

# Smelt Monitoring Team – Friday, February 17<sup>th</sup>, 2023

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## **PARTICIPANTS**

- California Department of Fish and Wildlife (CDFW)
- California Department of Water Resources (DWR)
- State Water Resources Control Board (SWRCB)
- U.S. Bureau of Reclamation (USBR)
- U.S. Fish and Wildlife Service (USFWS)
- Kearns & West (K&W)

## **ACTION ITEMS**

- None

## **PURPOSE**

Convene the Smelt Monitoring Team (SMT) to review new information on Delta turbidity conditions and consider risk assessments for adult Delta Smelt (DS) and larval Longfin Smelt (LFS).

### **Part 1: Updates on Water Operations and Biological Updates**

#### **Relevant Actions & Triggers**

Incidental Take Permit (ITP) Condition of Approval (COA) 8.5.1 (Turbidity Bridge Avoidance) was triggered on February 15<sup>th</sup>. State facility operations will be restricted to target an Old and Middle River (OMR) index of -2,000 cfs for five days starting February 18<sup>th</sup>. In the event turbidity at Old River at Bacon Island (OBI) falls below 12 FNU on or before the 18<sup>th</sup> CDFW and DWR agreed COA 8.5.1 will off-ramp and if turbidity rises above 12 FNU again the three-day compliance period restarts. The federal Turbidity Bridge Avoidance action was off-ramped by the detection of a ripe female DS on 2/9/23, and thus CVP is not obligated to restrict their operation. ITP COA 8.4.2 (Larval and Juvenile Longfin Smelt Entrainment Protection) was triggered by Smelt Larval Survey (SLS) 4.

#### **Current Operations**

USBR and DWR updated the SMT on water operations and environmental conditions:

- USBR reported no anticipated changes to upstream operations.
- A debris build-up at the federal facility forced a short deviation from expected operations so foreign material could be safely removed from infrastructure. Exports have resumed at 4,200 cfs.
- DWR reported that the state facility is targeting an OMR index of -5,000 cfs with a -2,000 cfs OMR index starting February 18<sup>th</sup> resulting in a 1,500 cfs allotment into Clifton Court Forebay (CCF).
- Delta outflows are slightly above 17,000 cfs.
- QWEST is 1,400 cfs with flows possibly ramping up to 3,000 cfs depending on what action is taken.
- X2 is slowly shifting upstream from Port Chicago to Mallard (> 65km).

## Survey and Salvage Updates

CDFW had no further updates from field surveys, beyond the data provided via email indicating that SLS 4 caught 10 LFS larvae at four of the 12 stations in the Central and South Delta triggering COA 8.4.2.

USFWS shared the following updates from the Enhanced Delta Smelt Monitoring Program (EDSM):

- LFS
  - Suisun Marsh: Seven
- DS
  - February 14<sup>th</sup> at Suisun Bay: One (Soft Release)
  - February 15<sup>th</sup> at Lower Sacramento River: One (Soft Release)

CDFW provided a salvage update.

- February 14<sup>th</sup> at the federal facility during the 1400 count: One DS (right orange posterior dorsal clip; 63 mm)

## Part 2: Open Discussion on Species Status (Structured-Unstructured Time)

### Delta Smelt

CDFW inquired if the turbidity spike at OBI was a localized occurrence or if data were the product of a sensor error.

- DWR clarified that there is a backup sensor which is reporting similar readings as the primary sensor.
- USFWS used [Bay Delta Live](#) data to demonstrate that clear water is flowing from the San Joaquin and Sacramento Rivers in contrast to the previous wide-spread turbidity event where high turbidity was coming from the rivers.
- The SMT agreed that the turbidity readings are not a sensor error, and the turbidity is not a localized event (i.e., a turbidity bridge has formed and extends from the Lower San Joaquin River into the OMR corridor to the export facilities).

The SMT discussed changes to risk since the February 14<sup>th</sup> meeting.

- CDFW noted that additional risk to DS outside of the OMR corridor is likely as there is no longer a barrier to DS moving into areas with higher risk of entrainment. The presence of experimentally released DS throughout the system further complicates the SMT's ability to accurately assess risk.
- USFWS noted that the turbidity would allow fish to move into the South Delta which points to greater risk than what abiotic conditions would have supported on February 14<sup>th</sup>.
- CDFW clarified that the risk level agreed upon on the 14<sup>th</sup> were justified given that turbidity had decreased while water temperature entered an ideal range for spawning. However, now that turbidity has increased, and water temperatures remain in the spawning range, risk should be elevated accordingly.

The SMT reviewed supplemental materials distributed by USBR on conditions noting a broad increase in turbidity across the system since the 14<sup>th</sup>.

- CDFW proposed elevating DS entrainment risk in the South Delta to high, given the elevated turbidity values along with recent salvage detections and incoming storm events forecasted for the week of February 20<sup>th</sup>.
- USFWS expressed caution over modifying risk given the short forecast window for incoming wind events which may or may not elevate turbidity.
- USFWS stated that observed salvage of cultured under current hydrology DS is consistent with the upstream movement of wild DS prior to spawning.
- DWR recognized the increased connectivity between the San Joaquin River and the lower OMR corridor as a result of the recent wind driven turbidity but does not believe that risk should be elevated to high while acknowledging that risk has somewhat increased.
- The SMT agreed risk for DS has increased given elevated turbidity levels and less negative OMR index values would be more protective. Several SMT members noted that determining whether the increase in risk for DS in the OMR corridor had shifted from moderate to high was challenging given that the spike in turbidity may be brief and it is uncertain if these conditions that elevated risk will continue.

USBR shared results from three Delta Simulation Model II (DSM2) runs at OMR index scenarios of -2,000, -3,500, and -5,000 cfs. These scenarios were run with the assumption that both facilities would be operating to these OMRIs. No assumptions were built into the model for ITP COA 8.4.2 due to a lack of information. However, given that operations are currently targeting an OMR of -5,000 cfs the -2,000 and -3,500 cfs scenarios do include assumptions about state operations transitioning.

- CDFW noted that the flow is significantly lower at Jersey Point when the OMR index is -5,000 cfs, while flow is doubled at -3,500 cfs, and -2,000 cfs yields even greater flows. The DSM2 model predicts similar improvements to flow at Three Mile Slough as well, flows were much less negative under the -2,000 cfs scenario than under the -5,000 cfs scenario. Overall, the model results indicate less negative OMR index scenarios would create better flow conditions for DS in the lower San Joaquin River.
- DWR noted that Particle Tracking Model (PTM) runs assume the recommendation applies only to the state side where as the DSM2 model includes operation modifications for both state and federal facilities. Hence, any flow recommendations for LFS would only impact the state side with changes to flows being less dramatic than indicated by the DSM2 results.
- Lastly, CDFW noted that DSM2 model runs at Holland Cut for the -5,000 and -3,500 scenarios capture the transition from negative to positive flows.

## **Longfin Smelt**

CDFW reviewed SLS data noting that stations 809 and 812 have the most detections. Historically, detections at those stations are a strong precursor for salvage, and these detections are an indication that despite high outflow in the last month, spawning occurred in the entrainment zone and has not completely shifted downstream.

DWR shared PTM results clarifying that the base case is a no recommendation scenario (-5,000 cfs OMR index) and the two standard recommendations of -3,500 and -2,000 cfs are limited to CCF exports while Jones Pumping Plant operations remain unaffected. SWP share of -3,500 and -2,000 cfs OMRI results in an OMRI of approximately -3,500 cfs and -3,000 cfs respectively.

- Looking a week from the 17<sup>th</sup> there are consistent levels of entrainment across the state/federal projects and the OMR corridor.
- Two weeks out there is a couple percent difference in levels of entrainment across scenarios.
- CDFW noted that detections of larvae at stations 809 and 812 are likely indicative of more larvae being present in the South Delta, and in risk of entering zone of entrainment if no recommendation is made. CDFW highlighted the results of the run showing a 5% difference in entrainment of larvae already in the OMR corridor at 902 between -2,000 cfs scenario and baseline scenario. The results also showed a 7% difference from 815 to the projects after three weeks, and a 5% difference in larvae pushed past Chipps between -2,000 cfs scenario and baseline scenario. There is a 11% increase from 812 at the -2,000 cfs scenario in larvae pushed past Chipps between -2,000 cfs scenario and baseline scenario.
- DWR called into question whether the difference in percent of entrainment among the different OMR scenarios represents a significant impact. DWR also noted that adult LFS salvage this season implies spawning and larval presence in the OMR corridor and noted that those larvae are already entrained and could be considered lost.

CDFW recommended operating to an OMR index no more negative than -2,000 cfs for the protection of larval LFS, citing the 7% difference in particles entrained by the projects from station 815 between the -5,000 cfs and -2,000 cfs scenarios. DWR did not feel this difference was sufficient to warrant a change in operations and recommended maintaining an OMR index of -5,000 cfs, while closely monitoring for additional larval LFS detections.

### Part 3: Live-edit Assessments

#### **Proposed Action Weekly Evaluation of Delta Smelt, including Distribution, Abiotic Conditions, Risk Assessment Questions, and Executive Summary**

USBR reviewed proposed changes to the PA Assessment, which include the latest dates, detections, conditions, data, and reflects the discussion documented in Part 2 above.

#### **ITP Longfin Smelt and Delta Smelt Risk Assessment**

The SMT reviewed and discussed updates to the ITP Risk Assessment for DS and LFS, which include the latest dates, detections, conditions, data, and reflects the discussion documented in Part 2 above.

### Part 4: Additional Considerations/Discussion

SMT members will brief their WOMT representatives on the outcomes of today's discussions regarding risk for adult DS and larval LFS.