfin smelt were observed in daily larval fish samples from both facilities during February 28 – March 3.

Current delta and longfin smelt salvage information can be downloaded from DFG’s salvage FTP site at <ftp://ftp.dfg.ca.gov/salvage/Daily%20Smelt%20Summary/> or queried from DFG’s salvage web page at <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>

4) Expected Project Operations:

Combined CVP/SWP exports are approximately 2,500cfs as of March 4. Combined exports are presently curtailed to comply with the NMFS RPA OMR restriction of -2,500cfs to protect winter-run Chinook salmon.

The current OMR target of -2,500cfs was triggered by Delta salvage densities greater than 8 fish/TAF (NMFS second stage trigger in Action IV.2.3). This action will end when the salvage facilities record three consecutive days of densities less than 8 fish/TAF at which time the OMR target would go back to -5,000cfs or -3,500cfs, depending on the precise salvage density.

5) Particle Tracking Modeling:

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

6) Assessment of Risk:

Background:

The collection of a spent female in the SKT Survey #2 on February 15 indicates that delta smelt spawning has begun. The Working Group discussed the risk of entrainment for larval delta smelt and any discussion of a recommendation was intended to protect larval delta smelt (B.O., p 282). The Working Group will follow the guidance for Action 3 of the B.O. (pp. 357-368).

Combined incidental take levels for State and federal fish facilities are based on the most recent FMWT abundance index. The 2011 FMWT index for delta smelt is 343. This means that the authorized incidental take of adults is 2,487 (estimated) and the concern level is 1,862 (estimated), cumulative for the December through March period.

Table 2: Incidental Take Levels for the Larval/Juvenile life stage (cumulative)

	Concern Level	Take Limit
April	101	151
May	4,471	6,705
June	11,327	16,991
July	12,851	19,276

Discussion: The Working Group reviewed and discussed all relevant data from fish surveys, Delta monitoring, salvage, and planned Project operations. Low levels of salvage continue at the CVP and have begun at the SWP. The overall Delta conditions, low salvage and preliminary survey data indicate a low risk of entrainment.

7) Longfin Smelt:

Longfin smelt larval distribution (Smelt Larva Survey 1, January 9-10) exceeded the criteria for advice from the SWG under the SWP's 2081 permit; CDFG therefore requested that the

Working Group discuss entrainment risk for longfin smelt. The 2081 identifies OMR flow between -1250 and -5000cfs as the range to select from in determining a level adequately protective of longfin larvae. Because relatively few larvae were collected in the central and south Delta for SLS #4 (and less than SLS #3) the risk is currently low. Qwest remains positive and Delta outflow also has generally been maintained above 10,000cfs, all of which should assist larvae in moving downstream and out of the central and south Delta.

See “WEEKLY ADVICE FOR THE DEPARTMENT OF FISH AND GAME FOR LONGFIN SMELT” for additional details regarding this discussion.

The Working Group will hold the next call on March 12.

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

Advice for week of March 5, 2012:

The Smelt Working Group believes that OMR no more negative than -5000 cfs is protective of longfin smelt at this time.

Summary of risk: Risk of entrainment is currently low. Larva densities decreased slightly in the central and south Delta for the second consecutive survey in Smelt Larva Survey 4. This decline took place sooner than expected. OMR constraints by the Salmonid BO and recent hydraulic conditions in the interior Delta likely minimized larvae entrainment at the south Delta export facilities. Nonetheless, larvae and recently small juveniles were salvaged in low numbers. Smelt Larva Survey 1 information triggered the distribution criterion and a request for advice on 17 January. Smelt Larva Survey 2 revealed increased hatching of larvae at criteria stations as expected based on past catch densities, but was followed by slightly declining densities in both Surveys 3 and 4. Qwest turned positive on 8 February and has remained mostly positive through 28 February. A positive Qwest should have resulted in slow net transport westward out of the Delta for larvae hatched within the lower San Joaquin River. An OMR of -2500 cfs is protective of longfin smelt larvae. During the period 24-29 February OMR was targeted at -2500 to protect winter-run salmon, but has reverted back to -5000 cfs afterwards. Currently, OMR restrictions are for -2500 again. Barker Slough exports and criteria were not discussed, but exports have increase from 12 cfs to 29 cfs which pose an increased entrainment risk to longfin smelt larvae in the vicinity.

Basis for advice:

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 (SWP+CVP) 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.
5. For Barker Slough Exports only: After January 15 of critically dry or dry water years (Sacramento River), based on abundance and distribution and detection at Station 716.

Discussion of Criteria and Conditions

Review of past information: Longfin smelt larvae were collected in the Smelt Larva Survey #1 (January 9-10, 2012), so adult salvage and distribution are now informational and can be viewed as suggestive possible future larvae distribution. As of 5 March 2012, no ≥ 80 mm longfin smelt have been salvaged for the water year, but larva sampling began at both facilities 16 February, and longfin smelt larvae were detected by the State on 19 February and at both facilities 20 February. The Fall Midwater Trawl longfin smelt annual abundance index for 2011 is 477. The total adult salvage level threshold for advice is 2385 (see criterion in #1).

December Fall Midwater Trawl and Bay Study surveys collected adult longfin smelt in the San Joaquin River just downstream and just upstream of the Antioch Bridge. In early January, Bay Study collected adult longfin smelt as far upstream as San Andreas Shoals on the San Joaquin River. The first Smelt Larva Survey of 2012 caught longfin smelt larvae at 9 of 12 criteria stations in the central and south Delta (criterion #3, Figure 1) triggering the need for advice. Larva catches (densities) were very low during survey 1 and hydraulic conditions at the time posed little risk to longfin smelt larvae. Larvae numbers increased in Smelt Larva Survey 2, and then declined slightly in survey 3 and again in survey 4.

Review of new and current information: Smelt Larva Survey 4 (21-22 February 2012) detected decreasing numbers of longfin smelt larvae in the central and south Delta criteria stations (criterion #3 and Table 1 below). This observation suggests decreased risk to entrainment. Also, Qwest increased positively to about 1690 cfs (5 March), which would tend to move larvae downstream away from the area of entrainment. Nonetheless, since first detected longfin smelt larvae have been detected almost daily at the SWP and regularly at the CVP; 8 small juveniles were salvaged at the CVP on 29 February and 4 more on 3 March.

Combined State and federal exports were coordinated to achieve -2500 cfs OMR for the period 24-29 February to protect winter-run Chinook salmon, later relaxed to -5000 cfs, and last week resumed back to -2500 cfs. San Joaquin River flow is staying about 1300 cfs as of 5 March. OMR, estimated for 5 March, was -1849 cfs (CDEC 14-day average). Such flows will not strongly draw longfin smelt larvae into the central Delta. Given the relatively low densities of longfin smelt larvae in the central and south Delta, -2500 cfs OMR remains protective.

Barker Slough exports were not discussed, but have been between 12 and 29 cfs over the past week and do not pose an immediate risk to longfin smelt larvae. Barker Slough exports can pose a risk to longfin smelt larvae (concern period 15 January through 31 March) during critically dry and dry water years when longfin smelt larvae are present. Even though larva densities remained relatively high during Smelt Larva Survey 4, such intermediate level exports do not present a major risk to longfin smelt larvae.

Table 1. Longfin smelt and delta smelt catch per station from 2012 Smelt Larva Survey, Survey 4.

Year	Survey	SLS Station	Sample Status	Species	Smelt Catch
2012		405	Not yet processed		
2012		411	Not yet processed		
2012		418	Not yet processed		
2012		501	Not yet processed		
2012		504	Not yet processed		
2012	4	508	Processed	Longfin Smelt	158
2012	4	513	Processed	Longfin Smelt	68
2012	4	519	Processed	Longfin Smelt	52
2012	4	520	Processed	Longfin Smelt	49
2012		602	Not yet processed		
2012		606	Not yet processed		
2012		609	Not yet processed		
2012		610	Not yet processed		
2012	4	703	Processed	Longfin Smelt	47
2012	4	704	Processed	Longfin Smelt	89
2012	4	705	Processed	Longfin Smelt	12
2012	4	706	Processed	Longfin Smelt	50
2012	4	707	Processed	Longfin Smelt	42
2012	4	711	Processed	Longfin Smelt	5
2012	4	716	Processed	Longfin Smelt	39
2012	4	723	Processed	Longfin Smelt	31
2012	4	801	Processed	Longfin Smelt	84
2012	4	804	Processed	Longfin Smelt	62
2012	4	809	Processed	Longfin Smelt	26
2012	4	812	Processed	Longfin Smelt	15
2012	4	815	Processed	Longfin Smelt	2
2012	4	901	Processed	Longfin Smelt	22
2012	4	902	Processed	Longfin Smelt	5
2012	4	906	Processed	Longfin Smelt	5
2012	4	910*	Processed	Longfin Smelt	1
2012	4	912	Processed		No Smelt Catch
2012	4	914	Processed	Longfin Smelt	3
2012	4	915	Processed	Longfin Smelt	5
2012	4	918	Processed	Longfin Smelt	6
2012	4	919	Processed		No Smelt Catch

*5 Minute tow (standard is 10 minutes)
 Processing complete through 02/24/2012

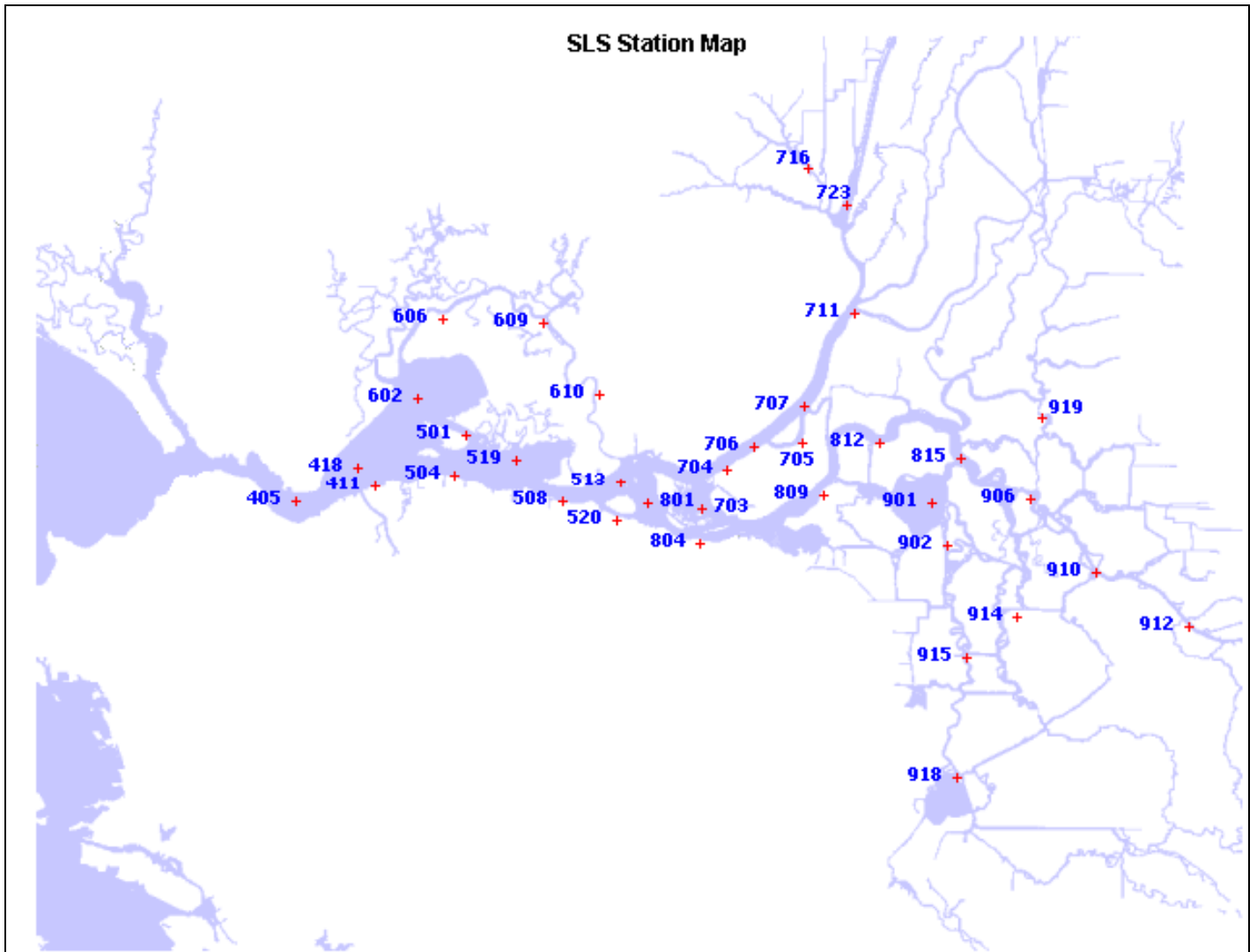


Figure 1. DFG's Smelt Larva Survey station locations.