

Smelt Monitoring Team – Tuesday, April 25th, 2023

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

- CDFW to share 20-mm Survey 4 Secchi depth with the Smelt Monitoring Team (SMT) via email.

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 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 ≥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 DS has been collected in monitoring surveys.	Off-ramped 1/17/23; triggered 12/31/22, implemented 1/3/23 to 1/16/23

¹ 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 st through June 30 th 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 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 st through Feb 28 th , 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 th	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 st through June 30 th 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°C and SLS survey 6 and 20mm Survey 1 Secchi depth were less than 1m, and continues to be triggered by 20mm Surveys 2 and 3 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 th	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 st through June 30 th 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 an increase in ambient temperature driving accelerated snowmelt. Temperatures will briefly decrease early next week with no precipitation for the state in the six-day forecast window.
- Releases from Whiskeytown Dam on Clear Creek are currently 200 cfs.
- Releases from Keswick Dam on the Sacramento River are currently 8,500 cfs and will increase in response to a spring pulse flow and storage management.
- Releases from Nimbus Dam on the American River are 7,000 cfs with increases to 8,000 cfs by April 29th.
- Releases from Goodwin Dam on the Stanislaus River are 1,500 cfs.
- Delta Cross Channel (DCC) gates remain closed. No changes expected for the next seven-day period.
- Tides are approaching the apex of a neap cycle on April 27th with a spring tide to follow on May 5th.
- Federal facility exports are 2,700 cfs.
- DWR reported that State facility exports are between 6,000 and 3,000 cfs depending on storage needs.
- Feather River releases are 15,000 cfs with variable flows as warming trends continue.
- As of April 25th, Sacramento River flows at Freeport are approximately 42,000 cfs and will increase as reservoirs receive increased snowmelt.
- San Joaquin River flows at Vernalis were just below 30,000 cfs and will likely hold steady.
- Delta outflows were approximately 68,000 cfs as of April 24th and will hold.
- As of April 25th, QWEST is approximately 33,600 cfs.
- X2 is west of Martinez.
- Rio Vista flows are 35,000 cfs.
- The expected daily OMR index values as of April 24th were between +11,000 and +6,000 cfs.
 - April 22nd OMR at USGS gauge:
 - Daily: 8,200 cfs
 - Five-day and 14-day averages cannot be calculated due to a Middle River gauge malfunction from April 17th to the 20th.
 - April 22nd OMR Index:
 - Daily: 10,500 cfs

- Five-Day: 10,000 cfs
 - 14-Day: 11,500 cfs
- April 24th OMR Index:
 - Daily: 10,200 cfs
 - Five-Day: 10,000 cfs
 - 14-Day: 11,200 cfs

Review of Environmental Conditions and Survey Updates

CDFW delivered catch updates on relevant surveys to the SMT.

- Processing for SLS Survey 4 (February 13th to the 15th) and SLS Survey 5 (February 27th and March 1st) is now complete.
- 20-mm Survey 1 was on the water from March 13th to the 17th. Processing for remainder of the stations is ongoing:
 - DS Larvae
 - Station 411: Two (Fork Length (FL) = 6 mm)
 - Station 405: One (FL = 12 mm)
 - One Preliminary detection (FL = 9 mm)
 - Five total confirmed DS detections for 20-mm Survey 1.
- 20-mm Survey 3 was on the water from April 10th to the 14th. Processing is ongoing:
 - LFS
 - Station 706: One (FL = 6 mm)
 - DS
 - Station 716: One (FL = 6 mm)
 - Station 704: One (FL = 7 mm)
 - Station 719: One (FL = 16 mm)
 - Station 726: One (FL = 12 mm)
 - Four total confirmed DS detections for 20-mm Survey 3.
- There are 12 confirmed DS detections across all SLS and 20-mm surveys for the season.

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

- EDSM Kodiak Trawl sampled April 17th to the 21st completing 34 sites.
 - LFS
 - Suisun Marsh: One
- EDSM Kodiak Trawl will sample this week From April 24th to the 27th.
 - The last Kodiak Trawl abundance estimate was March 26th at 1,575.
- EDSM 20-mm larval surface trawls sampled April 10th to the 14th completing 40 sites.
 - Larval DS
 - Suisun Bay: Two (FL = 5.7-6.0)
 - Suisun Marsh: One (FL = 6)
 - Larval LFS
 - Suisun Bay: 62
 - Suisun Marsh: 11
 - Lower Sacramento River: One
- EDSM 20-mm larval surface trawls sampled April 17th to the 21st completing 39 sites. Processing is ongoing.
 - No species of concern have been identified.

- Chipps Island Trawl sampled April 17th to the 21st on Monday, Tuesday, Thursday, and Friday completing 40 sites.
 - No species of concern were detected.
- Chipps Island Trawl is scheduled to sample this week on Monday, Tuesday, Thursday, and Friday.

CDFW provided a salvage and qualitative larval sampling update (April 17th to the 23rd).

- No DS or LFS were detected at either facility.
- Outages
 - State Facility: On April 17th the 1400 count was reduced due to a real time unexpected flow change.
 - Federal Facility: On April 20th the 1200 count was missed and the 1400 count was reduced by 30 minutes due to an operator error.

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.

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.