

**SMELT WORKING GROUP**  
**Monday, May 20, 2013**

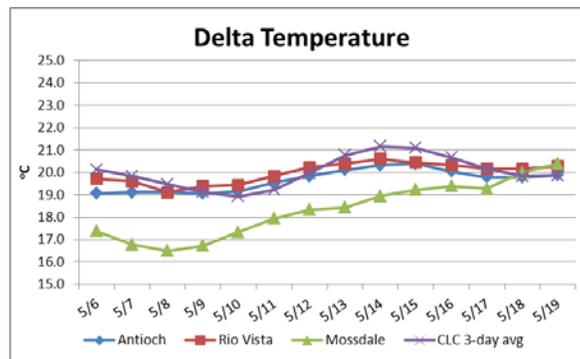
**Meeting Summary:**

The Working Group agreed that given their present distribution, current salvage, and Delta conditions, the 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 were sufficient to protect longfin smelt. The Working Group will continue to monitor smelt salvage, larval and juvenile smelt survey data, and Delta hydrological conditions and will reconvene May 28, 2013, at 10 am.

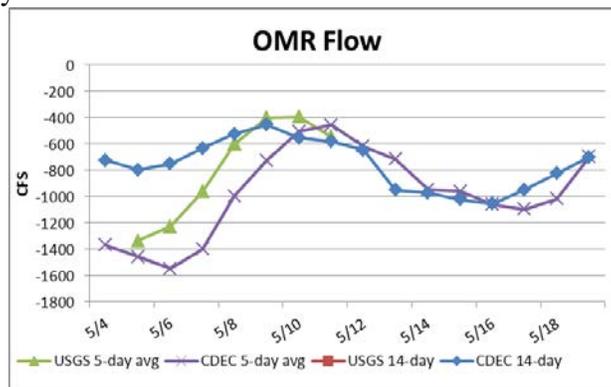
**Reported Data:**

**1) Current environmental data:**

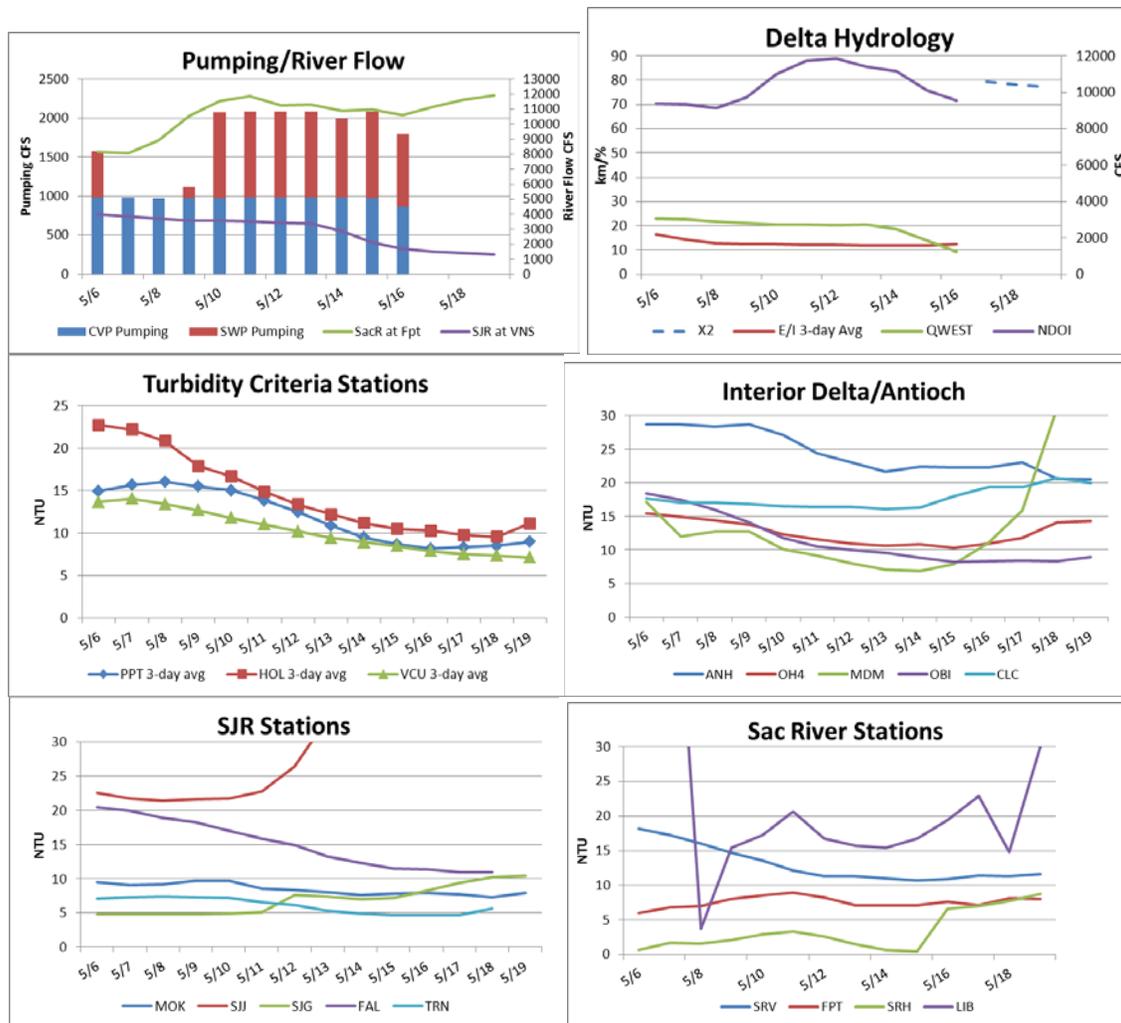
- **Water temperatures:**



- **OMR:** USGS tidally-averaged 5-day and 14-day average OMR flows were unavailable. CDEC 5-day average OMR flow and 14-day average OMR flow on May 19 was -696 cfs and -699 cfs, respectively.



- **Flow:** Sacramento River flows at Freeport are approximately 11,895 cfs and San Joaquin River at Vernalis is approximately 1,310 cfs, while X<sub>2</sub> was 77.3km.



### Delta Fish Monitoring:

The 20-mm Survey #6 is in the field this week. Preliminary results from the first tows of the central and south Delta stations are anticipated prior to the end of this week. Survey #5 was in the field the week of May 6. Tow times were reduced to 2.5 minutes at all 12 stations in the south and central Delta, due to high levels of filamentous algae. Sample processing is 74% complete. A total of 179 delta smelt, ranging in length from 6 to 27mm, have been collected so far. Thirty-four delta smelt were collected from the south and central Delta, most of which were from the lower San Joaquin River stations; the remaining delta smelt catch occurred in the lower Sacramento River and Cache Slough/DWSC area. Processing is complete for 20-mm Survey #4. A total of 139 delta smelt were collected, ranging from 7 to 28 mm. Updated 20-mm Survey data have been uploaded to the 20-mm Survey webpage (<http://www.dfg.ca.gov/delta/projects.asp?ProjectID=20mm>).

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 362 (revised). The combined SWP and CVP total allowable take for larval-juvenile delta smelt for the WY 2013 following the formula in Table C-4 of the BO is 2,350 (revised).

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 CDFW surveys are available online at: <http://www.dfg.ca.gov/delta/>.

### **1) Salvage:**

#### Delta Smelt:

A total of 284 young of the year delta smelt of salvageable size ( $\geq 20$  mm) were observed at the CVP and SWP fish facilities for the reporting period of May 13 through May 19 (SWP=228; CVP=56). The season total for juvenile delta smelt  $\geq 20$  mm is 694; or 30% of the WY 2013 larval/juvenile incidental take limit of 2,350. Smaller delta smelt young of the year were observed in a larval fish sample from May 13 at the CVP.

#### Longfin Smelt:

A total of 160 young of the year ( $\geq 20$  mm FL) longfin smelt (LFS) was salvaged at the CVP and SWP fish facilities for the reporting period of May 13 through May 19. No LFS post-larva  $< 20$  mm was observed at either facility during May 13-14.

#### Salvage Operations

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>

### **2) Expected Project Operations:**

Combined CVP/SWP exports are approximately 1,500 cfs as of today. D-1641 water quality standard at Emmaton and Jersey Point are now within the compliance range. With the incoming phase of the tidal cycle anticipated this weekend, Keswick reservoir releases were increased today to support Delta water quality standards. Projected operations currently are complying with the NMFS San Joaquin River flows RPA, which requires 1:1 pumping with the flow at Vernalis from April 1 through May 31 and the D-1641 water quality standards at Emmaton and Jersey Point (which continues through June 15).

### **3) Particle Tracking Modeling:**

No PTM runs were requested or discussed.

### **4) Assessment of Risk:**

#### **Background:**

RPA Component 2, Action 3: “The objective of this RPA component (which corresponds to Action 3 in Attachment B), is to improve flow conditions in the Central and South Delta so that larval and juvenile delta smelt can successfully rear in the Central Delta and move downstream when appropriate” (page 282).

“Upon completion of RPA Component 1 or when Delta water temperatures reach 12°C (based on a 3-station average of daily average water temperature at Mossdale, Antioch, and Rio Vista) or when a spent female delta smelt is detected in the trawls or at the salvage facilities, the projects shall operate to maintain OMR flows no more negative than -1,250 to -5,000 cfs based on a 14-day running average with a simultaneous 5-day running average within 25 percent of the applicable 14-day OMR flow requirement. Depending on the extant conditions, the SWG shall make recommendations for the specific OMR flows within this range from the onset of implementing RPA Component 2 through its termination. The Service shall make the final determination regarding specific OMR flows. This action shall end June 30 or when the 3-day mean water temperature at Clifton Court Forebay reaches 25°C, whichever occurs earlier” (page 282).

**Discussion:** The Working Group reviewed and discussed all relevant data from Delta monitoring, salvage, field surveys, and planned Project operations.

The Working Group is following the guidance provided in Action 3 of the RPA for assessing the risk of entrainment to juveniles. The Working Group discussed its May 20 recommendation, the WY 2013 juvenile delta smelt Incidental Take Limit (ITL), the recent delta smelt distribution data from field surveys, and the low level of salvage of juvenile and larval delta smelt.

Daily OMR flows since May 13 have ranged between approximately -1,910 and -300 cfs. Similarly positive OMR flows are anticipated to continue through May 31, which is the end of the NMFS BO’s San Joaquin River flow RPA requiring a 1:1 ratio of exports to flows at Vernalis in critically dry water year types. Exports are also constrained by D-1641 to support water quality standards at Emmaton and Jersey Point. For the past several weeks, daily OMR flows have been mostly more protective than the range of 14-day average OMR target flows required in the Service’s BO RPA Action 3 for larval and juvenile delta smelt (-1,250 to -5,000 cfs).

Salvage of  $\geq 20$  mm size delta smelt increased over the reporting period of May 13 through May 19, as compared to the previous week. Total take for the season is now 694 or 30% of the WY 2013 annual ITL of 2,350.

Distribution data from 20-mm Survey 5 indicate that the center of distribution of larval and juvenile delta smelt is out of the south and central Delta. Tow duration at stations in the south and central Delta were reduced due to high levels of filamentous algae and gear fouling. These reduced tow times were conducted at all 12 south and central Delta stations, which could reduce sensitivity of the sampling in this region. CDFW noted that of the few stations from Survey #6 that have been sampled today, little or no filamentous algae was collected, so tow durations are not anticipated to be shortened. The Working Group will continue to monitor fish distribution data, and review updated data from 20-mm Surveys as they become available.

Based on the review of current delta smelt distribution and salvage data, current Delta conditions and projected operations, the Working Group agrees that projected operations are sufficiently protective of delta smelt. The Working Group will continue to monitor Delta conditions and survey data.

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

### **Advice for week of May 20, 2013:**

The Smelt Working Group believes that an OMR of -5,000 cfs is protective of longfin smelt at this time. No advice for Barker Slough operations is necessary at this time.

### **Summary of Risk:**

Risk of additional entrainment into the south Delta is very low. No longfin smelt larvae were detected in the central and south Delta with the exception at Jersey Point (Station #809), though many tows were shortened due to an algae bloom. Current central Delta hydrologic conditions are very favorable. Qwest remains positive at about +900 cfs and should hold positive while total exports continued at 1,500 cfs, and are temporarily lower than San Joaquin River to maintain west Delta water quality. Thus there's little risk of additional larva entrainment into the south Delta. Within the south Delta, OMR has been weakly negative. The longfin smelt ITP concern period for Barker Slough ended March 31. Barker exports have been  $\leq 100$  cfs recently; risk of entrainment is low even though longfin smelt densities were detected in 20-mm Survey #5 results for Station 718.

### **Summary of Advice:**

Previously, SLS Survey #3 distribution numbers triggered Longfin Smelt Incidental Take Permit advice from the SWG on February 4 to limit OMR flows to -5,000 cfs (see criterion 3 below). On February 19, to limit south Delta entrainment of larvae from Station 809 and other San Joaquin River stations, an OMR of no more negative than -4,000 cfs was advised. On February 25 and 26, SLS Survey #5 central and south Delta catches from declined rather than increased, so as of March 4 an OMR of -5,000 was once again deemed protective. Since then central and south Delta larva numbers have remained low. As of May 20 and similar to March and April reviews, OMR of -5,000 was deemed protective. Actual conditions present through April and early May have been much more favorable.

On March 31, the ITP advice period for Barker Slough ended. Even though longfin smelt larvae remain in the vicinity, Barker Slough exports have remained low from March 1 (< 30 cfs) through April 17 and only increased to 50 cfs on the 18<sup>th</sup> and to about 100 cfs on May 11 and afterwards; posing little risk for longfin smelt larvae.

### **Basis for advice:**

The 2009 State Water Project 2081 for longfin smelt states that advice to the DFG Director shall be based on the following criteria:

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 20-mm Survey finds longfin smelt larvae present at 8 of 12 central and south Delta sampling stations in 1 survey (Stations 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 31 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. During the period May 13 through May 19, 160 juvenile longfin smelt were salvaged, up slightly from the 128 salvaged the previous week. It's not yet clear whether this trend will continue. Nonetheless, exports remain very low. Due to warming water temperatures, it is unlikely that any more adult longfin smelt will be salvaged this year. More juvenile longfin smelt can be expected in salvage, but no ITP criterion exists for juvenile longfin smelt.

2. Longfin smelt spawning is likely over for 2013. In early March Bay Study collected 3 longfin smelt adults just upstream from the Antioch Bridge, suggesting that some additional spawning took place in the lower San Joaquin River. No other longfin smelt adults were detected in the central or south Delta since then.

3 & 4. The fifth 20-mm Survey took place May 6 through 9. An algal bloom in the lower San Joaquin River and south Delta necessitated reduced tow times to avoid net clogging. No longfin smelt larvae were detected in the central or south Delta (Table 1) with the exception of Station # 809. Although our sampling was reduced, there is no evidence of additional risk of entrainment into the south Delta and an OMR of -5,000 remains protective at this time.

5. Barker Slough Exports: The ITP period of concern ended March 31. Even though some longfin smelt larvae were present at Station 718 in Lindsay Slough, the recent export levels (ca 100 cfs) pose little risk.

(<http://www.water.ca.gov/swp/operationscontrol/docs/delta/DeltaHydrology.pdf>).

**Current conditions:** Net Delta outflow was about 9,700 cfs on May 19. X2 decreased to about 77 km. Combined State and federal exports were about 1,500 cfs. Daily OMR flows since May 13 have been weakly negative and ranged between approximately -1,910 and -300 cfs. Similarly positive OMR flows are anticipated to continue through May 31, which is the end of the NMFS BO's San Joaquin River flow RPA requiring a 1:1 ratio of exports to flows at Vernalis in critically dry water year types. Exports are also constrained by D-1641 to support water quality standards at Emmaton and Jersey Point. Qwest has been weekly positive at about 900 cfs.

Table 1. Longfin smelt catch per station from 20-mm Survey, Survey #5, 2013. Processing is partial and data are preliminary and subject to change.

Year	Survey	Station	Date	# Tows Processed	Species	Total Catch	Min Length	Max Length	Avg Length	
2013	5	323	08-May-13	1	No Longfin Catch	0				Suisun Bay & West
2013	5	340	08-May-13	1	No Longfin Catch	0				
2013	5	342	08-May-13	1	Longfin Smelt	2	18	28	23.00	
2013	5	343	08-May-13	1	No Longfin Catch	0				
2013	5	344	08-May-13	1	No Longfin Catch	0				
2013	5	345	08-May-13	1	No Longfin Catch	0				
2013	5	346	08-May-13	1	No Longfin Catch	0				
2013	5	405	9-May-13	1	Longfin Smelt	19	19	34	25.89	
2013	5	411	9-May-13	1	Longfin Smelt	1	24	24	24.00	
2013	5	418	9-May-13	1	Longfin Smelt	7	24	31	27.14	
2013	5	501	07-May-13	3	Longfin Smelt	11	19	30	24.00	
2013	5	504	7-May-13	3	Longfin Smelt	27	20	33	28.52	
2013	5	519	7-May-13	3	Longfin Smelt	4	17	26	22.00	
2013	5	602	07-May-13	1	Longfin Smelt	18	14	30	25.22	
2013	5	606	07-May-13	1	Longfin Smelt	392	19	33	24.36	
2013	5	609	07-May-13	1	Longfin Smelt	25	18	31	24.68	
2013	5	610	07-May-13	1	Longfin Smelt	98	18	30	24.20	
2013	5	508	08-May-13	1	Longfin Smelt	58	17	31	24.28	
2013	5	513	08-May-13	1	Longfin Smelt	36	16	29	22.36	
2013	5	520	08-May-13	1	Longfin Smelt	90	16	27	22.44	
2013	5	801	08-May-13	3	Longfin Smelt	195	13	30	23.81	
2013	5	804*	08-May-13	3	Longfin Smelt	75	17	28	22.06	
2013	5	703	08-May-13	3	Longfin Smelt	98	11	30	22.14	
2013	5	704	08-May-13	2	Longfin Smelt	1660	20	33	25.64	
2013	5	705*	07-May-13	3	Longfin Smelt	1	18	18	18.00	
2013	5	706	07-May-13	1	Longfin Smelt	2054	19	29	23.28	
2013	5	707	07-May-13	3	No Longfin Catch	0				
2013	5	711	06-May-13	3	No Longfin Catch	0				
2013	5	716	06-May-13	3	Longfin Smelt	2	31	31	31.00	
2013	5	718	06-May-13	3	Longfin Smelt	5	24	36	32.20	
2013	5	719	06-May-13	3	Longfin Smelt	2	18	18	18.00	
2013	5	720*	06-May-13	3	Longfin Smelt	1	25	25	25.00	
2013	5	723	06-May-13	3	Longfin Smelt	2	18	33	25.50	
2013	5	724	06-May-13	3	No Longfin Catch	0				
2013	5	726	06-May-13	3	No Longfin Catch	0				
2013	5	809*	06-May-13	3	Longfin Smelt	40	10	28	20.30	
2013	5	812*	07-May-13	3	No Longfin Catch	0				
2013	5	815*	07-May-13	3	No Longfin Catch	0				
2013	5	901*	06-May-13	3	No Longfin Catch	0				
2013	5	902*	06-May-13	3	No Longfin Catch	0				
2013	5	906*	07-May-13	3	No Longfin Catch	0				
2013	5	910*	06-May-13	3	No Longfin Catch	0				
2013	5	912*	06-May-13	3	No Longfin Catch	0				
2013	5	914*	06-May-13	3	No Longfin Catch	0				
2013	5	915*	06-May-13	3	No Longfin Catch	0				
2013	5	918*	06-May-13	3	No Longfin Catch	0				
2013	5	919*	07-May-13	3	No Longfin Catch	0				

Processing complete through 5/20/2013

\*Reduced tow time