

Smelt Monitoring Team – Tuesday, June 28th, 2022

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 (KW)

ACTION ITEMS

- KW to schedule post-season Smelt Monitoring Team (SMT) meeting the week of July 11th.
- KW to coordinate presentations and discussions for the initial meetings next season.

MEETING SUMMARY

PART 1: Updates on Water Operations and Biological Updates

Relevant Actions & Triggers

USBR off ramped the Old and Middle River (OMR) Management action on June 28th when the daily mean water temperature at Clifton Court Forebay (CCF) reached 77° F for three consecutive days. CDFW reported on Incidental Take Permit (ITP) Condition of Approval (COA) 8.8, End of OMR Management, which was triggered as of midnight June 27th after the daily mean water temperature at Clifton Court Forebay (CCF) exceeded 25° C for three consecutive days. COA 8.12 Delta Smelt Protection at Barker Slough Pumping Plant remains in effect until June 30th.

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 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.	Triggered 12/18/21; last day of action was 1/2/22

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		Off-ramped on 6/28/22
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 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.	Triggered on 1/3/22; Off-ramped by SKT 3 on 3/17/22
Larval and Juvenile Delta Smelt	Run hydrodynamic models and forecasts of entrainment, informed by the 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	In effect
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 CCF reaches 77°F for 3 consecutive days	Triggered 6/28/22

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		Triggered

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.	Triggered 12/18/21; last day of action was 1/2/22
8.3.3 (Adult Longfin Smelt Entrainment Protection)	After December 1, if an Integrated Early Winter Pulse Protection (Condition of Approval 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 WY 2022 is one.	Off-ramped due to trigger of 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 by larval detections 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 offramp 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	Triggered 1/20/22, 1/31/22, 2/28/22, 3/11/22, 3/29/22, 4/11/22, and 4/26/22
8.4.3 High flow offramp for Longfin Smelt	If triggered, Conditions of Approval 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, Not 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 end of OMR management or until CDFW agrees that the action may be ended or modified.	Turbidity at OBI > 12 FNU	In effect as of 1/3/22; off-ramped April 1 st .

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 salvage of DS exceeds 11 in three days, 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 -3,500 cfs.	Nov 1 st through June 30 th or until off-ramped by 8.8	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 2021 FMWT index for DS was zero.	Active, not 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.	Triggered 6/28/22
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	Active, Triggered for LFS 2/14/22, 3/11/22, and DS on 3/23/22

Current Operations & Outlook

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

- Releases from Whiskeytown Dam on Clear Creek are currently 150 cfs and will likely remain steady.
- Releases from Keswick Dam on the Sacramento River are 4,500 cfs.
- Releases from Nimbus Dam on the American River are 5,000 cfs in preparation of increased pumping on July 1st and to mitigate increased salinity in the Delta.

- Releases from Goodwin Dam on the Stanislaus were 900 cfs and will continue to trend downward to 300 cfs by July 1st with the Vernalis flow requirement ending in July.
- Federal facility exports are at 900 cfs and will increase to 1,800 cfs on July 1st.
- Delta Cross Channel (DCC) gates will open over the July 4th holiday weekend and possibly remain open for the summer.
- DWR reported that Feather River releases are 3,500 cfs and will increase to 4,000 cfs by the end of the day with the possibility of trending to 4,500 cfs by the end of the week.
- June 27th Freeport flows were approximately 9,700 cfs and will increase to 12,000 cfs in the next few days.
- Vernalis flows as of June 27th were 850 cfs and will decrease after July 1st with decreases in the Stanislaus River.
- The State facility shut off exports as of June 27th for herbicide treatment with exports from Banks Pumping Plant resuming July 2nd.
- June 27th Delta outflows were 5,000 cfs and will increase with increased flows on the Sacramento River.
- The Delta is experiencing the peak of a weaker spring tidal cycle.
- X2 is at 95.75 km.
- The OMR index is -1,500 cfs.
- QWEST is about -800 cfs today and may reach 1,000 cfs with the DCC gates opening.
- No updates were made to the survey table.

Review of Environmental Conditions and Survey Updates

CDFW delivered catch updates on relevant surveys to the SMT.

- 20 mm Survey 8 is on the water this week.
- 20 mm Survey 7 was on the water from June 13th to the 16th. Updated results are as follows:
 - LFS
 - Station 513: 7 (31 to 36 mm)
 - Station 418: 11 (28 to 37 mm)
- 20 mm Survey 6 was on the water from May 31st to June 3rd. Updated results are as follows:
 - Additional LFS Detections
 - Confluence: 36
 - Suisun Bay and West: 18

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

- Last week EDSM sampled all 40 planned sites and reported one new DS detection from June 6th in the Sacramento Deepwater Ship Channel at a length of 22.5 mm. There were no new LFS detections.
- A total of 75 DS have been detected by EDSM for water year 2022.
- The June 13th to 17th all strata abundance estimate for post larval juvenile DS is zero given no recent catches.
 - The previous week's abundance estimate was also zero.
- Chipps Island Trawl sampled all planned sites last week and reports no new DS or LFS detections.
- This marks the last week of 20 mm Surveys and USFWS will transition to Kodiak sampling on July 5th.

CDFW provided a salvage update (June 20th to the 26th).

- Neither facility reported any DS or LFS salvaged in the last week.

USBR shared environmental data updates as of June 27th.

- Three-station daily average water temperature: 23.50° C.
- Current turbidity at OBI: 2.36 FNU.
- Three-day average turbidity at Freeport: 3.39 FNU.
- CCF daily average temperature: 25.74° C.
- The estimated X2 is 95.75 km.
- The weather forecast out of Antioch is sunny and mostly clear with temperatures slightly decreasing by the end of the week with light winds from the northwest.
- The weather forecast out of Stockton is sunny and mostly clear with temperatures slightly decreasing by the end of the week with light winds from the northwest.

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

The SMT observed that temperatures have exceeded the documented spawning range for DS and the OMR management off ramp measure has been triggered for the season.

CDFW noted similar conditions for LFS with ITP COA 8.8 signaling the off ramp for OMR management season for DS and LFS and 20 mm Survey 7 not triggering COA 8.12 Barker Slough. No additional survey data is anticipated before COA 8.12 is off ramped for DS on June 30th.

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 included updating the latest dates, detections, data, and reducing language in the executive summary to note that the OMR management off ramp criteria was met on June 28th.

ITP Longfin Smelt Risk Assessment

The SMT reviewed and discussed updates to the ITP Risk Assessment for LFS, which included updating the latest dates, detections, and data as well as removing section 1-A and 1-B from the risk assessment in response to COA 8.8 triggering. Advice to WOMT stated the end of DS and LFS OMR management for the year.

USWFS asked for clarification regarding what factors would control operations now that the OMR management season has ended. DWR explained that the Emmaton D-1641 requirement will help to control water quality and X2 migration over the summer. The temporary change order will also off ramp after June 30th and D-1641 requirements will remain in place.

Part 4: Additional Considerations/Discussion

The SMT reviewed the following pre-season meeting topics:

1. Purpose of SMT, group norms, expectations, agendas, guidance documents, etc.
 - a. Timing – First meeting of water year 2023 season.
 - b. Who - All
2. Formal introduction for SMT group members at the start of next season.
 - a. Timing – First meeting of water year 2023 season.
 - b. Who - All
3. Review regulatory context to identify where further clarification is needed and collect data on permits and amendments related to regulations.

- a. Timing – Early season meeting
- b. Who – WOMT representatives, USBR, SWRCB (D-1641 overview)
- 4. Update the SMT bibliography. Discuss new papers since previous year.
 - a. Timing – Spread out across early season meetings
 - b. Who – All
- 5. Hydrology calculations (OMRI, QWEST, Chipps Days, etc.)
 - a. Timing – Early season meeting
 - b. Who – Bryant
- 6. Assessing Risk, available tools, PTM modeling and hindcasts.
 - a. Timing – Early season meeting
 - b. Who – Ian U.
- 7. Salvage tutorial.
 - a. Timing – Early season meeting
 - b. Who – Kyle and Virginia

The SMT agreed to use the November 2022 meetings to cover the above topics. SMT members noted that topics 3, 5, 6, and 7 are well-suited to help onboard new or alternate members and recommended distributing supporting materials in advance.

Agencies reported no items for elevation to WOMT.