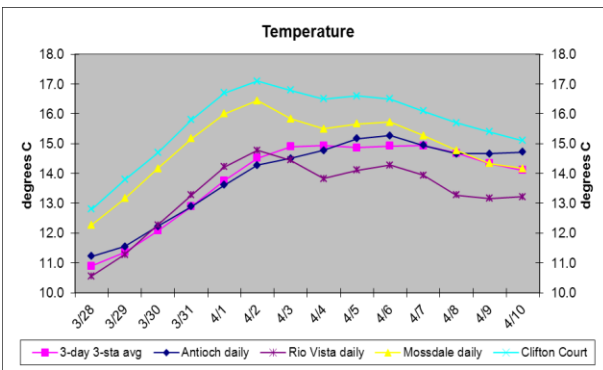
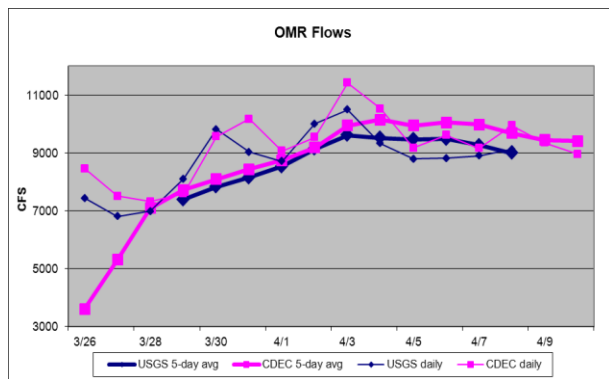
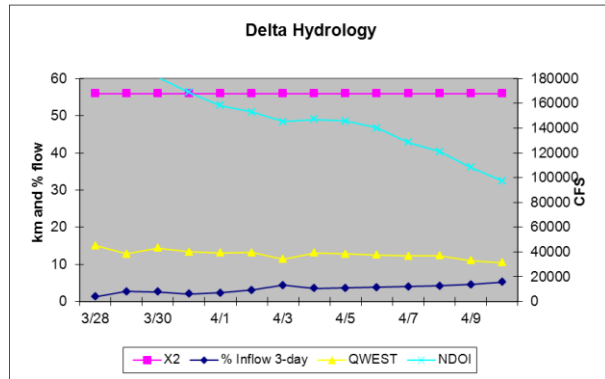
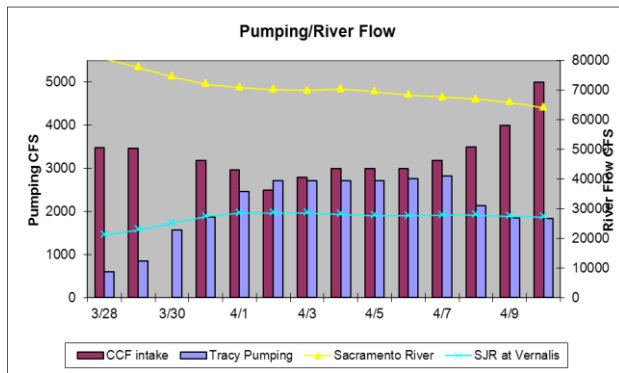


SMELT WORKING GROUP
Monday, April 11, 2011

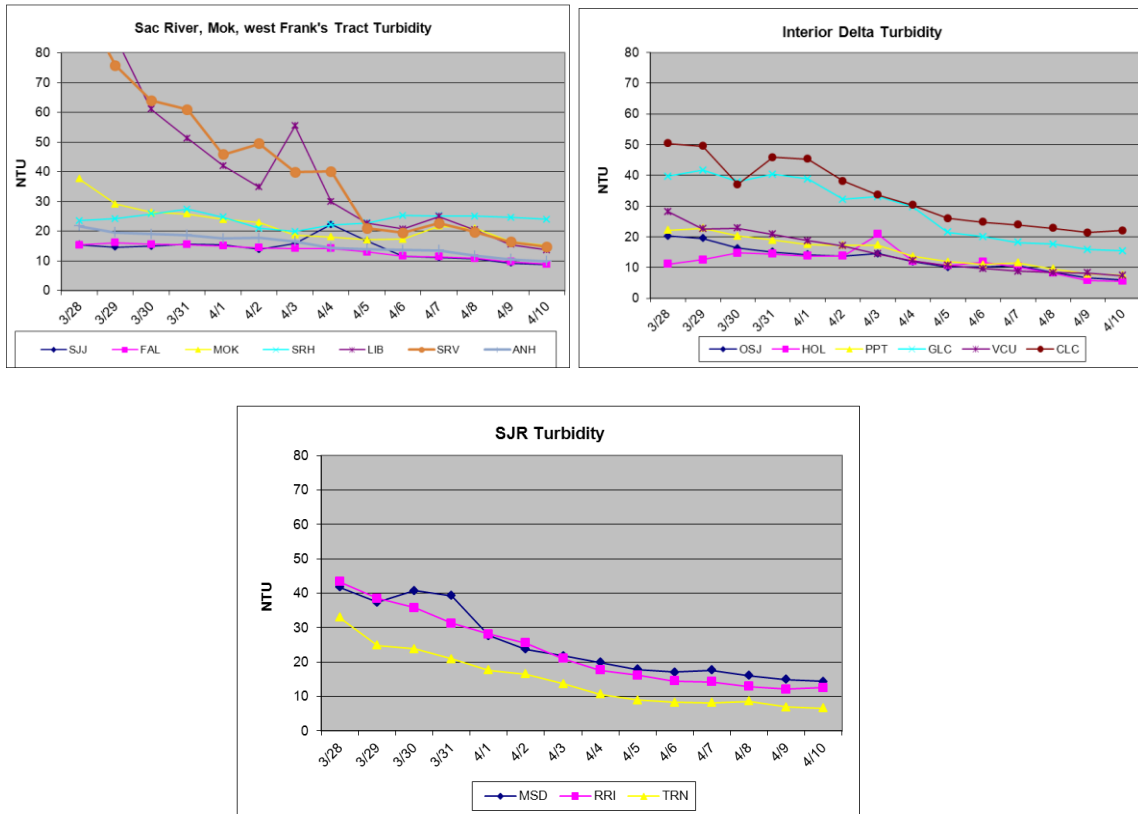
The Working Group will continue to monitor salvage, survey data, and hydrological conditions and will reconvene April 18. No recommendations were made.

1) Current environmental data.

- **Water temperature** for the 3 station average is 14.1°C.
- **OMR** USGS tidally-averaged OMR was 9,120 cfs on April 8, 2011. The 5-day average OMR was 8,990 cfs. The OMR average estimate from CDEC on April 10 was 8,962 cfs. The 5-day CDEC OMR is 9,406 cfs.
- **Flow** Sacramento River inflow is 64,045 cfs and San Joaquin 27,200 cfs. X₂ calculation from CDEC is less than 56km. For April 11, the E/I ratio was 5.2%, QWEST was 31,390 cfs, and NDOI was 97,490 cfs. The graphs below show the most recent trends in Delta hydrology and water quality that were evaluated by the Working Group.



- **Turbidity** Turbidities are generally trending down from highs following recent rains.



2) Delta fish monitoring:

Spring Kodiak Trawl #4 was in the field last week. A total of 62 adult delta smelt were collected, 80% of which were from station 719 in the Sacramento Deep Water Shipping Channel. Staging information for 25 of these fish will be provided in several weeks' time. Additional fish were collected from Montezuma Slough and Suisun Bay, as well as 2 stations from the central Delta. Spent females were collected in Suisun Bay and the SDWSC, while other stations had ripe and prespawn fish. 20mm Survey #3 is in the field this week. The final 2010 FMWT Index is 29 for delta smelt and 191 for longfin smelt. The 2010 Delta Smelt Recovery Index (based on September and October) is 11. 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 larval surveys, SKT, and 20mm Surveys are available online at: <http://www.dfg.ca.gov/delta/>

3) Salvage

No longfin smelt were salvaged from January 15 through April 10. Four adult delta smelt were salvaged at the CVP on January 15 and 17, February 24, and March 15, 19, and 20, and 12 were salvaged at the CVP on March 22, 8 on March 23, 4 on March 30, 2.1 on April 1, and 1 on April 5 for a seasonal cumulative total of 51 fish. No salvage has been reported for longfin smelt or delta smelt at the SWP since June 2010. No larvae or juveniles for either delta smelt or longfin smelt has been reported at either facility for the season. Criteria for the implementation of an action were not met or exceeded.

Incidental take for juvenile delta smelt at least 20mm in size is as follows:

	Concern Level	Authorized Take
April	9	13
May	378	567
June	958	1436
July	1086	1630

Numbers are estimated salvage for the SWP and the CVP combined. The monthly numbers are cumulative. For example, the authorized take for July includes the salvage from April, May, and June.

4) Expected Project Operations

Combined CVP/SWP exports are around 7,400 cfs as of April 10. The CVP and SWP have filled their shares of San Luis Reservoir. Goodwin Reservoir is anticipated to increase releases tomorrow to 3,000 cfs to manage inflow to the reservoir. Releases on the American River are anticipated to decrease from the current 10,000 cfs later this week.

5) Particle Tracking Modeling

The Working Group did not request PTM runs for this week.

6) Discussion for Recommendation

The Working Group reviewed and discussed all relevant data from fish surveys, Delta monitoring, salvage, and planned Project operations. No recommendation was made.

RPA Component 1, Action 1 is intended to protect pre-spawning adults during the first flush, as they move into their spawning areas. The WY 2011 first flush has likely passed through the Delta. Component 1, Action 2 (pp 280-281 and Attachment B, pp 352-356) may be implemented following the conclusion of Action 1, or the first flush. Criteria for the implementation of Action 2 are more varied and more flexible than those for Action 1. Action 3 is intended to minimize the entrainment of larval delta smelt. Criteria for the implementation of Action 3 are based upon the onset of spawning or the presence of larvae in the system. Risk of entrainment is estimated based upon survey data, Delta conditions, and the occurrence of salvage.

The 2010 FMWT index for delta smelt is 29. This means that the authorized incidental take of adults is 210 (estimated) and the concern level is 157 (estimated), cumulative for the December through March period. Under the low-entrainment risk scenario for the implementation of Action 2, the salvage criterion is a Daily Salvage Index greater than or equal to 1 (i.e., 29, estimated; B.O. p 338).

The Working Group will continue to evaluate the risk of entrainment according to the guidance provided in the RPA, as in previous years. The recent OCAP settlement does not change any of the parameters that the Working Group is required to discuss (B.O., pp 358-368). However, the newly-created Delta Condition Team (DCT) may provide additional information for the Working Group's consideration. The settlement additionally provides that the Service may set OMR flows more negative than -5000 cfs; flows as negative as -6100 cfs are allowed on an experimental basis if the "best available science and consideration of all factors...indicate that such flows would be adequately protective" of delta smelt. This rate of flow could apply if the risk of entrainment is believed to be low, based upon evaluation of physical and biological monitoring results.

The 3-day, 3-station average water temperature surpassed 12°C on March 10, 2 spent female delta smelt were detected in SKT survey 3, and 1 delta smelt larva was collected during the 20mm Survey #1, any of which meet or exceed the criteria for the implementation of Action 3, entrainment protection for larval smelt. The temperature criterion may indicate that protections are needed based upon the assumption that delta smelt spawning is in progress, whereas the observation of spent females and/or larvae provides direct evidence of spawning. Peak daily adult salvage exceeding a one:one ratio to the FMWT Index may also indicate that the risk of entrainment is unacceptably high (B.O., pp 346-347).

The Working Group estimated that the overall risk of entrainment for larvae and adults was low given the distributional data from recent surveys. Turbidity has decreased in the last several days throughout the delta. Hydrology remains favorable, indicating a low level of risk for entrainment. Apparent abundance remains very low, which raises the concern level for the species into the moderate range. The risk of delta smelt entering the central and south Delta is expected to remain low, due to anticipated export pumping and flows for the San Joaquin and Sacramento Rivers.

The Working Group did not receive any advice from the DCT.

The Working Group believes that, based upon what is known of Delta conditions and delta smelt distribution, a modification of Project operations to protect delta smelt is not yet warranted.

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

Recommendation for week of April 11, 2011:

The Smelt Working Group does not have any advice based on longfin smelt information. San Joaquin River at Vernalis flows and Sacramento River flows at Rio Vista are both above levels that indicate virtually no risk entrainment.

Basis for recommendation:

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 (State Water Project + Central Valley Project) 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, and 919).
4. Larva catch per tow exceeds 15 longfin smelt larvae or juveniles in 4 or more of the 12 survey stations listed.

As of April 3, no longfin smelt have been salvaged since the first longfin smelt of the season was salvaged on January 14, 2011 and none have been collected in the central or south Delta in fish surveys in March. No advice is warranted based on this criterion.

Longfin smelt larvae were detected during the Smelt Larva Survey #1 (January 18-19), providing evidence of spawning, which initiated SWP Longfin Smelt ITP section 5.2 to protect larval and juvenile longfin smelt. However, OMR restrictions under section 5.2 are not required when river flows are: 1) greater than 55,000 cfs on the Sacramento River at Rio Vista; or 2) greater than 8,000 cfs on the San Joaquin River at Vernalis.

San Joaquin River flow at Vernalis surpassed 8,000 cfs flow criterion on February 19th and has remained above it since (Figure 1). Sacramento River flow at Rio Vista surpassed the 55,000 cfs flow criterion about March 18 and has remained above it since (Figure 2). As of April 3, Qwest was above 31,000 cfs (Delta Hydrologic Conditions), indicating strong westward flows and little risk of entrainment for longfin smelt larvae.

The most recent, and last Smelt Larva Survey data available (#5, March 22-23) indicate that recently hatched larvae were transported westward out of the central Delta, though a few larvae continue to hatch within the Delta (Table 1). The subsequent 20mm Survey results show very few larvae within the Delta and the highest concentration of larvae in San Pablo Bay and Napa River (Table 2). No additional advice to protect larvae is warranted at this time based on criteria 3 and 4.

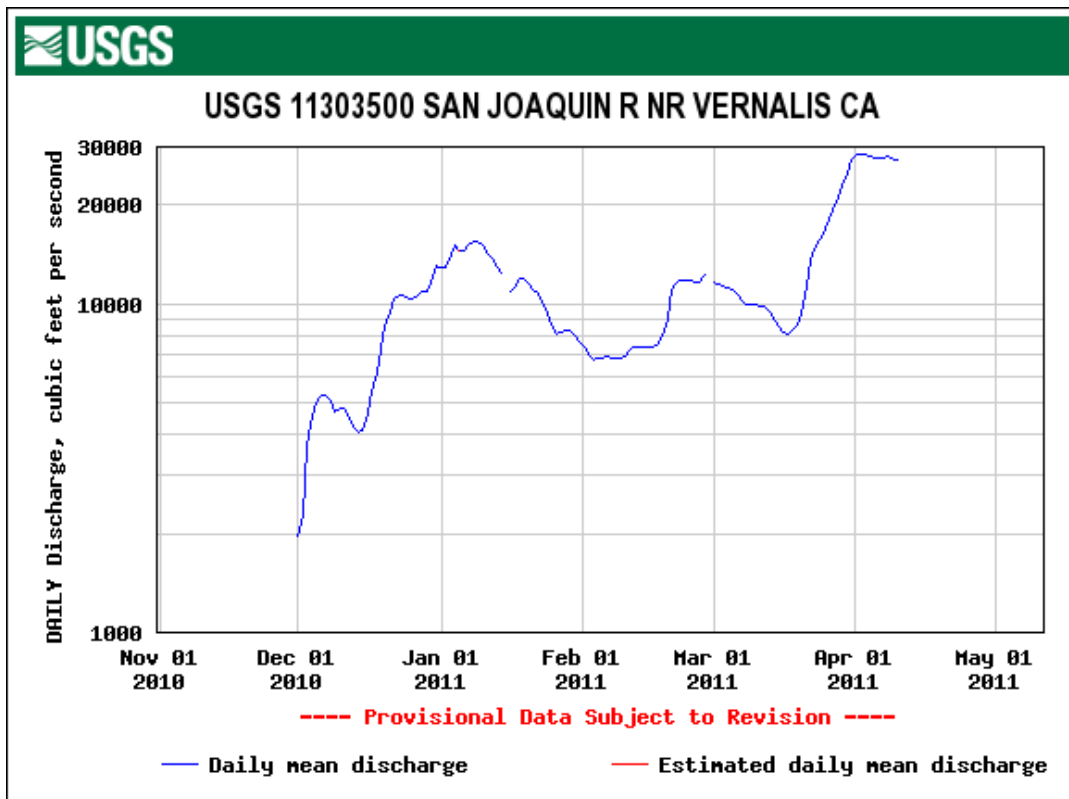


Figure 1. Tidally averaged San Joaquin River flow measured near Vernalis, December 1, 2010 through April 10, 2011.

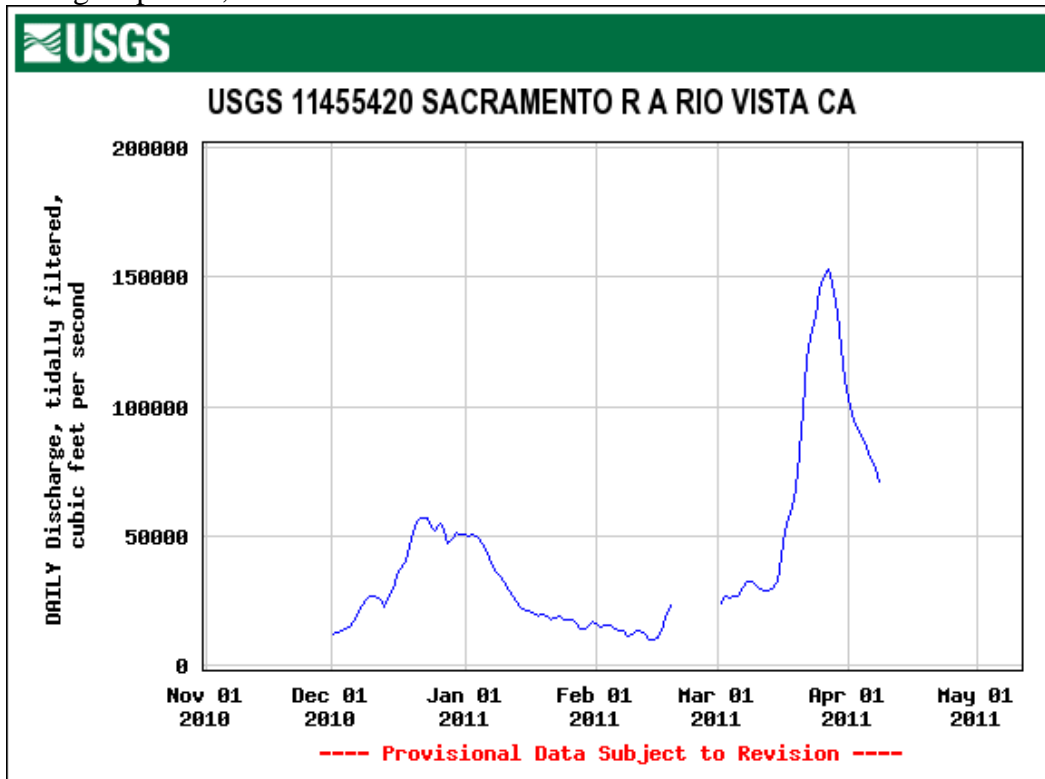


Figure 2. Tidally averaged Sacramento River flows measured at Rio Vista, December 1, 2010 through April 8, 2011.

Table 1. Longfin smelt catch per station from 2011 Smelt Larva Survey, Survey 5, March 22-23, 2011 (sample processing complete). South and central Delta criteria station data are highlighted in yellow.

Year	Survey	SLS Station	Sample Status	Species	Smelt Catch
2011	5	405	Processed	Longfin Smelt	8
2011	5	411	Processed	Longfin Smelt	8
2011	5	418	Processed	Longfin Smelt	1
2011	5	501	Processed	Longfin Smelt	5
2011	5	504	Processed	Longfin Smelt	9
2011	5	508	Processed	Longfin Smelt	2
2011	5	513	Processed		No Smelt Catch
2011	5	519	Processed	Longfin Smelt	5
2011	5	520	Processed	Longfin Smelt	2
2011	5	602	Processed	Longfin Smelt	36
2011	5	606	Processed	Longfin Smelt	10
2011	5	609	Processed		No Smelt Catch
2011	5	610	Processed	Longfin Smelt	2
2011	5	703	Processed	Longfin Smelt	3
2011	5	703	Processed	Delta Smelt	1
2011	5	704	Processed	Longfin Smelt	4
2011	5	705	Processed	Longfin Smelt	1
2011	5	706	Processed		No Smelt Catch
2011	5	707	Processed		No Smelt Catch
2011	5	711	Processed	Longfin Smelt	1
2011	5	716	Processed		No Smelt Catch
2011	5	723	Processed	Longfin Smelt	2
2011	5	723	Processed	Delta Smelt	2
2011	5	801	Processed	Longfin Smelt	1
2011	5	804	Processed	Longfin Smelt	2
2011	5	809	Processed	Longfin Smelt	1
2011	5	812	Processed	Longfin Smelt	2
2011	5	815	Processed		No Smelt Catch
2011	5	901	Processed	Longfin Smelt	1
2011	5	902	Processed	Longfin Smelt	1
2011	5	906	Processed		No Smelt Catch
2011	5	910	Processed	Longfin Smelt	1
2011	5	912	Processed		No Smelt Catch
2011	5	914	Processed		No Smelt Catch
2011	5	915	Processed	Longfin Smelt	1
2011	5	918	Processed		No Smelt Catch
2011	5	919	Processed		No Smelt Catch

Processing through 3/28/11

Total LFS: 109
 Total DS: 3

Table 2. Longfin smelt catch per station from 2011 20mm Survey, Survey 2 (sample processing complete).

Year	Survey	Station	Date	# Tows Processed	Species	Total Catch
2011	2	323	30-Mar-11	3	Longfin Smelt	48
2011	2	340	30-Mar-11	3	Longfin Smelt	25
2011	2	342	30-Mar-11	3	No Longfin Catch	
2011	2	343	30-Mar-11	3	Longfin Smelt	2
2011	2	344	30-Mar-11	3	Longfin Smelt	7
2011	2	345	30-Mar-11	3	Longfin Smelt	4
2011	2	346	30-Mar-11	3	No Longfin Catch	
2011	2	405	01-Apr-11	3	Longfin Smelt	1
2011	2	411	01-Apr-11	3	No Longfin Catch	
2011	2	418	01-Apr-11	3	No Longfin Catch	
2011	2	501	29-Mar-11	3	No Longfin Catch	
2011	2	504	29-Mar-11	3	No Longfin Catch	
2011	2	519	29-Mar-11	3	No Longfin Catch	
2011	2	602	29-Mar-11	3	Longfin Smelt	9
2011	2	606	29-Mar-11	3	Longfin Smelt	12
2011	2	609	29-Mar-11	3	No Longfin Catch	
2011	2	610	29-Mar-11	3	No Longfin Catch	
2011	2	508	30-Mar-11	3	No Longfin Catch	
2011	2	513	30-Mar-11	3	No Longfin Catch	
2011	2	520	30-Mar-11	3	No Longfin Catch	
2011	2	801	30-Mar-11	3	No Longfin Catch	
2011	2	804	30-Mar-11	3	No Longfin Catch	
2011	2	703	29-Mar-11	3	No Longfin Catch	
2011	2	704	29-Mar-11	3	No Longfin Catch	
2011	2	705	29-Mar-11	3	No Longfin Catch	
2011	2	706	29-Mar-11	3	No Longfin Catch	
2011	2	707	29-Mar-11	3	No Longfin Catch	
2011	2	711	28-Mar-11	3	No Longfin Catch	
2011	2	716	28-Mar-11	3	No Longfin Catch	
2011	2	718	28-Mar-11	3	No Longfin Catch	
2011	2	719	28-Mar-11	3	Longfin Smelt	2
2011	2	720	28-Mar-11	3	No Longfin Catch	
2011	2	723	28-Mar-11	3	No Longfin Catch	
2011	2	724	28-Mar-11	3	No Longfin Catch	
2011	2	726	28-Mar-11	3	No Longfin Catch	
2011	2	809	28-Mar-11	3	No Longfin Catch	
2011	2	812	29-Mar-11	3	No Longfin Catch	
2011	2	815	29-Mar-11	3	No Longfin Catch	
2011	2	901	28-Mar-11	3	No Longfin Catch	
2011	2	902	28-Mar-11	3	No Longfin Catch	
2011	2	906	29-Mar-11	3	No Longfin Catch	
2011	2	910	28-Mar-11	3	No Longfin Catch	
2011	2	912	28-Mar-11	3	No Longfin Catch	
2011	2	914	28-Mar-11	3	No Longfin Catch	
2011	2	915	28-Mar-11	3	No Longfin Catch	
2011	2	918	28-Mar-11	3	No Longfin Catch	
2011	2	919	29-Mar-11	3	No Longfin Catch	

The Smelt Working Group will reconvene on Monday, April 18 at 10 am to review the updated environmental, salvage, and survey data.