

Smelt Monitoring Team – Friday, March 11th, 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 (KW)

ACTION ITEMS

- CDFW to circulate an email notification to the Smelt Monitoring Team (SMT) regarding the triggering of ITP Conditions of Approval (COA) 8.4.2 and 8.12.
- SMT to review ITP Risk Assessment executive summary by 4 pm March 11th.
- CDFW to communicate the SMT's recommendation under COA 8.4.2 to WOMT.

PURPOSE

Convene the SMT to review new information which may inform the risk of entrainment for Longfin Smelt (LFS) in the Delta with the possibility of formally offering a recommendation to modify operations under COA 8.4.2.

MEETING SUMMARY

Relevant Actions & Triggers

CDFW reported on the ITP COA in effect which includes 8.4.2 (Larval and Juvenile Longfin Smelt Entrainment Protection), 8.5.1 (Turbidity Bridge Avoidance), 8.5.2 (Larval and Juvenile Delta Smelt Protection), and 8.12 (Barker Slough Pumping Plant Longfin and Delta Smelt Protection).

- COA 8.4.2 and 8.12 were both triggered by Smelt Larva Survey (SLS) 5.

Current Operations

USBR and DWR updated the SMT on water operations and environmental conditions:

- USBR reported that the forecast has shifted to account for a greater chance of precipitation (up to 0.25 inches) over the weekend and into next week with rain on the valley floor possible.
- No changes have occurred in any upstream conditions since the last SMT meeting on March 8th.
 - Change orders have been published for early next week on the American River with flows decreasing to 1,250 cfs.
 - Flows in the Stanislaus River will decrease to 400 cfs on March 14th.
 - The Delta will experience reduced inflows given the modifications on the American and Stanislaus.
 - Operational requirements for March have been confirmed: 14 Chipps Days at 11,400 cfs then a transition to target reduced outflows (7,100 cfs) and Collinsville water quality.

- DWR reported on planned decreases at Oroville. Current releases are around 5,500 cfs and incremental reductions of 1,000 cfs are planned on March 12th and 13th with flows finally evening out to about 2,500 cfs on the 16th.
- Clifton Court Forebay exports were 300 cfs on March 11th and will remain stable until the 14th. Potential increases may occur on the 15th.
- On March 11th the OMR Index was -700 cfs, and is expected to trend more negative towards -3,000 cfs for a few days before returning to more positive values (-1,400 to -1,500 cfs) given reduced flows upstream.
- Qwest remains positive from 1,500 to 2,000 cfs and will eventually reach 800 cfs. QWEST could become negative during the upcoming transition days if exports increase.
- X2 remains at 74 km and will move upstream with tidal cycle and reduced flows next week.

Survey Updates

CDFW delivered catch updates on relevant surveys to the SMT.

LFS larvae were caught at four stations in the south delta as part of SLS 5.

- Station 809: 14
- Station 812: Five
- Station 815: One
- Station 902: One
- Three LFS larvae were detected at station 716 along with one Wakasagi (8 mm).
- Of the 21 LFS larvae detected in the south Delta, 12 had yolk sacs. Station 809 had the highest concentration with 10 of 14 detections having yolk sacs indicating that another spawning event occurred.

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

- One 79 mm subadult LFS was detected in the lower San Joaquin River stratum on March 9th.

CDFW provided a salvage and larval facilities update.

- Three LFS were salvaged at the federal facility on March 8th with lengths of 19.2, 20, and 21 mm.
- One LFS larvae was detected in qualitative sampling at the Skinner Facility on March 8th.

The SMT briefly discussed the possibility of spawning occurring in the south Delta given the sizes of the larvae which averaged 7 mm in length in SLS 4 and 5. There have not been any LFS adults detected in the San Joaquin River with SKT, but it is possible that during spawning the fish are more oriented towards the bottom which would make detections more difficult. It is also possible that the adults are travelling up the river beyond station 815.

Environmental Conditions Update

USBR shared environmental data updates as of March 10th.

- Three-station daily average water temperature: 13.21° C.
- Three-day running average turbidity at OBI: 3.44 FNU.
- Current turbidity at OBI: 2.4 FNU.
- X2 is 74 km.

- Weather forecast out of Antioch is sunny and clear to partly cloudy with a chance of rain on March 14th. Winds from north northwest to west southwest from 3 to 10 mph and gusts as high as 22 mph on Saturday night.
- Weather forecast out of Stockton is sunny and clear to partly cloudy with a chance of rain on March 14th. Winds from south southeast to west northwest from 5 to 9 mph.

PTM Results

Two PTM scenarios were run with an injection date of March 8th:

1. A base case representing the maximum (i.e., most negative) plausible OMR Index scenario, which show two days at around -3,000 cfs while operations transition to the Collinsville standard (March 15th to 16th), followed by a gradual decrease to -1,400 cfs.
2. A -1250 cfs OMR Index case, beginning on March 15th.

The injection point at Station 902 showed more entrainment of particles into the projects and OMR corridor than the injection points at Stations 812 and 815 under both scenarios.

DWR noted that the PTM run produced unusual results with a negative flux followed by a positive period before returning to negative. DWR's interpretation of these results is that there were a few days of very low exports on the CCF side with a couple days of no exports and a short period of positive flow on the Old River corridor, but there is still negative flow on the Middle River corridor. With these uncommon conditions there is potential for very slight positive flows, but this is beyond the level of precision in the model.

DWR clarified that the percentage of particles in the OMR corridor at Station 902 decreased from Week 2 to Week 3 because some particles were entrained by the projects by Week 3. Adding together the particles entrained by the projects and the particles in the OMR corridor for a given week (i.e., the total likelihood of an adverse outcome) will indicate the cumulative effect.

CDFW noted that the difference in particles entrained by the projects plus particles in the OMR corridor between the base case and -1,250 cfs OMR Index scenario at Station 902 is 11% in Week 2 and 12% in Week 3. This difference between scenarios is similar to the results of a PTM run the SMT used as a basis to provide advice last year.

DWR pointed out that the -1,250 cfs OMR Index scenario consistently indicated 1% more particles passed Chipps across all three injection points.

Historical Data Review

CDFW shared historical data on >20 mm LFS salvage for the last seven years. 2020 was noted as a year with particularly high LFS salvage. Dry years appear to correspond on average to high salvage while wetter years result in less salvage. Although the date of first salvage is slightly later this year than last year, salvage may rapidly increase during the spring months given dry conditions. LFS salvage typically peaks in April and May. The relationship between the Fall Midwater Trawl (FMWT) Index and entrainment is unclear, but more adults in the system could imply more fish in the system to be potentially entrained. DWR cautioned that the high FMWT Index may be the result of the unusual and large storm in late October contributing to early migration upstream.

CDFW also presented data on the LFS salvage versus exports at the SWP. In critically dry years, it appears that increased exports in March tend to draw fish lower into the system and thereby increases

the likelihood of entrainment thereafter. CDFW suggested this could be a critical time for fish in the system. USFWS noted that the 20 mm threshold for salvage may mean LFS salvage is beginning earlier than current detections indicate.

ITP Longfin Smelt Risk Assessment

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

- Exposure Risk
 - Low risk for adult and subadult LFS entrainment. Recent LFS detection on March 9th in the lower San Joaquin was noted as evidence that sub-adults are present.
 - Remains low to medium for larvae in the lower San Joaquin River with language slightly edited to note that PTM results from the region (injection points at Stations 812 and 815) support this assessment.
 - DWR and CDFW agreed it would be valuable for the 20 mm survey to begin earlier in the season to better capture the distribution of early season LFS that have recruited out of the SLS gear.
 - Remains high for LFS larvae and juveniles in the OMR corridor citing that by Week 3 of the base case, 43% of particles in the PTM run for the region (Station 902) were entrained by the projects or in the OMR corridor (versus 31% for the -1,250 cfs OMR Index scenario). The latest salvage data and the presence of a yolk sac larvae detected by SLS 5 at Station 902 were also referenced in support of high risk in this region.
 - Additional language was added to highlight that the PTM run exhibited more particles moving past Chipps under the -1,250 cfs scenario.
- Change in exposure from last week
 - LFS: Updated to reflect the high risk for larvae with juvenile salvage beginning and possible increase in exports.

CDFW proposed the SMT make a recommendation under COA 8.4.2 to maintain a seven-day average OMR Index no more negative than -1,250 cfs. DWR agreed.

- DWR noted that in practice, this will likely result in the OMR Index reaching close to -2,500 cfs rather than -3,000 cfs during the transition period and SWP exports will be capped at 600 cfs because of the proportional shares.

The SMT agreed to review the executive summary via email after the meeting. Language was updated to capture new survey and PTM data discussed earlier in the meeting. Increased risk to LFS larvae was noted for the lower San Joaquin River and OMR corridor.

Advice to WOMT:

- In response to SLS 5 triggering COA 8.4.2, maintain a seven-day average OMR Index no more negative than -1,250 cfs.
- In response to SLS 5 triggering COA 8.12, limit Barker Slough Pumping Plant to 60 cfs on a seven-day running average to protect vulnerable LFS populations.