

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 to review literature regarding the size range at which Longfin Smelt (LFS) develop swimming capabilities.

MEETING SUMMARY

PART 1: Updates on Water Operations and Biological Updates

Relevant Actions & Triggers

USBR reported on Old and Middle River (OMR) management measures. Turbidity Bridge Avoidance is in effect to maintain average daily turbidity in Old River at Bacon Island (OBI) at a level of no more than 12 NTU to minimize risk to adult DS in the OMR corridor where they are subject to higher entrainment risk. CDFW reported on the Incidental Take Permit (ITP) Conditions of Approval (COA) that are in effect. COA 8.4.2 Larval and Juvenile Longfin Smelt Entrainment Protection is active and triggered. 8.5.1 Turbidity Bridge Avoidance is in effect with 8.5.2 Larval and Juvenile DS Protection being active. CDFW also noted that COA 8.12 Barker Slough Pumping Plant Longfin and Delta Smelt Protection is inactive due to the Sacramento Valley Water Year Type Index (SVI) forecast for January and will be reassessed when the February forecast is available. The 2022 water year is below normal at this point so 8.12 is not active with the time period for DS starting on March 1st and LFS ending on March 31st.

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 three-day average of daily flows at Freeport >25,000 cfs; and (2) Running three-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.	In effect as of 1/3/22
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	Not active

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 Clifton Court Forebay reaches 77°F for 3 consecutive days	Not active

TTP Conditions of Approval

Condition of Approval	Requirement	Time Frame	Trigger	Triggered?
8.1.5.2 (Smelt Monitoring Team Risk Assessment) Triggered	Outlines contents for weekly risk assessments of Delta Smelt 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		Yes
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 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	Three-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 Smelt Monitoring Team 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 FMWT Index divided by 10, or Smelt Monitoring Team (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 and 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 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 and 1/31/22

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 in Old River at Bacon Island (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

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 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 Clifton Court Forebay 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	Not active

Current Operations & Outlook

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

- USBR Central Valley Office (CVO) reported a dry weather pattern with no anticipated precipitation in the seven-day outlook.

- 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 currently 2,000 cfs with releases between 1,750 and 2,000 cfs expected for the next week to manage inflows into the river system.
- Releases from Goodwin Dam on the Stanislaus River are currently 1,500 cfs to meet D-1641 requirements. This may change given updated hydrology information.
- Jones Pumping Plant exports are currently 1,800 cfs in response to the monthly requirement targeting an outflow of 11,400 cfs.
- Delta Cross-channel (DCC) gates are currently closed. No modifications expected.
- DWR reported that Feather River releases increased from 3,000 cfs last week to 3,250 cfs as of February 8th. Increases are expected on February 9th and through the rest of the week to counteract dry conditions and possible decreases from the San Joaquin River system.
- As of February 7th, Freeport flows are slightly above 12,600 cfs.
- Vernalis flows are approximately 1,800 cfs, but may decrease over the next few days given the next round of forecasts.
- As of February 7th, Clifton Court Forebay (CCF) flows have been between 300 to 800 cfs with future flows anticipated in the same range to complement daily Sacramento River flows and maintain the 11,400 cfs outflow target.
- Delta outflows were 11,800 cfs yesterday and will remain steady.
- QWEST yesterday was 1,600 cfs and will remain stable.
- Rio Vista flows are currently in the 10,000 cfs range and expected to hold steady. OMR Index was -1,500 to -1,600 cfs for the last week and will trend more positive to -1,000 cfs for the week ahead in reaction to exports.
- X2 is 76 km due to the increased outflow and is expected to stay stable as outflows are maintained.
- CDFW asked for clarification regarding the range of expected CCF exports this week reported to the SMT (300 to 800 cfs) and the range noted in the Outlook (0 to 1,200 cfs). DWR replied that the broader estimates in the Outlook exist to capture the range of possible flow scenarios that could be encountered for the week ahead, as extreme events are feasible, but the range reported to the SMT is most likely.
- CDFW pointed out there was a difference between the OMR Index range reported during last week's call and actual operations. The range reported in the WOMT notes was closer to actual operations. A wider range is reported in the weekly Operations Outlook than is reported during SMT calls.
- No edits were made to the survey status table.

Review of Environmental Conditions and Survey Updates

CDFW delivered catch updates on relevant surveys to the SMT.

- Smelt Larva Survey (SLS) 2 was active from January 24th to 28th. Sample processing is almost complete with the Napa River and two other stations outstanding. LFS larvae abundance is increasing throughout the system.
 - LFS catch results include:
 - Station 513: 48 larvae
 - Station 606: 56 larvae
 - Station 707: 41 larvae
 - Station 801: 63 larvae

- CDFW noted that the Napa River stations have a lower processing priority than the Larval Entrainment Pilot Study (LEPS) samples, hence data from Napa stations may be delayed relative to other SLS data.
- SLS 3 is on the water this week after a delay on February 7th, but it will conclude by the end of the week.
- Spring Kodiak Trawl (SKT) 2 is planned for February 14th to the 18th.
- There are no data updates from the LEPS 24-hour larvae sampling period, but an update is expected soon.
- CDFW reported that the formal portal for sharing LEPS data is not active yet, but a total of 11 LFS larvae (9 to 6 mm, all without yolk sac) were detected by LEPS to date, excluding the first 24-hour sampling period.
 - February 3rd: One LFS larvae (9 mm)
 - February 2nd: Two LFS larvae (both 7 mm)
 - The remaining LFS larvae were detected between January 18th and January 20th
- The second 24-hour sampling period begins the evening of February 8th.
- The third 24-hour sampling period is tentatively scheduled for the beginning of March.

USFWS provided catch updates on the Enhanced Delta Smelt Monitoring Program (EDSM).

- Results for EDSM sampling from January 31st to February 4th are below:
 - Suisun Bay
 - LFS: Five (68 to 81 mm)
 - Suisun Marsh
 - LFS: 48 (51 to 106 mm)
 - Lower Sacramento River
 - LFS: Six (71 to 87 mm)
 - DS: One (55 mm, adipose clipped)
 - Lower San Joaquin River
 - LFS: One (76 mm)
 - DS: One (57 mm, adipose clipped)
 - Sacramento Deepwater Shipping Channel (SDWSC)
 - DS: Two (66 and 70 mm, adipose clipped)

CDFW provided a salvage update (February 1st to February 7th).

- No salvage of DS or LFS at either facility.

DWR provided updates on the DS experimental release program.

- 6,400 DS were released on February 3rd in the SDWSC near mile marker 53.
- Additional hard releases are planned for this week totaling 12, 800 fish near Beldon's Landing in Montezuma Slough.
- The last releases of the season are planned for the week of February 14th approximately 9,000 fish will be released in the SDWSC.

USBR shared environmental data updates as of February 7th.

- Three-station daily average water temperature: 10.05° C.
- Three-day running average turbidity at OBI: 5.56 FNU.
- Current turbidity at OBI: 5.3 FNU.
- X2 is 76 km.

- Weather forecast out of Antioch is sunny and clear with north to northeast winds from 5 to 7 mph.
- Weather forecast out of Stockton is sunny and clear with northwest winds from 3 to 9 mph.

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

USBR indicated that there are no significant changes from last week aside from there being no anticipated wind events. Considering that turbidity and water temperatures have settled and will likely remain consistent for the next week there is no reason to believe spawning behavior for the DS will increase.

CDFW noted that the three-station average water temperature includes the Mossdale station which tends to be more variable and a little warmer relative to other stations nearby, so this is worth considering when discussing DS behavior.

CDFW noted that more LFS are emerging based off SLS 2 data and the continued presence of adult and sub-adult life stages given EDSM and Chipps Island catches.

Furthermore, CDFW pointed out that the larval detections from LEPS are between 6 to 9 mm which is below the maximum efficiency range for qualitative larval sampling at the salvage facilities.

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:

- Noted the abundance estimate is based off only the SDWSC and San Joaquin strata this week.
- Removed language referring to last week's wind event and related turbidity impacts.
- Updated the Executive Summary to remove text about last week's wind event and note the OMR Index being equal to or less negative than -2,000 cfs will maintain a low overall likelihood of entraining adult DS.

ITP Longfin Smelt Risk Assessment

The SMT reviewed and discussed updates to the ITP Risk Assessment.

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: Remains low. No changes from last week.
 - LFS: Remains low. Text was amended to note low exports rather than reduced exports.
- Routing Risk (behavior and life history)
 - DS: Modified to low given the less negative OMR Index and reduced turbidity. The section also removed a reference to turbidity from last week's wind event.
 - LFS: Risk remains low due to low exports and X2 shifting downstream.
- Overall entrainment risk for DS or LFS.
 - DS: Remains low. Language on the OMR Index range was updated to reflect current conditions.
 - LFS: Remains low. Text was updated to reflect the projected OMR Index range and a reference to detections from the previous week was removed.

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

- Exposure Risk
 - DS: Remains low due to projected operations resulting in a less negative OMR Index.
 - LFS: Overall risk remains low. Text was revised to note QWEST remains positive and exports have decreased since the beginning of the month.
- Change in exposure from last week
 - DS: Remains low. Removed language on wind event and noted no change from last week.
 - LFS: Remains low due to low exports. No other changes from last week.

The LFS executive summary was revised to reflect the following:

- Abiotic conditions (e.g., OMR Index, X2) were updated.
- Low exports maintain a low risk of entrainment.
- SLS 2 triggered 8.4.2 on January 31st.

USFWS pointed out that as DS spawning begins, risk for adults decreases over time while risk for larvae increases.

- CDFW noted that water temperatures remain on the low end of the range associated with DS spawning, but agreed the SMT should continue to monitor conditions and consider these shifts in relative risk as the season progresses.

DWR asked when it would be appropriate to update language referencing volitional movement.

- CDFW will review the literature to identify the size range at which LFS are capable of swimming behavior and the SMT will discuss next week.
- USFWS shared that [Bennett et al. 2002](#) reported vertical movement of LFS at 12 mm SL.

Part 4: Additional Considerations/Discussion

Agencies reported no items for elevation to WOMT.