BUREAU OF RECLAMATION

Salmon Monitoring Team (SaMT) Weekly Meeting

Teams call: 5/28/24 at 9:00 a.m.

Objective

Provide information to the Water Operations Management Team (WOMT), the U.S. Bureau of Reclamation (Reclamation) and California Department of Water Resources (DWR) on measures to reduce adverse effects from Delta operations of the Central Valley Project (CVP) and the State Water Project (SWP) on salmonids and green sturgeon. Final versions of the Proposed Action Assessment, and Fish and Water Operations Outlook will be posted to Reclamation's Delta Monitoring Work Group webpage, while final version of the Meeting Notes will be posted to Reclamation's Salmon Monitoring Team webpage. Meeting participants include representatives from: California Department of Fish and Wildlife (CDFW), DWR, National Marine Fisheries Service (NMFS), State Water Resources Control Board (SWRCB), Reclamation, and the U.S. Fish and Wildlife Service (USFWS).

Agenda Items

1. Introductions
2. Housekeeping
3. Updates on Water Operations and Biological Conditions
4. Open Discussion on Species Status
5. Live-edit Assessments (Proposed Action Assessment and ITP Risk Assessment)
6. Additional Considerations/Other Topics
7. Items to Raise to WOMT
8. Next Meeting

Agenda Item 2. Housekeeping

- N/A

Agenda Item 3. Updates on Water Operations and Biological Conditions

- The Fish and Water Operations Outlook document was reviewed. Please refer to the Operations Outlook, PA Assessment, and ITP Risk Assessment documents. All flows and releases, unless otherwise noted, are reported as approximated daily averages.
- The attraction pulse on Clear Creek will conclude on 5/28/24.

- Sacramento River flows at Freeport were 19,000 cfs on 5/27/24 and are expected to decrease through the week.
- San Joaquin River flows at Vernalis were 5,000 cfs on 5/27/24 and are expected to decrease over the next few days before increasing again with the Stanislaus River pulse flow.
- The Delta outflow index was 21,000 cfs and is expected to decrease through the week.
- Rio Vista flows were at 16,000 cfs as of 5/27/24 and are expected to decrease through the week.
- QWEST flow values were +5,200 cfs on 5/27/24 and are expected to decrease through the week.
- Questions
    - CDFW asked about the OMRI proposal of -5,000 cfs on 5/28/24. Is an OMRI of -3,500 cfs still being proposed or evaluated at this time?
        - DWR said they'd like to evaluate risk at the –5,000 cfs, the –3,500, and the -2,500 cfs levels to help provide guidance for a decision by WOMT.
- For details on salvage that occurred in the past week please refer to the Operations Outlook, PA Assessment, and ITP Risk Assessment documents. Additionally, all salvage information can be found online at https://filelib.wildlife.ca.gov/Public/salvage/.

Actions Currently in Effect

- The Interim Operations Plan (IOP) is currently in effect resulting from a court order issued on 4/1/2024 and in effect until 12/20/2024. Reclamation shall adopt the following provisions of the SWP ITP:
    - 8.5.2 Larval and Juvenile Delta Smelt Protection
    - 8.6.1 Winter-run Single-year Loss Threshold
    - 8.6.2 Early-season Natural Winter-run Chinook Salmon Discrete Daily Loss Threshold
    - 8.6.3 Mid- and Late-season Natural Winter-run Chinook Salmon Daily Loss Threshold
    - 8.6.4 Daily Spring-run Chinook Salmon Hatchery Surrogate Loss Threshold
    - 8.7 OMR Flexibility During Delta Excess Conditions
    - 8.8 End of OMR Management
- **Delta Cross Channel (DCC) Gate operations (PA 4.10.5.3)**: See Outlook and Assessment for more information.

- **ITP Winter-run Single-year Loss Threshold (COA 8.6.1):** DWR and Reclamation will operate Banks Pumping Plant consistent with Condition of Approval 8.6.1 of the ITP. These values are based on the juvenile production estimate (JPE). The final JPE for brood year 2023 natural-origin winter-run Chinook salmon has been estimated at 234,896. The thresholds below are based on the final JPE.
    - The ITP natural-origin Winter-run Single-year Loss Threshold for this year is loss of unclipped length-at-date (LAD) winter-run Chinook salmon from the CVP and SWP greater than or equal to 1.17% of the winter-run Chinook salmon JPE (loss ≥ 2,748.28). If 50% of the threshold is exceeded (loss ≥ 1,374.14), the required response would be to reach a 14-day average OMR of -3,500 cfs. If 75% of this threshold is exceeded (loss ≥ 2,061.21), the required response would be to reach a 14-day average OMR of -2,500 cfs. If 100% of this threshold is exceeded (loss ≥ 2,748.28), the required response is to immediately convene SaMT to review recent fish distribution information and operations and provide advice regarding future planned Project operations to minimize subsequent loss during that year.
    - The ITP hatchery-origin Chinook salmon Single-year Loss Threshold for this year is loss of clipped LAD winter-run Chinook salmon from the CVP and SWP greater than or equal to 0.12% of the winter-run Chinook salmon hatchery-origin JPE (loss ≥ 232.30). If 50% of the threshold is exceeded (loss ≥ 116.15), the required response would be to reach a 14-day average OMR of -3,500 cfs. If 75% of this threshold is exceeded (loss ≥ 174.23), the required response would be to reach a 14-day average OMR of -2,500 cfs.
- **ITP Mid- and Late-season Natural Winter-run Chinook Salmon Daily Loss Threshold (COA 8.6.3):** From 5/1/24 – 5/31/24, DWR and Reclamation will operate Banks Pumping Plant consistent with Condition of Approval 8.6.3 of the ITP. The ITP Daily Loss Threshold for May is loss of older juvenile Chinook salmon from CVP and SWP greater than 0% of the winter-run Chinook salmon JPE. If the threshold is exceeded (loss > 0), the required response would be to reach an OMR of no more negative than -3,500 cfs for five consecutive days. DWR and Reclamation shall restrict exports in response to the initial LAD identification of natural older juvenile Chinook salmon and the thresholds described above. If genetic analysis of an individual natural older juvenile Chinook salmon observed in salvage at the SWP or CVP indicates that it is not a winter-run, that individual shall not count toward the daily loss threshold and continued export restrictions under this COA are not required if the daily loss threshold has consequently not been met.

Weekly Fish and Water Operations Outlook, Current Operations

- SaMT reviewed and updated the Outlook document. The updated Outlook document will be distributed to the SaMT via email by close of business (COB) 5/29/24.
- SaMT discussed Fish Monitoring Gear Efficiency/Disruptions as addressed within the Operations Outlook and updated accordingly.

SaMT Estimates of Fish Distribution

- SaMT estimates of the current distribution of listed Chinook salmon and CCV steelhead, as a percentage of each population, are based on recent monitoring data and historical migration timing patterns. Estimates this week are based on YOY winter-run and YOY spring-run as well as natural origin steelhead at the real-time monitoring locations. These estimates are reported in the final Assessment document, available on the Delta Monitoring Workgroup webpage.

Location	Yet to Enter Delta	In the Delta	Exited the Delta past Chipps Island
Young-of-year (YOY) winter-run Chinook salmon	Current: 0% Last week: 0%	Current: 0-2% Last week: 0-5%	Current: 98-100% Last week: 95-100%
YOY spring-run Chinook salmon	Current: 5-10% Last week: 5-10%	Current: 5-15% Last week: 10-25%	Current: 75-90% Last week: 70-80%
YOY hatchery winter-run Chinook salmon	Current: 0% Last week: 0%	Current: 0% Last week: 0%	Current: 100% Last week: 100%
Natural origin steelhead	Current: 5-10% Last week: 5-10%	Current: 5-20% Last week: 10-25%	Current: 75-85% Last week: 70-80%

Rationale for Distribution

- Wild winter-run Chinook Salmon
    - Data were not available due to the federal holiday. According to SacPAS historical estimates, 100% of winter-run Chinook salmon have typically passed Chipps Island by this time, including in wetter years. The total in the Delta estimation was reduced to 0-2%, and total exited the Delta increased to 98-100%.
- Wild spring-run Chinook Salmon
    - In the absence of new data, SaMT considered historical data and seasonal timing to determine this week's numbers for spring-run Chinook salmon. A SaMT member again noted this week that there has never been a year when 95% of catch at Chipps Island happened after mid-May. However, salvage has seen 95% into the first week of June during some years. It seems like the San Joaquin is the only place potentially catching spring-run salmon past the current date. Another SaMT member noted that LAD spring-run loss sometimes extends through June, and genetic spring-run have even been seen into July, although this may be considered an anomaly. However, one member cautioned against basing the distribution numbers too heavily on observations rather than data analysis. In response to this concern, another member shared some escapement estimates from Water Year 2023 that included: 95 spawners in Butte Creek, under 40 spawners in Deer Creek, 68 in Mill Creek, and low returns in Feather River, leading her to believe that very few fish would be sampled this year coming out of the Sacramento River. CDFW acknowledged that although small numbers of spring-run are caught in real-time monitoring stations, that essentially infers that they are in the just in system, since RSTs are mainly obtaining presence/absence data. RST trap efficiency is low so usually SaMT infers that 1 fish caught in the RST's indicates that more are passing through and that they are present in the system.

CDFW cautioned against moving too many out of the system since real-time monitoring data was not observed this week due to the holiday on Monday and noted that next week the distribution estimates can get pushed out further once data are received. SaMT estimated that the range of natural-origin spring-run exited the Delta increased by 5-10% this week to a total of 75-90% based on seasonal timing, SacPAS historical estimates and catch in salvage. The estimation of fish in the Delta was decreased to 5-15%. SaMT agreed that the Yet to Enter should stay at 5-10% until data is received from RBDD RST, which will likely be end of this week, to see if the final Sacramento pulse flow moved the rest of the juvenile spring-run downstream.

- Hatchery winter-run Chinook Salmon
    - CalFishTrack has not revealed any detections of hatchery winter-run Chinook salmon during the previous few weeks. SaMT estimates that all have exited the Delta at this point in the season.
- Natural-origin Steelhead
    - Data were not available due to the federal holiday. Steelhead are being observed in salvage on the majority of days. Historically, about 97% of steelhead have exited the Delta past Chipps Island by late May, however 89% have historically moved past Knights Landing, implying that there are still some upstream. SaMT discussed moving 5% versus 10%, but cautioned against overshooting the estimate in the absence of data for the previous week. SaMT ultimately estimated an additional 5% have migrated past Chipps Island for a total of 75-85% for fish that have exited the Delta.

Agenda Item 4. Open Discussion on Species Status

Salvage Update for 5/20 – 5/26/24

- Salvage and loss totals are detailed in the salvage update shared via email. Please refer to the email for specific figures.
- Unclipped steelhead were observed the majority of days at the CVP facility.
- A few sutured steelhead were observed during the reporting period.
- The SWP facility observed unclipped spring-run and fall-run Chinook salmon.
- The CVP facility observed wild fall-run-sized and spring-run-sized Chinook salmon.
- Fall-run Chinook salmon are being seen in especially high numbers at both facilities.

Operations

- The SWP facility was offline from 5/20 – 5/24/24 for maintenance activity. No fish were salvaged during maintenance hours.
- The CVP facility also conducted maintenance during the reporting period and were offline for part of May 20, 21, and 22.

Agenda Item 5. Live-Edit Assessments

Proposed Action Assessment

- SaMT reviewed and updated the current week's Proposed Action Assessment document. The updated Proposed Action Assessment will be distributed to the SaMT via email by COB 5/29/24. The final assessment will be posted to Reclamation's Delta Monitoring Workgroup webpage.

ITP Risk Assessment

- The draft ITP Risk Assessment will be distributed on 5/28/24 with comments due COB Thursday (5/30/24). A final version will be distributed Friday (5/31/24). Past ITP Risk Assessments can be found at CDFW's Water Project Operations webpage.

Agenda Item 6. Additional Considerations/Other Topics

Discussion on OMRI Ranges

- CDFW requested a discussion on the OMRI proposed change to -5,000 cfs and asked if the updated Tillotson Model would change the outcome of the discussions.
    - Reclamation does not expect the [Tillotson] model to change very dynamically. Since there are few data points and scenarios to input for the assessment of increasingly negative OMRI values, the certainty of the model is expected to decrease. Because of this, Reclamation removed any OMRI values more negative than -5,000 cfs from the list of proposed values.
- Winter-Run Chinook salmon
    - CDFW believes that an OMRI of -3,500 cfs beginning 6/1/24 would provide similar protections for winter-run that OMRI of-2,500 cfs provided. However, because of seasonal timing and the absence of winter-run, CDFW could also support an OMRI of -5,000 cfs, but suggests decreasing to an OMRI of -3,500 cfs for the first week of June then decreasing to an OMRI of -5,000 cfs to ensure winter-run have made it out of the system.
    - NMFS anticipates that nearly all winter-run have exited the Delta by this point in the season.
- Spring-run Chinook salmon
    - Based on historical data, spring-run are expected to be moving through the system through June. CDFW assumes that an OMRI of -2,500 or -3,500 cfs would be more protective for spring-run than an OMRI of -5,000 cfs.
- Fall-run Chinook salmon
    - CDFW noted that fall-run are being seen in high numbers in salvage at this time.
- Steelhead
    - CDFW noted the high steelhead loss coincided with higher exports during the previous few weeks. NMFS also confirmed this trend.

    - NMFS said that OMRI is restricted to -2,500 cfs from exceeding the 75% threshold and are at 62% of the April – June incidental take limit (ITL) for steelhead. Due to the large number of steelhead still in the system, NMFS recommends staying at an OMRI of -2,500 cfs for as long as possible.

- Reclamation clarified that any proposed change to the operational plan would be elevated to WOMT, and that while other agencies are free to make recommendations, no recommendation would come directly from Reclamation. Reclamation is going to state that they see low risk for winter-run at this point in the season.
    - CDFW also noted that WOMT is likely going to look at the exact language in the Proposed Action Assessment and the ITP assessment for how to offramp the -2,500 cfs for steelhead and for winter-run. There are certain items that need to be done before offramping so making sure all of that is in place before WOMT would be beneficial.

Agenda Item 7. Items to Raise to WOMT

NMFS

- NMFS recommends continuing to target an OMRI of -2,500 cfs to be most protective of CCV steelhead. We have observed a large number of steelhead this season, and when exports increase, we tend to see salvage increase. Until most steelhead have migrated out of the system, a risk to steelhead is still present, and targeting a more negative OMRI (-3,500 or -5,000 cfs) would not be beneficial to steelhead.
- Maintaining a more positive OMRI would also likely be beneficial to any spring-run in the system.

CDFW

- Although CDFW assumes winter-run presence in the Delta is likely to occur through the end of May, winter-run presence in June is unlikely according to historical data and seasonal timing of winter-run. OMRI protections of -2,500 cfs under COA 8.6.1 are likely to be protective enough through May; however, beginning June 1, OMRI as negative as -3,500 cfs would likely also provide protections for winter-run if they are still present in the system. Operating to -3,500 cfs OMRI for the first week of June and then re-evaluating to further decrease OMRI to -5,000 cfs would provide a buffer period for any remaining winter-run in the system. However, this recommendation is specific to winter-run and does not incorporate the entrainment risk for steelhead or spring-run Chinook salmon.

Agenda Item 8. Next Meeting

- The next SaMT Meeting is scheduled for Tuesday, 6/4/24 on Microsoft Teams.