

SMELT WORKING GROUP
Monday, April 30, 2012

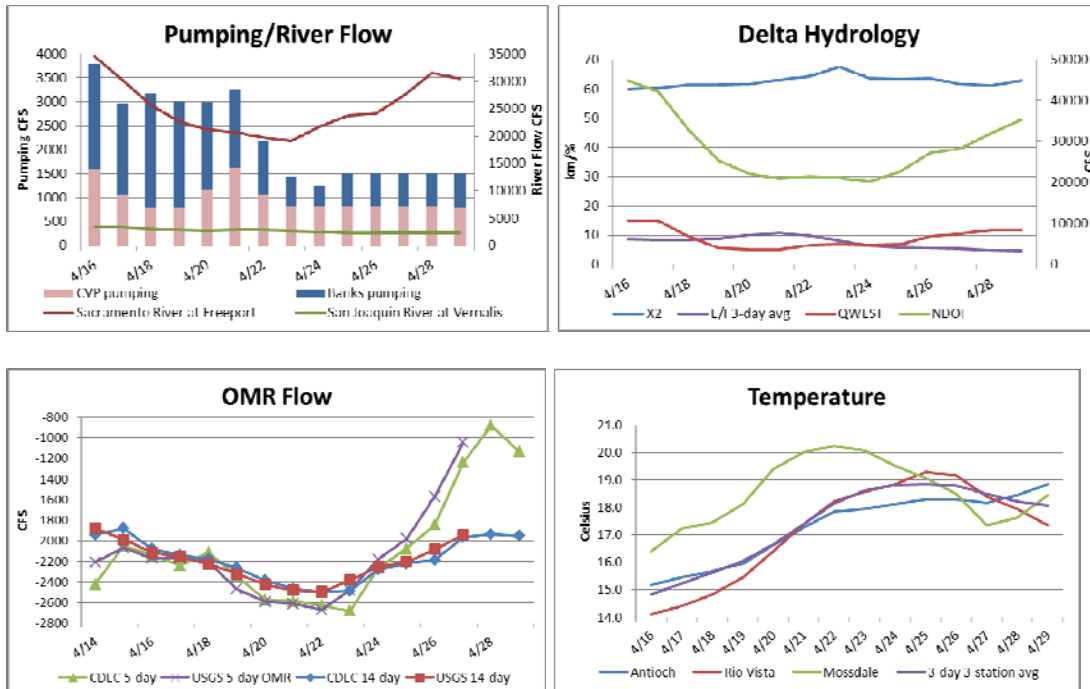
Meeting Summary:

The Working Group agreed that given their present distribution, current salvage, and Delta conditions, 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 was sufficient to protect longfin smelt. The Working Group will continue to monitor smelt salvage, adult and larval smelt survey data, and delta hydrological conditions and will reconvene May 7, 2012, at 10 am.

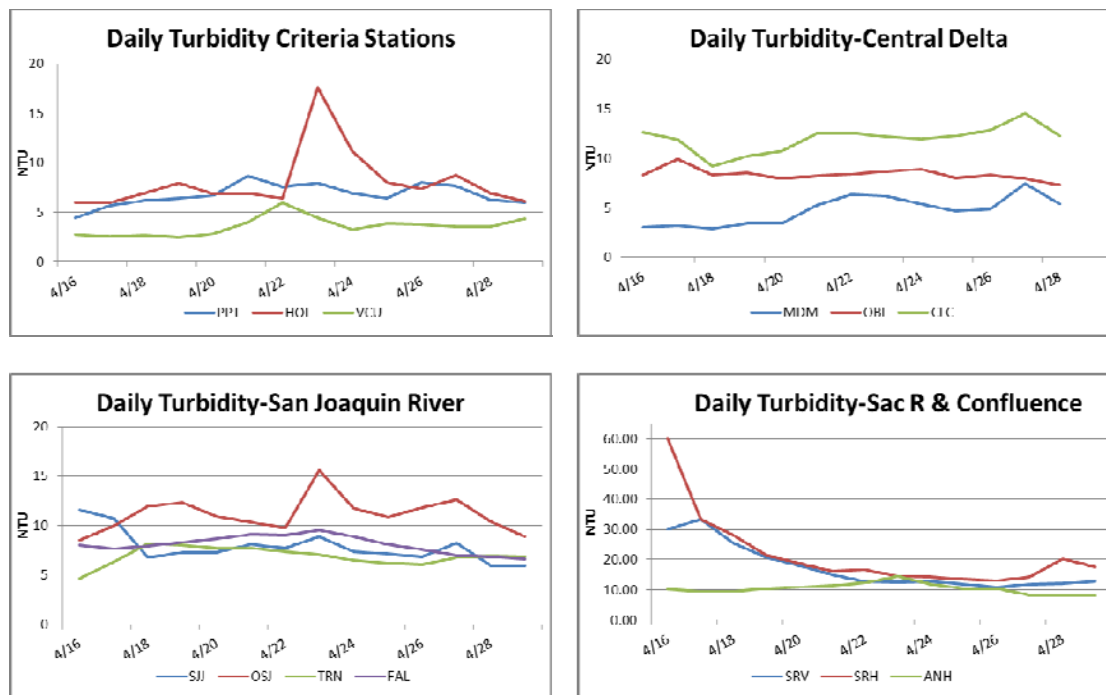
Reported Data:

1) Current environmental data:

- **Water temperature** for the 3 station average is 18.1°C. Average daily water temperature at the Clifton Court Forebay (station CLC) is approximately 21 °C.
- **OMR:** USGS tidally-averaged OMR 5-day and 14-day averages as of April 27 are -1,045 cfs and -1,942 cfs, respectively. CDEC 5-day average and 14-day averages as of April 29 are -1,132 cfs and -1,952 cfs, respectively.
- **Flow:** Sacramento River inflow is 30,482 cfs and San Joaquin River is 2,322 cfs. X_2 calculation from CDEC is 62.78 km. The graphs below show the most recent trends in Delta hydrology and water quality that were evaluated by the Working Group.



- **Turbidity:**



2) Delta Fish Monitoring:

20mm Survey #4 was in the field last week. So far, 39 delta smelt were collected, 11 of which were adults. The 28 larvae ranged in size from 5-22mm. Two delta smelt larvae were collected in the central and southern Delta stations. SKT#5 is in the field this week. 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 adult delta smelt and juvenile longfin smelt salvage for the season:

Table 1. Estimated daily adult delta smelt and juvenile (≥ 20 mm) longfin smelt salvage for WY 2012.

Delta Smelt (adults)				Longfin Smelt (YOY ≥ 20 mm)			
Date	CVP	SWP	Total	Date	CVP	SWP	Total
January total	36	0	36	February total	8	0	8
February total	50	52	102	March total	257	1484	1741
March total	21	40	61	4/1	36	62	98
4/17	4	0	4	4/2	25	40	65

				4/3	38	28	66
				4/4	28	8	36
				4/5	12	66	78
				4/6	16	88	104
				4/7	52	28	80
				4/8	28	8	36
				4/9	48	24	72
				4/10	28	36	64
				4/11	44	36	80
				4/12	48	56	104
				4/13	24	84	108
				4/14	4	140	144
				4/15	35	84	119
				4/16	24	76	100
				4/17	0	80	80
				4/18	8	46	54
				4/19	0	46	46
				4/20	24	20	44
				4/21	28	4	32
				4/22	4	4	8
				4/23	14	20	34
				4/24	44	16	60
				4/25	4	16	20
				4/26	1	12	13
				4/27			9
				4/28	16	4	20
				4/29	4	8	12

Preliminarily a total of 16 prejuvenile (<20mm) delta smelt have been salvaged at the CVP since 04/27, see Table 2.

Table 2. Combined daily salvage (CVP+SWP) of juvenile (>20mm) delta smelt.

Date	Combined delta smelt salvage
04/27	4
04/28	4
04/29	8

Larval or prejuvenile (< 20 mm) longfin 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 1,500 cfs as of April 30. Combined exports are presently curtailed to comply with the NMFS Joint Stipulation which requires OMR flow be no more negative than -1,250 cfs or combined SWP/CVP pumping maximum of 1,500 cfs through April 30. As of May 1, operations will increase to meet 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. Combined pumping starting May 1 is anticipated to be approximately 2,200-2,300 cfs and is anticipated to match flow at Vernalis.

5) Particle Tracking Modeling:

The Working Group did not request PTM runs 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 3. Incidental take levels for the larval/juvenile delta smelt (cumulative).

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

Discussion: The Working Group reviewed and discussed all relevant data from fish surveys, Delta monitoring, salvage, and planned Project operations. Salvage of larval delta smelt occurred for the first time in WY 2012 at the CVP on April 26 and at the SWP on April 24. An adult was observed in salvage at the CVP on April 17. This is the first salvage of an adult delta smelt at either facility since March 27. The Working Group followed the guidance of the adaptive process detailed in the RPA for action 3. While low levels of salvage of juvenile delta smelt has occurred, the Working Group discussed the fact that, based on preliminary data from 20mm Survey #4, most delta smelt appear to occur north and west of Station 815. In addition, QWEST remains strongly positive at >8000cfs, X2 is located at 63km and the 5-day OMR is -1,132cfs. All of these indicate a low entrainment risk of juvenile delta smelt.

During the call, the SWG agreed that current Delta conditions, including current and projected OMR flows, are sufficiently protective of delta smelt and therefore no change in operations is necessary.

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. A near absence of salvage in the central and south Delta for 20-mm Survey #4 and a decreasing salvage trend, the risk is currently low. QWEST is approximately 8,387cfs and Delta outflow is now 35,452cfs, 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 April 30, 2012:

The Smelt Working Group believes that the current target of exports matching Vernalis flows should not change OMR flow much from the recent target of -1,250 cfs, and will be protective for larvae and juveniles remaining in the lower San Joaquin River.

Summary of risk: Risk of additional entrainment into the south Delta is currently very low. Larva catches were low in the central and south Delta in 20-mm Survey #4. At the fish facilities detection of larvae and salvage of juveniles are dropping. Recent runoff has maintained a strong positive Qwest, (currently 8,387 cfs). This will provide some westward transport of larvae in the central Delta. Starting on May 1, water exports will be managed at 1:1 with Vernalis flows which are currently 2,300 cfs.

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 (≥ 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 ≥ 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 fourth 20-mm Survey (April 23-25) detected only 3 longfin smelt larvae in the central and south Delta (Table 1). Qwest reached 11,000 cfs on April 15 and has since declined, but remains at 8,387 cfs. Longfin smelt larvae were not reported from the facilities during the period April 17-27, but were on April 28 and 29; small juveniles continue to be salvaged daily at both fish facilities in the single or low double digits. The increase in south Delta water temperatures to 18°C likely means the end of longfin smelt spawning. Nonetheless a few small larvae remain in the south Delta (Table 1).

Combined State and federal exports will be coordinated this week to achieve 1:1 with Vernalis flows in accordance of SWRCB D-1641. Vernalis flows are currently 2,300 cfs and will increase to 3,000 by this coming weekend. OMR as of April 29 was estimated at -1,132 cfs (CDEC 5-day) and -1,952 (CDEC 14-day). OMR will likely become more negative with increased exports to match increased Vernalis flows, but is not expected to be the inverse of Vernalis flows due to the leaky Head of Old River barrier. Such weakly negative OMR flows along with positive Qwest should not draw many additional longfin smelt larvae or juveniles into the south Delta.

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.