

SMELT WORKING GROUP
Monday, January 23, 2012

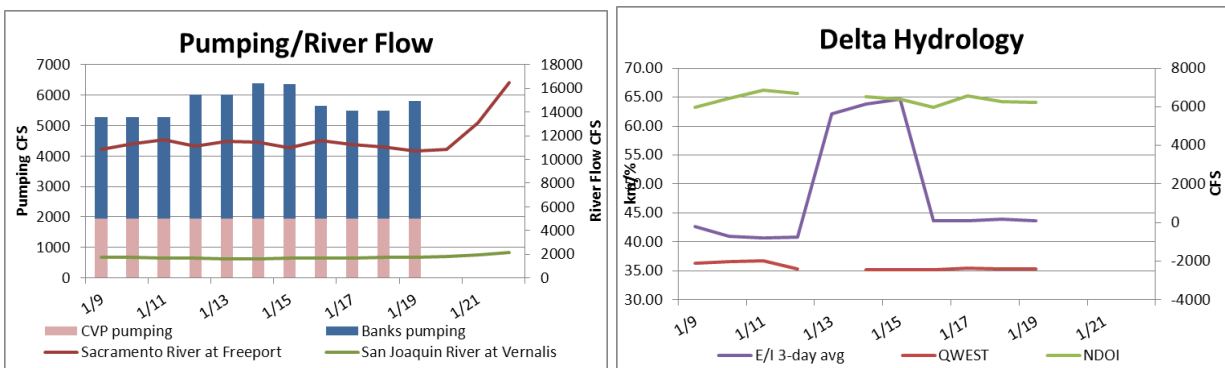
Meeting Summary:

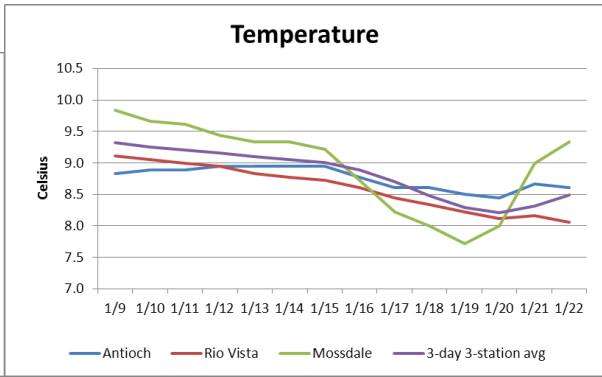
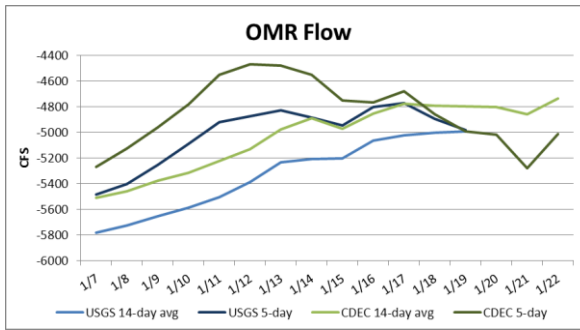
The Working Group will continue to monitor salvage, survey data, and hydrological conditions and will reconvene January 30 at 10am, if conditions warrant. The Working Group agreed that given their present distribution, no change in salvage since 1/18/12, and turbidity levels remaining low, risk of entrainment of delta smelt remains low and therefore, no recommendation was made by the Working Group. The Working Group also agreed that given their present distribution, the NMFS -5000cfs OMR flow restriction was sufficient to protect longfin smelt.

Reported Data:

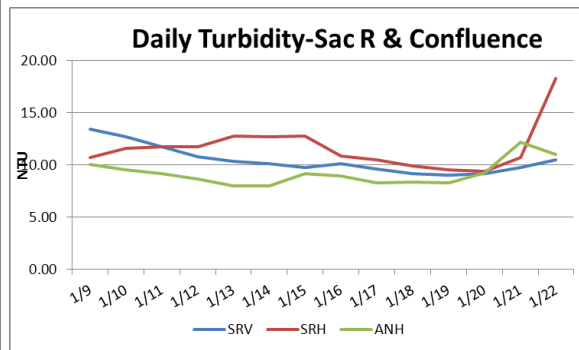
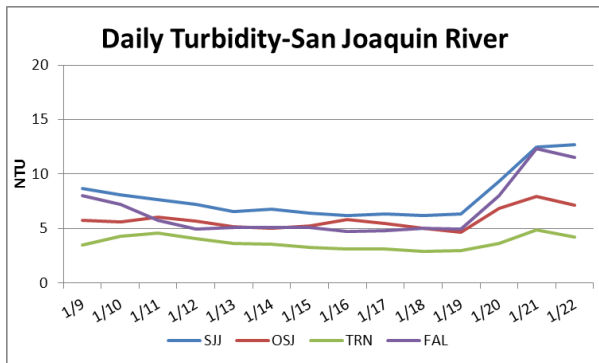
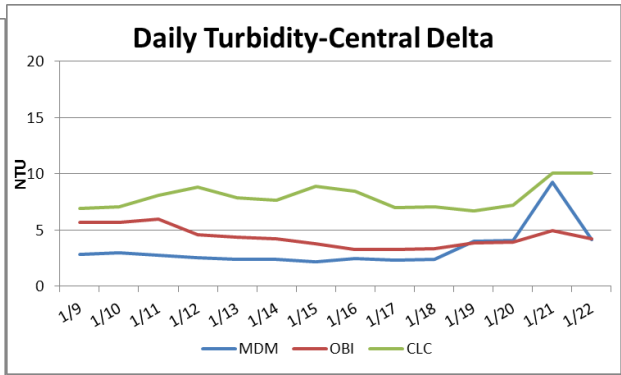
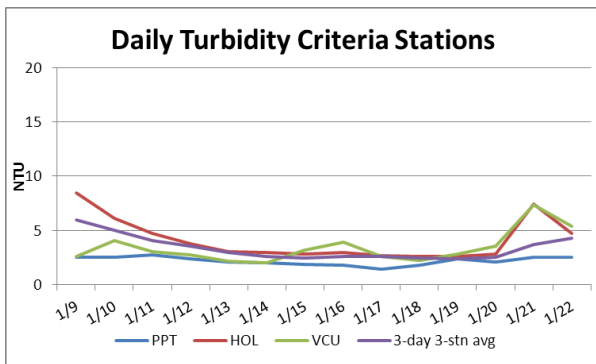
1) Current environmental data:

- **Water temperature** for the 3 station average is 8.5°C.
- **OMR:** USGS tidally-averaged OMR 5-day average for January 19 was -4,991cfs and the 14-day average was -4,982cfs. CDEC 5-day average on January 22 was -5,011cfs and the 14-day average was -4,736cfs.
- **Flow:** Sacramento River inflow is 16,505cfs and San Joaquin River is 2,153cfs. X₂ calculation from CDEC is upstream of 81km since December 8 (precise location not calculated). The NDOI and QWEST for January 22 were approximately 14,000cfs, and 2,000cfs, respectively. 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:

Results from Spring Kodiak Trawl #1 indicate most delta smelt are in the Sacramento River or downstream of the confluence. A total of 330 adult delta smelt were collected, none at interior Delta stations. Smelt Larval Survey #2 is in the field this week. 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:

No longfin smelt has been salvaged in water year 2012. A total of four delta smelt (estimated) were salvaged at the CVP facility on January 18, which brings the cumulative total for adult delta smelt for WY 2012 to four.

4) Expected Project Operations:

Combined CVP/SWP exports are approximately 6,500 cfs as of January 23. CVP will increase pumping to 3,500cfs on January 25 to meet demand. CVP share of San Luis Reservoir is 98% of capacity. SWP will decrease their pumping on January 25 to 3,000cfs to meet the NMFS RPA restriction for OMR flow no more negative than -5,000cfs.

5) Particle Tracking Modeling:

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

6) Assessment of Risk:

Background: The period covered by RPA Component 1, protection for pre-spawning adult delta smelt, Action 1(a) (pp 280-282 in the B.O. and Attachment B, pp 329-351), is December 1 through 20. Historic salvage patterns indicate that an entrainment event is unlikely during this period. The Working Group may recommend an action during this period based upon examination of turbidity and salvage data, as well as parameters such as the location of X2, apparent abundance, and river flows. The historic likelihood of an entrainment event increases after December 20, the period covered by Component 1, Action 1(b). If turbidity criteria are met or exceeded after December 20, Action 1(b), setting average daily OMR flow no more negative than -2000 cfs for a 14-day period, will begin. The salvage criteria for initiating an action are three consecutive days of salvage or a one-time salvage of 343 delta smelt (estimated). Component 1, Action 2 (pp 280-281 and Attachment B, pp 352-356) is implemented following the conclusion of Action 1.

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. Irrespective of Delta conditions, Action 1 would be initiated if salvage at the export facilities occurs on three consecutive days, or exceeds 343 on any given day (B.O. p 329).

Table 1: 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 salvage and favorable distributional information from last week’s SKT indicate delta smelt indicate a low risk of entrainment. The Working Group did not think the slightly elevated turbidity levels and flows for the Sacramento and San Joaquin Rivers were of concern.

The Service requested comments to the Annual Review Report for the Working Group be submitted no later than February 6. The Service plans to use any comments in their response to the Science Panel.

7) Longfin Smelt:

Longfin smelt larval distribution 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, the risk is currently low. However, longfin smelt hatching typically increases through January, peaking early to late February, thus risk is likely to increase unless outflow conditions change and Qwest becomes positive for a couple weeks. Qwest went from -2,400cfs on January 19 to approximately 2,000cfs on January 22. A positive Qwest should assist larval longfin smelt in moving downstream and out of the influence of the Delta pumps. 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 January 30 at 10am, if conditions warrant.

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

Advice for week of January 23, 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 given recent low larva densities in the central and south Delta, OMR constraints by the Salmonid BO and recently favorable hydrology. Distribution information from the Smelt Larva Survey 1 triggered a request for advice on 17 January, when longfin smelt larvae were found at 9 of 12 criteria stations. No new distribution information exists, though increased hatching of larvae is expected based on past catch densities. OMR is currently targeted at -5000 cfs by the salmon BO. San Joaquin River flows increased slightly and Qwest recently turned positive, indicating net transport out of the Delta within the lower San Joaquin River.

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

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 January 22, 2012, no longfin smelt have been salvaged for the water year. The Fall Midwater Trawl longfin smelt annual abundance index for 2011 is 477. The total salvage level threshold for advice is 2385 (see criterion in #1).

Past condition review: December fish surveys (Fall Midwater Trawl and Bay Study) collected longfin smelt in the San Joaquin River just downstream and just upstream of the Antioch Bridge. In early January, Bay Study collected longfin smelt as far upstream as San Andreas Shoals on the San Joaquin River, but catches have yet to be summarized.

No new information on larvae. The second Smelt Larva Survey began sampling today and will provide new information by the next meeting, Monday 30 January. The first Smelt Larva Survey of 2012 caught longfin smelt larvae at 9 of 12 criteria stations in the central and south Delta

(Table 1, Figure 1) triggering the need for advice. Larva catches (densities) at the criteria stations were very low, so the then current conditions posed little risk to longfin smelt. Larva catches and densities are expected to increase with hatching in late January and into February.

Current conditions: Combined State and federal exports are being coordinated to achieve -5000 cfs OMR stipulated by the Salmonid BO. San Joaquin River flow increased to about 2150 cfs and Sacramento River flow at 16,500 cfs as of 22 January. OMR, estimated for 22 January, was -4736 cfs (14-day average). More importantly for larvae hatching in the central Delta, Qwest averaged about 0 cfs on 21 January and +2000 cfs on 22 January, indicating net downstream movement in the lower portion of the main San Joaquin River channel.

Barker Slough exports pose a risk to longfin smelt larvae 15 January through 31 March during critically dry and dry water years, and the SWP Longfin Smelt ITP stipulates an export limit of 50 cfs when abundance, distribution, and other factors. Although the DWR's Compliance Standards page (<http://www.water.ca.gov/swp/operationscontrol/docs/delta/DeltaWQ.pdf>) indicates the current Sacramento River conditions fall into the below normal category, DFG asked for voluntary compliance with a 50 cfs export limit. Exports dropped to 39 cfs on 19 January.

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

Year	Survey	SLS Station	Sample Status	Species	Smelt Catch
2012	1	405	Not yet processed		
2012	1	411	Not yet processed		
2012	1	418	Not yet processed		
2012	1	501	Not yet processed		
2012	1	504	Not yet processed		
2012	1	508	Not yet processed		
2012	1	513	Processed	Longfin Smelt	195
2012	1	519	Not yet processed		
2012	1	520	Not yet processed		
2012	1	602	Not yet processed		
2012	1	606	Not yet processed		
2012	1	609	Not yet processed		
2012	1	610	Not yet processed		
2012	1	703	Processed	Longfin Smelt	29
2012	1	704	Processed	Longfin Smelt	132
2012	1	705	Processed	Longfin Smelt	24
2012	1	706	Processed	Longfin Smelt	47
2012	1	706	Processed	Delta Smelt*	1
2012	1	707	Processed	Longfin Smelt	46
2012	1	711	Processed		No Smelt Catch
2012	1	716	Processed	Longfin Smelt	33
2012	1	723	Processed	Longfin Smelt	26
2012	1	801	Processed	Longfin Smelt	130
2012	1	804	Processed	Longfin Smelt	38
2012	1	809	Processed	Longfin Smelt	78
2012	1	812	Processed	Longfin Smelt	9
2012	1	815	Processed	Longfin Smelt	7
2012	1	901	Processed	Longfin Smelt	1
2012	1	902	Processed	Longfin Smelt	10
2012	1	906	Processed	Longfin Smelt	4
2012	1	910	Processed	Longfin Smelt	1
2012	1	912	Processed		No Smelt Catch
2012	1	914	Processed		No Smelt Catch
2012	1	915	Processed	Longfin Smelt	1
2012	1	918	Processed	Longfin Smelt	4
2012	1	919	Processed		No Smelt Catch

SWP ITP Criteria Stations

*Adult Delta Smelt (Fork Length = 75 mm)
Processing is complete through 1/13/12

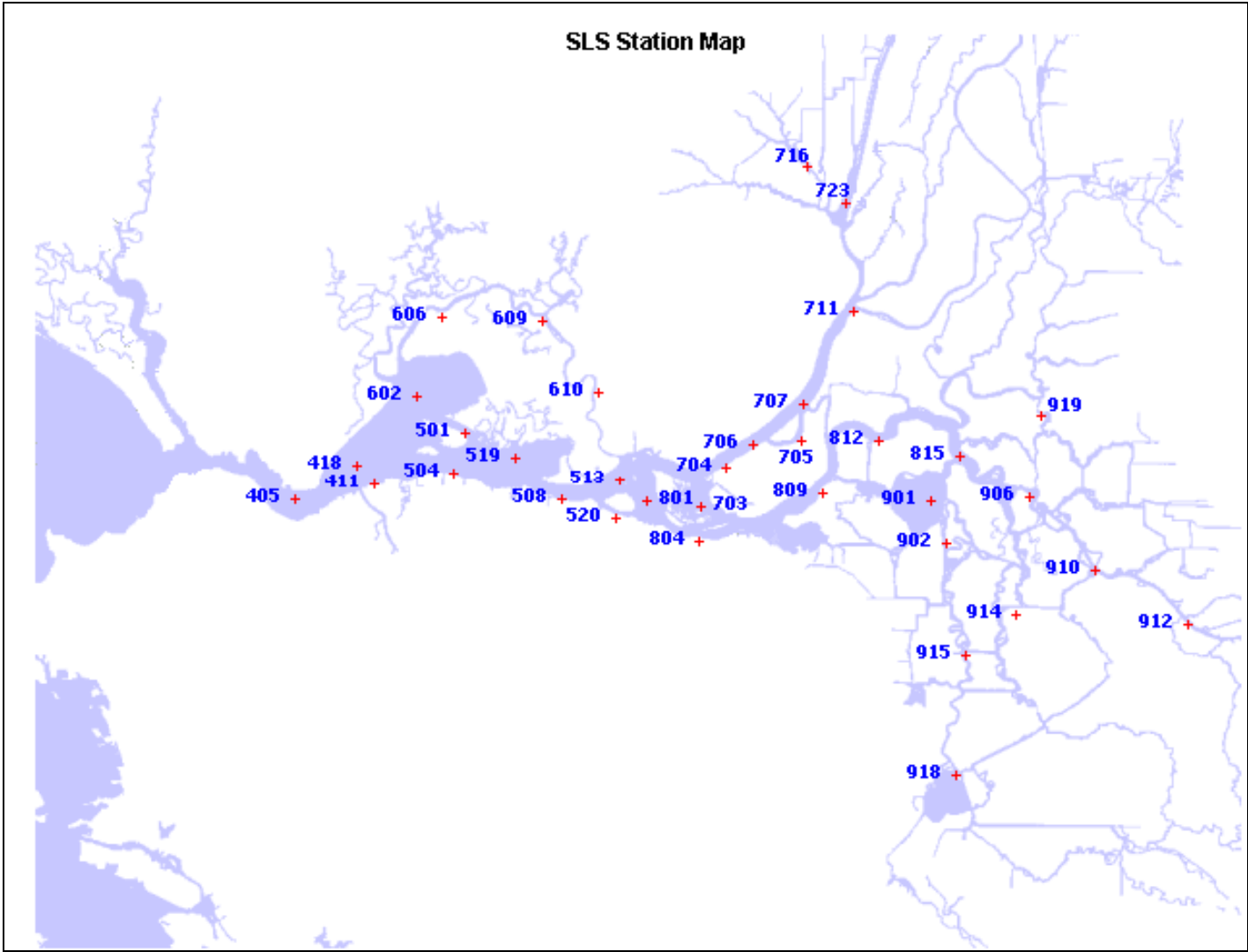


Figure 1. DFG's Smelt Larva Survey station locations.