

SMELT WORKING GROUP
Monday, March 26, 2012

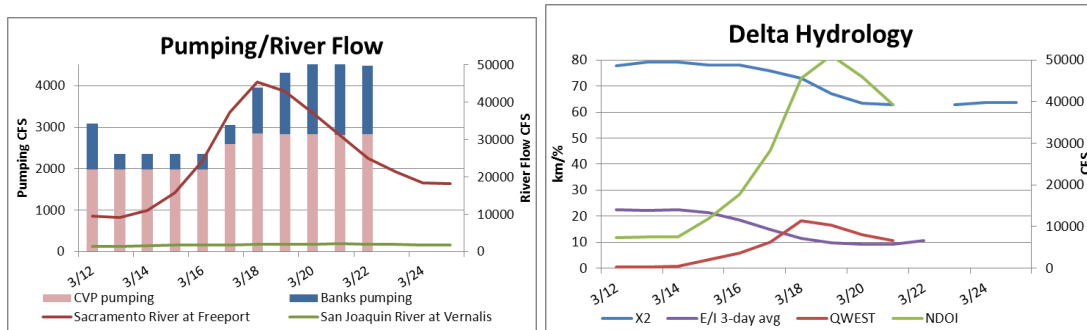
Meeting Summary:

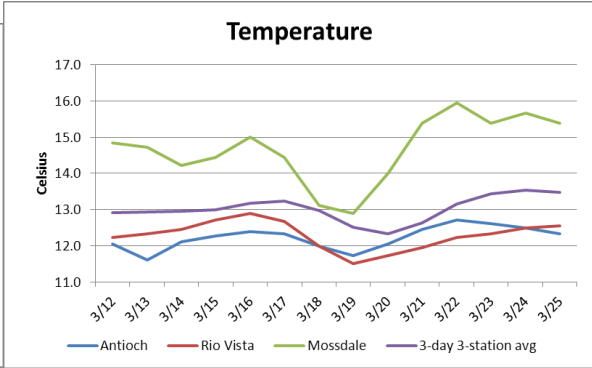
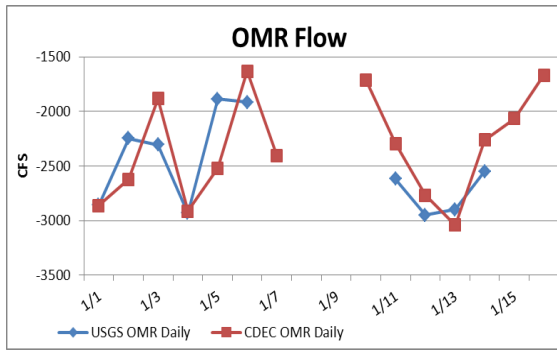
The Working Group agreed that given their present distribution, current salvage, and Delta conditions, risk of entrainment of delta smelt remains low and therefore, the Working Group recommends that no change in operations is necessary to adequately protect delta smelt from entrainment through Friday, March 30. 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 30, 2012, at 10 am.

Reported Data:

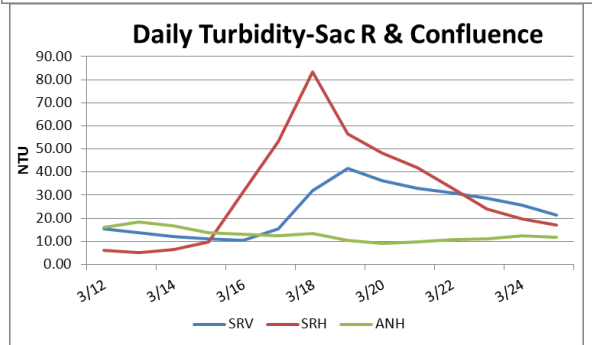
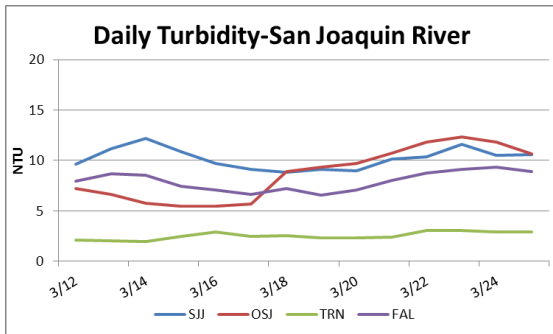
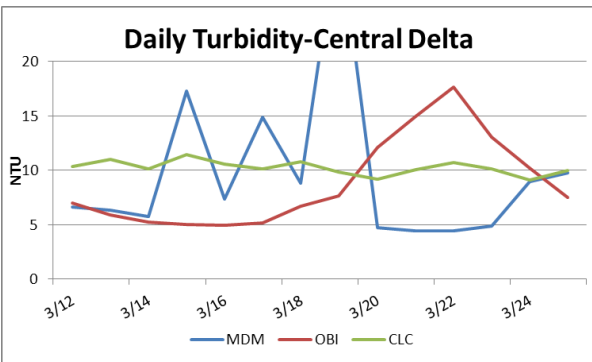
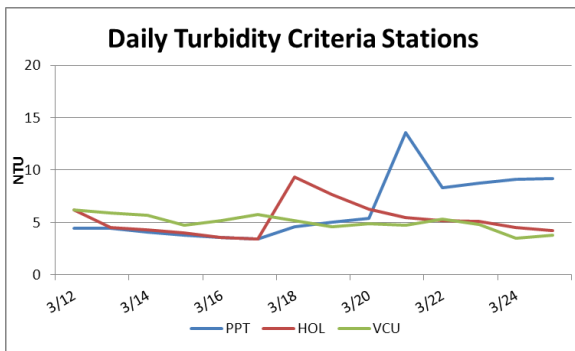
1) Current environmental data:

- **Water temperature** for the 3 station average is 13.5°C.
- **OMR:** USGS tidally-averaged OMR 5-day and 14-day averages currently are unavailable. CDEC 5-day average on March 25 was -2,361 cfs. CDEC 14-day average currently is unavailable.
- **Flow:** Sacramento River inflow is 18,217 cfs and San Joaquin River is 1,783 cfs. X_2 calculation from CDEC is 63.74 km. 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:

20-mm Survey #1 was in the field March 12 through 15. 124 of 141 total tows have been processed. No larval delta smelt were collected, although 18 adult delta smelt were collected in Honker Bay, Montezuma Slough, Sacramento Deepwater Shipping Channel, and other stations downstream of the confluence. A total of 472 longfin smelt larvae were collected, 38 of which were collected from central and southern Delta stations. Data from other stations are being processed. 20-mm Survey #2 is in the field this week. Smelt Larval Survey #6 was in the field March 19 and 20. Data processing is ongoing. So far, 42 delta smelt larvae (5-8 mm) were collected from the lower San Joaquin River mainstem stations. Twenty-three (23) longfin smelt larvae were collected from five stations. Spring Kodiak Trawl #4 is in the field April 2. 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 198. The table below details daily estimated adult delta smelt salvage for the season:

Table 1: Estimated daily adult delta smelt salvage and estimated daily juvenile longfin smelt salvage (>20 mm) for WY2012

Delta Smelt (adults)				Longfin Smelt (YOY>20 mm)			
Date	CVP	SWP	Total	Date	CVP	SWP	Total
1/18	4	0	4	2/29	8	0	8
1/24	4	0	4	3/3	4	0	4
1/25	4	0	4	3/5	4	4	8
1/26	5	0	5	3/6	32	0	32
1/27	2	0	2	3/7	0	8	8
1/28	4	0	4	3/9	8	0	8
1/30	12	0	12	3/11	0	48	48
1/31	1	0	1	3/12	0	8	8
2/1	3	0	3	3/13	8	16	24
2/3	4	0	4	3/14	4	8	12
2/10	4	0	4	3/15	0	28	28
2/13	4	0	4	3/16	4	24	28
2/14	4	0	4	3/17	0	34	34
2/15	1	0	1	3/18	4	16	20
2/17	2	0	2	3/19	0	14	14
2/18	4	0	4	3/20	4	22	26
2/20	4	0	4	3/21	4	172	176
2/21	4	0	4	3/22	42	152	194
2/22	8	0	8	3/23	3	122	130
2/23	0	4	4	3/24	12	144	156
2/24	0	12	12	3/25	4	82	86
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				
3/2	0	6	6				
3/5	0	4	4				
3/6	4	20	24				
3/9	4	0	4				
3/11	4	4	8				

3/13	0	4	4				
3/17	4	0	4				
3/24	4	0	4				

Post-larvae or young juvenile (< 20 mm) longfin smelt were observed in daily larval fish samples from both facilities during February 28 – March 25.

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 2,500 cfs as of March 25. Combined exports are presently curtailed to comply with the NMFS RPA OMR restriction of -2,500 cfs to protect winter-run Chinook salmon.

The current OMR limit of -2,500 cfs was triggered by Delta export facilities loss densities greater than 5.0 unclipped older juvenile Chinook salmon (considered to be comprised mainly of winter-run sized fish by date) / TAF on March 21, 2012. Based on preliminary loss density over the weekend and made available Monday morning (3/26/2012), OMR flows will be held at -2,500 cfs until at least Thursday, March 28, 2012. Relaxation of the OMR flow restrictions at that time will be based on loss density data collected during the next 3 days. Relaxation of the OMR flow restrictions require 3 consecutive days below the loss density trigger point of 5.0 but greater than 2.5 fish/TAF to go to -3,500 cfs.

5) Particle Tracking Modeling:

The Working Group did not request PTM runs for this week. PTM runs assuming -2,500 cfs OMR through March 31, -2,000 cfs OMR from April 1 through 7, and -3,500 cfs OMR from April 8 through 20 will be discussed at the next Working Group meeting.

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 both the CVP and SWP. The overall Delta conditions, low salvage and survey data indicate a low risk of entrainment, with the exception of the larval delta smelt collected in SLS #6 in the lower San Joaquin River. The Working Group noted that present restrictions on operations by NMFS should adequately protect emerging larvae in the lower San Joaquin River. As operations are yet to be set beyond March 30, and as remaining results from SLS#6 are still forthcoming, the Working Group decided to meet on March 30 to discuss updated conditions and to make additional recommendations through April 2.

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 -1,250 and -5,000 cfs as the range to select from in determining a level adequately protective of longfin larvae. Because few larvae were collected in the central and south Delta for 20-mm Survey #1 (39 total) the risk is currently low. Qwest remains positive and Delta outflow has been greater than 20,000 cfs since March 17, which should assist the remaining 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 30 at 10 am.

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

Advice for week of March 26, 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 substantially in the central and south Delta in Smelt Larva Survey (SLS) 5 and remained at similar low levels

in SLS 6. Larvae continue to be salvaged in low numbers and small juveniles in modest numbers. Currently, OMR restrictions remain at -2500 cfs through 29 March, possibly longer. Barker Slough exports and criteria were not discussed, but exports recently dropped to 0 cfs, and now pose no risk of entrainment 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 followed by a substantial drop in survey 5.

Review of new and current information: Smelt Larva Survey 6 (19-20 March 2012 - partial) detected low numbers of longfin smelt larvae in the central and south Delta criteria stations (criterion #3 and Table 1 below), similar to those from survey 5. These observations indicate continued low risk of entrainment. Also, Qwest became increasingly positive beginning 15 March and reached over 10,000 cfs positive 18 and 19 March, likely leading to the lower longfin smelt numbers in the central Delta. Longfin smelt larvae or small juveniles have been detected in increasing numbers at the SWP and CVP. These larger larvae and small juveniles have been in the south Delta for weeks to months prior to detection at the facilities.

Combined State and federal exports were recently coordinated to achieve -2500 cfs OMR for the period 24-29 March to protect winter-run Chinook salmon; these flows may become less negative and may continue beyond 29 March with additional winter-run salvage or based on updated salvage information. OMR was estimated at -2360 cfs (5-day). Such flows will not strongly draw longfin smelt larvae or juveniles into the south Delta.

Barker Slough exports were not discussed, but have dropped to 0 cfs on 10 March and remained 0 since, so exports do not currently pose a 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 5, there is no current risk to longfin smelt larvae.

Table 1. Longfin smelt and delta smelt catch per station from 2012 Smelt Larva Survey, survey 6.

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		508	Not yet processed		
2012		513	Not yet processed		
2012		519	Not yet processed		
2012		520	Not yet processed		
2012		602	Not yet processed		
2012		606	Not yet processed		
2012		609	Not yet processed		
2012		610	Not yet processed		
2012		703	Not yet processed		
2012		704	Not yet processed		
2012		705	Not yet processed		
2012		706	Not yet processed		
2012		707	Not yet processed		
2012		711	Not yet processed		
2012		716	Not yet processed		
2012		723	Not yet processed		
2012		801	Not yet processed		
2012		804	Not yet processed		
2012	6	809	Processed	Longfin Smelt	6
2012	6	809	Processed	Delta Smelt	7
2012	6	812	Processed	Longfin Smelt	9
2012	6	812	Processed	Delta Smelt	16
2012	6	815	Processed	Longfin Smelt	1
2012	6	815	Processed	Delta Smelt	8
2012	6	901	Processed	Longfin Smelt	5
2012	6	901	Processed	Delta Smelt	3
2012	6	902	Processed	Longfin Smelt	2
2012	6	906	Processed	Delta Smelt	5
2012	6	910	Processed		No Smelt Catch
2012	6	912	Processed		No Smelt Catch
2012	6	914	Processed	Delta Smelt	1
2012	6	915	Processed		No Smelt Catch
2012	6	918	Processed		No Smelt Catch
2012	6	919	Processed	Delta Smelt	2

SWP ITP Criteria Stations

Processing complete through 03/22/2012

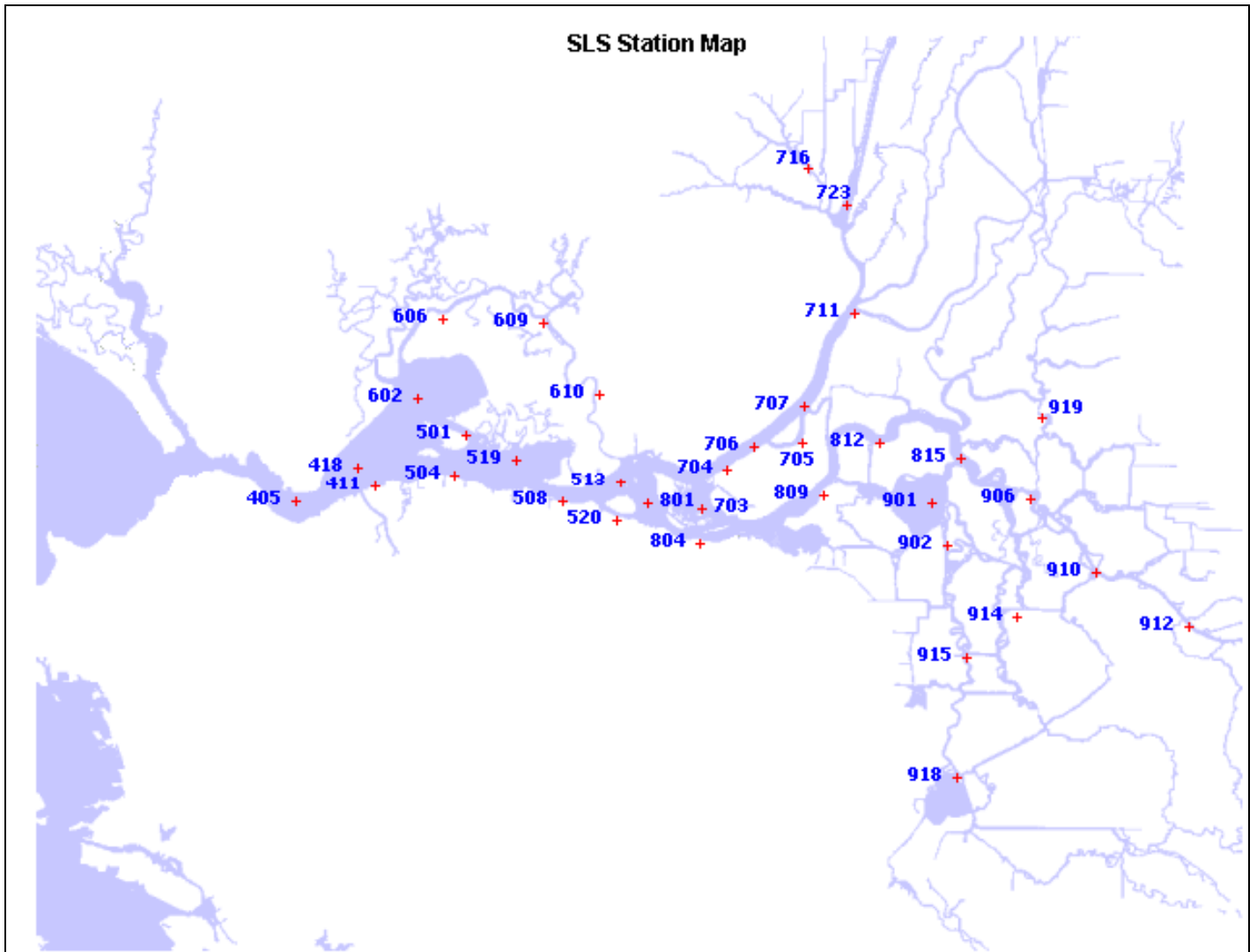


Figure 1. DFG's Smelt Larva Survey station locations.