

**SMELT WORKING GROUP**  
**Monday, February 4, 2013**

**Meeting Summary:**

The Working Group recommended that until such time that the delta smelt concern level is reached (75% of the WY 2013 incidental take limit, or 228 fish), OMR flow should be set at a 14-day average flow of no more negative than -2,500 cfs with a corresponding 5-day average flow of no more negative than -3,125 cfs. Upon reaching the concern level, the Working Group recommended that the OMR target be changed to no more negative than -1250 cfs. The Working Group will continue to monitor salvage, turbidity, and other conditions, and will reconvene Monday, February 11. The Working Group remains prepared to meet upon reaching the concern level, at the request of the Service.

**Reported Data:**

**1) Current environmental data:**

- **Water temperatures** are as follows: Rio Vista approx. 10C, Antioch approx. 9.5C, Mossdale (no data for part of 02/03) averaging approx. >10C, (Data available after the Working Group call: 11.4C)
- **OMR:** Due to the field equipment failure a 24 hour outage in data logger transmission, no OMR averages are available for 01/31, 02/01, and 02/03. USGS tidally-averaged 5-day average OMR flow and 14-day average OMR flow on February 1 was -1,268 cfs and -2,544 cfs, respectively. Daily OMR as reported on CDEC for 02/02 is -2352cfs and 02/03 is -2480cfs
- **Flow:** Sacramento River flows at Freeport are approximately 18,500 cfs and San Joaquin River is 1844 cfs. X<sub>2</sub> calculation from CDEC is at 70.9km.

**Delta Fish Monitoring:**

Spring Kodiak Trawl #2 began today, February 4. No data were available to report.

Smelt Larval Survey #3 completed a full survey (35 stations) on January 29, 2013 and all samples have been processed (see longfin smelt advice at the end of these notes). No delta smelt larvae or adults were detected. The survey did result in surpassing a distributional criterion for the State Water Project's longfin smelt ITP. A total of 2248 longfin smelt larvae were collected, 151 of which were collected at stations in the central and southern Delta. Smelt Larval Survey #4 is in the field next week, February 11-12.

The 2012 annual Fall Midwater Trawl Index (September through December) is 42. The combined SWP and CVP total allowable take for adult delta smelt for the WY 2013 as calculated from the FMWT Index using the formula prescribed in the BO is 305.

The 2012 Delta Smelt Recovery Index (based on September and October) is 13. More information on the Recovery Index can be found on the Bay-Delta Office's web site at [http://www.fws.gov/sfbaydelta/species/delta\\_smelt.cfm](http://www.fws.gov/sfbaydelta/species/delta_smelt.cfm). Results from CDFG surveys are available online at: <http://www.dfg.ca.gov/delta/>.

## **2) Salvage:**

Forty-two adult delta smelt were salvaged during the period from January 28<sup>th</sup> through February 3<sup>rd</sup>. The total combined delta smelt salvage for the season is now 221 (100 at the SWP and 121 at the CVP) as of February 3, or approximately 72% of the total allowable take of 305. No longfin smelt were salvaged over this reporting period. The total combined longfin smelt salvage for the season is now 4.

Current longfin smelt and delta 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>

## **3) Expected Project Operations:**

Combined CVP/SWP exports are expected to be approximately 3900 cfs for the week of February 3, 2013, targeting an OMR of -2500cfs.

## **4) Particle Tracking Modeling:**

No PTM runs were requested for this week.

## **5) Turbidity Modeling:**

Turbidity data reviewed by the Delta Conditions Team (DCT) earlier this morning were distributed to the Working Group prior to the call. Members of the Working Group that attended the DCT conveyed the opinion of the DCT members that the turbidity bridge between the confluence/Sacramento River and the central/southern Delta is no longer in place.

## **6) Assessment of Risk:**

### **Background:**

RPA Component 1, Action 2: "An action implemented using an adaptive process to tailor protection to changing environmental conditions after Action 1. As in Action 1, the intent is to protect pre-spawning adults from entrainment and, to the extent possible, from adverse hydrodynamic conditions."

"The range of net daily OMR flows will be no more negative than -1,250 to -5,000 cfs. Depending on extant conditions (and the general guidelines below) specific OMR flows within this range are recommended by the Working Group from the onset of Action 2 through its termination..." (page 35).

**Discussion:** The Working Group reviewed and discussed all relevant data from Delta monitoring, salvage, field surveys, and planned Project operations. Turbidity has continued to decrease throughout the south and central Delta to below 10 NTU. Members remain concerned regarding the recent rate of salvage and season total to date of adult delta smelt salvage. For the reporting period of January 28 to February 3, 42 adult delta smelt were collected, similar to the January 21-27 weekly total of 46 delta smelt. The preliminary seasonal total of salvaged adult delta smelt is 221; representing 72% of the total authorized take.

The Working Group acknowledged that reaching the concern level of 228 total salvage is imminent (based on 75% of the WY 2013 Incidental Take Limit [ITL] of 305). When the concern level trigger is reached, the Service notified the Working Group that it will call for a meeting to provide immediate operation recommendations. The Working Group proactively addressed this need.

While recent OMR flows are less negative than -2,500 cfs, and turbidity in the interior Delta is low and declining, salvage has continued over the last two weeks (46, then 42 delta smelt in the past 2 weeks). The Working Group discussed whether it was appropriate to recommend further reduction of OMR flows based on reaching the concern level of salvage. There was some discussion that further flow reductions may not significantly reduce delta smelt salvage. The Working Group decided that projected operations targeting OMR flows of -2500cfs can be maintained until the concern level is met (i.e., delta smelt salvage  $\geq$  228), at which time the Working Group recommends that the projects reduce exports to target an OMR flow of no more negative than -1250 cfs. The Working Group's recommendation for reduced flow upon reaching the concern level is made with the understanding that the extent of possible salvage reduction is uncertain, and that less negative flows have a higher probability of delaying the occurrence of exceeding the ITL level as much as possible, given the expected remaining duration of the adult salvage season.

The Working Group will meet again on February 11, but the group is prepared to meet shortly after the concern level of take (228) is met, at the request of the Service

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

### **Advice for week of February 4, 2013:**

The Smelt Working Group believes that an OMR of -5000 is protective of longfin smelt at this time. The current OMR advice for delta smelt (-2500 cfs, dropping to -1250) will be very protective for longfin smelt.

### **Summary of Risk:**

Risk of additional entrainment into the south Delta remains very low. Salvage and survey data for adult longfin smelt suggests limited spawning in the central and south Delta. SLS #3 distribution numbers surpassed the criterion 3 threshold, yet densities were low at all but 2 criteria stations and current densities do not by themselves warrant protections beyond -5000 OMR. Qwest conditions since survey 3 have been positive and OMR only weakly negative (generally less negative than the target -2500), leading to little south Delta entrainment. Currently X2 is located at about Chipps Island, which suggests that a few adult longfin smelt will move into the central and south Delta to spawn. Barker Slough criteria are only in effect during “Dry” and “Critical” water years; this year is currently forecast as Wet for the Sacramento 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 ( $\geq 80$ 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; see Figure 1).
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: Between January 15 and March 15 of Critically Dry or Dry water years only (Sacramento River), based on abundance and distribution and detection of longfin smelt larvae at Station 716.

### **Discussion of Criteria**

1. On January 20 and 21, 2013, longfin smelt salvage occurred at the SWP for a total salvage of 4. These are the first and only instances of adult longfin smelt salvage this water year. The Fall Midwater Trawl longfin smelt annual abundance index has completed and is 61. The total salvage level threshold for advice is  $>305$  (see criterion in #1). No advice is warranted based on this criterion.

2. January Bay Study sampling collected a single longfin smelt in the San Joaquin River at their station 863 (Santa Clara Shoals, between Twitchell and Bradford Islands). Distribution information does not indicate advice is warranted based on this criterion.

3 & 4. The third Smelt Larva Survey (SLS) of 2013 was conducted January 28 and 29. During survey 3, longfin smelt larvae were collected at 9 of 12 central or south Delta stations, so the **distribution criterion was met** (cf., Table 1 and Basis for Advice #s 3 & 4 above). Given the potential to entrain some larvae from Franks Tract into the south Delta and the likelihood of peak hatching occurring in early February, an OMR less negative than -5000 would be more protective, but a more positive OMR is not yet warranted based on current central and south Delta longfin smelt larval densities.

5. Barker Slough Exports: current water type for the Sacramento River is Wet (<http://www.water.ca.gov/swp/operationscontrol/docs/delta/DeltaWQ.pdf>), therefore even though longfin smelt larvae are present at station 716, no advice is provided. Current exports are low (14-20 cfs) and don't pose a risk to larvae in Barker Slough (<http://www.water.ca.gov/swp/operationscontrol/docs/delta/DeltaHydrology.pdf>).

Current conditions: Net Delta outflow declined steadily through January. As of January 31 net Delta outflow was 17,690. X2 remained below 60 km from December 26 through January 3, but has been increasing slightly and as of February 3 was about 71. Combined State and federal exports are currently about 3900 cfs. Qwest has been slightly positive since January 24 and as of January 31 was about +1170 and declining.

To delay or reduce the likelihood of exceeding the delta smelt adult salvage limit, the Smelt Working Group today recommended maintaining the OMR target at -2500 until the total delta smelt salvage reached 75% of the annual limit, or 228 out of 305, at which time the OMR target is recommended to become -1250. These targets should provide substantial additional protection for longfin smelt larvae.

Table 1. Longfin smelt catch per station from 2013 Smelt Larva Survey, Survey 3.

Study Year	Survey #	SLS Station	Sample Status	Species	Smelt Catch
2013	3	405	Processed	Longfin Smelt	114
2013	3	411	Processed	Longfin Smelt	180
2013	3	418	Processed	Longfin Smelt	92
2013	3	501	Processed	Longfin Smelt	270
2013	3	504	Processed	Longfin Smelt	335
2013	3	508	Processed	Longfin Smelt	174
2013	3	513	Processed	Longfin Smelt	67
2013	3	519	Processed	Longfin Smelt	86
2013	3	520	Processed	Longfin Smelt	62
2013	3	602	Processed	Longfin Smelt	56
2013	3	606	Processed	Longfin Smelt	21
2013	3	609	Processed	Longfin Smelt	4
2013	3	610	Processed	Longfin Smelt	4
2013	3	703	Processed	Longfin Smelt	76
2013	3	704	Processed	Longfin Smelt	109
2013	3	705	Processed	Longfin Smelt	25
2013	3	706	Processed	Longfin Smelt	33
2013	3	707	Processed	Longfin Smelt	170
2013	3	711	Processed	Longfin Smelt	22
2013	3	716	Processed	Longfin Smelt	38
2013	3	723	Processed	Longfin Smelt	98
2013	3	801	Processed	Longfin Smelt	34
2013	3	804	Processed	Longfin Smelt	27
2013	3	809	Processed	Longfin Smelt	69
2013	3	812	Processed	Longfin Smelt	9
2013	3	815	Processed	Longfin Smelt	7
2013	3	901	Processed	Longfin Smelt	51
2013	3	902	Processed	Longfin Smelt	1
2013	3	906	Processed	Longfin Smelt	2
2013	3	910	Processed		No Smelt Catch
2013	3	912	Processed		No Smelt Catch
2013	3	914	Processed	Longfin Smelt	1
2013	3	915	Processed	Longfin Smelt	2
2013	3	918	Processed		No Smelt Catch
2013	3	919	Processed	Longfin Smelt	9

SWP ITP Criteria Stations

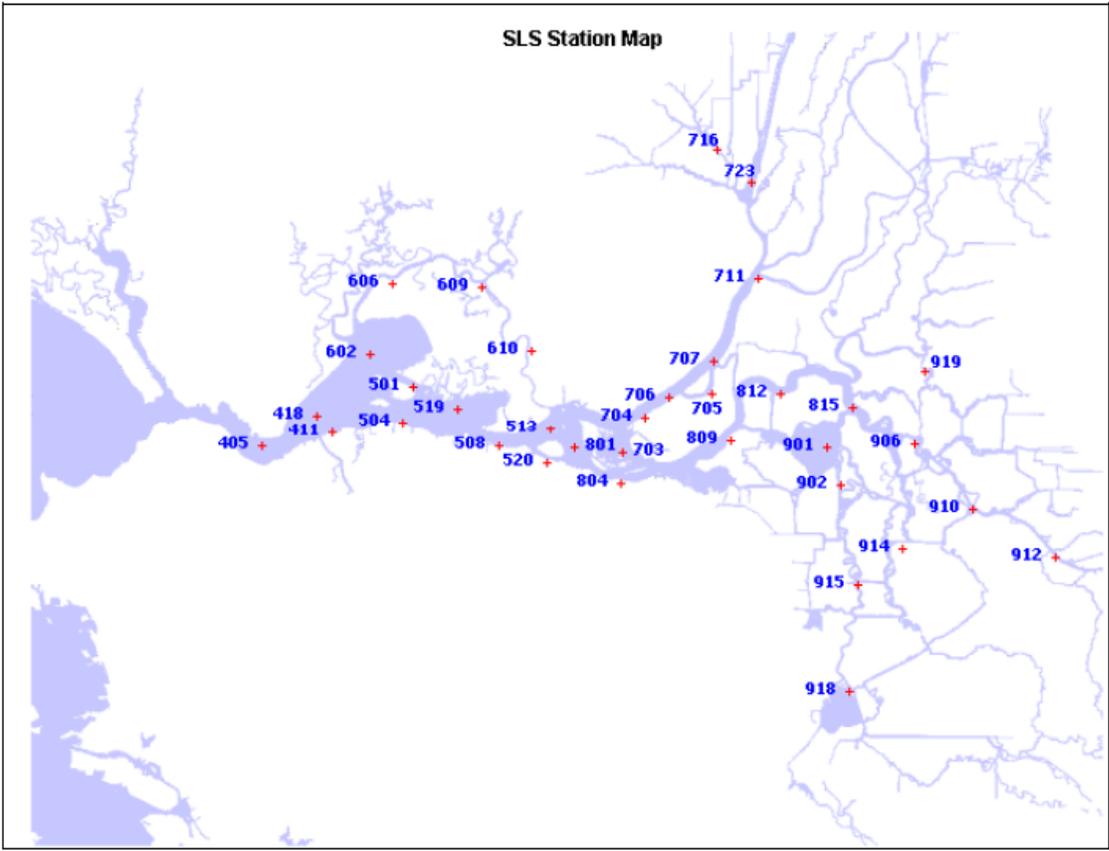


Figure 1. DFG's Smelt Larva Survey station locations.