



Salmon Monitoring Team (SaMT) Weekly Meeting

Teams call: 4/23/24 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
 - a. Document Sharing
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
 - a. Recap of 4/19 WOMT meeting
7. Next Meeting

Agenda Item 2. Housekeeping

- Document Sharing
 - Due to access difficulties, beginning the week of 4/29, Kearns & West will take over document hosting for SaMT and SMT-related documents. Please reach out to mschiappi@kearnswest.com if you have any trouble accessing.

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.
- Feather River releases will be operating with a pulse flow schedule to help outmigrating fish.
- Sacramento River flows at Freeport were 28,400 cfs on 4/22/24 and are expected to vary with the current pulse flow.
- San Joaquin River flows at Vernalis were 5,900 cfs on 4/22/24 and are expected to vary due to the Stanislaus River pulse flow.
- The Delta outflow index was 34,000 cfs on 4/22/24 and is expected to vary with the current pulse flow.
- QWEST flow values were +9,400 cfs on 4/22/24 and are expected to vary with the pulse flows within a range of approximately +10,000 cfs to +7,000 cfs.
- Rio Vista flows were 26,000 cfs on 4/22/24 and are expected to vary with the pulse flows.
- OMRI remains in the positive range.
- X2 was at 63 km near Port Chicago on 4/22/24.
- Discussion Questions
- CDFW asked how much of the 100 TAF of storage has been used up/is remaining.
- Reclamation responded that the storage accounting method hasn't yet been formally adopted, so there has not yet been an official decision made. A method for the accounting has been presented to WOMT. Reclamation expects that they have accounted for approximately 49 TAF, or roughly half the amount of storage.
- USFWS asked if this information could be included in the Fish & Water Operations Outlook next week, assuming the accounting is finalized by then.
 - Reclamation responded that they are unsure when this will be confirmed and finalized. This information will be shared upon availability.
- CDFW asked: When will the updated Stanislaus pulse flow for the month of May be released? Currently, it's only scheduled through 4/30/24.
- Reclamation expects that it will likely be released at the end of this week.
- 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 $\geq 2,748.28$). If 50% of the threshold is exceeded (loss $\geq 1,374.14$), the required response is to reduce SWP exports by its proportional share, according to the coordinated operations agreement (COA), that would be required to reach a 14-day average OMR of -3,500 cfs. If 75% of this threshold is exceeded (loss $\geq 2,061.21$), the required response is to reduce SWP exports by its proportional share, according to the COA, that would be required to reach a 14-day average OMR of -2,500 cfs. If 100% of this threshold is exceeded (loss $\geq 2,748.28$), 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 is to reduce SWP exports by its proportional share, according to the coordinated operations agreement (COA), that would be required to reach a 14-day average OMR of -3,500 cfs. If 75% of this threshold is exceeded (loss ≥ 174.23), the required response is to reduce SWP exports by its proportional share,

according to the COA, that would be required 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 4/1/24 – 4/30/24, 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 April is loss of older juvenile Chinook salmon from CVP and SWP greater than 0.00226% of the winter-run Chinook salmon JPE. If the threshold is exceeded (loss > 5.31), the required response is to reduce SWP exports by its proportional share, according to the COA, that would be required to reach an OMR of no more negative than -3,500 cfs for five consecutive days. DWR 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) 4/17/23.
- 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 Chippis Island
Young-of-year (YOY) winter-run Chinook salmon	Current: 1-3% Last week: 1-5%	Current: 22-34% Last week: 30-44%	Current: 65-75% Last week: 55-65%
YOU spring-run Chinook salmon	Current: 5-15% Last week: 10-20%	Current: 40-60% Last week: 45-65%	Current: 35-45% Last week: 25-35%
YOY hatchery winter-run Chinook salmon	Current: 1-2% Last week: 1-2%	Current: 4-8% Last week: 9-18%	Current: 90-95% Last week: 80-90%
Natural origin steelhead	Current: 5-20% Last week: 10-25%	Current: 20-45% Last week: 20-45%	Current: 50-60% Last week: 45-55%

Rationale for Distribution

- Wild winter-run Chinook Salmon
 - 5 wild winter-run were seen exiting past Chippis Island. None were seen at other monitoring locations. Red Bluff Diversion Dam RSTs have been catching a few

per day but these numbers seem to have dropped off, which is expected for this time of the year. Based on seasonal timing and a few observations at Chipps Island, SaMT estimated that an additional 10% of winter-run Chinook salmon in the Delta have exited past Chipps Island. The total in the Delta estimation was decreased to 22-34% and total exited the Delta increased to 65-75%.

- Wild spring-run Chinook Salmon
 - 2 wild spring-run Chinook salmon were seen at the beach seines, 121 at the Sacramento Trawl, 24 at the Lower Sacramento Trawl, approximately 89 at Mossdale Trawl, and 456 at Chipps Island. However, due to a hatchery fall-run release from CNFH with only 25% marked from that release group, many of these LAD natural-origin spring-run may actually be non-clipped hatchery fall-run Chinook salmon. Therefore, SaMT assumed that a portion of the natural-origin spring-run observed at the real-time monitoring sites this week were non-clipped hatchery-origin fall-run. Although many of them were assumed to be non-clipped hatchery-origin fall-run, natural-origin spring-run are likely to have also been caught as well; therefore, SaMT estimated that the range of fish exited the Delta increased by 10% this week to a total of 35-45% based on seasonal timing and taking the numbers from real-time monitoring stations with caution due to the hatchery releases that occurred. Historical data shows that typically an average of 59% have exited past Chipps Island by mid-to-late April.
- Hatchery winter-run Chinook Salmon
 - CalFishTrack showed a couple winter-run Chinook salmon passing the Benicia Bridge. None were seen passing through the Delta receivers. Because even fewer fish are being seen than during the previous week, SaMT agreed that peak outmigration for the hatchery winter-run release group has ended and most have moved out of the system. SaMT decreased the range for hatchery winter-run that have moved into the Delta to 4-8% and increased the number exited to 90-95%.
- Natural-origin Steelhead
 - Natural-origin Steelhead were observed at the following locations: 3 at Chipps Island, a few at Feather River and Yuba, as well as in salvage every day last week albeit in lower numbers. SaMT estimates an additional 5% have migrated past Chipps Island for a total of 50-60% for fish that have exited the Delta.

Agenda Item 4. Open Discussion on Species Status

Salvage Update for 4/15 – 4/21/24

- Salvage and loss totals are detailed in the salvage update shared via email. Please refer to the email for specific figures.
- Both wild and clipped steelhead continue to be seen in salvage.
- Many spring-run length-at-date (LAD) Chinook salmon are being seen in salvage.
- Fall-run LAD Chinook salmon are being seen in salvage.
- CWT-coded fish observed this week came from the San Joaquin Restoration Program.

- Questions / Comments
 - CDFW asked if any salvage increases were noticed when pumping went from zero cfs to 1,800 cfs.
 - CDFW responded that fairly consistent Chinook salmon numbers were seen through the week. They did not look especially closely after this pumping change.

Operations

- Jones Pumping Plant was periodically down to zero cfs on 4/16 – 4/18/24, however this was not considered an unexpected outage since no pumping occurred at these times.

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 4/24/24. 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 4/23/24 with comments due COB Thursday (4/25/24). Past ITP Risk Assessments can be found at [CDFW’s Water Project Operations](#) webpage.

Agenda Item 6. Additional Considerations/Other Topics

Recap of 4/19/24 WOMT Meeting

- Kearns & West shared some key takeaways from the 4/19 meeting:
 - Advice is needed for the ITP.
 - NMFS would like guidance for IOP-related action.
 - Non-consensus is generally accepted. CDFW would like to hear from SaMT as a group, but Reclamation would prefer to share individual agency perspectives.
 - The proposal for this week’s Operational Intent was flagged and was included in this week’s Fish & Water Operations Outlook.

Discussion on winter-run Chinook

- CDFW, USFWS, NMFS recommends operating to a daily average 2-unit operation at the CVP (exports of 1,800 cfs) for the upcoming week for Reclamation’s portion of COA 8.17, per the 2024 IOP. Exports of 1,800 cfs is likely to increase the number of days that the CVP exports will be curtailed and extend the 100 TAF spring outflow later into May. Spring-run Chinook salmon peak outmigration is likely to occur sometime in mid- to late-May, according to historical data in wet years, and winter-run Chinook salmon peak outmigration is likely to decrease over the upcoming week due to seasonal timing and estimated OMRI values for the upcoming week. Although fall-run fish are not listed, the fall-run fishery has been officially closed this year; therefore, extending spring outflow later into May would also increase survival of fall-run that are out-migrating. CDFW

recognizes that this recommendation may decrease OMRI to as negative as -800 cfs, which may increase entrainment of LAD WR. However, due to seasonal timing, the likelihood of LAD WR entrainment increasing is less likely as May approaches; therefore, even with a decrease in OMRI, LAD WR are less likely to be observed in salvage in the upcoming week. Since spring-run outmigration is likely to increase as May approaches, the benefits of spring outflow extending into mid- May would outweigh the potential increase in LAD WR entrainment. Other SaMT agencies agree with the rationale of the recommendation but chose to abstain from this recommendation.

- WOMT requested that additional information on survival be included in the Proposed Action Assessment.
 - A DWR SaMT member shared that actual survival observed with winter-run Chinook seems slightly higher by 3.5 percentage points than the amount that was calculated for the JPE. This would result in a JPE that is 11% higher than the current JPE, pointing to a great deal of uncertainty with forecasting.
 - A CDFW SaMT member commented that survival presumably changes each year after the JPE is finalized, particularly during higher water years. It would be interesting to see how often this occurs.
 - A DWR SaMT member noted that survival is predicted to be lower during dry years because the JPE is an average of the previous five years. This indicates that survival is underestimated (i.e. overprotected JPE) during wet years and overestimated (i.e., underprotected JPE) for dry years.
 - A DWR SaMT member added that SaMT and other technical teams are charged with evaluating the risk to fish populations.
 - A CDFW SaMT member added that it might be helpful to discuss the range of survival. It's correct that the survival rate is slightly above average this year at 35%, but it ranges from 10-50% depending on the year and water conditions.
 - A CDFW SaMT member asked if the JPE is only applicable to genetic winter-run, or if it's intended to capture LAD winter-run upstream at Red Bluff and is then calculated at that location.
 - A CDFW SaMT member responded that the estimates of winter-run passage at RBDD are based on LAD and corrected for genetics. LAD estimates are a more accurate predictor of run in the Upper Sacramento River than in the Delta.
 - A CDFW SaMT member added that the JPE is based on average survival that is weighted by the variance of the different acoustic tag fish releases. She also added that agencies are aware that the JPE is a projection and is imperfect, but that the survival rate for tagged releases this year falls well within the confidence intervals provided in the JPE letter.
 - A CDFW SaMT member pointed out that behavior and size measurements differ between hatchery and natural-origin Chinook

salmon and therefore, survival between the two categories would likely also differ.

Agenda Item 7. Next Meeting

- The next SaMT Meeting is scheduled for Tuesday, 4/30/24 on Microsoft Teams.