Smelt Monitoring Team – Friday, January 29, 2021

PARTICIPANTS

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

ACTION ITEMS

- CDFW to share updated catch data from SLS 2 with SMT members.
- CDFW to update DWR on timing of processing north Delta SLS stations.

MEETING SUMMARY

Updates on Water Operations and Hydrological Conditions

USBR and DWR shared operations updates:

- USBR CVO stated that releases from Whiskeytown Dam on Clear Creek have decreased from 215 cfs to 200 cfs.
- Releases on the Sacramento River from Keswick Dam are currently at minimum flows of 3,250 cfs; they do not anticipate changes.
- American River releases from Nimbus Dam remain at 950 cfs.
- Releases from Goodwin Dam on the Stanislaus River are currently at 200 cfs and no modifications are anticipated.
- Jones Pumping Plant exports are currently at 1,650 cfs.
- The Delta Cross-channel Gates are currently closed and are not expected to open for any water quality requirements this week; construction activities on the gates remain ongoing. DCC gates will remain closed until mid-May per the PA and D-1641 criteria.
- Feather River releases are at 1,250 cfs with no anticipated changes.
- Freeport flows were at 10,500 cfs as of yesterday and will likely increase another 3,000 cfs over the next two days. Flow should peak around January 30th, then decrease into early February.
- San Joaquin River flows reached 1,400 cfs yesterday and will likely peak just under 2,500 cfs on January 30th to 31st.
- DWR reported that Delta outflows reached 14,000 cfs yesterday (January 28th) and will continue to increase to around 28,000 cfs on Saturday or Sunday (January 30th to 31st). Most of this outflow is derived from the 2.5 inches of precipitation in the Delta over the last two days.
- The OMR index was -2,600 cfs yesterday and is -2,400 cfs today (January 29th). DWR anticipates OMR will become more positive (-2,100 csf) tomorrow (January 30th) and could reach -1,800 to -1,900 cfs Sunday (January 31st) and Monday (February 1st) if San Joaquin River flows meet their forecasted levels.

- QWEST was 4,700 cfs yesterday (January 28th) and with additional rain will reach 10,000 to 11,000 cfs over the next two to three days.
- A wind event generated turbidity in the Old River corridor. Turbidity in Franks Tract reached nearly 300 NTU. Turbidity at Old River at Bacon Island (OBI) was 12.5 FNU yesterday, but reached 14 FNU at its peak. Flows from the San Joaquin River are in the 100 FNU range and turbidity upstream of Freeport at Verona are 50-60 NTU.
- The next restriction for Delta operations will be the E:I ratio, which will likely be 45% early next week.

CDFW asked when OMR might next trend more negative. DWR confirmed this would occur no earlier than Monday, and turbidity would have to decrease from current values for operations to change.

CDFW noted that yesterday's USGS OMR tidally averaged flow was around -4,000 cfs, which is notably different from yesterday's OMR index (-2,600 cfs).

USFWS suggested the group consider requesting Longfin Smelt larval monitoring at salvage facilities. CDFW agreed this could be useful but observed this request would be much earlier in the season than usual. The group agreed to revisit this discussion at the next SMT meeting (February 2nd).

Survey Updates

CDFW shared survey updates.

- Smelt Larva Survey (SLS) 2 sampling is continuing today (January 29th) after weather-related delays. CDFW shared the latest catch table with SMT members via email yesterday (January 28th). Eleven of 12 stations in the south and central Delta have been processed so far. Processing has been delayed due to CDFW office closure and will resume on Monday (February 1st). CDFW will share updates as soon as they are available.
    - 35 Longfin Smelt larvae were detected in total (6 to 8 mm):
        - Station 809: 22 Longfin Smelt larvae detected (6 to 8 mm).
        - Station 812: 8 Longfin Smelt larvae detected (7 to 8 mm).
        - Station 815: 2 Longfin Smelt larvae detected (7 to 8 mm).
        - Station 901: 2 Longfin Smelt larvae detected (7 mm).
        - Station 906: 1 Longfin Smelt larva detected (8 mm).
    - Station 919 has not yet been processed.

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

- Crews were unable to sample Wednesday (January 27th) due to the weather but sampled yesterday and today (January 28th and 29th).
- Zero Delta Smelt or Longfin Smelt detections so far yesterday or today.
- Crews are sampling in Suisun Bay, the Lower Sacramento River, and southern Delta strata today.

Discuss Flow Advice for Longfin Smelt

CDFW shared a preliminary data summary of hydrologic conditions (OMR, QWEST, flow at Vernalis, X2) during two high salvage years (2020 and 2012) and two low salvage years (2009 and 2010) to guide the group's discussion of Condition of Approval 8.4.2 (Larval and Juvenile Longfin Smelt Entrainment Protection; triggered during the January 26th SMT meeting).

- CDFW suggested that neither an OMR of -5,000 cfs nor -4,000 cfs would be sufficiently protective. Under better conditions, an OMR of -3,000 cfs might be sufficiently protective.

- The group noted X2 did not appear to be correlated to high or low salvage events.
- DWR observed that there did not appear to be a significant difference between the mean OMR values of the four reference years, but there was a notable difference in the minimum (most negative) OMR values between high and low salvage years.
- CDFW pointed out that OMR has been more positive so far in 2021 than in 2020, but larval densities in the central and south Delta are the highest since 2014. Given the status of the Longfin Smelt population, these higher densities in the central and south Delta could lead to another significant salvage event later this year.
- CDFW noted that more negative OMR values may be protective when QWEST values remain positive for a sustained period of time; it is not yet known how long the current increase in QWEST will last.
- USFWS emphasized that entrainment risk is not only a factor of OMR, but also the distribution of Longfin Smelt. The current location of Longfin Smelt larvae could indicate high risk of a future entrainment event.
- DWR agreed that the distribution of fish affects their susceptibility to entrainment but suggested that distribution alone is not sufficient to justify a particular OMR recommendation.
- CDFW reiterated that sustained increases in QWEST seem to dampen the effect of OMR by allowing fish in the San Joaquin River to be transported downstream and avoid entrainment.
- DWR pointed out that QWEST cannot be increased by export operations; positive QWEST values typically require precipitation events.
- CDFW noted that it might be possible to reduce OMR restrictions when QWEST sustains positive values.
- CDFW suggested that since operations are anticipated to remain stable over the weekend, formal advice was not required. However, the SMT could note that an OMR more negative than -2,500 cfs would be a high-risk scenario potentially setting the stage for a large entrainment event in the future. The longer QWEST remains positive, the more that risk is mitigated.
- USFWS and DWR agreed with this approach.
- DWR suggested the group develop a more focused assessment of the relationship between QWEST and OMR. USFWS suggested analyzing the number of days QWEST is above a certain threshold in a given month.

Discuss Turbidity Data and Central Delta Turbidity Event

Turbidity Data for Turbidity Bridge Avoidance Action

SMT members discussed which day's turbidity data should be used to inform the onset of the turbidity bridge avoidance action.

- CDFW suggested that since February 1st is the date the action goes into effect, this is the first day of turbidity data that should be considered, though February 2nd is the first day data are available.
- The group agreed with this interpretation.

USBR noted that turbidity at OBI exceeded the 12 FNU threshold identified in the turbidity bridge avoidance action earlier in the week, and increased turbidity was also observed at Holland Cut, Prisoners Point, and Victoria Canal.

- SMT members agreed that there is no regulatory mechanism to trigger the turbidity bridge avoidance action prior to February 1st.
- SMT members agreed to not attempt to predict if the turbidity bridge avoidance action would trigger on February 1st.

- The group noted that while the state and federal guidance include slightly different mechanisms for triggering the turbidity bridge avoidance action, both allow the SMT to assess turbidity data and determine if an event is spurious.
- USBR asked if the mechanism that generates a significant turbidity event (i.e., flow- versus wind-driven) affects whether that event would be eligible to trigger turbidity bridge avoidance.
- SMT members agreed that if a turbidity event was sufficient to affect fish movement, the origin of the event (wind or flow) was not relevant.
- CDFW suggested the current turbidity conditions could be characterized as a wide-spread wind-driven event with the potential to trigger movement of Delta Smelt into the OMR corridor.

USBR shared a draft document describing current turbidity conditions and updated responses to the assessment questions that will be attached to this week's assessment.

SMT members discussed the description of current conditions.

- The group agreed to note that high winds and precipitation increased turbidity in the Delta and this event was not localized nor the result of sensor error, but did not speculate on what conditions might be going forward.

SMT members discussed the description of other environmental conditions.

- The group agreed to highlight that conditions will "*change with predicted precipitation events with associated increases of in-river flow and turbidity*" prior to the next SMT meeting on February 2nd.

SMT members reviewed the relevant assessment questions: (1) Between December 1 and January 31, has any first flush condition been exceeded? (2) Do Delta Smelt have a high risk of migration and dispersal into areas at high risk of future entrainment? (3) Has a spent female been collected? (4) If OMR of -2,000 cfs does not reduce OBI turbidity below 12 NTU/FNU, what OMR target is deemed protective between -2,000 and -5,000 cfs? (5) If OBI is 12 NTU/FNU, what do other station locations show? (6) If OBI is 12 NTU/FTU, is a turbidity bridge avoidance action not warranted? What is the supporting information?

- The responses to the first two questions have not changed since the last SMT meeting (January 26th).
- The response to the third question was modified slightly to clarify that no Delta Smelt have been observed since January 26, 2021 and a spent female has not been collected.
- The group agreed to the following response to question four: "*The expected OMR range of -1,500 to -2,500 cfs will continue through the weekend and be reassessed on 2/1/21 with the development of the next Outlook which will be provided to the SMT.*"
- In the response to question five, SMT members agreed to note the February 1st start date for the turbidity bridge avoidance action, and characterize the current turbidity conditions in the central Delta as a widespread wind- and precipitation-driven event, unlike previous localized wind-driven events.
- SMT members agreed to the following response for question six: "*There is no regulatory mechanism for a turbidity bridge avoidance action until February 1st.*"

DWR asked if SLS 2 processing of Station 716 and the other north Delta SLS stations would be complete by the next SMT meeting. CDFW will provide a timing estimate as soon as possible.