

**Smelt Working Group
Monday, May 12, 2014**

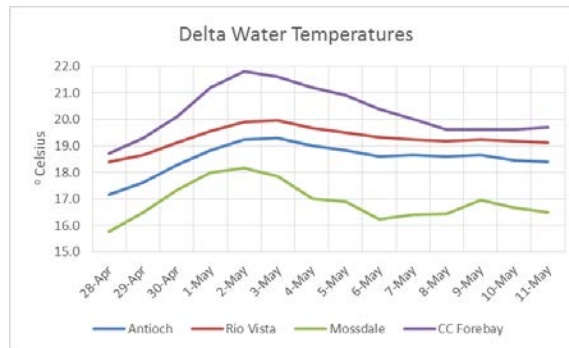
Meeting Summary:

The Working Group agreed that given their present distribution, current salvage, and Delta conditions, there was no indication that projected exports (potentially resulting in OMR flows as negative as approximately -1700 cfs daily average) need to be more restrictive for the protection of Delta Smelt adults and larvae. The Working Group also agreed that given their present distribution, existing constraining conditions were sufficient to protect Longfin Smelt from entrainment in the southern Delta. The next scheduled SWG meeting will be Monday, May 19.

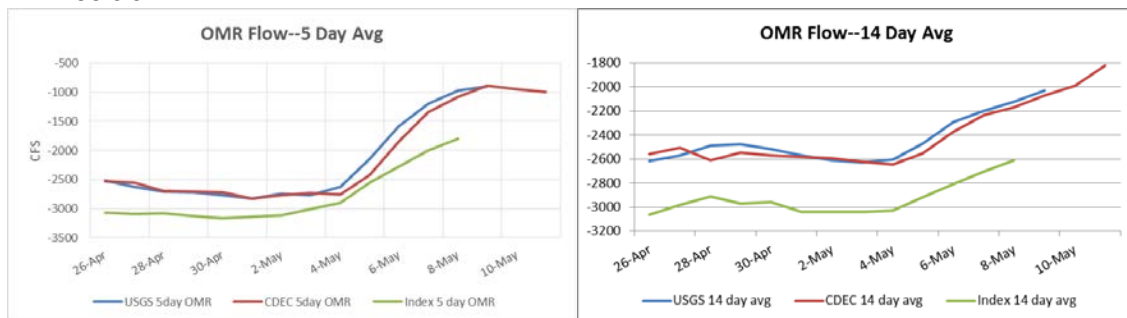
Reported Data:

1. Current environmental data:

- **Temperature:**



- **OMR flow:** CDEC OMR flow 5-day and 14-day average for May 11 was -998 cfs and -1819 cfs, respectively. Operators indicated the anticipated OMR flow for the week to be approximately -1700 cfs.



- **Flow:** Sacramento River average daily flow for May 11 was approximately 5295 cfs and San Joaquin River average daily flow was 2172 cfs. X2 calculation from CDEC was upstream of Collinsville (81 km). As of May 11, outflow was 4515 cfs, Qwest was 1369 cfs, and E/I was 15.9% (3-day average).



- The weather forecast for this week indicates warming temperatures.

2. Delta Fish Monitoring:

20-mm Survey #4 was in the field the week of April 28. Laboratory processing is complete. A total of 27 Delta Smelt larvae were observed in the samples processed, sizes ranging from 7 to 25 mm. 20-mm Survey #5 is in the field this week.

SKT Survey # 5 (the final SKT of WY 2014) was in the field last week. A total of 28 Delta Smelt were collected, 24 of which were collected in the Sacramento Deepwater Shipping Channel. Sizes of adults collected ranged from 65 to 83 mm, and catch was comprised of mostly spent or near-ripe females, and only a few ripe and spent males.

Jersey Point sampling concluded for the Service's Early Warning Study on April 10.

The 2013 Annual FMWT surveys concluded December 2013. The Annual FMWT Index (based on all four months) for Delta Smelt is 18, the second lowest on record, and statistically indistinguishable from the lowest, 17, from 2009.

The 2013 Delta Smelt Recovery Index (based on September and October) is 4. 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. Results from CDFG surveys are available online at: <http://www.dfg.ca.gov/delta/>.

3. Salvage:

Reporting for the period of May 5 to 11, an estimated 4 juvenile Delta Smelt were salvaged at the CVP. The seasonal total for juvenile Delta Smelt is now 74. No adult Delta Smelt and no adult or juvenile Longfin Smelt were salvaged at either facility for the same period.

Larval Delta Smelt (<20mm) were observed in the larval collection at the CVP on May 2 and 3.

Current Longfin Smelt and Delta Smelt salvage information can be downloaded from DFW's salvage FTP site at <ftp://ftp.dfg.ca.gov/salvage/Daily%20Smelt%20Summary/> or queried from DFW's salvage web page at <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>

4. Expected Project Operations:

Exports at the CVP are targeting 1000 cfs; exports at the SWP are at zero today, although the intake at the forebay radial gates is at 200 cfs. Combined exports should remain at these levels for the week. Operators indicated that the monthly outflow standard of 3000 cfs as well as Delta salinity levels are both controlling operations right now.

Operators estimated that daily OMR flow levels for this week will be approximately -1700 cfs.

The DCC gate is closed.

The State Water Board's (Board) order from January 31, 2014 states that project operations must maintain a monthly net Delta outflow of no less than 3000 cfs and must not pump more than combined 1500 cfs. An addendum was submitted to the Board on February 7. This addendum allows the operators to revert to compliance with the monthly Outflow standard, and increase pumping above the 1500 cfs included in the Temporary Urgency Change Petition (TUCP). A request to extend the Board's January 31, 2014 order was approved through the end of March. An additional addendum was approved to modify the number of days required to meet an X2 at Chipps Island (11,400 cfs on a 3-day running average) for the remainder of March. The projects will continue to meet X2 at Collinsville (7,100 cfs on a 3-day running average) prescribed in the Board's plan. An addendum was submitted and approved on April 9, 2014 to allow the projects to continue with their drought operations as approved by the Board through the month of April. An addendum submitted and approved on April 18, 2014 allows the projects to match the 1:1 Vernalis inflow to export pumping ratio (and exceed the 1500 cfs pumping restrictions as per earlier TUCP orders) during the NMFS RPA and D-1641 Stanislaus River pulse flow. An additional addendum was approved on May 2, allowing the monthly outflow standard to be reduced to 3000 cfs, however additional details were not available for the call.

5. Particle Tracking Modeling:

No modeling runs were discussed.

6. Turbidity Modeling:

No modeling runs were discussed.

7. Assessment of Risk:

Background:

The timing for RPA Component 1, Action 1 has passed. The SWG is following the guidance for RPA Component 1, Actions 2 and 3, as described below.

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 SWG from the onset of Action 2 through its termination...” (page 352).

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 -5000 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 SWG reviewed and discussed all relevant data from Delta monitoring, salvage, field surveys, and planned Project operations. The adult incidental take limit is 155 with a concern level of 116 fish. The juvenile incidental take limit is 1007 with a concern level of 671 fish. These numbers reflect the revised incidental take calculation, as reported in the Service’s February 2013 memorandum.

Catch data from SKT # 5 indicate that the majority of remaining adult Delta Smelt are located out of the south and central Delta. Additionally, results from the 20 mm Survey #4 indicate a similar distribution for juvenile Delta Smelt.

Salvage of Delta Smelt juveniles decreased this week; 4 juvenile Delta Smelt were salvaged from May 5 through 11. Members anticipate very low numbers of juvenile Delta Smelt salvage this week.

OMR flows are expected to remain around -1700 cfs on a daily basis for at least the remainder of the week, as projects are constrained by the monthly outflow standard of 3000 cfs and the interior Delta salinity standards. Additionally, Qwest remains positive at 1369 cfs.

Based on this review of the Delta Smelt distribution and salvage data, current Delta conditions and projected operations, the SWG agreed that no change in operations is necessary to adequately protect Delta Smelt from entrainment. The SWG will continue to monitor turbidity, salvage and survey data through this week, and will request a call to discuss Delta Smelt entrainment risk, should one be necessary.

8. Framework for providing advice to the Service:

No update was provided.

The SWG will have the next meeting on May 19.

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

Advice for week of May 12, 2014:

The Smelt Working Group believes that current and planned export rates are protective of Longfin Smelt at this time.

Barker Slough operations advice terminated for the year as of March 31.

Basis for advice:

The 2009 State Water Project 2081 for Longfin Smelt states that advice to WOMT and the DFW 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; 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. During the period January 15 through March 31 of a dry or critically dry water year only, advice for Barker Slough pumping plant operations may be warranted if larval Longfin Smelt are detected at station 716 and other information indicates risk of entrainment.

Discussion of Criteria

1. As of April 20, 2014, no age-1 or adult Longfin Smelt have been salvaged for the water year. The Fall Midwater Trawl Longfin Smelt annual abundance index was 164. The total salvage level threshold for advice is >820 (see criterion in #1). No advice is warranted based on this criterion.

On February 24, the first Longfin Smelt larva was detected at the SWP and larvae were detected almost daily for about a week before declining (CVP started sampling for larvae as of March 13 on a day-time work-week schedule). On February 28, the first juvenile (age-0) Longfin Smelt was detected at the SWP. From April 21 and through May 4, no juvenile Longfin Smelt were collected at either facility. Only a single Longfin Smelt larvae was collected at the CVP on April 21; that's been the only the second Longfin Smelt larvae detected at either facility since early April. This information is not related to a criterion and does not have a direct effect on advice.

2. December Fall Midwater Trawl and Bay Study sampling in December through March collected no Longfin Smelt in the central or south Delta, suggesting limited or no recent proximity to the export pumps. Distribution information does not indicate advice is warranted based on this criterion.

3 & 4. The forth 20mm Survey of 2014 was conducted April 28 – May 5. Longfin Smelt larvae were detected at only 3 central and south Delta stations and 2 of 3 detections involved only a single larvae (Table 1). Larva density at station 809 declined compared to survey 3. Together these data indicate low risk of entrainment.

5. The Barker Slough concern period ended for the water year on March 31. No additional advice will be given for this water year.

Current conditions: Outflow declined from 8,804 on April 28 to 2,694 on May 4, but increased modestly to 4,515 on May 11. Combined State and federal exports have been declining April 28 to May 4 from just under 3,000 cfs to about 2,200 cfs, and dropped further to the 1,200 to 1,500 cfs range currently. Combined exports will target about 1,200 to 1,500 cfs and remain stable. Qwest flows remained positive and over 1,000 cfs for the previous week. Currently, Vernalis flows are about 2,100 cfs but will decline mid-week as the Stanislaus River releases will drop from 2,100 to 600 cfs.

Summary of Risk: Qwest remained slightly positive. OMR flows are expected to be approximately -1,700 for the next week. Exports will be adjusted to balance outflow and salinity for the coming weeks. These hydrodynamics though improved will continue to put larvae in central and south Delta at some risk of entrainment; however, few Longfin Smelt larvae have been detected in the region (Table 1) and no additional larvae are expected to hatch this season, so the overall risk is low.

The concern period for Barker Slough exports ended for the water year on March 31.

Table 1. Longfin Smelt catch per station from 2014 20mm Survey, Survey 4. These data are preliminary and subject to change.

Year	Survey	Station	Date	# Tows Processed	Species	Total Catch	Min Length	Max Length	Avg Length	
2014	4	323		0	Not Yet Processed	0				Suisun Bay & West
2014	4	340		0	Not Yet Processed	0				
2014	4	342		0	Not Yet Processed	0				
2014	4	343		0	Not Yet Processed	0				
2014	4	344		0	Not Yet Processed	0				
2014	4	345		0	Not Yet Processed	0				
2014	4	346		0	Not Yet Processed	0				
2014	4	405	01-May-14	1	Longfin Smelt	2	27	32	29.50	
2014	4	411	01-May-14	1	No Longfin Catch	0				
2014	4	418	01-May-14	1	Longfin Smelt	1	33	33	33.00	
2014	4	501	29-Apr-14	1	No Longfin Catch	0				
2014	4	504	29-Apr-14	1	No Longfin Catch	0				
2014	4	519	29-Apr-14	1	Longfin Smelt	1	31	31	31.00	
2014	4	602	29-Apr-14	1	Longfin Smelt	1	29	29	29.00	
2014	4	606	29-Apr-14	1	Longfin Smelt	8	17	34	23.13	
2014	4	609	29-Apr-14	1	Longfin Smelt	3	21	24	22.67	
2014	4	610	29-Apr-14	1	No Longfin Catch	0				
2014	4	508	30-Apr-14	1	Longfin Smelt	2	22	25	23.50	Confluence
2014	4	513	30-Apr-14	1	Longfin Smelt	2	31	33	32.00	
2014	4	520	30-Apr-14	1	Longfin Smelt	8	22	30	25.00	
2014	4	801	30-Apr-14	3	Longfin Smelt	9	22	35	29.00	
2014	4	804	30-Apr-14	3	Longfin Smelt	2	14	28	21.00	
2014	4	703	30-Apr-14	1*	Longfin Smelt	1	26	26	26.00	Sac. River System
2014	4	704	30-Apr-14	1	Longfin Smelt	6	25	36	30.00	
2014	4	705	29-Apr-14	3	No Longfin Catch	0				
2014	4	706	29-Apr-14	2	Longfin Smelt	3	24	32	26.67	
2014	4	707	29-Apr-14	1	Longfin Smelt	1	27	27	27.00	
2014	4	711	28-Apr-14	1	No Longfin Catch	0				
2014	4	716	28-Apr-14	1	No Longfin Catch	0				
2014	4	718	28-Apr-14	1	No Longfin Catch	0				
2014	4	719	28-Apr-14	2	No Longfin Catch	0				
2014	4	720	28-Apr-14	2	No Longfin Catch	0				
2014	4	723	28-Apr-14	2	No Longfin Catch	0				
2014	4	724	28-Apr-14	1	No Longfin Catch	0				
2014	4	726	28-Apr-14	2	No Longfin Catch	0				
2014	4	809	28-Apr-14	3	Longfin Smelt	3	18	28	23.33	Central & South Delta
2014	4	812	29-Apr-14	3	Longfin Smelt	1	13	13	13.00	
2014	4	815	29-Apr-14	3	No Longfin Catch	0				
2014	4	901	28-Apr-14	3	Longfin Smelt	1	20	20	20.00	
2014	4	902	28-Apr-14	3	No Longfin Catch	0				
2014	4	906	29-Apr-14	2	No Longfin Catch	0				
2014	4	910	28-Apr-14	3	No Longfin Catch	0				
2014	4	912	28-Apr-14	3	No Longfin Catch	0				
2014	4	914	28-Apr-14	3	No Longfin Catch	0				
2014	4	915	28-Apr-14	3	No Longfin Catch	0				
2014	4	918	28-Apr-14	3	No Longfin Catch	0				
2014	4	919	29-Apr-14	1	No Longfin Catch	0				

Processing complete through 05/02/2014

*Five minute tows

Figure 1. DFW's Smelt Larva Survey/20-mm Survey station locations.

