

## PARTICIPANTS

- CDFW
- DWR
- NMFS
- SWRCB
- USBR
- USFWS
- Kearns & West

## ACTION ITEMS

- K&W will add an item on the April 27<sup>th</sup> SMT meeting agenda for CDFW’s presentation on historical size distribution data of Longfin Smelt (LFS).

## MEETING SUMMARY

### PART 1: Updates on Water Operations and Biological Updates

CDFW will share a brief presentation on historical size distribution data of Longfin Smelt (LFS) at the end of next week’s Smelt Monitoring Team (SMT) meeting.

### Relevant Actions & Triggers

USBR reported on the OMR management measures currently in effect and whether they have been triggered; CDFW reported on the ITP Conditions of Approval that are currently in effect and whether they have been triggered. 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 relevant.

#### Proposed Action

OMR Management Measures	Requirement	Time Frame	Trigger	Active? 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 <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	Not active; Not triggered

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

OMR Management Measures	Requirement	Time Frame	Trigger	Active? Triggered?
			Delta Smelt (DS) has been collected in monitoring surveys.	
OMR Management	Manage to a more positive OMR than -5,000 cfs	From the onset of OMR management to the end		Yes (initiated on 1/1/2021 for salmon)
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.	Off-ramped; not triggered
Larval and Juvenile DS	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 (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	Active; not triggered

ITP Conditions of Approval

Condition of Approval	Requirement	Time Frame	Trigger	Active? Triggered?
8.1.5.2 (Smelt Monitoring Team Risk Assessment)	Outlines contents for weekly risk assessments of DS and 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		Yes
8.3.1 (Integrated Early Winter)	Reduce south Delta exports for 14 consecutive days to maintain a 14-day average OMR index no more	Dec 1 to Jan 31	Three day running average daily flows at Freeport greater than, or equal to,	Not active

Condition of Approval	Requirement	Time Frame	Trigger	Active? Triggered?
Pulse Protection)	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.		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.	
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 <sup>st</sup> through Feb 28 <sup>th</sup> , exceeds most recent FMWT Index divided by 10, or SMT determines that there is a high risk of entrainment.	Dec 1 through Feb 28th	Salvage threshold is three LFS for WY 2021.	Not active
8.4.1 (OMR Management for Adult Longfin Smelt)				Off-ramped due to detection of Longfin Smelt larvae on December 28 <sup>th</sup>
8.4.2 <sup>2</sup> (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 Larval 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,	Triggered on 1/26, 2/2, 2/23, 3/9, 3/16, 3/30

<sup>2</sup> DWR asked CDFW to confirm that the “average catch per tow > 5 larvae or juveniles” referred to by Condition 8.4.2 should be calculated as the average of the three tows done at each station, i.e., the total LFS reported at each station in the 20 mm Survey is divided by three to calculate average catch per tow. CDFW confirmed that was also their interpretation. They also shared their interpretation that the SMT should always use the most recent survey data to determine whether the Condition is triggered; if only partial data is available, they refer to the previous survey available.

Condition of Approval	Requirement	Time Frame	Trigger	Active? Triggered?
			901, 902, 906, 910, 912, 914, 915, 918 and 919	
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.	No
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 April 1st	Turbidity at OBI > 12 FNU	Off-ramped; not 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 DS 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 <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 threshold for this year is one.	Active; Not Triggered

Condition of Approval	Requirement	Time Frame	Trigger	Active? 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 1 <sup>st</sup> through June 30 <sup>th</sup> of dry and critical water years for DS	Larval Smelt are detected at SLS Station 716 during the period identified for each species, and/or when recommended by the SMT	Off-ramped for LFS; Active but not triggered for DS

## Current Operations & Outlook

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

- USBR CVO reported that precipitation is expected at the end of this week (Sunday into Monday, and perhaps Tuesday). Anticipated rainfall totals are still uncertain this far out, but the current forecast calls for 0.50-inches of rain in the Valley floor and around 1.5-inches in the Sierras. No significant runoff is anticipated from this precipitation event because soils are too dry.
- Releases from Whiskeytown Dam on Clear Creek are currently 225 cfs with no planned changes.
- Releases on the Sacramento River from Keswick Dam are currently at 6,500 cfs and will increase to 7,000 cfs tomorrow (April 21<sup>st</sup>).
- American River releases from Nimbus Dam are currently 2,000 cfs; no changes are anticipated.
- Releases from Goodwin Dam on the Stanislaus River will range from 600 to 1,500 cfs over the course of the week, as spring pulse flow operations continue.
- Conditions in the Delta continue to be challenging given low inflows from the Sacramento River. Jones Pumping Plant exports are currently 800 cfs, with no planned changes.
- The Delta Cross-channel Gates are currently closed, but there is the potential for testing of one gate in May as they approach more regular operations in mid-May per the PA and D-1641 requirements.
- DWR reported that Feather River releases from Oroville are 1,100 cfs; they hope to reduce releases later this week if possible.
- Sacramento River flows at Freeport are just below 7,000 cfs and will decrease over the next seven days due to increasing demand upstream. San Joaquin flows at Vernalis were 1,600 cfs yesterday (April 19<sup>th</sup>).
- Clifton Court exports are targeting 400 cfs. Delta outflow was just below 6,700 cfs yesterday and will decrease over the next few days.
- The OMRI was around -700 cfs yesterday and will likely be near -1,200 cfs this week. The OMRI will be more negative when San Joaquin River flows are lower and less negative when San Joaquin River flows increase, due to relatively constant exports.
- QWEST was 1,500 cfs yesterday and could decrease to near 700 cfs later this week when San Joaquin River flows are lower.
- X2 is currently upstream of Collinsville.

NMFS pointed out that installation of South Delta agricultural barriers is scheduled to begin on May 1<sup>st</sup>, which will alter the hydrodynamics of the south Delta. DWR confirmed that the first barrier to be installed will be at

the Middle River location, and the soonest that barrier would be operational is May 15<sup>th</sup>. The remaining two barriers will be installed and become operational at later dates.

## Review of Environmental Conditions and Survey Updates

NMFS noted that the Delta Juvenile Fish Monitoring Program (DJFMP) San Joaquin seines will begin again on May 1<sup>st</sup>. In addition, USFWS will continue with the Mossdale trawls starting on May 1<sup>st</sup> and will continue until CDFW receives authorization to start the Mossdale trawls.

CDFW shared survey updates.

- 20-mm Survey 3 is in the field this week (April 19<sup>th</sup> to 22<sup>nd</sup>). Yesterday crews sampled the south and central Delta. Six stations have been processed so far (Stations 901, 902, 910, 914, 915, 918); no smelt were detected.
- Spring Kodiak Trawl (SKT) 5 will be sampling next week (April 26<sup>th</sup> to 29<sup>th</sup>). This will be the final SKT survey of the season.
- 20-mm Survey 2 (April 5<sup>th</sup> to 8<sup>th</sup>) processing is 75% complete. CDFW shared preliminary catch data with SMT members via email yesterday.

USBR asked for clarification on the duration of the surveys. CDFW explained that the 20-mm Survey will run every other week through the first week in July, while SKT, which began in January, runs once per month with next week's survey being the last of the season.

CDFW noted that 20-mm Survey 2 detected over 2,000 LFS and asked if this survey encountered any challenges related to take. CDFW replied that in the past LFS take has not been as stringent as DS take, though there is no specific take limit for the 20-mm Survey. CDFW keeps the appropriate groups informed of take numbers and does not anticipate any issues.

USFWS reported on the Enhanced Delta Smelt Monitoring (EDSM) Program.

- EDSM Phase 2 (20-mm) sampled six strata last week (April 12<sup>th</sup> to 16<sup>th</sup>; April 16<sup>th</sup> was a make-up day due to high winds earlier in the week). Processing is complete.
  - One DS (13.3 mm) was captured on April 12<sup>th</sup> in the Sacramento Deep Water Ship Channel.
  - Another osmerid (12.7 mm) was captured in the Sacramento Deep Water Ship Channel on April 13<sup>th</sup>; this fish is undergoing a blind identification process to determine if it is also a DS.
    - *It was reported after the call that this fish was confirmed as a DS.*
  - A new abundance estimate for DS will be available on Friday (April 23<sup>rd</sup>).
- EDSM has captured 392 larval LFS so far this year. 65 LFS were identified from last week's sampling:
  - One LFS (8.5 mm) in the lower San Joaquin River on April 12<sup>th</sup>.
  - Six LFS (8.5 to 21.2 mm) in the lower Sacramento River on April 14<sup>th</sup>.
  - 15 LFS (9.0 to 30.0 mm) in Suisun Bay on April 14<sup>th</sup>.
  - 23 LFS (10.3 to 89.0 mm) in Suisun Bay on April 15<sup>th</sup>.
  - 20 LFS (9.9 to 28.5 mm) in Suisun Marsh on April 15<sup>th</sup>.
- Of the seven unidentified osmerids reported last week, four were confirmed as LFS. The remaining three will undergo genetic confirmation.
- EDSM crews will be on the water Monday through Thursday this week (April 19<sup>th</sup> to 22<sup>nd</sup>).
- The Chipps Island Trawl caught zero DS and one LFS in the last week. The LFS (90 mm) was captured on April 13<sup>th</sup> and transferred to the Fish Culture and Conservation Laboratory (FCCL). Transfers to FCCL have been suspended for the rest of the season due to higher water temperatures increasing stress in

captured fish. USFWS intends to resume transfers again in the fall when water temperatures fall below 14.5° C.

- The Chipps Island Trawl is scheduled to sample five days this week.

USBR asked for clarification on USFWS's process for identifying fish. USFWS explained that they conduct multiple blind identifications. If two blind identifications yield discrepancies, USFWS will do a third blind identification. If results are still uncertain, USFWS will seek genetic confirmation.

CDFW provided a salvage update (April 13<sup>th</sup> to April 19<sup>th</sup>).

- No adult or larval DS were salvaged at either facility.
- 115 LFS were salvaged at the SWP, bringing the expanded salvage season total to 283 LFS.
- 60 LFS were salvaged at the CVP, bringing the expanded salvage season total to 160 LFS.
- Length data for the LFS were not available at the time of the SMT meeting.
  - *Post meeting update: Fork length size range for LFS salvaged at the SWP and CVP were 22-49 mm and 20-33 mm, respectively.*

USBR shared water quality data (three-station average daily water temperature as of April 19<sup>th</sup> was 18.08° C; daily average turbidity at Old River at Bacon Island (OBI) was 2.15 FNU and is currently 3.70 FNU). The seven-day weather forecast for Antioch is clear to partly cloudy with W/SW winds from 7 to 15 mph and gusts up to 23 mph; the seven-day weather forecast for Stockton is clear to partly cloudy with W/WNW winds from 6 to 16 mph and gusts up to 21 mph. X2 is >81 km; the estimated Sacramento River X2 is 85.8 km. The estimated San Joaquin River X2 for today was not available; the estimated San Joaquin River X2 on April 17<sup>th</sup> was 85.7 km.

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

CDFW noted that Condition 8.4.2 for LFS has not been triggered by the latest survey, but the SMT is still required to do a risk assessment. Initial results from 20-mm Survey 3 indicate decreased densities of LFS relative to 20-mm Survey 2, though salvage continues to occur. EDSM has detected larvae across a range of sizes, though the smaller fish are more susceptible to hydrodynamic influences. Operations have not changed in the last week, nor has the projected range of OMRI values for the upcoming week (-300 to -1,500 cfs). CDFW reminded the SMT that last week they discussed the lack of tools available to distinguish between an OMRI of -1,500 cfs and an OMRI of -1,250 cfs. CDFW asked the group if risk has changed since last week.

CDFW suggested that risk may have decreased for fish beyond the OMR corridor since last week given the lack of detections in 20-mm Survey 3 where LFS were detected in 20-mm Survey 2. CDFW agreed that the discussion from last week's SMT meeting regarding a lack of information to distinguish between potential risk at an OMRI of -1,500 versus -1,250 cfs still applies this week.

CDFW pointed out that as water temperatures in the estuary continue to increase, LFS will begin to move out of the Delta, further reducing risk of entrainment.

CDFW proposed carrying forward the same risk assessment as the previous week. CDFW also noted that no DS were observed in monitoring at Station 716, so no advice for Barker Slough is warranted.

USBR asked whether the detection of a DS in the Sacramento Deep Water Ship Channel last week affected the SMT's assessment of risk for DS.

- CDFW observed that the detection confirmed the presence of larval DS in the system, which is significant given how infrequent detections have been this season.

- USFWS noted that the high turbidity of the Sacramento Deep Water Ship Channel seemed to be attractive for DS and discouraged speculating on risk of entrainment based on a confirmed fish in the Sacramento Deep Water Ship Channel.

### PART 3: Live-edit Assessments

#### ITP Longfin Smelt Risk Assessment

CDFW updated the ITP assessment based on the discussion documented in Part 2 above.

#### Proposed Action Weekly Evaluation of Delta Smelt, including Distribution, Abiotic Conditions, Risk Assessment Questions, and Executive Summary

USBR reviewed updates to the assessment, which was limited to minor changes in anticipated conditions in the Delta (including OMR Index and QWEST values) as well as adding information on the April 12<sup>th</sup> DS detection and removing language referencing a lack of recent detections.

USFWS suggested clarifying that EDSM does not sample in the south Delta during Phase 2; SMT members agreed to note this in the Forecasted Distribution section.

The group reviewed the relevant assessment questions: (1) Between December 1 and January 31, has any first flush condition been exceeded? (2) Do DS have a high risk of migration and dispersal into areas at high risk of future entrainment? (3) Has a spent female DS been collected? (4) If OMR of -2,000 cfs does not reduce daily average OBI turbidity below 12 NTU/FNU, what OMR target is deemed protective between -2,000 and -5,000 cfs? (5) If daily average OBI turbidity is greater than 12 NTU/FNU, what do other station locations show? (6) If daily average OBI is greater than 12 NTU/FNU, is a turbidity bridge avoidance action not warranted? What is the supporting information? (7) After March 15 and if QWEST is negative, are larval or juvenile DS within the entrainment zone of the CVP and SWP pumps based on surveys? (8) Based on real-time spatial distribution of DS and currently available turbidity information, should OMR be managed to no more negative than -3,500? (9) What do hydrodynamic models, informed by EDSM or other relevant data, suggest the estimated percentage of larval and juvenile DS that could be entrained may be?

- The responses to questions one through eight either did not change at all or were updated to reflect the latest dates and data.
- The response to question nine was updated to replace the language referencing no recent detections with a statement referencing the detection in the Sacramento Deep Water Ship Channel.

USBR reviewed the Executive Summary:

- The SMT agreed to delete the sentence referencing no larval DS detections and replace it with a statement about the April 12<sup>th</sup> detection.

USBR also updated the Outlook to mention the DS found in the Sacramento Deep Water Ship Channel.

No non-consensus issues were identified.

#### Additional Considerations/Discussion

Agencies reported no items for elevation to WOMT.