

Smelt Monitoring Team

Meeting Summary

Tuesday, April 16, 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 (USBR)
- U.S. Fish and Wildlife Service (USFWS)
- Kearns & West (K&W)

ACTION ITEMS

- N/A

ADVICE TO WOMT

- N/A

ANNOUNCEMENTS

- There will be an in-person option for next week's Smelt Monitoring Team (SMT) meeting.

MEETING SUMMARY

PART 1: Updates on Water Operations and Biological Conditions Updates

Relevant Actions & Triggers

- The CVP and SWP are targeting an OMR range of +400 to +900 cfs.

CDFW reported on the ITP Conditions of Approval (COA) currently in effect and whether they have been triggered. COA 8.17 became active on 4/10/24 and is limiting exports to be within 4:1 I/E ratio with Vernalis flows or limit the State’s share of combined exports of 1,500 cfs for health and safety minimum. CVP operations are currently following the 2024 Interim Operations Plan (IOP). SWP operations are currently controlled by I/E ratio export constraints per ITP COA 8.17. 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 ¹); 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

¹ The current instrumentation measures turbidity in Formazin Nephelometric Units (FNUs).

OMR Management Measures	Requirement	Time Frame	Trigger	Action Status*
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

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 st through June 30 th 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 th	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
8.4.1 (OMR Management for Adult Longfin Smelt)	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: 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	Onset of OMR management through Feb 28 th	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

Condition of Approval	Requirement	Time Frame	Trigger	Action Status
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 st 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 by 20-mm Survey 2
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	Off-ramped

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 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
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.

Condition of Approval	Requirement	Time Frame	Trigger	Action Status
8.17 (Export Curtailments for Spring Outflow)	Reduce exports from April 1 st to May 31 st 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 1 st through May 31 st	The three-day average Delta outflow is less than 44,500 cfs	Active, Triggered on 4/10/24

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 8,000 cfs with no anticipated changes for the week.
- Releases from Oroville Dam on the Feather River are currently 7,000 cfs with a range of 2,500 cfs to 7,000 cfs for the week.
- Releases from Nimbus Dam on the American River are 4,000 cfs with no anticipated changes for the week.
- Releases from Goodwin Dam on the Stanislaus River are currently 400 cfs with a range of 300 cfs to 2,000 cfs for a Spring pulse.
- Jones Pumping Plant is currently exporting 900 cfs with an actual range of 0 cfs to 1,800 cfs (for maintenance) and a daily average range of 900 cfs to 1,000 cfs.
- The State facility is currently exporting 600 cfs with a range of 600 cfs.
- Expected Daily OMR Index Values are between +400 cfs to +900 cfs.
- Sacramento River flows at Freeport range between 25,000 to 35,000 cfs.
- San Joaquin River flows at Vernalis range between 4,500 to 6,000 cfs.
- The Delta Outflow index ranges from 30,000 to 44,000 cfs.
- X2 is 60 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.

- 20-mm Survey 1 processing and QC is ongoing.
- 20-mm Survey 2 was on the water from 4/2/24-4/5/24 and there are a total of 1,281 larval, 8 juvenile, and 2 subadult LFS detections mainly in the Suisun Marsh and Suisun Bay regions.
- 20-mm Survey 3 will be on the water this week from 4/15/24-4/18/24.
 - The Central and South Delta average Secchi depth will be emailed out to the SMT on 4/17/24.

USFWS provided catch updates for EDSM and Chipps Island Trawl.

- EDSM was on the water from 4/8/24-4/12/24 and sampled 40 sites and detected 9 larval DS in the Sacramento Deep Water Shipping Channel and Suisun Marsh. EDSM detected 106 larval and 1 juvenile LFS in Suisun Marsh, Suisun Bay, and Lower Sacramento River.
 - EDSM 20-mm processing is ongoing. That data may contain confirmed and preliminary identifications and are subject to change. The DS abundance estimate has been delayed.
 - EDSM is on the water this week, sampling from 4/15/24-4/19/24.
 - A fish caught by EDSM on 1/16/2024 was genetically confirmed to be a DS, not a LFS as identified in the field.
- Chipps Island Trawl was on the water on 4/8/24-4/9/24 and 4/11/24-4/12/24, sampled 40 tows and did not detect any DS or LFS.
 - Chipps Island Trawl is on the water this week from 4/15/24-4/16/24 and 4/18/24-4/19/24.
- SWRCB asked about the misidentification of the LFS that was actually a DS.
 - USFWS noted that this seems to have been an identification error which happens occasionally, though it is more common with Wakasagi and DS. There is an extensive QA/QC process in place to help correct misidentifications.

CDFW shared the following salvage update.

- 1 LFS with a fork length of 40 mm was detected at the CVP salvage facility on 4/10/24 at 1800 hours. There was a missed count at the CVP on 4/14/24 at 0800 due to operator error.

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

DS

- Reclamation suggested keeping risk Low for all life stages in all regions. The OMRI is positive and conditions are favorable to DS at this time.
 - CDFW agreed with Reclamation's proposal.

LFS

- CDFW suggested keeping risk Low for all life-stages in all regions. The recent LFS salvage seems like an outlier and environmental conditions remain favorable.
 - 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

- Secchi depth remaining stable.

LFS

- N/A

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
 - Based on recent detection data and distribution patterns over the past decade, adult Delta Smelt spawning is ongoing.
- Biological conditions
 - Delta Smelt are spawning and larval Delta Smelt are present.
- Table 7
 - Updated detections.
- The SMT discussed the ongoing process to implement Condition Of Approval 8.17, Export Curtailments for Spring Outflow, and that the agency sub-directors are in ongoing discussions to resolve implementation.

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 to WOMT.
- COA 8.17 Export Curtailment for Spring Outflow remains in effect and will limit SWP exports to be within 4:1 I/E ratio with Vernalis flows or limit the State's share of combined exports of 1,500 cfs for health and safety minimum.
- CDFW shared that they summarized the detections from the Executive Summary due to guidance from their management to streamline this section.

Delta Smelt

- Risk remains Low for all life stages in all regions.
- No DS have been detected in salvage in the past 30 days.

Longfin Smelt

- Risk remains Low for all life stages in all regions.
- EDSM detected three larvae in the Lower Sacramento River during the week of 4/1/24.

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 04/23/2024 on Microsoft Teams or in-person.