

Smelt Working Group
March 5, 2018

Meeting Summary

The Working Group reviewed current Delta conditions, survey data, current water project operations, and forecasted weather. Current weather conditions are sunny and cool, with precipitation forecasted starting this Sunday. The 3-station average water temperature (Antioch, Rio Vista Bridge, and Mossdale) has remained below 12°C since February 14, which is the spawning temperature indicator identified in the Biological Opinion and a trigger for Action 3. Based on Delta conditions, water export levels, and the lack of recent detections of Delta Smelt from surveys within the entrainment risk area, the SWG concluded that the risk for Delta Smelt and Longfin Smelt entrainment is low. In addition, no larval Delta Smelt and no spawning adult Delta Smelt have been detected, suggesting that the spawning season has not yet begun.

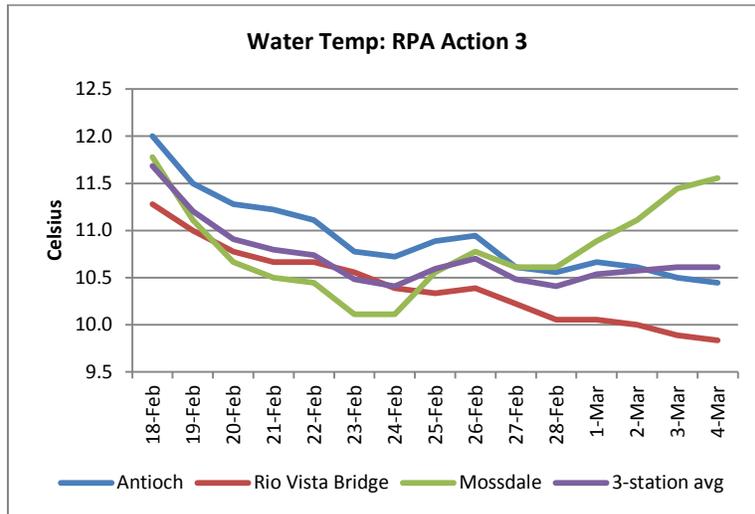
The Working Group does not believe that a recommendation under Action 2 (adult pre-spawning Delta Smelt) or Action 3 (larval Delta Smelt) is necessary to protect Delta Smelt at this time. The Working Group will continue to monitor Delta Smelt survey and salvage data, Delta conditions, and this Sunday's forecasted precipitation. The group will meet again next Monday, March 12 at 1000 hours.

Reported Data

1. **Current environmental data**

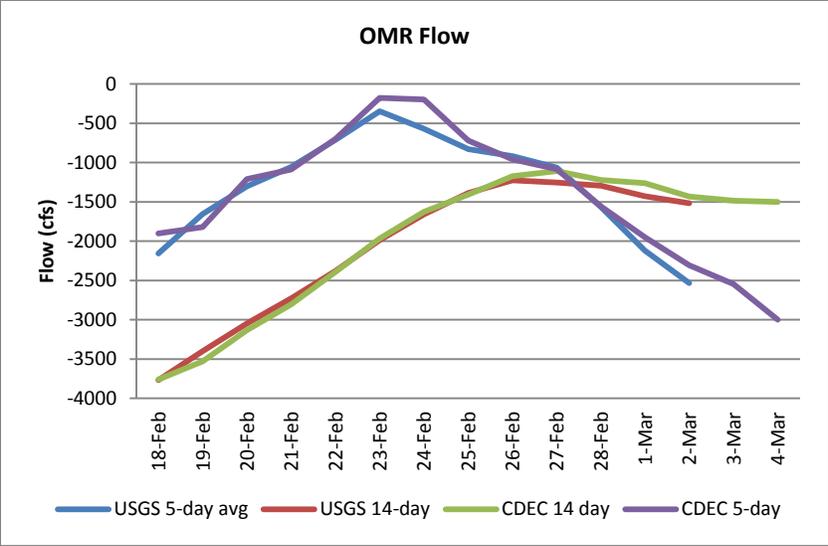
a. **Temperature**

Daily averages of the 3 Delta Stations (Antioch, Rio Vista Bridge, and Mossdale) was 10.6°C as of March 4.



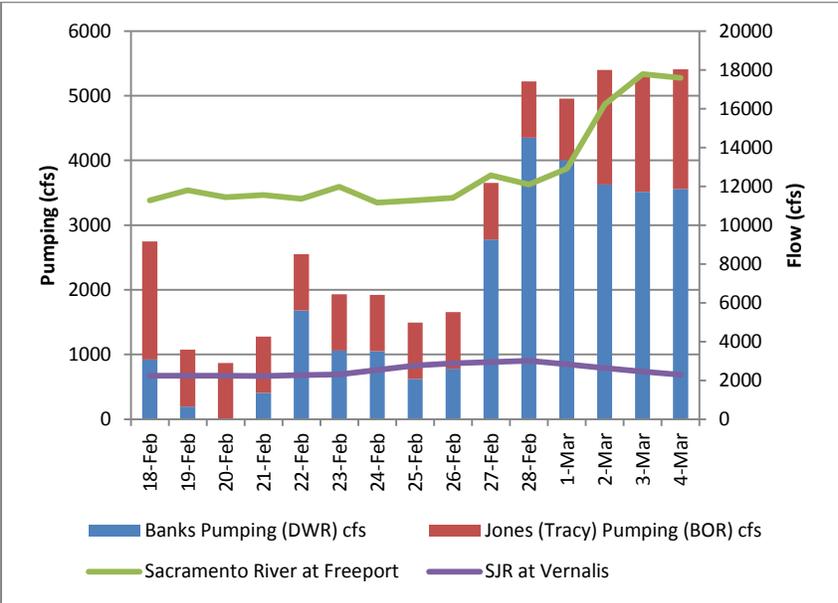
b. **OMR flow**

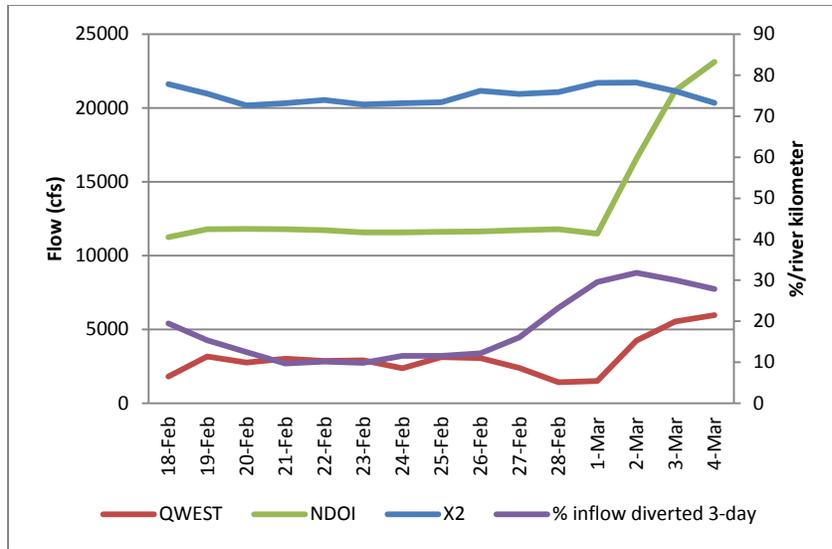
The CDEC daily average OMR flow for March 4 was -3,131 cfs. USGS daily average OMR flow for March 2 was -3,320 cfs.



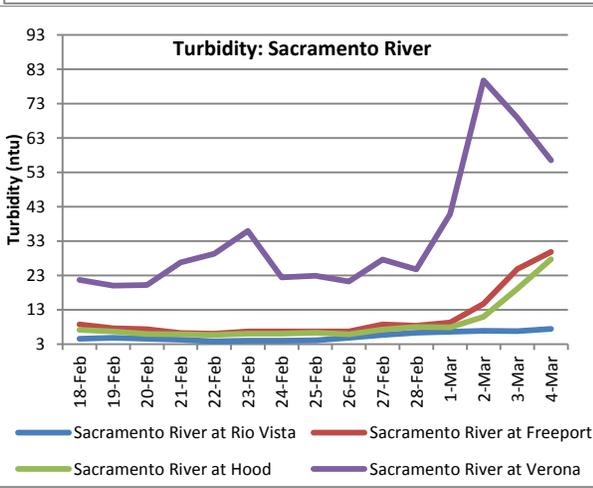
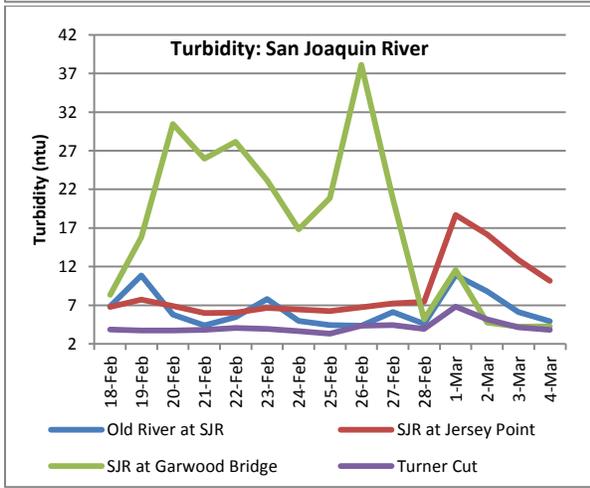
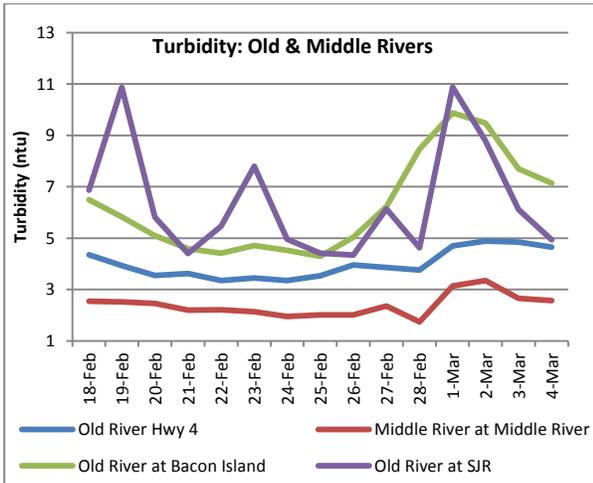
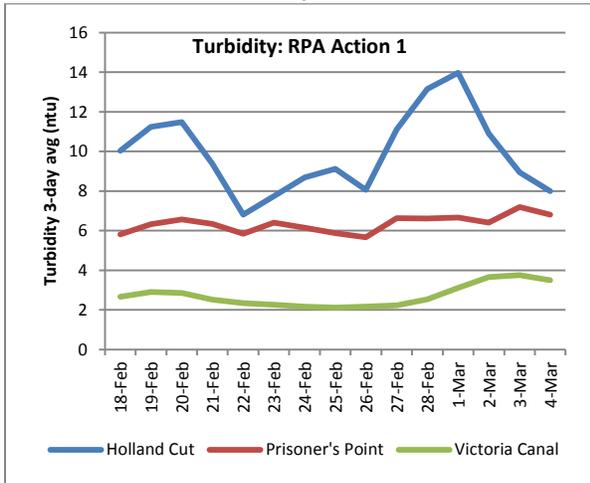
c. River flows and pumping

Sacramento River at Freeport flow for March 4 was approximately 17,577 cfs. San Joaquin River at Vernalis flow for March 4 was approximately 2,286 cfs. X2 was at 73.21 km as of March 4.





d. Turbidity



2. Delta fish monitoring

Smelt Larva Survey (SLS) #5 was out in the field last week, and all the South and Central Delta catches have been processed. No larval Delta Smelt and no larval Longfin Smelt were detected at any of the South and Central Delta stations. Sampling at the Napa River stations was canceled last week due to poor weather conditions and will be re-visited by the field crew today. Spring Kodiak Trawl (SKT) #3 is out in the field sampling this week.

Enhanced Delta Smelt Monitoring (EDSM) was in the field last week and will be in the field this week. Last week, one adult Delta Smelt and 3 adult Longfin Smelt were detected. Complete EDSM catch reports are publicly available [here](#).

3. Modeling

No modeling or PTMs have been performed over the past few weeks, and there were no new modeling requests this week. Last week, it was mentioned that running a PTM would be logical if a WIIN Act flex were to occur. Since a WIIN Act flex has not been implemented, there is no need for any PTMs this week.

4. Salvage

No adult or juvenile stages of Delta Smelt and Longfin Smelt have been observed in salvage so far this season (WY 2018). As field surveys have not observed any spawning adult Delta Smelt or larval Delta Smelt, the group consensus is that the fish salvage facilities do not yet need to initiate larval sampling.

5. Expected Project Operations

Combined pumping for the Banks and Tracy pumping facilities on March 4 was 5,410 cfs, and Net Delta Outflow on March 4 was 23,119 cfs. Pumping is currently restricted by SWRCB D-1641's Export/Inflow (E/I) ratio of 35%, which provides protection for fish and wildlife. Exports are scheduled to increase on Wednesday, though OMR indices will stay at approximately -4,500 cfs to meet the 35% E/I requirement.

Ambient temperatures are anticipated to warm up slightly starting tomorrow. Precipitation is forecasted for this Sunday.

6. Delta Conditions Team

The DCT met last week and did not have any recommendations for the SWG this week.

7. Biological Opinion Background:

RPA Component 1, Action 2 states, "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 4 OMR flows within

this range are recommended by the Working Group from the onset of Action 2 through its termination...”

The timing of Action 2 is immediately after Action 1. Before this date (in time for operators to implement the flow requirement) the SWG will recommend specific requirement OMR flows based on salvage and on physical and biological data on an ongoing basis. If Action 1 is not implemented, the SWG may recommend a start date for the implementation of Action 2 to protect adult Delta Smelt. (BiOp 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).

8. Assessment of Risk Discussion

Delta Smelt Detections

SLS #5 did not detect any larval Delta Smelt at the South and Central Delta stations. Last week, EDSM detected one pre-spawning adult Delta Smelt in the Sacramento River Deepwater Shipping Channel, which is not in close proximity to the pumping facilities. In addition, the Delta Juvenile Fish Monitoring Program’s Chipps Island midwater trawl detected one adult Delta Smelt last Friday. No Delta Smelt have been salvaged as yet this season (WY 2018).

Longfin Smelt Detections

SLS #5 did not detect any larval Longfin Smelt at the South and Central Delta stations. Last week, EDSM detected 3 adult Longfin Smelt in Suisun Marsh, which is not in close proximity to the pumping facilities. No fish salvaged as yet this season (WY 2018).

General discussion

Conditions in the Delta are currently cool with precipitation forecasted for this Sunday. River flows have increased over the past few days due to last week’s storms. OMR will likely be limited to about -4,500 cfs by the 35% E/I requirement. As recent surveys have not detected any larval Delta Smelt or ripe female adult Delta Smelt, and all the adult Delta Smelt detected have been outside of the entrainment risk zone, the group consensus is that additional protections for larval smelt are not necessary at this time. Two group members stated that the risk to Delta Smelt this week is the same as it was last week: very low. One group member did mention that some Delta Smelt may have already started to spawn, but the current fish surveys may not be able to detect the spawning fish. As there is not yet any field evidence of spawning and all the Delta Smelt detected have been outside of the entrainment risk areas, the overall group consensus is that the current risk of entrainment for Delta Smelt is very low.

The SWG determined that no recommendation was necessary this week for the protection of Delta Smelt.

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

Advice for week of March 5, 2018:

The Smelt Working Group has no advice for protection of Longfin Smelt.

No advice for Barker Slough operation. Current water year type for the Sacramento River is below normal (as of January 31), which does not trigger concern for Barker Slough risk of entrainment (see Basis for advice #5 below).

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 March 4, 2018, no Longfin Smelt have been salvaged for the water year. See current conditions discussion below. The 2017 Fall Midwater Trawl Survey annual abundance index for Longfin Smelt is 141, so the salvage threshold is 705. Advice is not warranted based on this criterion.
2. No new survey information of large juveniles and adults. Bay Study sampled the upper estuary the week of February 20 and detected only two Longfin Smelt within the Delta, both in the Sacramento River adjacent to Sherman Lake. The lack of detection of Longfin Smelt in the central or south Delta makes advice unwarranted.
- 3 & 4. The fifth Smelt Larva Survey (SLS) of 2018 detected no Longfin Smelt larvae at central or south Delta criteria stations (Table 1). Based on these criteria, no advice is warranted.
5. Criteria for Barker Slough were scheduled to begin January 15th if the water year was classified as either dry and critical. Water year 2018 began classified as “above normal”, but as

of January 31 was reclassified as “below normal” (<http://cdec.water.ca.gov/cgi-progs/iodir/WSI>). Based on water year type there is no concern for entrainment of Longfin Smelt larvae. SLS survey 4 collected no Longfin Smelt larvae at station 716 and survey 5 has not yet processed that sample (Table 1).

Current conditions: For March, Sacramento River at Freeport was 17,357 cfs and the San Joaquin was about 2,286 cfs. Clifton Court exports were about 3691 cfs and Tracy exports were about 1852 cfs. Combined exports target to maintain X2 standards. The OMR index was -4037. Qwest was +3,742 cfs. This should provide for transport/dispersion downstream. In the north Delta, the most current water year designation remains at “below normal”, so North Bay Aquaduct advice is not warranted.

No Longfin Smelt larvae were detected at stations from the central or south Delta (Table 1). Current, very low export levels pose very little risk of entrainment.

During the last sampling week (week of February 20), Bay Study detected two adult Longfin Smelt in the lower Sacramento River, but none in the lower San Joaquin River.

Slightly increased outflow and the need to maintain X2 at Chipps Island has led to only small increases in export pumping and Qwest has remained positive. Thus, even if additional spawning and hatching occurred in the lower San Joaquin River, larvae would likely be transported downstream toward Suisun Bay. No Longfin Smelt have been salvaged this water year.

Summary of Risk: Risk of entrainment is very low due to few Longfin Smelt larvae detected in the central or south Delta, and no juveniles or adults. Hydraulic conditions are as benign as can be expected for this time of year (positive Qwest and OMR less negative than -5,000). Current hydrodynamic conditions are expected to remain the same or slightly less favorable through the upcoming week: current rains are not expected to change river flows much and water operations in March will initially target X2 at Chipps Island, so exports will remain low.

Table 1. Longfin Smelt Larva catch by station in the Smelt Larva Survey, #5. Sample processing is incomplete. Longfin Smelt incidental take permit criteria stations are highlighted in blue (Barker Slough Pumping Plant) and yellow (State Water Project south Delta exports).

Year	Survey #	SLS Station	Turbidity (NTU)	Sample Status	Species	Smelt Catch	Min Length	Max Length	Mean Length
2018	5	340		Not yet processed					
2018	5	342		Not yet processed					
2018	5	343		Not yet processed					
2018	5	344		Not yet processed					
2018	5	345		Not yet processed					
2018	5	348		Not yet processed					
2018	5	347		Not yet processed					
2018	5	348		Not yet processed					
2018	5	349		Not yet processed					
2018	5	405		Not yet processed					
2018	5	411		Not yet processed					
2018	5	418		Not yet processed					
2018	5	501		Not yet processed					
2018	5	504		Not yet processed					
2018	5	508		Not yet processed					
2018	5	513		Not yet processed					
2018	5	519		Not yet processed					
2018	5	520		Not yet processed					
2018	5	602		Not yet processed					
2018	5	606		Not yet processed					
2018	5	609		Not yet processed					
2018	5	610		Not yet processed					
2018	5	703		Not yet processed					
2018	5	704		Not yet processed					
2018	5	705		Not yet processed					
2018	5	706		Not yet processed					
2018	5	707		Not yet processed					
2018	5	711		Not yet processed					
2018	5	716		Not yet processed					
2018	5	723		Not yet processed					
2018	5	801		Not yet processed					
2018	5	804		Not yet processed					
2018	5	809	8.4	Processed		No Smelt Catch			
2018	5	812	8.0	Processed		No Smelt Catch			
2018	5	815	7.1	Processed		No Smelt Catch			
2018	5	901	6.7	Processed		No Smelt Catch			
2018	5	902	12.5	Processed		No Smelt Catch			
2018	5	906	10.5	Processed		No Smelt Catch			
2018	5	910	9.4	Processed		No Smelt Catch			
2018	5	912	9.1	Processed		No Smelt Catch			
2018	5	914	3.2	Processed		No Smelt Catch			
2018	5	915	7.7	Processed		No Smelt Catch			
2018	5	918	4.5	Processed		No Smelt Catch			
2018	5	919	5.5	Processed		No Smelt Catch			

Barker ITP

SWP ITP Criteria Stations

Processing is complete through 3/2/2018