

# Smelt Monitoring Team – Tuesday, November 8<sup>th</sup>, 2022

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## 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 distribute Joint Salmon Monitoring Team (SaMT) and Smelt Monitoring Team (SMT) Operations Outlook Meeting calendar event.

## 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

<b>OMR Management Measures</b>	<b>Requirement</b>	<b>Time Frame</b>	<b>Trigger</b>	<b>Triggered?</b>
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 <sup>1</sup> ); 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.	Not active

<sup>1</sup> The current instrumentation measures turbidity in Formazin Nephelometric Units (FNU).

<b>OMR Management Measures</b>	<b>Requirement</b>	<b>Time Frame</b>	<b>Trigger</b>	<b>Triggered?</b>
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 1 <sup>st</sup> through June 30 <sup>th</sup> 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 1 <sup>st</sup> through Feb 28 <sup>th</sup> , 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)	<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 <sup>th</sup>	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 1 <sup>st</sup> through June 30 <sup>th</sup> 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 2022 September 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 <sup>th</sup>	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 1 <sup>st</sup> through June 30 <sup>th</sup> 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 widespread rain totaling approximately one inch on the valley floor and possibly four to five inches of precipitation in the central to southern Sierra Nevada regions. Weather patterns will trend drier starting November 9<sup>th</sup> with low intensity precipitation forecasted for the end of the week and early next week.
- 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 3,900 cfs with a change order for November 9<sup>th</sup> and Thursday, November 10<sup>th</sup> reducing releases to 3,700 cfs.
- Releases from Nimbus Dam on the American River are 1,400 cfs with 100 cfs reduction anticipated in response to the rain for November 9<sup>th</sup>.
- Releases from Goodwin Dam on the Stanislaus River have returned to a baseflow of 200 cfs after fall pulse flows. No anticipated changes.
- Federal facility exports are 900 cfs with a change order increasing exports to 1,800 cfs on November 9<sup>th</sup>.
- Delta Cross Channel (DCC) gates closed on Monday, November 7<sup>th</sup>. Gates will re-open Friday the 11<sup>th</sup> and close again the following Monday.
- DWR reported that Feather River releases decreased from 2,400 to 2,200 cfs.
- Yesterday Freeport flows were approximately 7,600 cfs and will likely fluctuate.
- San Joaquin River flows at Vernalis are around 700 cfs.
- State facility exports increased to 1,000 cfs on Monday, November 7<sup>th</sup> and will continue to increase to 1,500 cfs on the 9<sup>th</sup>.
- Delta outflows were close to 4,400 cfs on November 7<sup>th</sup> and may increase to 9,000 cfs with the rain.
- On November 7<sup>th</sup> QWEST was between 1,200 to 2,000 cfs and could reach 3,000 cfs.
- Rio Vista flows are increasing with the potential to reach 7,500 cfs at peak flows.
- The daily OMR Index has been fluctuating between -1,000 to -1,500 cfs with increased exports at CCF pushing flows towards -2,000 cfs. The OMR Index could reach -3,000 cfs tomorrow when both facilities increase exports.
- Survey table updates:
  - Delta Juvenile Fish Monitoring Program (DJFMP) Chipps and Sacramento Trawls are currently sampling three days a week.
  - San Joaquin River Restoration Program (SJRRP) for USFWS and USBR field monitoring is active until Thursday, November 17<sup>th</sup>.

## Review of Environmental Conditions and Survey Updates

CDFW delivered catch updates on relevant surveys to the SMT.

- No current survey updates.
- Spring Kodiak Trawl starts Monday, January 9<sup>th</sup>.
- 20 mm Survey starts Monday, March 13<sup>th</sup>.

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

- EDSM sampled Monday to Thursday the week of October 31<sup>st</sup> completing 35 of 36 sites.
  - One site was cancelled due to weather.

- DS: One at lower Decker Island (unmarked at 55 mm).
- LFS: Nine at Suisun Marsh and Bay (57 to 93 mm).
- EDSM will be sampling Monday to Thursday this week.
  - DS: One at lower Decker Island (unmarked at 62 mm).
  - Sampling for Suisun Marsh was cancelled on Tuesday, November 8<sup>th</sup> due to boat issues. With the holiday on Friday there is no time to make up the lost sites, but other Suisun Marsh sites will be sampled later in the week.
- Both DS and three LFS were transferred to the Fish Conservation and Culture Laboratory (FCCL) for broodstock.
  - Neither DS survived transfer to FCCL. The DS captured last week is frozen at the FCCL and awaiting transfer to other laboratories.
  - This is the first time LFS were collected for broodstock.
- The week of October 31<sup>st</sup> Chipps Island crews completed all 30 tows with no detections of DS or LFS.
- Chipps Island will sample this week on Monday, Wednesday, and Thursday.
- The DS abundance estimate for the week of October 31<sup>st</sup> was 1,288.

CDFW provided a salvage update (October 31<sup>st</sup> to November 6<sup>th</sup>).

- No DS or LFS have been detected at either facility this WY.
- Wakasagi salvage did not continue through the summer.

USBR shared environmental data updates.

- Sacramento River X2: 95.3 km.
- San Joaquin X2: 94.9 km.

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

USBR observed that nothing dynamic is occurring with the DS population and the current storm system is not likely to trigger first flush conditions. The DS detections by EDSM are a promising sign for the season.

CDFW is waiting to see what happens with the current storm system and noted that that recent DS detections and decreasing water temperatures could indicate the imminent onset of staging in preparation for migration. Furthermore, if the recent DS detections are the offspring of cultured fish, then this may indicate that these fish are behaving as we would expect wild fish to behave with these conditions at this time of year.

CDFW noted that conditions for LFS are similar to DS. LFS are expected to begin moving with lower water temperatures which may produce early season larvae. FMWT data indicate some LFS were present in the lower Sacramento River as early as mid-September, which is a month earlier than what the SMT discussed last week. These data could suggest migration may occur early this year. LFS distribution could also reflect the X2 location being so far upstream.

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 as well as the following updates:

- Current distribution: captures that DS may be beginning to stage downstream of X2 in preparation for seasonal migration into freshwater.

### 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 and LFS Executive Summary

- DS and LFS Life Stages updated to subadult and adult.
- No items for elevation to WOMT.

Section 1-A: Risk of entrainment into the central Delta and export facilities for DS and LFS in the Sacramento River and Confluence

DS

- Larvae and juvenile exposure risk: N/A
  - Spawning has not started, and no larvae are present.
- Subadults and adults routing risk: Low
  - Turbidity remains low, migration may be starting soon with water temperatures quickly dropping.
- Overall risk: Low

LFS

- Larvae and juvenile exposure risk: N/A
  - Spawning has not started, and no larvae are present.
- Subadults and adults routing risk: Low
  - Migration may be starting soon with water temperatures quickly dropping.
- Overall risk: Low

Section 1-B: Risk of entrainment into the export facilities for DS and LFS in the central Delta

DS

- Subadults and adults exposure risk: Low

LFS

- Subadults and adults exposure risk: Low

Change in risk exposure from previous week

- DS: Risk remains low. The two fish detected by EDSM in the Lower Sacramento River indicate staging may start soon.
- LFS: No change, migration may start soon into freshwater.

Executive Summary

- DS: Notes that detections may be an indication that DS are starting to stage downstream of X2 in preparation for seasonal migration into freshwater.
- LFS: Indicates LFS are expected to migrate into spawning habitat by November and December.



## Part 4: Additional Considerations/Discussion

Agencies reported no items for elevation to WOMT.