

PARTICIPANTS

- California Department of Fish and Wildlife (CDFW)
- California Department of Water Resources (DWR)
- National Marine Fisheries Service (NMFS)
- State Water Resources Control Board (SWRCB)
- U.S. Bureau of Reclamation (USBR)
- U.S. Fish and Wildlife Service (USFWS)
- Kearns & West (KW)

ACTION ITEMS

- CDFW requests that USBR send the PA Assessment to the entire SMT each week.
- USFWS to discuss feasibility of Enhanced Delta Smelt Monitoring Program (EDSM) sampling in the vicinity of Miner Slough/Steamboat Slough in future years given the presence of Delta Smelt (DS) larvae in that area this season.
- CDFW to confirm date and restoration area of the DS detection in Cache Slough by the Fish Restoration Program (FRP).

MEETING SUMMARY

PART 1: Updates on Water Operations and Biological Updates

Relevant Actions & Triggers

USBR reported on Old and Middle River (OMR) management measures. Under the End of OMR Management action, OMR criteria may control operations until June 30th or until the daily mean water temperature at Clifton Court Forebay (CCF) reaches 77° F for three consecutive days. CDFW reported on the Incidental Take Permit (ITP) Conditions of Approval (COA) that are in effect including 8.4.2 Larval and Juvenile Longfin Smelt (LFS) Entrainment Protection which was triggered on April 11th by 20 mm Survey 2, 8.5.2 Larval and Juvenile DS Protection, and 8.12 Barker Slough Pumping Plant Longfin and Delta Smelt Protection.

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
OMR Management	Manage to a more positive OMR than -5,000 cfs	From the onset of OMR management to the end		In effect
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 Delta Smelt 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 Delta Smelt are within the entrainment zone of the pumps based on real-time sampling of spawning adults or young of year life stages	In effect

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

OMR Management Measures	Requirement	Time Frame	Trigger	Triggered?
End of OMR Management	OMR criteria may control operations until June 30 (for Delta Smelt 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	In effect

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 Delta Smelt and Longfin Smelt required under 8.1.5 and 8.1.1	Nov 1 st through June 30 th or until off-ramped by 8.8		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

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
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
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 1 st through June 30 th or until the temperature offramp occurs	(1) Longfin Smelt 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) Longfin Smelt 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, and 4/11/22

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
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 is in agreement 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 Delta Smelt 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 Delta Smelt is greater than or equal to one plus the average prior three years' FMWT index (rounded down). The 2021 FMWT index for Delta Smelt was zero.	Active, not triggered
8.8 (End of OMR Management)	If triggered, OMR Management would be off-ramped for Longfin and Delta Smelt.	From the onset of OMR management through June 30 th	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 Longfin Smelt, and from March 1 st through June 30 th for Delta Smelt	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

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

- USBR reported on weather conditions noting precipitation and light wind through the week in northern parts of California including the north coast and Sierra Crest through the rest of the week. The Central

Valley could receive up to one-half an inch of rain in favorable locations before weather clears over the weekend. Given dry soils there is no anticipated increase in tributaries or mainstem flows.

- Releases from Whiskeytown Dam on Clear Creek are currently 200 cfs. No modifications expected.
- Releases on the Sacramento River from Keswick Dam are currently 3,250 cfs. No modifications expected.
- American River releases from Nimbus Dam are holding at 1,000 cfs. No modifications expected.
- Releases from Goodwin Dam on the Stanislaus River are currently 200 cfs. A pulse containing three peaks is planned to occur between April 18th to May 18th. Peaks will fluctuate from 1,000 to 1,250 cfs.
- Delta inflows from the Sacramento River are dwindling in response to cuts from the Feather River system. Operations are currently targeting a net Delta outflow index of 4,000 cfs in accordance with the temporary urgency change order.
- Federal Facility exports are targeting 900 cfs with no changes expected for the week ahead.
- The Delta is emerging out of the neap tidal sequence and approaching a full moon with stronger spring tides on April 16th.
- USBR noted that OMR values maybe off due to a faulty USGS gauge.
- Delta Cross-channel (DCC) gates are currently closed. Maintenance work on April 6th required that one gate open from 11:00 am to 12:00 pm with 5'9" and 5'5" stages on opening and closing. There will be no further openings until late May.
- DWR reported that Feather River releases were 1,100 cfs.
- Freeport flows were around 6,400 cfs and will fluctuate from 5,500 to 6,500 cfs for the week.
- State facility exports are 600 cfs and will remain constant for the week with possible minor adjustments.
- Delta outflows on April 12th are 4,900 cfs with water quality as the controlling factor.
- QWEST has been near 400 to 500 cfs and will decrease to near negative as the week progresses.
- The daily OMR Index is -1,400 cfs.
- DWR clarified for CDFW that the expected OMRI values in the operations outlook are daily values, and that information was added to the outlook.
- DWR noted that reconstruction of the emergency drought barrier will be finished this week.
- The SMT corrected the Larval Entrainment Pilot Study status in survey table to reflect that it is still active.

Review of Environmental Conditions and Survey Updates

CDFW delivered catch updates on relevant surveys to the SMT.

- 20 mm Survey 2 detected one larval DS at station 812 with a fork length of 10 mm on April 6th. Additional results include:
 - LFS
 - Station 809: 65 larvae
 - Station 812: 11 larvae
 - Station 901: Four larvae
 - Station 902: One larva
 - Station 914: One larva
 - DS
 - Station 726: Seven larvae (9 to 14 mm)
 - Station 724: 14 larvae (10 to 12 mm)
 - Station 706: One larva (11 mm)
- DWR noted that the FRP DS larva will be genetically tested at UC Davis for parentage.
- Smelt Larva Survey 6 and 20 mm Survey 1 processing should be done by April 15th.

USFWS provided catch updates on EDSM.

- The week of April 4th, EDSM started its 20 mm sampling for the season. To date, 143 LFS have been detected across Suisun Bay, Suisun Marsh, and the lower Sacramento River. Final catch data will be available April 15th.
- Chipps Island trawl detected 42 sub-adult and adult LFS.

CDFW provided a salvage and qualitative larval sampling update (March 29th to April 3rd).

- There were no DS salvaged at either facility.
- LFS salvage occurred every day this week with juvenile LFS salvage values (>20 mm) below:
 - State Facility: 534
 - Federal Facility: 1,082
- 1,616 total salvage for the week, and the total juvenile LFS salvage for the season is 2,632.
- There will be sampling outages at the CVP April 13th and 14th for four hours each day for inspection and repair work.

USBR shared environmental data updates as of April 11th.

- Three-station daily average water temperature: 16.93° C.
- CCF daily average temperature: 18.26° C.
- Three-day running average turbidity at OBI: 5.22 FNU.
- Current turbidity at OBI: 3.30 FNU.
- X2 is > 81 km.
 - Estimated Sacramento River X2 is 86.8 km.
 - Estimated San Joaquin River X2 is 86.3 km.
- Weather forecast out of Antioch is sunny and clear with rain amounting to less than one tenth of an inch at the end of the week and winds from west northwest to west southwest from eight to 15 mph and gusts up to 23 mph.
- Weather forecast out of Stockton is sunny and clear with rain amounting to less than one tenth of an inch at the end of the week and winds from west northwest to west southwest from six to 14 mph and gusts up to 20 mph.

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

USBR noted the DS larvae detected at stations 812 and 815 indicate DS are likely remaining in the relative area in which they were released. CDFW highlighted the increased detections in 20 mm Survey 2 as compared to 20 mm Survey 1 indicating that hatching is ongoing. DWR pointed out that hydrology for fish in the lower San Joaquin River is favorable for avoiding entrainment.

USBR inquired why there haven't been any recent detections in the Montezuma Slough region, and CDFW clarified that Montezuma Slough is being sampled but processing is a lower priority. Hence samples are not processed yet.

CDFW noted that 20 mm Survey 2 demonstrated a continued presence of larval and juvenile LFS in the lower San Joaquin River, Franks Tract, and OMR Corridor/south Delta region and a wide range of lengths are present. Overall conditions have not significantly changed resulting in risk remaining high for LFS in the OMR corridor. Thus, CDFW suggested a recommendation is warranted especially with high salvage numbers and no evidence that risk has decreased. DWR agreed.

USFWS presented a preliminary analysis of historical LFS salvage data that suggests 2020, 2021, and 2022 are all relatively high salvage years when standardizing by the FMWT index in the previous year. CDFW shared an

analysis of salvage trends relative to exports for 2020, 2021, and 2022. The main takeaway is that salvage numbers for 2022 are projected to exceed 2020 and 2021, despite low exports.

CDFW is working to update the code that generates the graphs and will add daily OMR Index values and QWEST to the graphs. The SMT suggested including markers to indicate when recommendations were issued by the team to better understand how interventions may affect salvage rates.

[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:

- Evaluation question seven was revised to note that QWEST is positive to near zero and will become negative and past PTM results indicate a low likelihood of entrainment for larval DS.
- Evaluation question nine was updated to reflect that DS detections remain downstream in the lower San Joaquin River which supports low likelihood of entrainment.

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 was updated to note that COA 8.4.2 was triggered on April 11th by 20 mm Survey 2, and the SMT will continue their recommendation to maintain a seven-day average OMR Index no more negative than -1,250 cfs, citing an increase in salvage and continued detections of larval and juvenile LFS in the central and south Delta.

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

- Exposure Risk (hydrology)
 - DS: No changes since last week.
 - LFS: No changes since last week.
- Routing Risk (behavior and life history)
 - DS: No changes since last week.
 - LFS: No changes since last week.
- Overall entrainment risk for DS or LFS.
 - DS: No changes since last week.
 - LFS: Remains low. Updated to reflect new X2 position and QWEST values.

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

- Exposure Risk
 - DS:
 - No changes to risk since last week.
 - No changes to risk since last week.
 - LFS:
 - No changes to adult risk since last week.

- Low risk for larvae and juvenile LFS in the lower San Joaquin River. Language was revised to reflect updated QWEST and X2 position.
- Risk remains high for LFS larvae and juvenile in the OMR Corridor given high salvage and that hydrological conditions have not greatly changed since last week. Consequently, last week's PTM run results continue to be used to inform risk.
- Change in exposure from last week
 - DS: No changes since last week.
 - LFS: Risk remains high for larvae and juveniles in the OMR corridor given that salvage has doubled since last week and densities have increased from 20 mm Survey 1 to 20 mm Survey 2.

The executive summary was updated to reflect 20 mm Survey 2 highlighting detections in areas of high risk of entrainment. The upward trajectory of LFS salvage over the last week and larval/juvenile detections in central and south Delta were highlighted as justifications for a continued SMT recommendation. The SMT qualified its recommendation with language stating that it understands that the recommendation will be superseded by ITP COA 3.8 requiring combined exports to not drop below 1,500 cfs for health and safety.

Part 4: Additional Considerations/Discussion

Agencies reported no items for elevation to WOMT other than maintaining a recommendation under COA 8.4.2 to manage the seven-day average OMR Index to be no more negative than -1,250 cfs for the protection of larval and juvenile LFS.