

Smelt Monitoring Team – Tuesday, March 21st, 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

- None

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 Delta Smelt Protection) was triggered on March 18th due to the three-day 12° C water temperature trigger at Jersey Point and average secchi depth of <1 m at the 12 Central and South Delta stations by SLS 6 and 20mm Survey 1. COA 8.5.1 (Turbidity Bridge Avoidance) was triggered on the 17th due to daily average turbidity >12 FNU at Old River at Bacon Island (OBI). 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 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

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

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 28 th	Salvage threshold for water year (WY) 2023 is 40.	Off-ramped 12/31/22 with triggering of COA 8.3.1
8.4.1 (OMR Management for Adult Longfin Smelt)	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: 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	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

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
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.	Off-ramped by SLS 6; 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
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 end of OMR management or until CDFW agrees that the action may be ended or modified.	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

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
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 Delta Smelt is greater than or equal to one plus the average prior three years' FMWT index (rounded down). The 2022 September through November FWMT 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)
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 $>25^{\circ}\text{C}$ for three consecutive days.	Active; not triggered

Condition of Approval	Requirement	Time Frame	Trigger	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 above normal as of 03/01/23

Current Operations & Outlook

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

- USBR reported on weather conditions noting a weak storm system from March 21st to the 23rd with a break in the precipitation over the weekend. Light precipitation may return the evening of the 26th and into early next week.
- Releases from Whiskeytown Dam on Clear Creek are currently 200 cfs. Dialogue is unfolding regarding channel maintenance releases, but no firm outcomes on flow modifications.
- Releases from Keswick Dam on the Sacramento River are 3,750 cfs with a change order issued for March 22nd targeting 3,650 cfs.
- Releases from Nimbus Dam on the American River are 14,000 cfs with a change order issued for March 21st targeting 12,000 cfs.
- Releases from Goodwin Dam on the Stanislaus River are 1,500 cfs due to Tulloch side flow management.
- Vernalis flows have elevated to the danger stage.
- Delta Cross Channel (DCC) gates remain closed. No changes expected for the next seven-day period.
- A new moon arrived on March 21st bringing peak spring tides with the next neap cycle on March 28th.
- The federal facility is exporting 4,200 cfs.
- DWR reported that State facility exports have remained at 6,680 cfs since March 16th. Exports may be reduced as downstream reservoirs are meeting capacity needs.
- Feather River releases are 35,000 cfs and will likely decrease to about 20,000 cfs within the week.
- As of March 20th, Sacramento River flows at Freeport were just below 77,000 cfs, and flows will reduce to approximately 50,000 cfs by the end of the week.
- San Joaquin River flows at Vernalis were 36,000 cfs as of March 20th, and will remain relatively stable.
- Delta outflows were 175,000 cfs as of March 20th and will decrease over the week.
- As of March 20th, QWEST was around +46,000 cfs and is expected to remain positive.
- X2 is west of Martinez (<56 km).
- South Delta turbidity has increased with the positive OMR index.
- The expected daily OMR index values as of March 20th are +7,000 to +11,000 cfs.
 - March 18th OMR at USGS gauge:
 - Daily: 8,000 cfs
 - Five-Day: 3,700 cfs
 - 14-Day: -1,800 cfs
 - March 18th OMR Index:
 - Daily: 9,400 cfs

- Five-Day: 4,200 cfs
- 14-Day: -1,600 cfs
- March 20th OMR Index:
 - Daily: 10,700 cfs
 - Five-Day: 8,800 cfs
 - 14-Day: 600 cfs

No updates to the survey table.

Review of Environmental Conditions and Survey Updates

CDFW delivered catch updates on relevant surveys to the SMT.

- SLS 4 was on the water from February 13th to the 15th. New results are as follows, processing is ongoing:
 - LFS Larvae
 - Napa River and San Pablo Bay: 216
- SLS 5 was on the water from February 27th to March 1st. All stations were sampled. New detections not reported last week are as follows, processing is ongoing:
 - LFS Larvae
 - Sacramento River system and Confluence region: 123
- SLS 6 was on the water from March 13th to the 17th. All stations were sampled. Detections are as follows, processing is ongoing:
 - LFS Larvae
 - Station 812: Two (Fork Length (FL) = 8-10 mm)
 - Station 815: Seven (FL = 6-8 mm)
 - Station 901: Three (FL = 5-7 mm)
 - Sacramento River system and Confluence region: 35
- 20-mm survey 1 was on the water from March 13th to the 17th. Napa stations 345 and 346 were dropped in addition to two tows at station 344 due to storm deposited debris in the river. All 12 Central and South Delta stations are processed. Processing is ongoing:
 - LFS Larvae
 - Station 901: One (FL = 14 mm)
 - Station 801: One (FL = 19 mm)

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

- EDSM sampled the week of March 12th Monday through Friday completing all sites.
 - LFS
 - Sacramento Deep Water Ship Channel (SDWSC): One
 - Suisun Marsh: One
 - Western Delta: Three
- EDSM is scheduled to sample this week Monday, March 20th through Thursday, March 23rd. Preliminary results are as follows:
 - DS
 - SDWSC: One (Tagged: Right Green Posterior from January 26th SDWSC soft release)
- Chipps Island sampled the week of March 12th Sunday, Monday, Wednesday, Thursday, and Friday completing 50 tows.
 - DS: Zero
 - LFS: 33 (FL = 76-110 mm)

- Chipps Island will sample Sunday, Monday, Tuesday, Thursday, and Friday the week of March 19th.

CDFW provided a salvage and qualitative larval sampling update (March 13th to the 20th).

- No DS or LFS were detected at either facility.
- Operations
 - State Facility
 - Reduced counts on March 14th from 1100 to 2300 due to high fish numbers.
 - Reduced counts on March 15th from 0100 to 0700 due to high fish numbers.
 - Reduced counts on March 15th from 0700 to 1300 due to weed debris management.

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

Delta Smelt

The SMT discussed whether risk can be considered less than moderate within the OMR corridor for any species if a COA is triggered. USBR noted that risk appears to be low given current hydrologic conditions in the OMR corridor, but requested SMT input regarding whether the SMT could declare low risk. CDFW responded that as long as the environmental conditions like hydrology are favorable for fish, then it is reasonable to declare low risk despite a triggered COA.

CDFW proposed low risk for all DS life stages given the favorable hydrology (OMRI between +7,000 and +11,000 cfs this week and very positive QWEST (~40,000 cfs)) and no recent detections in salvage or field surveys in the central or south Delta. Thus far, no DS larvae have been detected in the system. The SMT agreed risk is currently low for DS throughout the system for all life stages. Furthermore, given current environmental conditions, DWR encouraged the use of language that acknowledges the likelihood of larval presence despite a lack of detections thus far.

DWR clarified that as of March 17th daily average turbidity at OBI exceeded 12 FNU which would result in the SWP operating to an OMR index of -2,000 cfs for five days (through March 21st) under ITP COA 8.5.1 (Turbidity Bridge Avoidance), but operations were already less negative than -2,000 cfs due to high flows so this COA is not controlling. ITP COA 8.5.2 (Larval and Juvenile DS Protection) was triggered March 18th, which would initiate the SWP operating to an OMR index of -3,500 cfs until April 1st or turbidity at OBI dropped below 12 FNU. COA 8.5.2 is also unlikely to be controlling given current hydrology. DWR also noted that limiting the OMR index to -3,500 cfs under COA 8.5.2 would also be protective for adult DS.

Longfin Smelt

CDFW proposed low risk for all life stages of LFS across the system due to favorable hydrology and lower detections in the recent field surveys (SLS 6, 20-mm survey 1), and no recent detections in salvage, indicating that there are fewer LFS in the South and Central Delta. The SMT agreed.

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

DWR and CDFW agreed they will not request EDSM crews undertake 20-mm sampling in the South Delta, as 20-mm detections in the South Delta have been rare in the past and any additional information obtained is unlikely to affect decision making under current conditions.

No items to elevate to WOMT.