

# Smelt Monitoring Team – Tuesday, May 2<sup>nd</sup>, 2023

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## 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

- None.

## MEETING SUMMARY

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

#### Relevant Actions & Triggers

The descriptions below are intended as summaries and do not provide all the details related to each action or trigger. For full descriptions, please see the Old and Middle River (OMR) Guidance Document or Incidental Take Permit (ITP) as needed.

#### Proposed Action

OMR Management Measures	Requirement	Time Frame	Trigger	Triggered?
Integrated Early Winter Pulse Protection (“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 $\geq$ 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 1/17/23; triggered 12/31/22, implemented 1/3/23 to 1/16/23

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

OMR Management Measures	Requirement	Time Frame	Trigger	Triggered?
OMR Management	Manage to a more positive OMR than -5,000 cfs.	From the onset of OMR management to the end.		Active as of 1/17/23
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 by detection of a ripe female by Spring Kodiak Trawl (SKT) 2; Triggered 1/17/23 to 2/8/23
Larval and Juvenile Delta Smelt	(1) Reclamation will operate to an OMRI no more negative than -5000 cfs. (2) Reclamation will operate to an OMRI no more negative than -3500 cfs.	On or after March 15 of each year until off-ramp criteria are met.	(1) 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. (2) If QWEST is negative AND Secchi depth in the south Delta is less than 1 m.	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	Not active

#### ITP Conditions of Approval

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
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		Active

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
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 1/17/23; triggered 12/31/22, implemented 1/3/23 to 1/16/23
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 if: Cumulative expanded salvage, Dec 1 <sup>st</sup> through Feb 28 <sup>th</sup> , exceeds most recent Fall Midwater Trawl (FMWT) Index divided by 10, or SMT determines that there is a high risk of entrainment.	Dec 1 through Feb 28th	Salvage threshold for water year (WY) 2023 is 40.	Off-ramped 12/31/22 with triggering of COA 8.3.1

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
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 with detection of LFS larvae in Smelt Larval 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 off-ramp occurs	(1) LFS larvae or juveniles are found in four or more of the 12 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.	Not triggered by SLS 6, 20mm Survey 1, 20mm Survey 2, and 20mm Survey 3; triggered by SLS 4 on 2/16/23; by SLS 5 on 2/28/23; temporarily off-ramped by COA 8.4.3 (3/2/23-3/21/23)
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	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, triggered 3/2/23

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
8.5.1 Turbidity Bridge Avoidance	Maintain daily average turbidity at OBI at a level of less than 12 NTU. If the daily average turbidity at OBI is greater than 12 NTU, 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 NTU.	After the first flush or Feb 1 until April 1	Turbidity at OBI > 12 FNU	Active; Triggered 1/17/23 to 2/8/23; 2/15/23 to 2/17/23; 2/21/23 to 2/26/23; 3/17/23 to 4/1/23; off-ramped 4/1/23
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 1 <sup>st</sup> through June 30 <sup>th</sup> 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 2022 September through November 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)	Active, initially triggered on 3/18/23 by (3) Jersey Point 3-day average water temperature exceeded $12^{\circ}\text{C}$ and SLS survey 6 and 20mm Survey 1 Secchi depth were less than 1m, and continues to be triggered by 20mm Surveys 2, 3, and 4 Secchi depth less than 1m

Condition of Approval	Requirement	Time Frame	Trigger	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 30 <sup>th</sup>	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 1 <sup>st</sup> through June 30 <sup>th</sup> 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; water year type is wet as of 04/01/23; off-ramped for LFS 4/1/23

## Current Operations & Outlook

USBR and DWR shared operations updates from the Outlook. Their observations included:

- USBR reported on weather conditions noting a cooling pattern with light precipitation on May 2<sup>nd</sup> and 4<sup>th</sup>. Decreased temperatures may bring snow to the Sierras and Shasta Basin.
- Releases from Whiskeytown Dam on Clear Creek are currently 200 cfs with a spring attraction pulse elevating flows to a peak of 800 cfs later in the week.
- Releases from Keswick Dam on the Sacramento River are currently 10,000 cfs and will remain variable in response to Shasta and Keswick storage management.
- Releases from Nimbus Dam on the American River are 8,000 cfs and will remain variable in response to storage management.
- Releases from Goodwin Dam on the Stanislaus River are 1,500 cfs. A weir removal action will reduce releases to approximately 300 cfs on May 2<sup>nd</sup> with flows returning to 1,500 cfs by May 5<sup>th</sup>.
- Delta Cross Channel (DCC) gates remain closed. No changes expected for the next seven-day period.
- Conditions are approaching a spring tide peak on May 5<sup>th</sup> with a neap cycle reaching its zenith on May 12<sup>th</sup>.
- Federal facility exports are 3,500 cfs.
- DWR reported that State facility exports are approximately 4,000 cfs.
- As of May 2<sup>nd</sup>, Feather River releases are decreasing from 20,000 cfs to 15,000 cfs with potential for continued decreases into the week.
- Sacramento River flows at Freeport are 50,800 cfs and will reach a local peak on May 2<sup>nd</sup> or 3<sup>rd</sup> with a decrease in flows to follow.
- San Joaquin River flows at Vernalis were just below 29,000 cfs and will likely decrease later in the week.
- Delta outflows were just below 76,000 cfs and will reach a local peak May 2<sup>nd</sup> or 3<sup>rd</sup> with a decrease in flows to follow to about 60,000 cfs.
- As of May 1<sup>st</sup>, QWEST was just below 34,000 cfs.
- X2 is upstream of Martinez (Approximately 58 km)
- Rio Vista flows are 35,000 cfs.
- The expected daily OMR index values as of May 1<sup>st</sup> were between +3,500 and +11,000 cfs.
  - April 29<sup>th</sup> OMR at USGS gauge:

- Daily: 9,700 cfs
- Five-day: 8,900
- 14-day averages cannot be calculated due to a Middle River gauge malfunction from April 17<sup>th</sup> to the 20<sup>th</sup>.
- April 29<sup>th</sup> OMR Index:
  - Daily: 10,900 cfs
  - Five-Day: 10,000 cfs
  - 14-Day: 10,300 cfs
- May 1<sup>st</sup> OMR Index:
  - Daily: 9,300 cfs
  - Five-Day: 9,700 cfs
  - 14-Day: 10,100 cfs

## 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 March 13<sup>th</sup> to the 17<sup>th</sup>. Detections are as follows:
  - LFS Larvae
    - San Pablo and Carquinez Strait: 131
  - DS Larvae
    - All six DS detections for Survey 1 have been confirmed.
- 20-mm Survey 2 was on the water from March 27<sup>th</sup> to the 30<sup>th</sup>. Detections are as follows:
  - LFS Larvae
    - Station 401: 102
- 20-mm Survey 3 was on the water April 10<sup>th</sup> to the 14<sup>th</sup>. Detections are as follows:
  - LFS Larvae
    - Suisun Bay and West region: 205
  - DS Larvae
    - Station 501: One (Fork Length (FL) = 7mm)
      - All Five Delta Smelt detections for Survey 3 have been confirmed.
- 20-mm Survey 4 was on the water April 24<sup>th</sup> to the 27<sup>th</sup>. Detections are as follows:
  - DS Larvae
    - Station 804: One (FL = 6mm)
  - The average Secchi depth for the 12 Central and South Delta stations is 97 cm.
- SLS Survey 6 was on the water March 13<sup>th</sup> to the 16<sup>th</sup>. Detections are as follows:
  - DS Larvae
    - Station 519: One (Pending QC)
- Spring Kodiak Trawl (SKT) is on the water this week and it will be the last SKT survey of the season.
- There are 15 confirmed DS detections across all SLS and 20-mm surveys for the season and one awaiting further QC.

USFWS provided updates on the Enhanced Delta Smelt Monitoring Program (EDSM) and Chipps Island Trawl.

- EDSM 20-mm larval surface trawls sampled April 17<sup>th</sup> to the 21<sup>st</sup> and completed 39 sites.
  - DS
    - Suisun Bay: One (FL = 6.8mm)
    - Suisun Marsh: One (FL = 6.5mm)

- Post larval juvenile DS abundance estimate for the week of April 17<sup>th</sup> is 2,422,717.
  - LFS (FL = 5 to 23.6mm)
    - Suisun Bay: 136
      - Larval: 133
      - Juvenile: Three
    - Suisun Marsh: 26 (All larval)
- EDSM 20-mm larval surface trawls sampled April 24<sup>th</sup> to the 28<sup>th</sup> and completed 39 sites. Catch data is currently being processed and data is incomplete.
  - No smelt have been identified thus far.
- EDSM Kodiak trawls sampled April 24<sup>th</sup> to the 28<sup>th</sup> Monday through Friday and completed 37 sites.
  - LFS
    - Suisun Marsh: One (FL = 39mm)
    - Western Delta: Three (FL = 38 to 41mm)
  - EDSM Kodiak sampling has concluded for Phase 1 and will start again in July 2023 at the beginning of Phase 3.
  - The last Kodiak abundance estimate was for the week March 26<sup>th</sup> at 1,575.
- DJFMP Chipps Island Trawl sampled April 24<sup>th</sup> to the 28<sup>th</sup> (Monday, Tuesday, and Thursday) completing 30 tows.
  - No DS or LFS have been detected.
- DJFMP Chipps Island sampling this week is scheduled for Monday, Wednesday, and Friday.

CDFW provided a salvage and qualitative larval sampling update (April 24<sup>th</sup> to the 30<sup>th</sup>).

- No DS or LFS were detected at either facility.
- No operational issues were reported at either facility.

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

### Delta Smelt

USBR and CDFW agreed that conditions are similar and risk has not changed since last week. CDFW highlighted that one EDSM catch marked as Suisun Bay is technically in the confluence and will be marked as so in the risk table. However, overall risk will remain the same.

### Longfin Smelt

CDFW noted that environmental conditions continue to be favorable and there is low risk for LFS.

## PART 3: Live-edit Assessments

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

USBR reviewed proposed changes to the PA Assessment, which include the latest dates, detections, conditions, data, and reflects the discussion documented in Part 2 above.

### 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.

## Part 4: Additional Considerations/Discussion

No items to elevate to WOMT.