Smelt Monitoring Team – Tuesday, November 29th, 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 (K&W)

ACTION ITEMS

- None.

MEETING SUMMARY

PART 1: Updates on Water Operations and Biological Updates

Relevant Actions & Triggers

There are currently no relevant actions or triggers for Old and Middle River (OMR) management. The first one will be the Integrated Early Winter Pulse Protection action, and this cannot be initiated until December 1, 2022. There have been no changes since last week in the Incidental Take Permit (ITP) Conditions of Approval (COA) that are currently in effect. Starting December 1, 2022, COA 8.3.1 (Integrated Early Winter Pulse Protection) and 8.3.3 (Adult Longfin Smelt Entrainment Protection) can be considered. 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 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.	Not active

[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.	N/A	Not active
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.	Not active
Larval and Juvenile Delta Smelt	Run hydrodynamic models and forecasts of entrainment, informed by the Enhanced Delta Smelt Monitoring (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.	Not active
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	N/A	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.	Not active
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 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) 2022 is one.	Not active

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.	Not active
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 Smelt Larvae Survey (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 active
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.	Not active

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 end of OMR management or until CDFW agrees that the action may be ended or modified.	Turbidity at OBI > 12 FNU	Not active
8.5.2 (Larval and Juvenile Delta Smelt Protection)	If triggered, this COA 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 COA 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 1st through June 30th 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 2022September 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 30th	Daily mean water temperature at CCF is >25° C for three consecutive days.	Not active
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

Current Operations & Outlook

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

- USBR reported on weather conditions noting back-to-back storm systems with the valley floor experiencing the greatest precipitation on Thursday, December 1st and the following Saturday. The Shasta basin and Central/Southern Sierra Nevada spine will accumulate the largest precipitation totals with about four to five inches forecasted. The valley floor may receive up to four inches in the Redding region and trail off to less than two inches in the Sacramento area.
- Releases from Whiskeytown Dam on Clear Creek are currently 200 cfs. No changes expected for the next seven-day period.
- Releases from Keswick Dam on the Sacramento River are 3,250 cfs.
- Releases from Nimbus Dam on the American River are 1,300 cfs. No changes expected for the next seven-day period.
- Releases from Goodwin Dam on the Stanislaus River are 200 cfs. No anticipated changes.
- The federal facility is exporting 900 cfs.
- Delta Cross Channel (DCC) gates closed on Monday, November 28th and are intended to remain closed for seasonal operation.
- Salinity is a rising concern in the Delta. Additional water from the weekend storm systems may help improve water quality. USBR may conduct operational adjustments to further reduce Delta salinity.
- The first quarter of the neap tidal cycle is about to begin, and then on December 7th the full moon will bring a spring tidal sequence.
- DWR reported that Feather River releases are 1,400 cfs and may decrease to 950 cfs if conditions allow.
- As of November 29th, Sacramento River flows at Freeport are 6,300 cfs.
- San Joaquin River flows at Vernalis are around 600 cfs.
- State facility exports are 300 cfs.
- Delta outflows peaked a little below 4,000 cfs and will likely increase with precipitation arriving later in the week, possibly exceeding 10,000 cfs.
- As of November 28th, QWEST was 2,800 cfs and has trended negative to about 100 cfs as of the 29th. QWEST will likely turn more positive values with the forecasted storm systems.
- Rio Vista flows are fluctuating between 4,000 and 5,000 cfs and will likely increase with incoming precipitation.
- The daily OMR Index is approximately -2,000 cfs and may trend more positive as combined exports decrease after November 24th.
    - November 24th OMRI
        - Daily: -2,500 cfs
        - Five-Day: -2,900 cfs
        - 14-Day: -2,800 cfs
    - November 24th Index Calculations
        - Daily: -1,800 cfs
        - Five-Day: -2,100 cfs
        - 14-Day: -2,200 cfs
    - November 28th Index Calculations
        - Daily: -1,200 cfs
        - Five-Day: -1,500 cfs
        - 14-Day: -1,900 cfs
- 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.

- November FMWT LFS catch data:
    - Life Stage:
        - Juvenile: 27
        - Adult: Two
    - Regions:
        - Confluence: One (66 mm)
        - Lower Sacramento River: Two (63 and 74 mm)
        - Suisun Bay: 18 (55 to 100 mm)
        - San Pablo Bay: Eight (56 to 72 mm)
    - November LFS FWMT Index will be released Wednesday, November 30th.
- Smelt Larva Survey (SLS) will be on the water the week of December 5th from Monday to Wednesday.

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

- EDSM sampled Monday through Friday the week of November 21st, completing 32 sites with staffing issues precluding the completion of all 36 sites.
    - DS: Zero
    - LFS: Eight in Suisun Marsh and Bay (59 to 102 mm).
        - Two largest LFS adults were transferred to the Fish Conservation and Culture Laboratory (FCCL) for broodstock.
            - No information exists on the status of the transferred fish.
    - EDSM will be sampling Monday to Thursday this week.
    - EDSM will transition to phase one sampling next week which will include the south Delta stratum.
- The week of November 21st Chipps Island crews completed all 30 scheduled tows.
    - DS: Zero
    - LFS: Eight (60 to 95 mm)
        - Three LFS were transferred to FCCL for broodstock.
- The DS abundance estimate for the week of November 21st was zero due to no detections.
    - The last non-zero abundance estimate is from the week of November 7th at 1,240.

CDFW provided a salvage update (November 21st to November 27th).

- No DS or LFS have been detected at either facility this WY.

CDFW provided an update on DS experimental releases.

- This week marks the start of WY23 DS experimental releases with the first fish released November 29th and 30th. An update will be provided next week on release details.

USBR shared environmental data updates.

- Although the Integrated Early Winter Pulse Protection period begins on December 1st, the forecasted storm systems anticipated to arrive later in the week are not expected to lead to First Flush conditions.

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

USBR and CDFW noted no significant changes since last week for DS.

CDFW noted that the LFS center of distribution continues to migrate east and currently is placed in Suisun Bay. Both adult and subadult life stages are present as the population prepares for spawning. Freshwater from forecasted precipitation may alter the location of the population distribution.

No actions or conditions of approval were triggered this week and the SMT did not make any recommendations.

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, and data.

ITP Longfin Smelt Risk Assessment

The SMT reviewed and discussed updates to the ITP Risk Assessment for LFS, which include the latest dates, detections, and data as well as:

Advice to WOMT

- No items for elevation to WOMT.

Sections 1-A and 1-B

- No modifications to risk.

Executive Summary

- No additional modifications to the executive summaries.

Part 4: Additional Considerations/Discussion

Agencies reported no items for elevation to WOMT.