

**SMELT WORKING GROUP**  
**Monday, May 14, 2012**

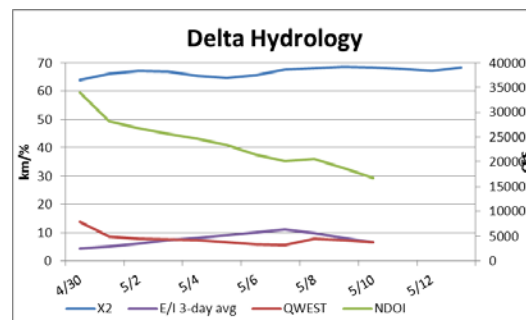
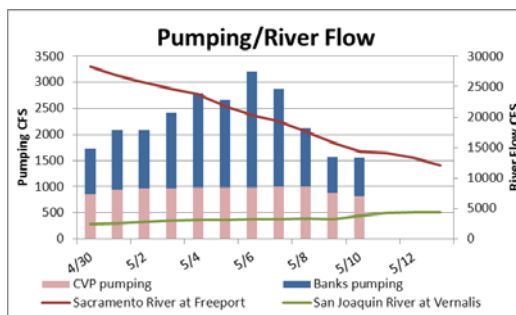
**Meeting Summary:**

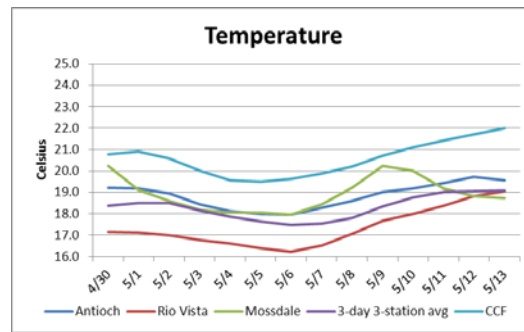
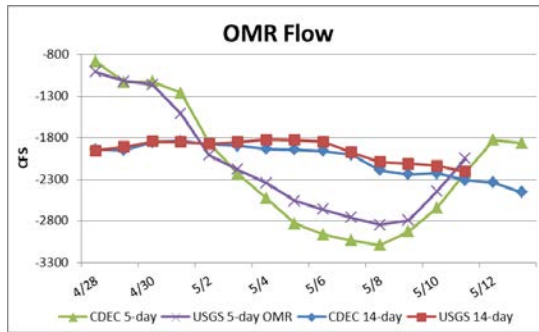
The Working Group recommended no change in projected operations based on a review of delta smelt distribution and salvage data, current Delta conditions and projected operations. While the salvage of juvenile delta smelt has increased over this past week, the Working Group agreed that the numbers do not reach a high level of concern requiring a change in operations, as detailed in the OCAP BiOp RPA for the following reasons: seasonal cumulative salvage has not reached the total concern level of 12,851, the center of delta smelt distribution appears to be out of the south and central Delta, and -5000 OMR is within the allowable level of the OMR range of action 3 of the RPA. The Working Group also agreed that given their present distribution, existing constraining conditions was sufficient to protect longfin smelt. The Working Group will continue to monitor smelt salvage, larval smelt survey data, and delta hydrological conditions and will reconvene May 21, 2012, at 10 am.

**Reported Data:**

**1) Current environmental data:**

- **Water temperature** for the 3 station average is 19.1°C.
- **OMR:** USGS tidally-averaged OMR 5-day and 14-day averages as of May 11 are -2,048 cfs and -2,206 cfs, respectively. CDEC 5-day average and 14-day averages as of May 13 are -1,863 cfs and -2,453 cfs, respectively.
- **Flow:** Sacramento River inflow is 12,051 cfs and San Joaquin River is 3,376 cfs. X<sub>2</sub> calculation from CDEC is 68.29 km. The graphs below show the most recent trends in Delta hydrology and water quality that were evaluated by the Working Group.





## 2) Delta Fish Monitoring:

20mm Survey #5 was in the field last week. Processing is ongoing. A total of 55 delta smelt larvae have been counted so far, 13 of which were from the central and southern Delta. Size ranges from 6 to 29mm. A total of 149 longfin larvae have been counted so far, with sizes ranging from 9 to 34mm. 20mm Survey #6 is in the field the week of May 21. 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:

The cumulative total for adult delta smelt for WY 2012 is 203. The table below details daily estimated juvenile delta smelt and longfin smelt salvage for the season:

Table 1: Estimated daily juvenile delta smelt and longfin smelt salvage ( $\geq 20$  mm) for WY2012 (5/11 – 5/13 salvage numbers reflect updated data, and differ from originally reported preliminary data).

Delta Smelt (YOY $\geq 20$ mm))				Longfin Smelt (YOY $\geq 20$ mm)			
Date	CVP	SWP	Total	Date	CVP	SWP	Total
<b>January total</b>	36	0	36	<b>February total</b>	8	0	8
<b>February total</b>	50	52	102	<b>March total</b>	257	1484	1741
<b>March total</b>	21	40	61	<b>April total</b>	605	1052	1657
<b>4/17</b>	4	0	4	<b>5/2</b>	8	0	8
<b>4/27</b>	6	0	6	<b>5/3</b>	4	16	20
<b>4/28</b>	4	0	4	<b>5/4</b>	0	6	6
<b>4/29</b>	8	0	8	<b>5/5</b>	0	16	16
<b>5/1</b>	4	0	4	<b>5/6</b>	0	24	24
<b>5/3</b>	4	2	6	<b>5/7</b>	12	16	28
<b>5/4</b>	16	2	18	<b>5/8</b>	0	4	4
<b>5/5</b>	16	10	18	<b>5/9</b>	0	8	8

<b>5/6</b>	16	0	16	<b>5/10</b>	4	24	28
<b>5/7</b>	0	12	12	<b>5/11</b>	0	0	0
<b>5/8</b>	4	60	64	<b>5/12</b>	0	0	0
<b>5/9</b>	0	102	102	<b>5/13</b>	3	0	3
<b>5/10</b>	12	104	116				
<b>5/11</b>	40	52	92				
<b>5/12</b>	0	48	48				
<b>5/13</b>	0	220	220				

Larval or prejuvenile (< 20 mm) longfin smelt and delta smelt were observed in daily larval fish samples. Current delta and longfin 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>

**4) Expected Project Operations:**

Combined CVP/SWP exports are approximately 4,300 cfs as of May 14. Combined exports are presently curtailed to comply with the SWRCB D-1641 requirement of no more than 1:1 ratio of pumping to San Joaquin River flow at Vernalis, which is in place April 15-May 15. As of May 16, combined pumping is anticipated to increase to approximately 5,000 cfs. This is anticipated to create an OMR flow of no more negative than -5,000 cfs for the second half of May, as per the NMFS Stipulation Agreement. Should the sentinel steelhead trigger at Railroad Cut be exceeded during this period, operations are anticipated to drop to 1,500 cfs combined for a five day period.

**5) Particle Tracking Modeling:**

The Service requested PTM runs and forwarded them to the group for discussion.

**6) Assessment of Risk:**

**Background:**

The collection of a spent female in the SKT Survey #2 on February 15 indicates that delta smelt spawning has begun. The temperature criterion of 12°C was confirmed on February 28. The Working Group discussed the risk of entrainment for larval delta smelt and any discussion of a recommendation was intended to protect larval delta smelt (B.O., p 282). The Working Group will follow the guidance for Action 3 of the B.O. (pp. 357-368).

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.

Table 2: Incidental Take Levels for the larval/juvenile life stage (cumulative)

	<b>Concern Level</b>	<b>Take Limit</b>
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<b>April</b>	101	151
<b>May</b>	4,471	6,705
<b>June</b>	11,327	16,991
<b>July</b>	12,851	19,276

**Discussion:** The Working Group reviewed and discussed all relevant data from fish surveys, Delta monitoring, salvage, and planned Project operations. The first larval delta smelt were salvaged at the CVP on April 26 and the SWP on April 24. Salvage of larval delta smelt ( $\geq 20$ mm) at the SWP has increased since May 8. With a positive Qwest, X2 at 68km, 5-day OMR flow at -1,853 cfs, low levels of detection in the 20mm Survey #5 for the central and southern Delta data indicates a low risk of entrainment. Following the adaptive process parameters in the RPA for Action 3, with the majority of the 20mm Survey detections downstream of the central Delta, risk of entrainment is low.

Because of the high daily salvage observed on May 13, the SWG spent some time discussing an alternate "ramping up" strategy that the pumps could follow in the event that a reduction in operations is triggered by the NMFS joint stipulation. This approach would recommend a slower "ramping up" (eg. no more than 1000 cfs/day) versus the immediate increase to a -5000 OMR as observed this past weekend. This approach could be more protective of delta smelt.

## 7) Longfin Smelt:

Longfin smelt larval distribution (Smelt Larva Survey 1, January 9-10) 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 -1,250 and -5,000 cfs as the range to select from in determining a level adequately protective of longfin larvae. With one detection in the central and south Delta for 20-mm Survey #5 and low levels of salvage, the risk is currently low. Qwest remains positive and Delta outflow is now 12,000 cfs, which should assist the remaining larvae in moving downstream and out of the central Delta.

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

#### **Advice for week of May 14, 2012:**

The Smelt Working Group believes that planned exports for later this week resulting in -5000 cfs OMR will be protective for larvae and juveniles remaining in the lower San Joaquin River because the current risk of entrainment into the south Delta is extremely low.

**Summary of risk:** Risk of additional entrainment into the south Delta is currently extremely low. Larva/juvenile catches were zero in the central and south Delta in 20-mm Survey #5 except for a single larvae at the most westerly station in the central Delta, 809. At the fish facilities detection of larvae has been infrequent and salvage of juveniles has been fluctuating but

relatively low. Qwest, (currently about 3,800 cfs) provides some westward transport of larvae in the central Delta. Through May 15, the facilities will coordinate exports to achieve 1:1 with Vernalis flows, currently 4,400 cfs. Subsequently, water exports will be increased to -5000 OMR until at least May 23.

**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 20-mm 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 through March 31 of critically dry or dry water years (Sacramento River), based on abundance and distribution and detection at Station 716.

**Discussion of Criteria and Conditions**

Review of past information: 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 March 5, 2012, no  $\geq 80$  mm longfin smelt have been salvaged for the water year, but larva sampling began at both facilities on February 16, and longfin smelt larvae were detected by the State on February 19 and at both facilities on 20 February. The Fall Midwater Trawl longfin smelt annual abundance index for 2011 is 477. The total adult salvage level threshold for advice is 2,385 (see criterion in #1).

December Fall Midwater Trawl and Bay Study surveys collected adult longfin smelt in the San Joaquin River just downstream and just upstream of the Antioch Bridge. In early January, Bay Study collected adult longfin smelt as far upstream as San Andreas Shoals on the San Joaquin River. The first Smelt Larva Survey of 2012 caught longfin smelt larvae at 9 of 12 criteria stations in the central and south Delta (criterion #3, Figure 1) triggering the need for advice. Larva catches (densities) were very low during survey 1 and hydraulic conditions at the time posed little risk to longfin smelt larvae. Larvae numbers increased in Smelt Larva Survey 2, and then declined slightly in survey 3 and again in survey 4 followed by a substantial drop in survey 5.

Review of new and current information: The fifth 20-mm Survey (May 7-9) detected only a single longfin smelt larvae in the central and south Delta (Table 1) at station 809, the farthest west; thus, risk of further entrainment is extremely low. Qwest remains positive at about 1,900 cfs on May 13, down from 4,500 on May 12. Longfin smelt juveniles were salvaged more sporadically in the past week.

Combined State and federal exports will be coordinated through May 15 to achieve 1:1 exports with Vernalis flows, currently at 4,400 cfs. On May 16, exports will increase and target OMR of -5,000 cfs for 5 or more days, the duration dependent upon tagged steelhead movement during NMFS 3<sup>rd</sup> experimental fish release, also beginning May 16. If sufficient numbers of experimental steelhead enter the south Delta, prior to or after May 23, combined exports 2-days after May 23 or a subsequent trigger date will drop to 1500 cfs for 5 days.

The longfin smelt incidental take permit restrictions for Barker Slough exports concluded for 2012 on March 31. Although longfin smelt larvae remain in the vicinity, exports remain sporadic and low, and should not entrain larvae.

Table 1. Longfin smelt catch per station from 20mm Survey #5, 2012.

Year	Survey	Station	Date	# Tows Processed	Species	Total Catch	Min. Length	Max. Length	Avg. Length	
2012	5	323		0	Not Yet Processed	0				Suisun Bay & West
2012	5	340		0	Not Yet Processed	0				
2012	5	342		0	Not Yet Processed	0				
2012	5	343		0	Not Yet Processed	0				
2012	5	344		0	Not Yet Processed	0				
2012	5	345		0	Not Yet Processed	0				
2012	5	346		0	Not Yet Processed	0				
2012	5	405		0	Not Yet Processed	0				
2012	5	411		0	Not Yet Processed	0				
2012	5	418		0	Not Yet Processed	0				
2012	5	501	08-May-12	1	Longfin Smelt	9	9	28	15.7778	Confluence
2012	5	504	08-May-12	1	Longfin Smelt	11	11	23	16.4545	
2012	4	519	08-May-12	1	Longfin Smelt	4	15	19	16.75	
2012	4	602		0	Not Yet Processed	0				
2012	4	606	08-May-12	1	Longfin Smelt	20	9	23	16.3	
2012	4	609		0	Not Yet Processed	0				
2012	4	610	08-May-12	1	No Longfin Catch	0				
2012	4	508	09-May-12	1	Longfin Smelt	31	13	31	20.4516	
2012	4	513	09-May-12	1	Longfin Smelt	56	12	28	16.56	
2012	4	520	09-May-12	1	Longfin Smelt	1	14	14	14	
2012	4	801	09-May-12	1	Longfin Smelt	1	15	15	15	
2012	4	804	09-May-12	1	No Longfin Catch	0				
2012	4	703	09-May-12	1	No Longfin Catch	0				
2012	4	704	09-May-12	1	Longfin Smelt	2	15	16	15.5	
2012	5	705	08-May-12	1	No Longfin Catch	0				
2012	5	706	08-May-12	1	No Longfin Catch	0				
2012	5	707	08-May-12	1	No Longfin Catch	0				
2012	5	711	07-May-12	1	No Longfin Catch	0				
2012	5	716	07-May-12	2	Longfin Smelt	1	33	33	33	
2012	5	718	07-May-12	1	Longfin Smelt	10	18	33	24.2	
2012	5	719	07-May-12	1	Longfin Smelt	1	19	19	19	
2012	5	720	07-May-12	3	Longfin Smelt	1	34	34	34	
2012	5	723	07-May-12	2	No Longfin Catch	0				
2012	5	724	07-May-12	2	No Longfin Catch	0				
2012	5	726	07-May-12	1	No Longfin Catch	0				
2012	5	809	07-May-12	3	Longfin Smelt	1	19	19	19	
2012	4	812	08-May-12	2	No Longfin Catch	0				
2012	5	815	08-May-12	1	No Longfin Catch	0				
2012	5	901	07-May-12	3	No Longfin Catch	0				
2012	5	902	07-May-12	3	No Longfin Catch	0				
2012	5	906	08-May-12	1	No Longfin Catch	0				
2012	5	910	07-May-12	3	No Longfin Catch	0				
2012	5	912	07-May-12	3	No Longfin Catch	0				
2012	5	914	07-May-12	3	No Longfin Catch	0				
2012	5	915	07-May-12	3	No Longfin Catch	0				
2012	5	918	07-May-12	3	No Longfin Catch	0				
2012	5	919	08-May-12	1	No Longfin Catch	0				

Processing complete through 5/11/12

\*5 minute tows