SMELT WORKING GROUP Monday, January 31, 2011

The Working Group will continue to monitor salvage, survey data, and hydrological conditions and will reconvene February 7. No recommendation was made.

- 1) Current environmental data.
- Water temperature for the 3 station average is 9.8°C.
- OMR USGS tidally-averaged OMR was -3,469 cfs on Jan. 26, 2011. The USGS 5-day average OMR was -3,756 cfs. The OMR average estimate from CDEC on Jan. 30 was -3941 cfs. The 5-day CDEC OMR is -3,981 cfs. The OMR flow reported on the CVO website was -3,985 cfs as of Jan. 27, while the 5-day average was -4,046 cfs.
- Flow Sacramento River inflow is 20,515 cfs and San Joaquin 7,998 cfs. X₂ is 69.68km. As of Jan. 30 E/I ratio is 28.5%, QWEST is 2732 cfs and NDOI is 19,457 cfs. The graphs below show the most recent trends in Delta hydrology and water quality that were evaluated by the Working Group.



• **Turbidity** Three-day criterion station averages were 5.01NTU and 5.81NTU for Holland Cut and Victoria Canal. Data for Prisoner's Point was unavailable from January 26 through 28. Turbidity at Prisoner's Point on January 29 and 30 was 6.47 and 6.65NTU, respectively. Additionally, the Working Group reviewed turbidity data for several stations in and around the Delta.



2) Delta fish monitoring:

Smelt Larva Survey #1 was in the field the week of Jan. 18. No delta smelt larvae were collected. SLS #2 is in the field this week. Spring Kodiak Trawl #1 was in the field January 10 and collected a total of 177 delta smelt throughout the Delta, most in the Sacramento River area. SKT #2 will be in the field the week of February 7. 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.delta.dfg.ca.gov/delta

3) Salvage

No longfin or delta smelt were salvaged from Jan. 18 through 30. Four adult delta smelt were salvaged at the CVP on Jan. 15 and 17, for a total of 8 fish. No salvage has been reported for longfin smelt or delta smelt at the SWP since June 2010. Criteria for the implementation of Action 1 were not met or exceeded.

4) Expected Project Operations

Combined CVP/SWP exports are at 9,000 cfs as of January 30. Vernalis flow is expected to decrease to 6,000 cfs by Feb. 5. The projects will be operating to meet the -5,000 cfs OMR flow requirement (as per the NMFS Biological Opinion).

Both CVP and SWP expect to fill their respective shares of San Luis Reservoir. The CVP expects to fill their share by mid-February, at which point they expect to decrease pumping to match demand. The SWP did not report an anticipated fill date.

5) Particle Tracking Modeling

The Working Group did not request or receive 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).

Sacramento River and San Joaquin River flows have decreased over the past week. Flows on the San Joaquin River currently are anticipated to decrease to 6,000 cfs by Feb. 5.

The Working Group estimated that the overall risk of entrainment was low given the distributional data from recent surveys. Turbidity is low and hydrology remains favorable, which also indicates a low level of risk for entrainment. Apparent abundance remains very low, and the recent occurrence of first flush conditions raises concern for the species into the moderate range. The risk of delta smelt entering the central and south Delta likely is to remain low, due to decreasing Delta turbidity and the anticipated level of flow for the San Joaquin River. 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 asked that the Service formally follow up with the SWP regarding requested deliveries of Article 21 water, given that San Luis Reservoir is expected to fill.

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

Recommendation for week of Jan. 31, 2011:

The Smelt Working Group does not have a longfin smelt recommendation at this time.

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 (>=80mm) 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.

The first longfin smelt of the season was salvaged on Jan. 14, 2011: a single 130 mm fish was salvaged at the Central Valley Project. No other longfin smelt were salvaged through Jan. 31, 2011. The combined salvage level threshold for advice is 955 (see criterion in #1) based on a Fall Midwater Trawl longfin smelt annual abundance index of 191 for 2010. A few adult longfin smelt were collected during January fish surveys within the Delta, but all came from the Sacramento River. In early January sampling, Bay Study collected 4 longfin smelt in the Sacramento River from lower Decker Island upstream to Rio Vista, but none in the San Joaquin River. The Spring Kodiak Trawl collected 8 longfin smelt in the lower Sacramento River between 3 Mile Slough and Sherman Lake; no longfin smelt were collected in the central or south Delta. No advice is warranted based on this criterion.

San Joaquin River flow declined to just over 8,000 cfs on Jan. 30 (Figure 1; and DWR Delta Operations Summary) and Sacramento River flow declined to just over 14,000 cfs on Jan. 28 when currently available data ended (Figure 2; and 16,000 on Jan 30 based on DWR Delta Operations Summary). San Joaquin River flow remains above the lower threshold for entrainment risk to longfin smelt based on the State Water Project 2081 (i.e., 8,000 cfs at Vernalis). Also, both projects continue to operate to Old and Middle River net flows of no more negative than -5,000 cfs. Such a criterion would tend to reduce the risk of entrainment of adult longfin smelt. The most recent fish survey information for longfin smelt, the January Bay Study and Kodiak Trawl surveys, also suggests very low risk. Although adult longfin smelt are moving upstream in the estuary to spawn, fair Sacramento and high San Joaquin river flows and X2 at about 70 km in Suisun Bay continue to make it unlikely that a high proportion of the longfin smelt population will move into the Delta and spawn. This may change as flows continue to decline. Given this information, no advice is warranted based on criterion 2 at this time.

The first Smelt Larva Survey of the season was initiated on Jan. 18 and field sampling was completed Jan. 19. Complete survey 1 results depict most longfin smelt larvae distributed in the lower Sacramento River downstream into Suisun Bay (Table 1). Qwest remains positive (see delta smelt graphics above). Longfin smelt larvae were collected in very low numbers at 4 of 12 central and south Delta criteria stations. Both frequency of occurrence and catch at the positive

stations were below levels for concern (i.e., #3 and 4 above). No advice is warranted based on these criteria.



Figure 1. Tidally averaged San Joaquin River flow measured near Vernalis, Dec. 1, 2010 through Jan. 30, 2011.



Figure 2. Tidally averaged Sacramento River flows measured at Rio Vista, Dec. 1, 2010 through Jan. 28, 2011 (no data available for Jan. 29-30, 2011).

Year	Survey	SLS Station	Sample Status	Species	Smelt Catch	
2011	1	405	Processed	Longfin Smelt	37	
2011	1	411	Processed	Longfin Smelt	20	
2011	1	418	Processed	Longfin Smelt	17	
2011	1	501	Processed	Longfin Smelt	60	
2011	1	504	Processed	Longfin Smelt	24	
2011	1	508	Processed	Longfin Smelt	100	
2011	1	513	Processed	Longfin Smelt	26	
2011	1	519	Processed	Longfin Smelt	38	
2011	1	520	Processed	Longfin Smelt	35	
2011	1	602	Processed	Longfin Smelt	40	
2011	1	606	Processed	Longfin Smelt	43	
2011	1	609	Processed	Longfin Smelt	2	
2011	1	609	Processed	Delta Smelt*	1	
2011	1	610	Processed	Longfin Smelt	3	
2011	1	703	Processed	Longfin Smelt	12	
2011	1	704	Processed	Longfin Smelt	50	
2011	1	705	Processed	Longfin Smelt	11	
2011	1	706	Processed	Longfin Smelt	33	
2011	1	707	Processed	Longfin Smelt	40	
2011	1	711	Processed		No Smelt Catch	
2011	1	716	Processed	Longfin Smelt	2	
2011	1	723	Processed	Longfin Smelt	2	
2011	1	801	Processed	Longfin Smelt	1	
2011	1	804	Processed	Longfin Smelt	15	
2011	1	809	Processed	Longfin Smelt	9	
2011	1	812	Processed		No Smelt Catch	
2011	1	815	Processed		No Smelt Catch	
2011	1	901	Processed	Longfin Smelt	1	
2011	1	902	Processed	Longfin Smelt	1	
2011	1	906	Processed		No Smelt Catch	
2011	1	910	Processed		No Smelt Catch	
2011	1	912	Processed		No Smelt Catch	
2011	1	914	Processed		No Smelt Catch	
2011	1	915	Processed		No Smelt Catch	
2011	1	918	Processed		No Smelt Catch	
2011	1	919	Processed	Longfin Smelt	1	

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

*Adult Delta Smelt (Fork Length = 71 mm)

The Working Group will reconvene on Monday, Feb. 7 at 10 am to review the updated flow, turbidity, and other appropriate data.