

Smelt Working Group  
January 2, 2018

**Meeting Summary**

The Working Group reviewed current Delta conditions, survey data, expected water project operations, and forecasted weather. Although current conditions are dry, minor precipitation is forecasted for this coming Thursday and Friday. A “first flush” event is still unlikely to occur this week as the forecasted rain is not expected to be part of a major storm event. Based on Delta conditions, the forecasted weather, and the lack of recent detections of Delta Smelt from surveys, the SWG concluded that the risk for Delta Smelt and Longfin Smelt entrainment is low.

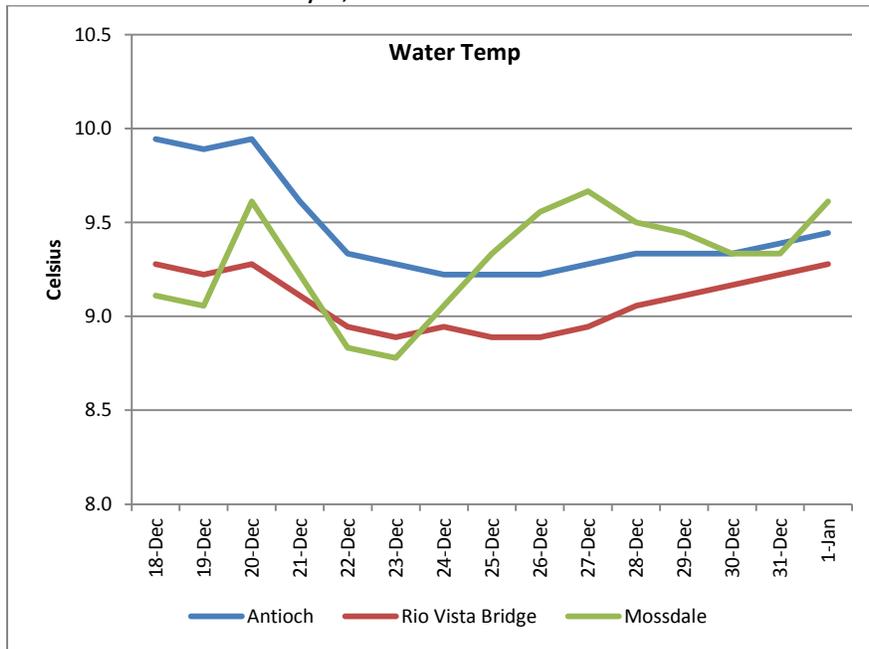
The Working Group does not believe that a recommendation under Action 1 or Action 2 (adult pre-spawning Delta Smelt) is necessary to protect Delta Smelt at this time. The Working Group will continue to monitor Delta Smelt survey and salvage data, Delta conditions, and particularly this week’s forecasted precipitation. The group will meet again on Monday, January 8, 2018.

**Reported Data**

1. **Current environmental data**

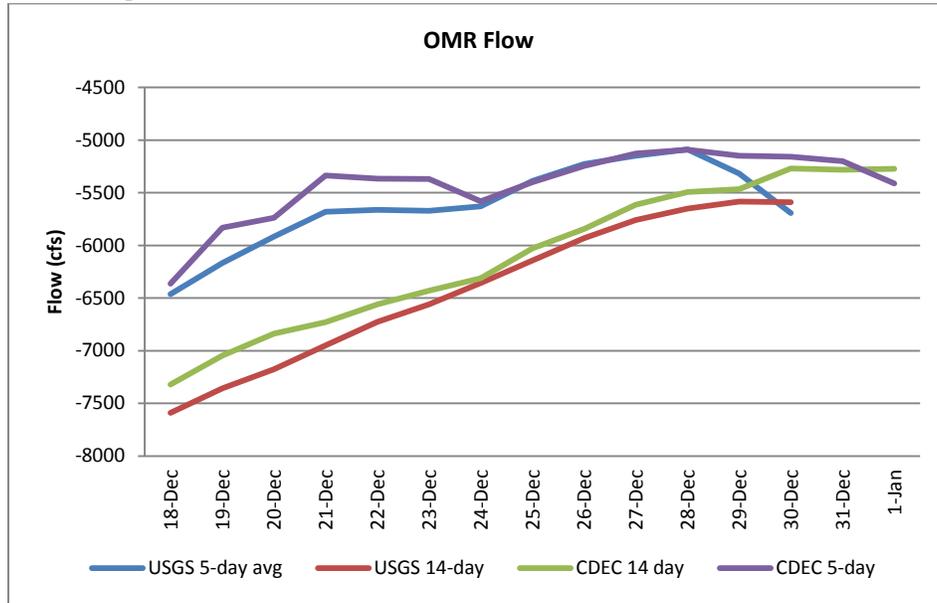
a. **Temperature**

Daily averages of the 3 Delta Stations (Antioch, Rio Vista Bridge, and Mossdale) was 9.4°C as of January 1, 2018.



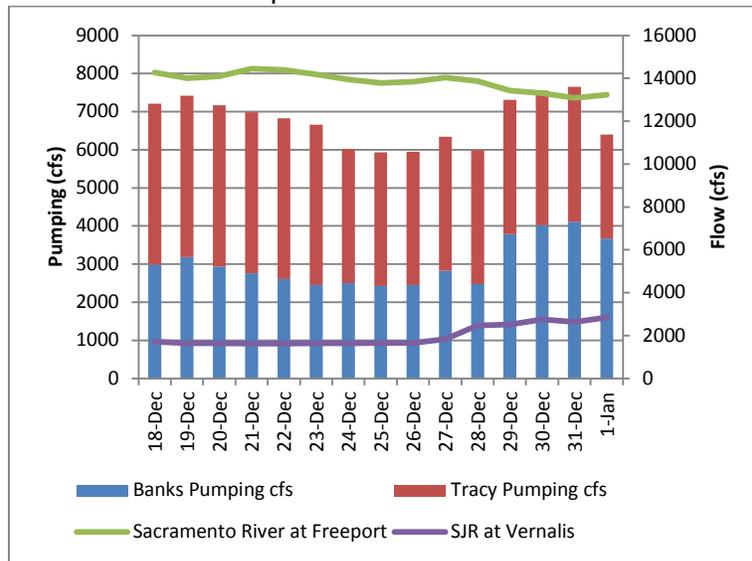
b. OMR flow

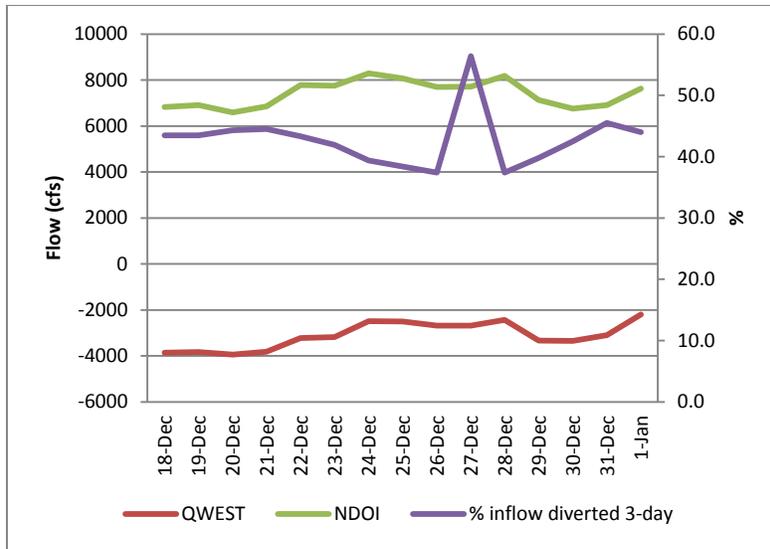
The CDEC daily average OMR flow for January 1, 2018 was -5,573 cfs. USGS daily average OMR flow for December 30, 2017 was -6,810 cfs.



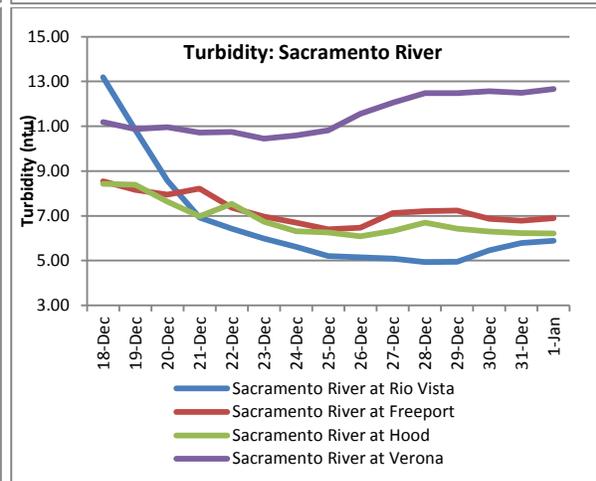
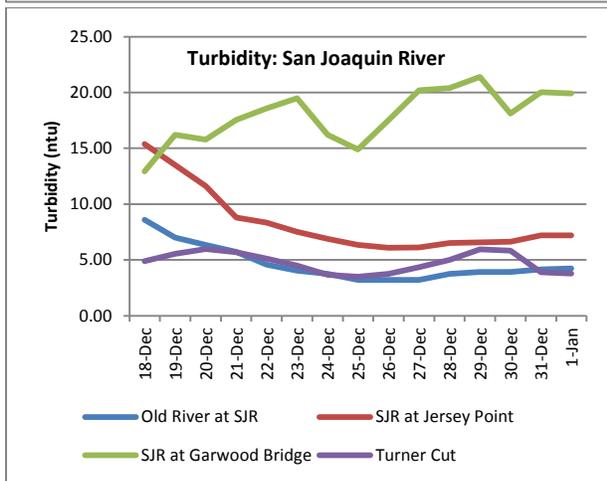
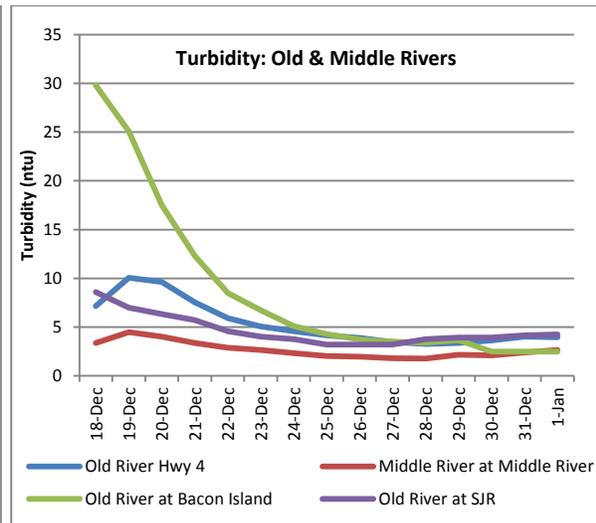
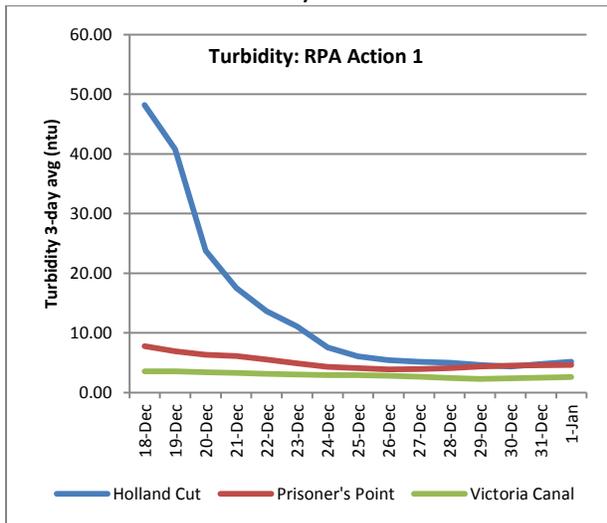
c. River flows and pumping

Sacramento River at Freeport flow for January 1, 2018 was approximately 13,240 cfs. San Joaquin River at Vernalis flow for January 1, 2018 was approximately 2,849 cfs. X2 has been upstream of 81 km since November 23, 2017.





d. Turbidity



## **2. Delta fish monitoring**

The first Smelt Larva Survey (SLS) is on the water today and will be surveying again in 2 weeks. The first Spring Kodiak Trawl (SKT) will begin next Monday. SLS is performed twice a month and SKT once a month.

The Fall Midwater Trawl was concluded in mid-December. No Delta Smelt were caught in the months of November and December 2017, and the final index for Delta Smelt for the year is 2.

Enhanced Delta Smelt Monitoring (EDSM) was in the field last Friday and will be in the field this week. No Delta Smelt have been captured since December 11, 2017. Complete EDSM catch reports are publicly available at [here](#).

## **3. Modeling**

No new PTM runs were requested, and no modeling was performed.

## **4. Salvage**

No adult or juvenile stages of Delta Smelt and Longfin Smelt have been observed in salvage so far this season (WY 2018).

## **5. Expected Project Operations**

Combined pumping for the Banks and Tracy pumping facilities on January 1, 2018 was 6,397 cfs, and Net Delta Outflow on January 1, 2018 was 7,631 cfs. Pumping is currently restricted by NMFS RPA Action IV.2.3, which was initiated on January 1, 2018. Index OMR values will be maintained at around -5,000 cfs to comply with the RPA, which is the current controlling factor on Delta operations.

Ambient temperatures are anticipated to remain cool through the week. Minor precipitation is expected from the north on Thursday and Friday.

## **6. Delta Conditions Team**

The DCT did not meet last week due to the holidays and will resume meeting this Thursday. The DCT did not have any recommendations or updates for the SWG this week.

## **7. DWR Turbidity Transects**

No turbidity transects have been performed to date. As turbidity readings at Holland's Cut have remained well below 8 ntu since December 23, 2017, the SWG did not deem it necessary to deploy turbidity transects this week. The group will monitor delta turbidity readings closely this week in anticipation of the forecasted precipitation.

## **8. Biological Opinion Background:**

RPA Component 1, Action 1: "Low-entrainment risk period: Delta Smelt salvage has historically been low between December 1 and December 19, even during periods when first flush conditions (i.e., elevated river inflow and turbidity) occurred. During the low-entrainment risk period, the SWG shall determine if the information generated by physical (i.e. turbidity and

river inflow) and biological (e.g., salvage, DFG trawls) monitoring indicates that Delta Smelt are vulnerable to entrainment or are likely to migrate into a region where future entrainment events may occur. If this occurs, the Service shall require initiation of Action 1 as described in Attachment B. Action 1 shall require the Projects to maintain OMR flows no more negative than -2,000 cfs (14-day average) with a simultaneous 5-day running average flow no more negative than -2,500 cfs to protect adult Delta Smelt for 14 days.” (page 281).

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).

## **9. Assessment of Risk Discussion**

### *Delta Smelt Detections*

No fish were detected in the November FMWT and December FMWT. No fish salvaged as yet this season (WY 2018).

### *Longfin Smelt Detections*

No new info on detections, although given outflow, some Longfin Smelt may be moving into the Delta to spawn. No fish salvaged as yet this season (WY 2018).

### *General discussion*

Conditions in the Delta remain dry and, despite the forecasted rain for this coming Thursday and Friday, it is unlikely that a major storm event will occur this week to provide a migration cue for Delta Smelt. Depending on the magnitude of this week’s precipitation, turbidity levels in the Sacramento River and the associated tributaries may experience increases, and the group stressed the importance of keeping a watchful eye on turbidity levels.

As there have been no recent Delta Smelt detections from fish surveys, estimating current Delta Smelt presence throughout the Delta is difficult. Conditions are not yet indicative of high entrainment risk, though the forecasted rain or sudden increase in South Delta turbidity could change the picture.

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 January 2, 2018:**

The Smelt Working Group has no advice for Longfin Smelt: no Longfin Smelt have been detected in the central or south Delta.

No Barker Slough operations advice. The Smelt Work Group meeting occurred prior to concern period beginning January 15 (see #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 ( $\geq 80$ 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 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 December 31, 2017, 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. There is no new midwater or otter trawl sampling information. December Bay Study and Fall Midwater Trawl sampling collected no Longfin Smelt in the San Joaquin River or south Delta. December Bay Study and Fall Midwater Trawl did detect Longfin Smelt in the Sacramento River as high as station 750 (Bay Study) and 703 (FMWT), both adjacent to Sherman Lake, indicating that Longfin Smelt adults are entering the Delta. Presence of adult Longfin Smelt in the Sacramento River increases concern, but the lack of detection of Longfin Smelt in the central or south Delta makes advice unwarranted.
- 3 & 4. The first Smelt Larva Survey (SLS) of 2018 will be conducted beginning January 2, 2018.

5. Criteria does not begin until January 15<sup>th</sup>, and is only in effect during dry and critical water years.

**Current conditions:** As of January 1, Sacramento River at Freeport was 13,240 cfs and the San Joaquin was at 2,849 cfs. Clifton Court exports were 3,666 cfs and Tracy exports were 2,700 cfs. Both will drop during the coming week as managers target an OMR of -5,000 to meet NMFS BO . Qwest was -2,198 cfs.

In December, Longfin Smelt were collected in the Sacramento River by both Bay Study and Fall Midwater Trawl. These collections indicate the start of the spawning migration and likely spawning: temperature at Rio Vista declined below the 12-13°C spawning threshold during the first week in December. The number of adults entering the Delta is expected to increase through the month and beyond. No Longfin Smelt have been salvaged this water year.

**Summary of Risk:** Risk of entrainment is low due to the lack of detection in the central or south Delta.