

# Smelt Monitoring Team

## Meeting Summary

Tuesday, May 28, 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

- SMT to continue identifying topics for discussion at the end of the season.

### ADVICE TO WOMT

- No advice to WOMT.

### ANNOUNCEMENTS

- **SMT** agreed to an in-person meeting at the CDFW conference room from 3-4pm, for the last meeting of the season followed by a social gathering.
  - **CDFW** shared that they would follow up with the SMT about any specific items including security concerns.

# MEETING SUMMARY

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

### *Relevant Actions & Triggers*

- CVP and SWP operators are targeting an OMRI range of -1,000 cfs to +1,500 cfs under COA 8.17 and the 2024 IOP.

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 continues to be triggered limiting 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 per the 2020 SWP ITP. CVP operations are currently following the 2024 Interim Operations Plan (IOP). The table below summarizes the status of OMR Management Measures and Conditions of Approval on a week-to week-basis through updates in the “Action Status” column on the far right. For full descriptions of OMR Management Measures and Conditions of Approval, please see the OMR Guidance Document or ITP.

### 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 (FNUs).

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.	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.  USFWS Memo/Technical Note 47: When the Secchi depth in the South Delta is less than 1 meter, Reclamation will operate to OMR no more negative than -3,500 cfs. When the Secchi depth in the south Delta is greater than 1 meter, Reclamation and DWR will operate to OMR no more negative than -5,000 cfs.	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>Condition of 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 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, Not Triggered by 20-mm Survey 4

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 <math>\geq 12^{\circ}\text{C}</math> and Secchi from the most recent SLS/20 mm survey is <math>\leq 1\text{m}</math> 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 5/14/24.
8.17 (Export Curtailments for Spring Outflow)	Reduce exports from April 1 <sup>st</sup> to May 31 <sup>st</sup> 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 <sup>st</sup> through May 31 <sup>st</sup>	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 250 cfs with a weekly range of 150 cfs to 250 cfs for a salmon attraction pulse.
- Releases from Keswick Dam on the Sacramento River are currently 8,700 cfs with a range of 7,700 cfs to 9,700 cfs for a spring pulse flow.
- Releases from Oroville Dam on the Feather River are currently 2,100 cfs with a range of 1,050 cfs to 2,500 cfs for the week.
- Releases from Nimbus Dam on the American River are 3,000 cfs with a range of 2,500 cfs to 3,500 cfs for the week.

- Releases from Goodwin Dam on the Stanislaus River are currently 1,000 cfs with a range of 950 cfs to 2,250 cfs for a spring pulse flow.
- Jones Pumping Plant is currently exporting 3,500 cfs with an anticipated range of 2,700 cfs to 4,200 cfs.
- The State facility (SWP) is currently exporting 600 cfs with an anticipated range of 400 cfs to 3,500 cfs.
- Expected Daily OMR Index Values are between –2,000 cfs to –5,000 cfs.
- Sacramento River flows at Freeport range between 12,000 to 19,000 cfs.
- San Joaquin River flows at Vernalis range between 3,000 to 6,000 cfs.
- The Delta Outflow index ranges from 10,000 to 19,000 cfs.
- X2 is 64 km.
- Delta Cross Channel (DCC) gates closed on 11/27/23 and are scheduled to open on 5/31/24 before closing again on 6/3/24.

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

CDFW delivered catch updates on relevant surveys to the SMT.

- SFBS was on the water from 5/6/24-5/14/24 and detected a total of 385 juvenile and 7 adult LFS. The majority of detections are from between Carquinez Straight and the Confluence.
- 20-mm Survey 2 processing is complete. There are 9,696 LFS detections with the majority coming from the Napa River, Suisun Bay, and Suisun Marsh.
- 20-mm Survey 5 was on the water from 5/13/24-5/17/24 with 297 new LFS detections primarily coming from Suisun Bay & Marsh and San Pablo Bay. There is 1 new larval DS at station 801 on 5/16/24.
- 20-mm 6 is on the water this week from 5/27/24-5/30/24. Secchi depth will be provided to the SMT via email when available.

USFWS provided catch updates for EDSM and Chipps Island Trawl.

- EDSM was on the water last week from 5/20/24-5/24/24 and sampled 34 sites. There are 9 confirmed new DS detections since the last SMT meeting. The majority of DS detections are from Deep Water Ship Channel and Lower Sacramento River.
  - EDSM has identified 2,092 LFS during this season's 20-mm trawling to date, with a majority from Suisun Bay, Suisun Marsh, and Cache Slough.
  - Processing for samples from weeks 40-43 is ongoing.
  - EDSM is on the water this week, sampling from 5/27/24-5/31/24.

- The most recent DS abundance estimate is 11,472,051 from the week of 4/22/24.
- Chipps Island Trawl was on the water on 5/20/24, 5/22/24, and 5/24/24, sampled 30 tows and did not detect any DS or LFS.
  - Chipps Island Trawl is on the water this week from 5/27/24-5/30/24.

CDFW shared the following salvage update.

- No DS or LFS were detected in salvage or reported in qualitative larval sampling this week.
- No operational variances were reported but CDFW shared that there was downtime at both the Federal and State facilities for routine maintenance which are not considered to be operational variances.

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

### **DS**

- Reclamation noted that hydrological conditions had not changed much since last week. Qualitative larval sampling staff at CVP clarified that there have been Wakasagi detected in larval sampling, and that recent detections of Wakasagi have included larvae, but Wakasagi data is not reported out in the Salvage reports. Temperatures are still below the 22°C temperature threshold discussed in the previous SMT meeting as the cutoff for sampling and the majority of DS detections are still larval fish.
- Reclamation noted that DWR shared that QWEST might go to -1,000 cfs with a more negative OMRI which may lead to greater risk of entrainment. Turbidity remains low at this time and survey detections are still high outside of the Central and South Delta (Suisun Bay, Suisun Marsh, DWSC etc.). Reclamation acknowledged that there may be DS detections in salvage but that does not represent a population level change in entrainment risk and does not trigger any actions. Reclamation suggested keeping risk Low for all life stages in all regions.
  - CDFW agreed with the proposal and shared that conditions have been favorable for DS and detections in that area remain low.
  - USFWS and DWR agreed with Reclamation's proposal.

### **LFS**

- CDFW suggested keeping risk Low for all life stages in all regions based on favorable environmental conditions and distribution from survey detections.
  - DWR agreed with CDFW's proposal.
  - DWR asked CDFW about the language that noted LFS spawning is ongoing. The smallest larva in survey detection were 9 and 10mm and

suggested changing the language to indicate that spawning is ending for the season.

- CDFW agreed that LFS spawning season is likely ending based on larval detections and seasonal timing. SFBS detected a few adults in their May survey, but the majority of the recent detection for various surveys have been juveniles and not freshly hatched larvae. Suggest changing the language to indicate spawning is ending.

### **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

- 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.

- CDFW asked whether the abundance estimate provided is from April.
  - Reclamation noted the estimate is from 4/22/24 and USFWS noted that is due to the ongoing processing of samples from sampling weeks 40-43.
- Other Environmental Conditions
  - The Fish and Water Operations Outlook OMR Index values are expected to range between -2,000 cfs and -5,000 cfs.
- Evaluation Questions
  - 7) Reclamation sought clarification from DWR about the correlation between OMRI and QWEST and whether the -5,000 cfs OMRI would lead to the QWEST of -1,000 cfs.
    - DWR noted that the -5,000 OMRI would lead to approximately a -1,000 cfs QWEST and that the QWEST break-even point was likely around an OMRI of -4,000 cfs.
  - 8) Reclamation noted that they added the “no” based on information provided by USFWS and the conversation in last week’s SMT meeting.

- Executive Summary
  - While there is a greater chance of entraining additional DS this week at more negative OMRI (up to -5,000 cfs) and negative QWEST (up to -1,000 cfs), risk of entrainment throughout the Delta remains low for OMRI of -2,000 to -5,000 cfs for all life stages based on low turbidity/Secchi depth >1m, and the majority of detections outside of the Central and South Delta.

### ***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.
- Condition of Approval (COA) 8.17 Export Curtailment for Spring Outflow continues to be triggered and limit SWP exports to be within 4:1 I/E ratio with Vernalis flows.
- OMRI range this week is -2,000 cfs to -5,000 cfs this week due to COA 8.17 controlling SWP operations through May and CVP following the Director's decision establish on 03/29/24. The controlling factor for the remainder of the week in June is dependent on the risk for salmonids.
  - CDFW asked the SMT if that language was acceptable. The SMT found it accurate and acceptable.

### **Delta Smelt**

- Risk remains Low for all life stages in all regions.
- One larval DS was detected in the Confluence by EDSM on 4/29/24 and another on 5/16/24.

### **Longfin Smelt**

- Risk remains Low for all life stages in all regions.
- LFS spawning is ending.

### **Change in Exposure**

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

### **Life Stages Present**

- Delta Smelt: Larvae, Juveniles, 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 06/4/2024 on Microsoft Teams.