

# Smelt Monitoring Team Meeting Summary Tuesday, March 12, 2024

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## MEETING OBJECTIVE

To collectively assess how current operations and environmental conditions could be impacting Delta Smelt and Longfin Smelt and to provide information to Water Operations Management Team (WOMT) on the status of Delta Smelt and Longfin Smelt, their exposure to operations of the CVP and SWP, and their potential sensitivity to environmental and operational changes; i.e., assess changes in risk week-to-week.

## 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

- N/A

## ADVICE TO WOMT

- Smelt Monitoring Team (SMT) continues to recommend Old and Middle River Index (OMRI) be limited to no more negative than -3,500 cfs on a 7-day average under Condition Of Approval (COA) 8.5.2, until the average Secchi depth in the Central and South Delta is greater than 1 m as measured by the next Smelt Larva Survey (SLS).

## ANNOUNCEMENTS

- The March forecast for the Sacramento Valley Water Year Type Index has been updated to be Above Normal.

# MEETING SUMMARY

## PART 1: Updates on Water Operations and Biological Conditions Updates

### Relevant Actions & Triggers

The CVP and SWP are targeting an OMRI no more negative than –500 cfs based on the Directors’ decision to limit OMRI for Steelhead Protection. The SaMT and WOMT will review this action weekly and make recommendations as necessary. With the Secchi depth again measured to be less than 1 m on 3/4/2024, the SMT recommends continuing to limit the 7-day average OMRI to no more negative than -3,500 cfs under COA 8.5.2. CDFW reported on the ITP Conditions of Approval (COA) currently in effect and whether they have been triggered. The table below is a summary and does not provide all the details related to each action or trigger. Rather, it is used to track the status of OMR Management Measures and Conditions Of Approval on a week-to week-basis in the “Action Status” column on the far right. For full descriptions, please see the OMR Guidance Document or ITP as needed.

### Proposed Action

OMR Management Measures	Requirement	Time Frame	Trigger	Action Status*
Integrated Early Winter Pulse Protection (IEWPP)(“First Flush” Turbidity Event)	Reduce exports for 14 consecutive days so that the 14-day averaged OMR index for the period shall not be more negative than -2,000 cubic feet per second (cfs).	Dec 1 to Jan 31	(1) Running 3-day average of daily flows at Freeport >25,000 cfs; and (2) Running 3-day average of daily turbidity at Freeport ≥50 Nephelometric Turbidity Units (NTU <sup>1</sup> ); or (3) Real-time monitoring indicates a high risk of migration and dispersal into areas at high risk of future entrainment or a spent Delta Smelt (DS) has been collected in monitoring surveys.	Off-ramped. Implemented 1/23/24-2/5/24
OMR Management	Manage to a more positive OMR than -5,000 cfs.	From the onset of OMR management to the end.	N/A	Active, Triggered 1/1/24 due to salmonid presence in the Delta

<sup>1</sup> The current instrumentation measures turbidity in Formazin Nephelometric Units (FNU).

OMR Management Measures	Requirement	Time Frame	Trigger	Action Status*
Turbidity Bridge Avoidance ("South Delta Turbidity")	If the daily average turbidity at Bacon Island cannot be maintained less than 12 NTU, manage exports to achieve an OMR no more negative than -2,000 cfs until the daily average turbidity at Bacon Island drops below 12 NTU.	After the first flush or Feb 1 (whichever comes first) and until a ripe or spent female DS is detected or April 1 (whichever is first).	Average daily turbidity in Old River at Bacon Island (OBI) at a level of more than 12 NTU.	Active, Not Triggered
Larval and Juvenile Delta Smelt	Run hydrodynamic models and forecasts of entrainment, informed by the Enhanced Delta Smelt Monitoring (EDSM) or other relevant survey data to estimate the percentage of larval and juvenile DS that could be entrained. If necessary, manage exports to limit entrainment to be protective based on the modeled recruitment levels.	On or after March 15 of each year until off-ramp criteria are met.	If QWEST is negative AND larval or juvenile DS are within the entrainment zone of the pumps based on real-time sampling of spawning adults or young of year life stages.	Not active, following COA 8.5.2 under 2023 IOP
End of OMR Management	OMR criteria may control operations until June 30 (for DS and Chinook salmon), until June 15 (for steelhead/rainbow trout), or when the species-specific off ramps have occurred, whichever is earlier.	During OMR management to June 30, or when the DS temperature off ramp has been reached.	DS: when the daily mean water temperature at Clifton Court Forebay (CCF) reaches 77°F for 3 consecutive days	Active, Not Triggered

## ITP Conditions of Approval

Condition of Approval	Requirement	Time Frame	Trigger	Action Status
8.1.5.2 (Smelt Monitoring Team Risk Assessment)	Outlines contents for weekly risk assessments of DS and Longfin Smelt (LFS) required under 8.1.5 and 8.1.1.	Nov 1 <sup>st</sup> through June 30 <sup>th</sup> or until off-ramped by 8.8	N/A	Active
8.3.1 (Integrated Early Winter Pulse Protection)	Reduce south Delta exports for 14 consecutive days to maintain a 14-day average OMR index no more negative than -2,000 cfs, and convene the Smelt Monitoring Team (SMT) within one day of triggering. After maintaining a 14-day average OMR index no more negative than -2,000 cfs for 14 days, Permittee shall maintain a 14-day average OMR index no more negative than -5,000 cfs, initiating the OMR Management season.	Dec 1 to Jan 31	3-day running average daily flows at Freeport greater than, or equal to, 25,000 cfs, AND Three-day running average of daily turbidity at Freeport is greater than, or equal to, 50 FNU OR The SMT determines that real-time monitoring of abiotic and biotic factors indicates a high risk of DS migration and dispersal into areas at high risk of future entrainment.	Off-ramped on 2/5/24

Condition of Approval	Requirement	Time Frame	Trigger	Action Status
8.3.3 (Adult Longfin Smelt Entrainment Protection)	After December 1, if an Integrated Early Winter Pulse Protection (COA 8.3.1) has not yet initiated, Permittee shall reduce south Delta exports to maintain a 14-day average OMR index no more negative than -5,000 cfs and initiate OMR Management (Condition of Approval 8.3) if: Cumulative combined LFS salvage (total estimated LFS counts at the CVP and SWP salvage facilities beginning December 1 through February 28 exceeds the most recent Fall Midwater Trawl (FMWT) LFS index divided by 10, Real-time monitoring of abiotic and biotic factors indicates a high risk of LFS movement into areas at high risk of future entrainment, as determined by DWR and CDFW SMT staff.	Dec 1 through Feb 28 <sup>th</sup>	Salvage threshold for water year (WY) 2024 is 46.4.	Off-ramped as of 1/1/24 due to initiation of OMR season by COA 8.3.2

Condition of Approval	Requirement	Time Frame	Trigger	Action Status
8.4.1 (OMR Management for Adult Longfin Smelt)	<p>The SMT shall conduct weekly risk assessments and decide whether to recommend an OMR flow requirement to minimize entrainment of adult LFS. The SMT may provide advice to restrict south Delta exports for seven consecutive days to achieve a seven-day average OMR index within three risk categories:</p> <p>Low risk: OMR between -4,000 cfs to -5,000 cfs  Medium risk: OMR between -2,500 cfs to -4,000 cfs  High risk: OMR between -1,250 cfs to -2,500 cfs</p>	Onset of OMR management through Feb 28 <sup>th</sup>	SMT recommendation based on weekly risk assessment.	Off-ramped as of 12/18/23 due to detection of larval LFS by Smelt Larva Survey (SLS) 12
8.4.2 (Larval and Juvenile Longfin Smelt Entrainment Protection)	If triggered, it will restrict south Delta exports for seven consecutive days in order to maintain a seven-day average OMR index no more negative than -5,000 cfs and convene the SMT to recommend an OMR flow limit between -1,250 and -5,000 cfs.	January 1 <sup>st</sup> through June 30 <sup>th</sup> or until the temperature off-ramp occurs	(1) LFS larvae or juveniles are found in four or more of the 12 Smelt Larvae Survey (SLS) or 20 mm stations in the central or south Delta, or (2) LFS catch per tow exceeds five larvae or juveniles in two or more of the 12 stations in the central or south Delta. The relevant stations are: 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918 and 919.	Active, <b>not triggered by SLS 5 and temporarily off-ramped by COA 8.4.3</b>

Condition of Approval	Requirement	Time Frame	Trigger	Action Status
8.4.3 High flow offramp for Longfin Smelt	If triggered, COA 8.4.1 and 8.4.2 are not required or would cease if previously required.	Throughout OMR management season	When river flows are (a) greater than 55,000 cfs in the Sacramento River at Rio Vista or (b) greater than 8,000 cfs in the San Joaquin River at Vernalis. If flows subsequently drop below 40,000 cfs in the Sacramento River at Rio Vista or below 5,000 cfs in the San Joaquin River at Vernalis, the OMR limit previously required as a part of Conditions of Approval 8.4.1 and 8.4.2 shall resume.	Active, <b>Triggered 2/6/24 by Rio Vista daily average flows</b> exceeding 55,000 cfs and Vernalis flow exceeding 8,000 cfs
8.5.1 Turbidity Bridge Avoidance	Maintain daily average turbidity at OBI at a level of less than 12 FNU. If the daily average turbidity at OBI is greater than 12 FNU, Permittee shall restrict south Delta exports to achieve an OMR flow that is no more negative than - 2,000 cfs until the daily average turbidity at OBI is less than 12 FNU.	After the first flush or Feb 1 until end of OMR management or until CDFW agrees that the action may be ended or modified.	Turbidity at OBI > 12 FNU	Active, Not Triggered

Condition of Approval	Requirement	Time Frame	Trigger	Action Status
8.5.2 (Larval and Juvenile Delta Smelt Protection)	If triggered, this Condition of Approval will restrict south Delta exports for seven consecutive days in order to maintain a seven-day average OMR index no more negative than -5,000 cfs and SMT members will meet to assess the risk of entrainment. The SMT may provide further advice to restrict exports in order to maintain an OMR index more positive than -5,000 cfs. In their assessment, SMT members will determine if risk of entrainment is low, medium, or high; subsequent OMR restrictions will be based on level of risk. Furthermore, if trigger (2) or (3) are met, this Condition of Approval will restrict south Delta exports to maintain a seven-day average OMR index no more negative than -3,500 cfs until the average Secchi depth is greater than 1 meter in the south Delta stations in a subsequent SLS or 20 mm survey. If average south Delta Secchi depth continues to be less than or equal to 1 meter in a subsequent SLS or 20mm survey, then Permittee shall continue restrictions and request a risk assessment by the Smelt Monitoring Team to determine if additional advice and subsequent restrictions are warranted and provide advice to WOMT.	Nov 1st through June 30th or until off-ramped by 8.8.	(1) When the five-day salvage of juvenile DS is greater than or equal to one plus the average prior three years' FMWT index (rounded down). The 2023 September through December FMWT index for DS was zero.  Or (2) when a larval/juvenile DS is detected in SLS/20 mm  Or (3) the 3-day average water temperature at Jersey Point is $\geq 12^{\circ}\text{C}$ and Secchi from the most recent SLS/20 mm survey is $\leq 1\text{m}$ averaged across the 12 stations (809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, and 919)	<b>Active, Triggered on 3/4/24</b> by SLS 5; previously triggered by SLS 4 on 2/21/24



Condition of Approval	Requirement	Time Frame	Trigger	Action Status
8.8 (End of OMR Management)	If triggered, OMR Management would be off-ramped for LFS and DS.	From the onset of OMR management through June 30th	Daily mean water temperature at CCF is >25° C for three consecutive days.	Active, Not Triggered
8.12 (Barker Slough Pumping Plant Longfin and Delta Smelt Protection)	Barker Slough Pumping Plant will reduce exports so the maximum 7-day average is <60 cfs.	From January 15 through March 31 in dry and critical water years for LFS, and from March 1st through June 30th for DS	Larval Smelt are detected at SLS Station 716 during the period identified for each species, and/or when recommended by the SMT.	Not active due to Above Normal water year type forecast as of 3/10/24

**Not active:** The COA could become active in this season, but the on-ramp conditions have not been met.

**Active, not triggered:** The on-ramping condition has been met, but the trigger condition has not been met.

**Active, triggered:** The trigger condition has been met.

**Off-ramped:** This COA could no longer become active in this season.

\* [Glossary](#)

### ***Current Operations & Outlook***

- Releases from Whiskeytown Dam on Clear Creek are currently 200 cfs with no anticipated changes for the week.
- Releases from Keswick Dam on the Sacramento River are currently 15,000 cfs with a range of 6,000 cfs to 15,000 cfs during the week.
- Releases from Oroville Dam on the Feather River are currently 10,000 cfs with a range of 8,000 cfs to 10,000 cfs for the week.
- Releases from Nimbus Dam on the American River are 6,000 cfs with a range of 3,000 cfs to 6,000 cfs for flood management.
- Releases from Goodwin Dam on the Stanislaus River are currently 1,500 cfs for flood management.
- Jones Pumping Plant is currently exporting 2,700 cfs with a range of 1,800 cfs to 2,700 cfs.
- The State facility is currently exporting 900 cfs with a range of 400 cfs to 1,500 cfs.
- Expected Daily OMR Index Values are between -400 cfs to -600 cfs.
- Sacramento River flows at Freeport range between 40,000 to 60,000 cfs.

- San Joaquin River flows at Vernalis range between 4,000 to 7,000 cfs.
- The Delta Outflow index ranges from 40,000 to 70,000 cfs.
- X2 is <56 km.
- Delta Cross Channel (DCC) gates closed on 11/27/2023 and are expected to remain closed for the season.

### ***Review of Environmental Conditions and Survey Updates***

CDFW delivered catch updates on relevant surveys to the SMT.

- SLS 5 was on the water from 3/4/24-3/7/24 and sampled all stations except for station 918 due to boat issues. SLS 5 detected 80 LFS in the Confluence, Suisun Bay & West, and San Pablo Bay, with most detections in Suisun and San Pablo bays.
  - The average Secchi depth for 11 of the 12 South and Central Delta stations is 95 cm. Station 918 was not measured or sampled.
- SLS 6 is scheduled to be on the water next week from 3/18/24-3/22/24.
- The 20-mm survey is scheduled to be on the water next week from 3/18/24-3/22/24.

USFWS provided catch updates for EDSM and Chipps Island Trawl.

- EDSM was on the water from 3/4/24-3/7/24 and sampled 35 sites and did not detect any DS. EDSM detected a total of 57 LFS.
  - The DS abundance estimate for the week of 3/4/24 is 0 and the last non-zero abundance estimate was 10,103 for the week of 2/26/24.
  - EDSM is on the water this week, sampling from 3/11/24-3/14/24. On 3/11/24, EDSM detected 2 VIE tagged DS, bringing the total detections for the water year to 32.
- Chipps Island Trawl was on the water on 3/3/24-3/5/24 and 3/7/24-3/8/24 and sampled all 50 tows and captured 7 LFS.
  - Chipps Island Trawl will be sampling 5 days per week until the week of 3/24/24.

CDFW shared the following salvage update.

- No osmerids detected in salvage or qualitative larval sampling and no operational variances were reported.
- The SWP began qualitative larval sampling for the season on 3/11/24.

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

DS

- Reclamation suggested changing the risk level for Sub-Adult and Adult DS to Low in the OMR corridor. Risk for larval DS would remain Moderate in the OMR corridor. The lack of recent detections in the Central and South Delta as well as low turbidity and less negative OMRI contribute to lower risk.
  - The SMT discussed the current and anticipated -500 cfs OMRI and the impact on Delta Smelt. Given a -500 cfs OMRI, the likelihood of SWP and CVP operations entraining more DS is likely low. USFWS and CDFW shared that the language used in the operational decision clarified that it was the Directors' decision and there was no specified averaging period and no timeframe for the action. The -500 cfs OMRI would be a continued weekly item for discussion for SaMT and WOMT.
  - DWR agreed with Reclamation's proposal to lower risk to Low for sub-Adults and Adults due to lack of detections in the Central and South Delta. USFWS noted they would support the reduction of risk, assuming that OMRI continues to be -500 cfs based on the Directors' decision.

#### LFS

- CDFW suggested keeping risk the same as previous weeks given OMRI has been reduced to -500 cfs. Conditions are favorable with the distribution in the West of the Confluence. Flows are generally decreasing but LFS are still expected to be outside the area of influence for the pumps. Recommend keeping risk Low for all life-stages in all regions.
  - DWR agreed with CDFW's proposal.

### **PART 3: Live-edit Assessments**

#### *Review of Tables 2 and 3 of the Fish and Water Operations Outlook*

The SMT reviewed and discussed updates to Tables 2a, 3b, and 3c of the Weekly Fish and Water Operations Outlook which include the latest dates, detections, conditions, and data.

#### DS

- N/A

#### LFS

- CDFW noted that decreasing flows later this week might result in the high flow offramp (COA 8.4.3) no longer being triggered, although this wouldn't impact operations.
  - The SMT discussed the high flow offramp thresholds for the San Joaquin and Sacramento rivers.
- CDFW noted that March water year type is Above Normal so COA 8.12 remains not in effect. Although unlikely, this COA may become active for larval DS if the April water year type forecast is Dry or Critical.

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

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

- Distribution
  - No salvage since 2/23/24.
  - The Skinner fish facility began qualitative larval sampling on 3/11/24 at 1100 hours.
- Delta Smelt
  - Risk of entrainment in the OMRI corridor has been decreased to Low for Adults, based on decreasing turbidity, lack of detection in the Central and South Delta and in salvage, and OMRI of -500 cfs.
  - CDFW suggested removing “decreasing flow” because higher flows are generally associated with lower risk.

### ***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.

### **Advice to WOMT and LFS Executive Summary**

- Smelt Monitoring Team (SMT) continues to recommend Old and Middle River Index (OMRI) be limited to no more negative than -3,500 cfs on a 7-day average under Condition Of Approval (COA) 8.5.2, until the average Secchi depth in the Central and South Delta is greater than 1m as measured by the next Smelt Larva Survey (SLS).
- The March Water Year Type forecast is Above Normal and thus COA 8.12 is not in effect.

### **Delta Smelt**

- Risk has been reduced to Low in the OMR corridor for Sub-Adults and Adults but remains Moderate for larvae. Risk remains Low in all other regions for all life-stages.
- CDFW asked for clarification about the detection dates for salvage.
  - Language added to clarify salvage detections “Six marked DS were detected in Salvage (pre-expansion) in the last 30 days.”

### **Longfin Smelt**

- Risk remains Low for all life stages in all regions.

- LFS spawning is on-going.

### **Change in Exposure**

- Delta Smelt: Sub-Adults and Adults in the Central Delta has been reduced to low, due to more favorable OMRI (-500cfs) and reduced turbidity.
- Longfin Smelt: No changes.

### **Life Stages Present**

- Delta Smelt: Larvae, Sub-Adults, Adults.
- Longfin Smelt: Larvae, Sub-Adults, Adults.

### **Part 4: Additional Considerations/Discussion**

Agencies reported no items for elevation to WOMT.

### **Next SMT Meeting**

The next SMT meeting will be held on Tuesday 03/19/2024 on Microsoft Teams.