Salmon Monitoring Team (SaMT) Weekly Meeting

Teams call: 4/2/24 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. Next Regular 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.
- Sacramento River flows at Freeport are approximately 43,000 cfs and are expected to decrease over the next few days.

- San Joaquin River flows at Vernalis are approximately 4,500 cfs and expected to vary slightly through the week.
- Clifton Court Forebay exports were 3,800 cfs on 4/1/24 in order to target the OMRI of -2,500 cfs. Exports may vary depending on potential changes to the OMRI.
- Delta Outflow is approximately 47,200 cfs and is expected to decrease through the week.
- QWEST is at +8,400 cfs and will range between+10,000 cfs and +7,000 cfs this week.
- Rio Vista flows were 39,000 cfs on 4/1/24 and is expected to decrease through the week.
- San Luis Reservoir total storage is 1.489 MAF; the SWP storage share is 527 TAF.
- Preliminary estimates for X2 requirements in April are around 15 to 20 days for Port Chicago and 30 days for both Chipps Island and Collinsville. (This information was not mentioned during the meeting, but added at a member's request).
- 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 or until the Court issues a ruling on the 2024 IOP. 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 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 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 ≥ 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 ≥ 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 3/1/24 – 3/31/24, DWR will operate Banks Pumping Plant consistent with Condition of Approval 8.6.3 of the ITP. The ITP Daily Loss Threshold for March is loss of older juvenile Chinook salmon from CVP and SWP greater than 0.00231% of the winter-run Chinook salmon JPE. If the threshold is exceeded (loss > 8.74), 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) 3/27/24.

- 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: 1-5% Last week: 1-5%	Current: 45-59% Last week: 55-69%	Current: 40-50% Last week: 30-40%
YOY spring-run Chinook salmon	Current: 20-30% Last week: 20-30%	Current: 50-70% Last week: 60-75%	Current: 10-20% Last week: 5-10%
YOY hatchery winter-run Chinook salmon	Current: 1-10% Last week: 20-30%	Current: 50-69% Last week: 40-60%	Current: 30-40% Last week: 20-30%
Natural-origin steelhead	Current: 15-30% Last week: 20-35%	Current: 25-50% Last week: 25-50%	Current: 35-45% Last week: 30-40%

Rationale for distribution

- Note: Data collection was limited for the week prior to 4/2/24 due to the state holiday on Monday.
- Wild winter-run Chinook Salmon
    - 13 wild winter-run were seen exiting past Chipps Island. No data was available for Knights Landing. Wild winter-run are still passing through Red Bluff Diversion Dam (RBDD) RST's upstream of the Delta, according to the biweekly RBBD report from last week. Due to Chipps Island Trawl catching 13 winter-run, and migrating timing indicates that peak Delta entry occurs in March, 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 45-59% and total exited the Delta increased to 40-50%.
- Wild spring-run Chinook Salmon
    - 334 wild spring-run Chinook salmon were observed at the Sacramento Trawl, 250 at the Lower Sacramento Trawl, 25 at the beach seines, 81 at Chipps Island, plus a few more elsewhere in the Delta. 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 mistaken for non-clipped hatchery fall-run Chinook salmon. Therefore, SaMT estimated that the range of fish exited the Delta increased by 5% this week to a total of 10-20% based on seasonal timing and taking the numbers from real-time monitoring stations with caution due to the hatchery releases that occurred. SaMT noted that the previous week's large numbers indicate that they are beginning to migrate out.
- Hatchery winter-run Chinook Salmon

    - CalFishTrack showed an additional 20 hatchery winter-run Chinook salmon pass by the receivers in the Delta and exiting past Benicia Bridge. SaMT increased the range for hatchery winter-run that have moved into the Delta to 50-69% and increased the number exited to 30-40%.

- Natural-origin Steelhead
    - Natural-origin Steelhead were observed at the following locations: 80 at the I-side of Feather River and 1 at Lower Feather River, 2 at Tisdale, as well as in salvage every day last week. Historically, 57% of natural-origin Steelhead have exited past Chipps Island by this time. SaMT estimates an additional 5% have migrated past Chipps Island for a total of 35-45% for fish that have exited the Delta and 25-50% present in the Delta coming from both the Sacramento Basin and San Joaquin Basin.

Agenda Item 4. Open Discussion on Species Status

Salvage Update for 3/25/24 – 3/31/24

- Salvage and loss totals are detailed in the Salvage update shared via email. Please refer to the email for specific figures.
- The collection facilities continued to see wild winter-run length-at-date (LAD) Chinook salmon, spring-run LAD, and fall-run LAD Chinook salmon in salvage.
- All tag codes reported on CVP data sheets were spring-run tag codes.
- Wild and hatchery steelhead were observed in salvage.
- On 3/28/24, there was a missed count of a few hours at the CVP facility to allow for a secondary screen inspection. NMFS noted that steelhead were seen before and after the operational variance and asked how the agencies would account for the missed numbers of steelhead during the variance. Reclamation offered to inquire about this with USBR management and provide any updates when they become available. CDFW noted that they are unable to retroactively input data during periods of missed counts, however, loss count estimates could be added to end-of-year totals.

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 4/3/24. 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 4/2/24 with comments due COB Thursday (4/4/24). Past ITP Risk Assessments can be found at CDFW's Water Project Operations webpage.

Agenda Item 6. Additional Considerations/Other Topics

Discussion on Winter-Run Chinook Salmon Loss

- Some SaMT members acknowledge that a decreasing OMRI is likely to result in an increase in loss of listed species. LAD winter-run Chinook salmon are approaching the incidental take limit (ITL) and have exceeded the 100% loss threshold, which was observed when OMRI decreased from -500 cfs to -1,500 cfs. Some SaMT members also note that remaining at a more positive OMRI would be more beneficial to the species.

- As of 3/30/24, total juvenile natural winter-run Chinook salmon LAD loss is 3,741.18 fish.

- In general, there is uncertainty regarding the extent of winter-run presence in the south Delta. Some SaMT members shared the following points regarding fish routing as an indicator of the previous and ongoing movement of winter-run into the south Delta over the migration season, and therefore as an indicator of the potential presence of Sacramento River winter-run in the zone of exports influence:

    - Hatchery winter-run are viewed as a model for routing behavior. Of the acoustically tagged winter-run from the 2/16/24 hatchery release that survived to the Georgiana Slough junction, preliminary detections show that 8-9% routed down the Georgiana Slough and approximately 2% were detected in the South Delta.

    - Among the LAD older juveniles, 23 genetic winter-run have been detected at the salvage facilities this season. Low detection rates of genetic winter-run are to be expected given the relatively low abundance of winter-run compared to other salmon runs.

    - The effectiveness of Georgiana Slough BAFF was examined through a series of fish releases in December, January, and February. These fish were primarily fall-run and late-fall-run and showed greater than 80% of the tagged study fish continuing to migrate through the Sacramento River rather than being routed into Georgiana Slough.

    - Water Year 2024 has consistently shown low routing into the central Delta.

    - Predictions of the STARS Model and observations of acoustic-tagged hatchery late-fall-run Chinook salmon released in the upper Sacramento River in December, January, and February suggest that since January over 80% of older juvenile sized salmon have consistently stayed in the mainstem Sacramento River.

    - Another possible indicator suggesting low routing of Sacramento River salmon into the south Delta in recent weeks is the salvage of zero YOY spring-run Chinook salmon from the Feather River hatchery release on 3/14/24, although it was noted coded wire tags in salvage have so far only been read through 3/21/24, and assessment of back-logged CWT fish is needed to determine current detection rates of this release group in salvage.

- CDFW and other SaMT members highlighted additional information suggesting the above indicators may not be accurate indicators of routing of winter-run into the south Delta may be higher than the above indicators may suggest: CDFW mentioned that although the routing probabilities have been low into Georgiana Slough and conditions have been favorable for fish migrating down the Sacramento River, it is also important to note that 97% of winter-run passage at Red Bluff Diversion Dam RST's occurs by January 1, whereas, the winter-run acoustic tag release that showed low routing into the central Delta occurred on 2/16/24, after that peak passage at RBDD RST's. [During the meeting SaMT discussed, and after the meeting the precise percentages were later verified, that the majority of tagged winter-run (> 85%) were detected passing the Georgiana Slough junction after 3/15/24 (in the last half of March), while the majority of genetic winter-run detections in salvage (> 85%) occurred prior to this date (primarily in the last week of February and the first week of March).]
- CDFW also noted that although conditions are favorable this year, with high flows at Freeport and DCC gate closure in December, there are still other alternative routes into the central Delta, such as Threemile Slough, that may be routing fish into the central Delta. Due to the large number of unmarked LAD older juveniles that continue to be detected at the salvage facilities since January, and due to the 100% tagged hatchery-origin spring-run on the San Joaquin River, CDFW suggested that the fish being observed in salvage are likely to be Sacramento River origin rather than San Joaquin origin.

Daily Loss Thresholds

- Daily loss thresholds under the 2024 IOP were not reviewed by SaMT prior to the meeting but will be included in future Assessments.

Agenda Item 7. Next Meeting

- The next SaMT meeting will be held on Tuesday, 4/9/24 on Microsoft Teams.
- Action item
    - Reclamation to inquire with management on how missed counts at the CVP were historically handled and determine how to account for the more than 3-hour missed count for steelhead on 3/28/24.