

Smelt Monitoring Team – Tuesday, April 11th, 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 transmit data on Secchi depths at all 12 stations from 20mm Survey 3 when available. (complete)
- CDFW to transmit survey results when QC is complete.
- Smelt Monitoring Team (SMT) members to contact CDFW with any interest in participating in a Delta Smelt (DS) subgroup to identify abiotic and biotic factors indicating DS may move into areas at high risk of entrainment in the absence of a first flush.

MEETING SUMMARY

PART 1: Updates on Water Operations and Biological Updates

Relevant Actions & Triggers

The Incidental Take Permit (ITP) Condition of Approval (COA) 8.5.2 (Larval and Juvenile DS Protection) remains in effect, though is not controlling operations. COA 8.12 remains inactive with the water year type classified as wet as of April 1st. 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.

CDFW proposed that triggering of COAs should be based on QC'ed survey data, rather than preliminary survey data. DWR agreed.

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
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

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

OMR Management Measures	Requirement	Time Frame	Trigger	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
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 28 th	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, and 20mm Survey 2; 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, triggered 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

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 a mid-week transition to warmer temperatures with a chance of light showers in the Sacramento and San Joaquin Basins resulting in little to no accumulation.
- Releases from Whiskeytown Dam on Clear Creek are currently 200 cfs.
- Shasta Reservoir exceeded 4 MAF.
- Releases from Keswick Dam on the Sacramento River are 3,250 cfs.
- Releases from Nimbus Dam on the American River are 7,000 cfs with inflows being monitored as snowmelt signals strengthen.
- Releases from Goodwin Dam on the Stanislaus River are 1,500 cfs. A fishery egg basked retrieval will briefly reduce releases to 300 cfs on April 17th and 18th.
- Delta Cross Channel (DCC) gates remain closed. No changes expected for the next seven-day period.
- The last quarter neap sequence arrives on April 13th, with a spring tide following on the 19th.
- The federal facility exports are 1,600 cfs.
- DWR reported that State facility exports are 3,500 cfs as of April 11th.
- Feather River releases increased from 7,500 to 10,500 cfs on April 11th due to a pulse flow traveling through the system to support fish migration. Flows are expected to decrease by next week.
- As of April 10th, Sacramento River flows at Freeport were around 41,000 cfs.
- San Joaquin River flows at Vernalis are 31,816 cfs as of April 11th with anticipated decreases.
- Delta outflows were 72,600 cfs as of April 10th and will decrease over the week.
- As of April 11th, QWEST is approximately +36,447 cfs.
- X2 is west of Martinez (<56 km).
- Rio Vista flows are 35,211 cfs.
- The expected daily OMR index values as of April 10th were +10,000 to +13,000 cfs.
 - April 8th OMR at USGS gauge:
 - Daily: 11,480 cfs
 - Five-Day: 10,754 cfs
 - 14-Day: 11,190 cfs

- April 8th OMR Index:
 - Daily: 11,972 cfs
 - Five-Day: 11,379 cfs
 - 14-Day: 11,684 cfs
- April 10th OMR Index:
 - Daily: 12,619 cfs
 - Five-Day: 12,427 cfs
 - 14-Day: 11,779 cfs

The survey table was updated to reflect the conclusion of DJFMP-Chipps trawl efficiency.

Review of Environmental Conditions and Survey Updates

CDFW delivered catch updates on relevant surveys to the SMT.

- SLS 6 was on the water from March 13th to the 16th. All stations were sampled. Detections are as follows, processing is ongoing:
 - LFS Larvae
 - San Pablo Bay: 26
 - DS Larvae
 - The three DS detections reported last week at stations 519, 610, and 706 are still pending QC.
- 20-mm survey 1 was on the water from March 13th to the 17th. All 12 Central and South Delta stations are processed. Processing for remainder of the stations is ongoing:
 - LFS Larvae
 - Suisun Bay and West region: 8
 - DS Larvae
 - The two DS detections reported last week at station 804 are still pending QC.
- 20-mm survey 2 was on the water from March 27th to the 30th. All stations were sampled. Processing is ongoing:
 - LFS
 - Suisun Bay and West: 57
- 20-mm survey 3 is on the water from April 10th to the 14th.
 - *Note: After the meeting, CDFW reported to the SMT via email that the average Secchi depth for the 12 South and Central Delta stations is 78 cm.*
- SKT 4 was on the water from Monday, April 3rd to the 6th. All stations were sampled. Processing is ongoing:
 - DS
 - None
 - LFS
 - Juvenile
 - Station 405: One
 - Station 606: One
 - Adult
 - Station 610: One (Fork Length (FL) = 90mm)

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

- EDSM sampled the week of April 3rd Monday through Friday completing all 35 sites.

- DS
 - None
 - The DS abundance estimate is zero. The last calculated abundance estimate was for the week of March 26th at 1,575.
- LFS
 - East San Pablo Bay and Carquinez Strait: Six (FL = 25 to 103 mm)
- EDSM is scheduled to sample this week April 3rd to the 6th with concurrent Kodiak and 20-mm trawling.
- Chipps Island sampled the week of April 2nd Sunday, Monday, Tuesday, Thursday and Friday completing all 50 tows.
 - DS: Zero
 - LFS: Five (FL = 90 to 104 mm)
- Chipps Island will sample Monday, Tuesday, Thursday and Friday the week of April 10th.
 - Chipps Island will sample four days a week in April.

CDFW provided a salvage and qualitative larval sampling update (April 3rd to the 9th).

- No DS or LFS were detected at either facility.
- No outages 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, particularly with continued positive QWEST and OMR index values. Turbidity has decreased slightly.

Longfin Smelt

CDFW noted that environmental conditions are favorable for LFS. Risk remains low for all life stages of 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.