



# Smelt Monitoring Team Meeting Summary

**Tuesday, April 2, 2024**

## 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 (Reclamation)
- U.S. Fish and Wildlife Service (USFWS)
- Kearns & West (K&W)

## Action Items

- SMT members to request clarification from their management about the changes in the 2024 Interim Operations Plan (IOP), including Condition of Approval (COA) 8.17 (Export Curtailments for Spring Outflow).
- Reclamation to consider how to track COA 8.17 in the Fish and Water Operations Outlook.

## Advice to WOMT

- N/A

## Announcements

- K&W shared that Evan Carson, USFWS, will be presenting the results of a DS-Wakasagi Hybridization study to the SMT on June 11th following the regular SMT business.

# Meeting Summary

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

### *Relevant Actions & Triggers*

- The CVP and SWP are targeting an Old and Middle River Index (OMRI) range of +300 to -2,600 cfs.

The Salmon Monitoring Team (SaMT) will review this action weekly and make technically supported recommendations for OMR operations to WOMET based on the most recent data and detections. CDFW reported on the ITP Conditions of Approval (COA) currently in effect and whether they have been triggered. As of 4/1/24, COA 8.17 is Active but temporarily off-ramped due to the three-day average net Delta outflow exceeding 44,500 cfs. COA 8.17 is expected to be in effect on 4/4/24 with decreasing flows in the Sacramento and San Joaquin Rivers. 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.

### *Discussion of Relevant Actions and Triggers*

The SMT discussed the ongoing Delta Smelt (DS) and Longfin Smelt (LFS) actions and triggers and how they have changed under the 2024 IOP.

- Reclamation shared that the 2024 IOP was finalized on 3/28/24 and includes proposals for actions and triggers that are different from previous IOPs. Under the 2024 IOP, Reclamation would not be following LFS COAs and will not be adding Above Normal Water Year Types (WYT) to COA 8.17. This change would not significantly impact monitoring efforts in the current season.
  - CDFW sought clarification from Reclamation about COA 8.17, and asked whether Reclamation would reduce exports by 100TAF in an Above Normal WYT. Reclamation clarified that export curtailment would occur in Below Normal and drier WYTs and the Above Normal proposal has not been agreed on at the time of the SMT meeting. DWR added that their legal department indicated that LFS provisions had not been adopted but Reclamation agreed to incorporate a spring outflow measure in the event that the WYT was Above Normal under COA 8.17.
  - The SMT agreed to seek clarification from their management.
- USFWS asked the SMT how the agencies would be notified when the three-day average Delta outflow falls below the high flow off-ramp, 44,500 cfs, and COA 8.17 is re-triggered.
  - DWR agreed to provide notification via email pending further clarification from agency management. The SMT agreed to seek further clarification about who is responsible for that notification.

- CDFW asked DWR whether the 4:1 I/E ratio export curtailment –due to Above Normal WYT– would occur on 4/3/24 or if there would be a 3-day buffer like with other management actions.
  - DWR responded that the export curtailment WYT is still Below Normal for the San Joaquin Valley, and the high flow off-ramp for the action would occur until 4/4/24. Due to the Below Normal WYT, the curtailment I/E ratio is 3:1. San Joaquin River WYT forecast is based on the 75% exceedance.
  - DWR noted that reconstructed WYTs are not used for decision making. The final, official WYT will be based on the [May Bulletin 120 forecast](#) (see also D-1641, Table 3, footnote 13).
    - Final determination for the Sacramento Valley is based on the May 1st 50% exceedance forecast.
    - Final determination for San Joaquin River flow objectives is based on the May 1st 75% exceedance forecast.
  - USFWS shared that the official Water Year Classification Indices for WY2023 are based on the May 1st runoff forecast and won't be posted until the numbers from USGS are finalized later in the spring according to DWR. Both the Sacramento and San Joaquin forecasts show Wet WYTs for last year.
  - DWR responded to USFWS' comment and clarified that those are the reconstructed WYTs and are neither official nor used for any operational decision making. The official final WYT will be based on the May Bulletin 120 forecast.
  - CDFW sought clarification from the SMT about the documentation stating the San Joaquin River WYT forecast uses the 75% exceedance instead of the 50% exceedance.
  - DWR linked to the [CDEC Water Supply Index \(WSI\) Forecasts](#) and D-1641 (Table 3, footnote 13) include clarification that the water year classification for the San Joaquin River flow objectives will be established using the best available estimate of the 60-20-20 San Joaquin Valley Water Year Hydrologic Classification at the 75% exceedance level.
- Reclamation asked if the CDEC Station DTO is the station being used for Delta Outflow, and whether this information should be added to SacPAS.
  - DWR responded that while DTO uses the same calculations as Delta Outflow and is often similar to Delta Outflow, DTO uses raw data without QA/QC and can be prone to errors.
- Reclamation shared that they had been following COA 8.5.2 for Larval and Juvenile DS protection under previous IOPs and will continue to do so under the 2024 IOP. Reclamation will be adhering to the actions and triggers in either the PA or the ITP, whichever is more conservative.

## 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 (NTU1); 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
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.	Off-ramped

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

<b>OMR Management Measures</b>	<b>Requirement</b>	<b>Time Frame</b>	<b>Trigger</b>	<b>Action Status*</b>
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.	Active, Not Triggered.
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

<b>Approval</b>	<b>Requirement</b>	<b>Time Frame</b>	<b>Trigger</b>	<b>Action Status</b>
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 1st through June 30th or until off-ramped by 8.8	N/A	Active

Approval	Requirement	Time Frame	Trigger	Action Status
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
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 28th	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

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 28th	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 1st through June 30th or until the temperature offramp 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, Not Triggered

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, Not Triggered
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



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 FWMT 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)	Active, Not Triggered
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 $>25^{\circ}\text{C}$ for three consecutive days.	Active, Not Triggered

Approval	Requirement	Time Frame	Trigger	Action Status
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.	LFS: Off-ramped. DS: Not active due to Above Normal water year type forecast as of 3/10/24.
8.17 (Export Curtailments for Spring Outflow)	Reduce exports from April 1st to May 31st each year to achieve the SWP proportional share of export reductions established by the ratio of Vernalis flow to combined CVP and SWP exports, scaled by water year type, to provide incidental spring outflow.	April 1st through May 31st	The three-day average Delta outflow is less than 44,500 cfs	Active, likely to be triggered on 4/4/24

**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 265 cfs with a range of 200 cfs to 265 cfs for a spring pulse.
- Releases from Keswick Dam on the Sacramento River are currently 4,000 cfs with a range of 4,000 cfs to 10,000 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 12,000 cfs for the week.
- Releases from Nimbus Dam on the American River are 4,000 cfs with a range of 3,000 cfs to 4,000 cfs during the week.
- Releases from Goodwin Dam on the Stanislaus River are currently 800 cfs with a range of 300 cfs to 1,200 cfs for a spring pulse.
- Jones Pumping Plant is currently exporting 900 cfs with a range of 900 cfs to 1,800 cfs.
- The State facility is currently exporting 2,600 cfs with a range of 600 cfs to 3,800 cfs.
- Expected Daily OMR Index Values are between +300 cfs to -2,600 cfs.
- Sacramento River flows at Freeport range between 32,000 to 44,000 cfs.
- San Joaquin River flows at Vernalis range between 4,000 to 4,500 cfs.

- The Delta Outflow index ranges from 35,000 to 47,000 cfs.
- X2 is 62 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 6 was on the water from 3/18/24-3/22/24. Processing is ongoing and new detections are as follows: 1,230 larval and 1 juvenile LFS were detected in San Pablo Bay, Carquinez Strait, Napa River, and Suisun Bay since reporting last week. The majority of detections are from the Napa River.
- 20-mm survey 1 was on the water from 3/18/24-3/22/24. Processing is ongoing and new detections are as follows: 314 larvae, 2 juvenile, and 1 adult LFS were detected in San Pablo Bay, Carquinez Strait, Suisun Bay, and Suisun Marsh since reporting last week. The majority of detections are from Suisun Bay and Suisun Marsh.
  - 20-mm Survey 2 is on the water this week from 4/2/24-4/5/24.

USFWS provided catch updates for EDSM and Chipps Island Trawl via email.

- EDSM was on the water from 3/25/24-3/28/24 and sampled 36 sites and detected 4 VIE tagged DS, with 2 DS detected in Suisun Marsh, and 1 DS in the Lower Sacramento River, and 1 DS in the Sacramento Deep Water Ship Channel. EDSM detected 12 LFS, with 11 detections in the Western Delta and 1 detection in Suisun Bay.
  - The DS abundance estimate for the week of 3/25/24 is 8,513.
  - EDSM Phase 2 20-mm sampling has begun as of 4/1/24 and will end in June.
  - EDSM is on the water this week, sampling from 4/1/24-4/4/24.
- Chipps Island Trawl was on the water on 3/25/24-3/26/24 and 3/28/24-3/29/24 and sampled 50 tows and did not detect any DS or LFS.
  - Chipps Island Trawl is on the water this week from 4/1/24-4/2/24 and 4/4/24-4/5/24.

CDFW shared the following salvage update.

- No osmerids were detected in salvage or qualitative larval sampling and no operational variances were reported aside from the planned outage at the CVP on 3/28/24.

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

DS

- Reclamation asked the SMT if there was a need to continue assessing risk for adult DS as adult DS are likely present but do not have specific regulatory triggers that can become active at this time. Reclamation suggested keeping risk Low for all life stages in all regions.

- CDFW suggested the SMT continue to assess risk for adult DS for tracking and consistency purposes. CDFW and DWR agreed with Reclamation's suggestion for keeping risk Low.

#### LFS

- CDFW suggested keeping risk Low for all life stages in all regions and noted X2 is slowly moving upriver which is important for the SMT to continue tracking.
- DWR and USFWS agreed with CDFW's risk determination and rationale.

### 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 asked if the SMT wanted to include COA 8.17 in the document, especially if it becomes controlling.

Reclamation agreed to evaluate where that information would be included in the Fish and Water Operations Outlook.

#### *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.

- Executive Summary
  - CDFW noted that Export Curtailment for Spring Outflow (COA 8.17) should be included along with the Salmonid protections as it could be controlling OMRI and benefit DS.
- Distribution
  - Updates to dates and detections including one LFS detection that was changed to DS.
- Table 9
  - Updated with the above correction.
- Evaluation Questions
  - 7) Updated to reflect QWEST and larval DS tracking following federal regulations.
    - Per the 2024 IOP, ITP conditions and tracking are also included, i.e., ripe and spent adult female DS.

### ***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**

- No Advice. However, Condition Of Approval 8.17 will likely be in effect beginning 4/4/2024, and limit SWP and CVP combined exports to be within 3:1 I/E ratio with Vernalis flows or combined exports of 1,500 cfs for health and safety minimums.
  - Reclamation clarified that with the Below Normal WYT the I/E ratio is 3:1.
- OMRI range this week is limited to +300 to -2,600 cfs this week for COA 8.17 and 8.6.1.
- DWR suggested removing the last sentence due to COA 8.12 being off-ramped for LFS.

#### **Delta Smelt**

- Risk remains Low for all life stages in all regions.
- Removed detections from February.

#### **Longfin Smelt**

- Risk remains Low for all life stages in all regions.
- OMRI range is limited to +300 to -2,600 cfs this week.

#### **Change in Exposure**

- Delta Smelt: No changes.
- Longfin Smelt: No changes.

#### **Life Stages Present**

- Delta Smelt: Larvae, Sub-Adults, Adults.
- Longfin Smelt: Larvae, Juveniles, 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 04/09/2024 on Microsoft Teams.