

## SMELT WORKING GROUP Tuesday, May 29, 2012

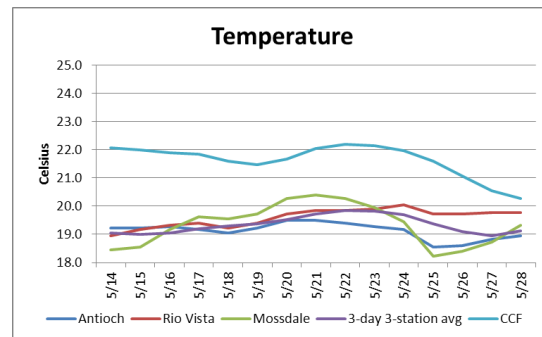
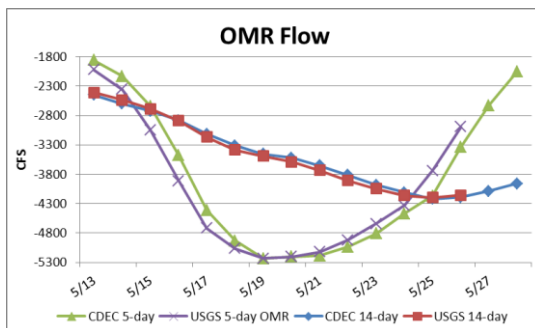
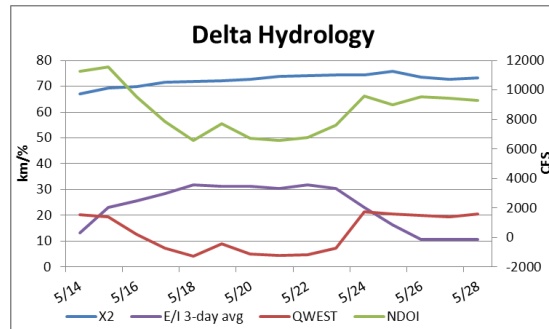
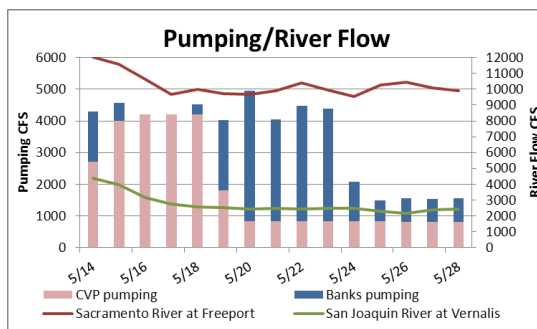
### Meeting Summary:

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. 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 June 4, 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 26 are -2,933 cfs and -4,155 cfs, respectively. CDEC 5-day average and 14-day averages as of May 28 are -2,055 cfs and -3,957 cfs, respectively.
- **Flow:** Sacramento River inflow is 9,889 cfs and San Joaquin River is 2,445 cfs.  $X_2$  calculation from CDEC is 73.2 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:

20-mm Survey #6 was in the field last week. Processing is ongoing. A total of 109 delta smelt larvae have been counted so far, 6 of which were from the central and southern Delta. Size ranges from 8 to 33 mm. A total of 185 longfin larvae have been counted so far, with sizes ranging from 12 to 29 mm. 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

Delta Smelt (YOY $\geq 20$ mm))				Longfin Smelt (YOY $\geq 20$ mm)			
Date	CVP	SWP	Total	Date	CVP	SWP	Total
4/27	6	0	6	<b>February total</b>	8	0	8
4/28	4	0	4	<b>March total</b>	257	1484	1741
4/29	8	0	8	<b>April total</b>	605	1052	1657
5/1	4	0	4	5/2	8	0	8
5/3	4	2	6	5/3	4	16	20
5/4	16	2	18	5/4	0	6	6
5/5	16	10	18	5/5	0	16	16
5/6	16	0	16	5/6	0	24	24
5/7	0	12	12	5/7	12	16	28
5/8	4	60	64	5/8	0	4	4
5/9	0	102	102	5/9	0	8	8
5/10	12	104	116	5/10	4	24	28
5/11	40	52	92	5/11	0	0	0
5/12	0	48	48	5/12	0	0	0
5/13	0	232	232	5/13	3	0	3
5/14	4	100	104	5/14	0	6	6
5/15	4	104	108	5/19	20	0	20
5/16	4	0	4				
5/17	20	0	20				
5/19	8	0	8				
5/20	4	20	24				
5/21	0	348	348				
5/22	0	152	152				

<b>5/23</b>	4	64	68				
<b>5/24</b>	8	0	8				

Preliminary results indicated that no juvenile delta smelt were salvaged during the period from May 25 through May 28. 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 5,100 cfs as of May 29. Combined exports are presently curtailed to comply with the NMFS Stipulation Agreement of -5,000 cfs OMR for the second half of May. Releases on both the Sacramento and San Joaquin Rivers are anticipated to reduce this week, and combined pumping is expected to reduce to 3,000 cfs by June 1 to comply with the SWRCB D-1641 minimum outflow requirement for June of 5,000 cfs.

#### **5) Particle Tracking Modeling:**

No PTM runs were requested for this week.

#### **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>
<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. The seasonal cumulative total of salvaged juvenile delta smelt is 1,600. Qwest is now 1,577 cfs, X2 is at 73.2 km, and the 5-day OMR flow is at -2,055 cfs. The preliminary data from the 20-mm Survey # 6 indicate low levels of detection in the central Delta and none in the south Delta.

Following the adaptive process parameters in the RPA for Action 3, the SWG agreed that current numbers of salvaged juvenile delta smelt do not reach the level of concern requiring a change in operations, for the following reasons: total cumulative salvage has not reached the total concern level for May of 4,471, as outlined in the OCAP BiOp, the center of delta smelt distribution appears to be out of the south and central Delta. Combined exports are curtailed to comply with the NMFS Stipulation Agreement of -5,000 cfs OMR through 05/31, and will then be more restricted under D1641; -5000 cfs OMR is within the OMR range under Action 3 of the RPA.

### **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 no detections in the central and south Delta for 20-mm Survey #6 and only one day of salvage since May 14, the risk is currently low.

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

### **Advice for week of May 29, 2012:**

The Smelt Working Group believes that planned exports for this week resulting in -5,000 cfs or less negative 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 #6, although sample processing is incomplete. At the fish facilities, detection of larvae has been infrequent and salvage of juveniles has been fluctuating but relatively low. Water exports will target -5,000 OMR or less negative while trying to maintain 5,000 cfs daily outflow.

### **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 February 20. 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 6th 20-mm Survey (May 21-24), based partially process samples, detected no longfin smelt larvae or juveniles in the central and south Delta (Table 1). The risk of additional longfin smelt entrainment into the south Delta is believed to be extremely low. Longfin smelt juveniles were not salvaged in the past week, and have not been salvaged since May 19. Similarly, larvae have been observed in fish larval samples at the Delta export facilities since May 3.

Combined State and federal exports will be coordinated through May 31 to a combined export of about 4,500 cfs and beginning June 1 to combined exports of 3,200 to achieve 5,000 cfs outflow (D-1641 compliance). Currently, the Delta Smelt BI Op sets a limit of -5,000 cfs.

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 #6, 2012 (partially processed).

Year	Survey	Station	Date	# Tows Processed	Species_	Total Catch	Min Length	Max Length	Avg Length
2012	6	323		0	Not Yet Processed	0			
2012	6	340		0	Not Yet Processed	0			
2012	6	342		0	Not Yet Processed	0			
2012	6	343		0	Not Yet Processed	0			
2012	6	344		0	Not Yet Processed	0			
2012	6	345		0	Not Yet Processed	0			
2012	6	346		0	Not Yet Processed	0			
2012	6	405		0	Not Yet Processed	0			
2012	6	411		0	Not Yet Processed	0			
2012	6	418		0	Not Yet Processed	0			
2012	6	501	22-May-12	1	Longfin Smelt	8	20	28	24.25
2012	6	504	22-May-12	1	Longfin Smelt	59	13	29	21.52
2012	6	519	22-May-12	1	Longfin Smelt	22	15	27	21.5909
2012	6	602		1	Longfin Smelt	42	18	28	24.4762
2012	6	606		1	Longfin Smelt	4	18	22	20.25
2012	6	609		1	No Longfin Catch	0			
2012	6	610		0	Not Yet Processed	0			
2012	6	508		0	Not Yet Processed	0			
2012	6	513		0	Not Yet Processed	0			
2012	6	520		1	Longfin Smelt	13	13	13	13
2012	6	801		1	Longfin Smelt	5	17	23	19.6
2012	6	804		1	No Longfin Catch	0			
2012	6	703		0	Not Yet Processed	0			
2012	6	704		1	Longfin Smelt	23	23	23	23
2012	6	705	22-May-12	1	No Longfin Catch	0			
2012	6	706		1	Longfin Smelt	1	19	19	19
2012	6	707	22-May-12	1	No Longfin Catch	0			
2012	6	711	21-May-12	1	No Longfin Catch	0			
2012	6	716	21-May-12	1	No Longfin Catch	0			
2012	6	718	21-May-12	3	Longfin Smelt	1	21	21	21
2012	6	719		0	Not Yet Processed	0			
2012	6	720	21-May-12	1	No Longfin Catch	0			
2012	6	723		0	Not Yet Processed	0			
2012	6	724		0	Not Yet Processed	0			
2012	6	726		0	Not Yet Processed	0			
2012	6	809	21-May-12	1	No Longfin Catch	0			
2012	6	812	22-May-12	1	No Longfin Catch	0			
2012	6	815	22-May-12	1	No Longfin Catch	0			
2012	6	901	21-May-12	1	No Longfin Catch	0			
2012	6	902	21-May-12	3	No Longfin Catch	0			
2012	6	906	22-May-12	1	No Longfin Catch	0			
2012	6	910	22-May-12	1	No Longfin Catch	0			
2012	6	912	22-May-12	1	No Longfin Catch	0			
2012	6	914	21-May-12	3	No Longfin Catch	0			
2012	6	915	21-May-12	3	No Longfin Catch	0			
2012	6	918	21-May-12	3	No Longfin Catch	0			
2012	6	919	22-May-12	1	No Longfin Catch	0			

Suisun Bay & West

Confluence

Sac. River System

Central & South Delta

Processing complete through 5/24/12