

Smelt Monitoring Team

Meeting Summary

Tuesday, April 23, 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

- Going forward, Fish and Water Operations Outlook and Proposed Action Assessment documents will be housed in a K&W-hosted Microsoft Teams site.

MEETING SUMMARY

PART 1: Updates on Water Operations and Biological Conditions Updates

Relevant Actions & Triggers

- The CVP and SWP are targeting an OMRI range of -800 to +700 cfs.
- Proposed action: CVP exports increase from 970 cfs to 1,800 cfs on 4/26/24.

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

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

OMR Management Measures	Requirement	Time Frame	Trigger	Action Status*
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
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

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 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
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 30 th 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, Not Triggered by 20-mm Survey 3

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, 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)	<p>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.</p>	Nov 1st through June 30th or until off-ramped by 8.8.	<p>(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.</p> <p>Or (2) when a larval/juvenile DS is detected in SLS/20 mm</p> <p>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)</p>	Active, Not Triggered

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.	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 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 11,000 cfs in support of a spring pulse flow. Releases are anticipated to decrease starting Friday.
- Releases from Oroville Dam on the Feather River will increase from 3,500 cfs to 6,500 today in support of a spring pulse flow.
- Releases from Nimbus Dam on the American River are 5,000 cfs in support of a spring pulse flow.

- Releases from Goodwin Dam on the Stanislaus River are currently 500 cfs with a range of 300 cfs to 2,500 cfs for a spring pulse flow.
- Jones Pumping Plant is currently exporting 900 cfs with an anticipated range of 900 cfs to 1,800 cfs.
- The State facility is currently exporting 600 cfs with no anticipated changes.
- Expected Daily OMR Index Values are between -800 cfs to +700 cfs.
- Sacramento River flows at Freeport range between 23,000 to 38,000 cfs.
- San Joaquin River flows at Vernalis range between 4,500 to 6,000 cfs.
- The Delta Outflow index ranges from 25,000 to 40,000 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.

- 20-mm Survey 1 was on the water from 3/18/24-3/22/24 and there are a total of 2,487 larval and 9 juvenile new LFS detections mainly in the Napa River and Suisun Bay and Suisun Marsh regions.
- 20-mm Survey 2 was on the water from 4/2/24-4/5/24 and there are a total of 8,131 larval and 202 juvenile new LFS detections mainly in the Napa River region.
- 20-mm Survey 3 was on the water from 4/15/24-4/18/24 and there are a total of 841 larval, 107 juvenile, and 1 adult LFS detections mainly in the Napa River and Suisun Bay and Suisun Marsh regions.
- 20-mm Survey 4 will be on the water next week from 4/29/24-5/1/24.

USFWS provided catch updates for EDSM and Chipps Island Trawl.

- EDSM was on the water last week from 4/15/24-4/19/24 and sampled 39 sites. Processing is ongoing.
 - There are 44 new DS detections from the week of 4/1/24 mainly in the Sacramento Deep Water Shipping Channel.
 - There are 4 preliminary and 1 confirmed new DS detections from the week of 4/8/24.
 - EDSM is on the water this week, sampling from 4/22/24-4/25/24.
 - The DS abundance estimate from the week of 4/1/24 is 2,680,284.

- Chipps Island Trawl was on the water on 4/15/24-4/16/24 and 4/18/24-4/19/24, sampled 40 tows and did not detect any DS or LFS.
 - Chipps Island Trawl is on the water this week from 4/22/24-4/23/24 and 4/25/24-4/26/24.
- USFWS noted that identification of larval DS has been challenging this year. In particular, larval DS and Wakasagi have been difficult to differentiate. USFWS is working to improve DNA extraction methods for formalin-preserved fish. This summer USFWS plans to genetically confirm identification of all DS and unidentifiable osmerids, along with as many Wakasagi as possible. USFWS is also working with CDFW on an attribute analysis of hatchery DS to improve identification of larval DS in future seasons.

CDFW shared the following salvage update.

- No osmerids were detected in salvage or qualitative larval sampling this week.
- Jones Pumping Plant was at 0 cfs for several hours each day on 4/16/24-4/18/24.

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

DS

- Reclamation suggested keeping risk Low for all life stages in all regions. All detections are outside of the central and south Delta, and environmental conditions and hydrology are favorable to DS at this time.
 - CDFW, DWR, and USFWS agreed with Reclamation's proposal.

LFS

- CDFW suggested keeping risk Low for all life-stages in all regions. The majority of fish are outside of the central and south Delta and environmental conditions remain favorable.
 - DWR agreed with CDFW's proposal.

The SMT discussed the Proposed Action for the upcoming week.

- DWR explained that keeping exports from the Jones pumping plant at the current rate of 900 cfs (one unit) will result in reaching the 100 TAF curtailment (per the 2024 IOP) faster while increasing exports to 1,800 cfs (two units) will reduce the rate at which the 100 TAF curtailment will accrue.
- The SMT agreed that risk for DS and LFS will remain Low for the anticipated OMRI range between -800 and +700 cfs, which encompasses both the one unit and two unit operations scenarios.

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

- COA 8.4.2 was not triggered by 20-mm Survey 3 and no detections in the south and central Delta in 20-mm Survey 3.

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
 - Entrainment risk is expected to remain Low between the anticipated OMRI range of -800 and +700 cfs.

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.
- Conditions are good for DS and LFS, no DS have been detected in the central or south Delta, the majority of LFS detections have been downstream of the confluence, and turbidity is low in the central and south Delta. Thus, SMT continues to expect low entrainment risk for both species between OMRI range of -800 and +700 cfs.

Delta Smelt

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

Longfin Smelt

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

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 04/30/2024 on Microsoft Teams.