Smelt Monitoring Team – Tuesday, June 6th, 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

- K&W to share calendar hold and Microsoft Teams link for Smelt Monitoring Team (SMT) season closing meeting. (complete)
- CDFW to distribute the 20-mm Survey 7 Secchi depth averages when available.
- USBR and DWR to inform respective fish facilities that qualitative larval sampling can conclude for the season.
- CDFW to share Larval Entrainment Pilot Study (LEPS) presentation being prepared for upcoming Interagency Ecological Program Estuarine Ecology Team (EET) meeting with SMT later this summer.

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 ≥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 1st through June 30th 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 (Condition of Approval (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 1st through Feb 28th, 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)	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 28th	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.	Active, not triggered by SLS 6, 20mm Survey 1, 2, 3, 4, 5, or 6 (3/21/23-present); 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 to present

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, not triggered; 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 1st through June 30th 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 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 ≥12°C and Secchi from the most recent SLS/20 mm survey is ≤1m averaged across the 12 stations (809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, and 919)	Active, not triggered by 20mm Surveys 5 and 6; Triggered 3/18/23 to 5/11/23 by (3) Jersey Point 3-day average water temperature exceeded 12°C and SLS survey 6 and 20mm Surveys 1 through 4 Secchi depths 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 30th	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 1st through June 30th 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 05/01/23; 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 slight cooling trend with possible thunderstorm activity along the spine of the Sierra and in the Shasta Basin. There is little chance of measurable precipitation in the valley floor.
- Releases from Whiskeytown Dam on Clear Creek are currently 150 cfs. Another Clear Creek pulse is expected for June 15th.
- Releases from Keswick Dam on the Sacramento River are 9,000 cfs for storage management.
- Releases from Nimbus Dam on the American River are 9,000 cfs for storage management.
- 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 emerging from a full moon with a last quarter neap cycle on June 10.
- Federal facility exports are currently 900 cfs due to a maintenance activity which will conclude the evening of June 6th. A change order for Thursday, June 8th will target exports of 3,500 cfs. Export will be suspended during business hours between June 12th and June 16th for maintenance activities.
- DWR reported that State facility exports as of June 6th are 5,700 cfs. Maintenance operations at Skinner will decrease flows to 2,000 cfs by June 7th with small increases up to 3,000 cfs by the end of the week. Looking towards the end of the month the gates at CCF will close on June 27th for herbicide application.
- As of June 6th, Feather River releases have increased to 8,000 cfs and the water level has reached the top of the lake. Operations will now fluctuate to matching inflows.
- Sacramento River flows at Freeport were 30,500 cfs as of June 5th and will likely increase in response to modifications on the Feather River.
- San Joaquin River flows at Vernalis were 27,000 cfs as of June 5th.
- Delta outflows were approximately 50,000 cfs as of June 5th and will remain stable.
- As of June 5th, QWEST was approximately 27,600 cfs and will remain stable.
- X2 is advancing to approximately 60 km due to lower outflows and high tides.
- The expected daily OMR index values as of June 5th were between +5,000 and +8,000 cfs.
    - June 3rd OMR at USGS gauge:
        - Daily: 4,400 cfs

        - Five-day: 4,500 cfs
        - 14-day: 3,400 cfs
    - June 3rd OMR Index:
        - Daily: 6,600 cfs
        - Five-Day: 6,200 cfs
        - 14-Day: 4,900 cfs
    - June 5th OMR Index:
        - Daily: 6,900 cfs
        - Five-Day: 6,600 cfs
        - 14-Day: 5,400 cfs

Review of Environmental Conditions and Survey Updates

CDFW delivered catch updates on relevant surveys to the SMT.

- 20-mm Survey 3 was on the water from April 10th to the 14th. New detections are as follows:
    - LFS Larvae and Juveniles
        - Station 342 in the Napa River: 459
- 20-mm Survey 4 was on the water from April 24th to the 28th. New detections are as follows:
    - LFS Larvae and Juveniles
        - Station 342 in the Napa River: 886
- 20-mm Survey 6 was on the water from May 22nd to the 25th. New detections are as follows:
    - LFS Larvae and Juveniles
        - Station 418 in Suisun Bay: 14
- 20-mm Survey 7 is on the water this week.

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

- EDSM 20-mm larval surface trawls sampled May 22nd to the 26th.
    - DS
        - Suisun Bay: One (Fork Length (FL) = 7 mm)
    - LFS
        - Suisun Bay
            - Larval: Three
            - Juvenile: 19
        - Suisun Marsh
            - Larval: Eight
            - Juvenile: 13
- EDSM 20-mm larval surface trawls sampled May 29th to June 2nd.
    - DS
        - Suisun Marsh: One (Juvenile, FL = 25.5 mm)
- DJFMP Chipps Island Trawl sampled May 29th to June 2nd completing 30 tows.
    - No detections
- DJFMP Chipps Island and EDSM 20-mm sampling this week is scheduled for Monday, Wednesday, and Friday.
- The DS abundance estimate is 1,963,874.

CDFW provided a salvage and qualitative larval sampling update (May 29th to June 4th).

- Salvage

    - No DS or LFS were detected at either facility or in qualitative larval sampling.
- Facility Operations
    - State Facility
        - Reduced counts on May 29th to June 3rd at the Skinner Delta Fish Protective Facility due to high splittail numbers.
    - Federal Facility
        - No Larval sampling on June 1st 10:00 count due to high splittail numbers.

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 risk has not changed since last week.

Qualitative Larval Sampling

SMT members discussed continuing larval sampling versus wrapping sampling for the season.

The SMT agreed that it is unlikely for DS or LFS larvae to be detected for the rest of the season given the positive OMR Index and QWEST values and agreed to recommend ending qualitative larval sampling for the season, effective immediately. USFWS expressed interest in improving the process for detections by transitioning from a qualitative to quantitative system.

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 Proposed Action (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.

Larval Entrainment Pilot Study (LEPS) Update

CDFW presented preliminary LEPS results at the Interagency Ecological Program workshop. WY23 highlights include:

- 700+ Samples collected
- 55 Sampling Days (Jan to Apr)
- New 940 micron-mesh net
- Two-day gear comparison sampling between original SLS net, 20-mm net, and 940-micron net

Plans for 2024 LEPS sampling and additional preliminary results from 2023 will be presented at the EET meeting in July. DWR added that the Longfin Smelt Technical Team will present an update on the outcomes of the ITP and the culture program at EET as well.