

2024 SWP ITP Operations Summary and Chinook Salmon Assessment

Date: 1/28/2025

Summary for the Water Operations Management Team (WOMT):

For the week beginning 1/28/25, COA 8.3/PA 3.7.4.2 (OMRI -5,000 cfs) is controlling exports at the Central Valley Project (CVP) and the State Water Project (SWP). Combined exports on 1/28/25 are 6,000 cfs resulting in an Old and Middle River Index (OMRI) of -5,200 cfs and 19.1% of inflow diverted (14-day average). The Delta Cross Channel (DCC) gates were closed on 11/18/24 and will likely remain closed this upcoming week.

Spring-run Chinook Salmon (SR) risk into the central Delta has increased to medium this week. Yearling and YOY SR are anticipated to move into the Delta in the upcoming week due to seasonal migration timing. Hydrological conditions are likely to increase spring-run entrainment risk to medium risk of being entrained into the central Delta this week. Freeport flows are decreasing and downstream migration is likely to start increasing due to seasonal migration. SR risk into the facilities has remains at medium this week primarily due to the release of yearling spring-run surrogates on 1/17/25 that are likely to start being observed in the Delta this week, and because hatchery-origin yearling surrogates from the other release groups are continuing to be observed at the salvage facilities.

Winter-run Chinook Salmon (WR) are migrating downstream and are entering the Delta in increasing numbers. 1 genetically-confirmed winter-run Chinook Salmon was observed at the salvage facilities on 1/16/25.

Spring-run Chinook Salmon Risk Assessment for 1/28/25 - 2/3/25

Section 1: Sacramento River and Confluence

Assessment of risk of entrainment into the central Delta for SR in the Sacramento River:

- Exposure Risk:
 - SR: Medium
- Routing Risk:
 - SR: Low
- Overall Entrainment Risk:
 - SR: Medium
- Change in risk of entrainment into the central Delta (increased/decreased risk compared to last week):
 - SR: Increased from previous week
 - Exposure Risk is estimated as medium this week. YOY SR are estimated to begin migrating into the Delta due to seasonal timing. Routing Risk is estimated as medium this week based on hydrologic conditions. Although the DCC gates projected to remain closed, Freeport flows are expected to drop to ~12,000 cfs, and the STARS Model is predicting ~25% entrainment into Georgiana Slough, which is an increase from the previous couple weeks. The Georgiana BAFF installation is less likely that fish will have a high entrainment risk into the central Delta this week; however, due to SR seasonal migration timing and hydrological conditions, the overall entrainment into the central Delta has increased to medium risk.

Section 2: Facilities Risk

Central Valley Project/State Water Project (CVP/SWP) facilities entrainment risk for SR in the central Delta over the next week:

- Exposure Risk:

- SR: Medium
- Reporting OMR/Export Risk:
 - Baseline OMR (-5,000 cfs)
 - SR: Medium
 - Scenario 1 OMR: (-3,400 cfs)
 - SR: Low
 - Scenario 2 OMR: (-5,100 cfs)
 - SR: Medium
- Overall Entrainment Risk:
 - SR: Medium
- Change in risk of entrainment into the facilities (increased/decreased risk compared to last week):
 - SR: Similar to previous week
 - Exposure Risk is medium this week due to hatchery-origin yearling SR surrogates anticipated to be salvaged in the upcoming week. Although hatchery-origin yearling SR surrogates have been observed in low numbers over the previous week, it is still likely that they will be observed in the upcoming week with the release that was conducted on 1/17/25. Reporting OMR/Export Risk is medium to low this week depending on which OMRI target is being operated to. Since the hatchery-origin spring-run surrogates indicate that natural-origin yearling SR are migrating through the system and may be present near the salvage facilities, it is also possible that natural-origin yearling SR will also be salvaged in the upcoming week. Since another yearling SR surrogate release was released on 1/17/25, it is possible that those fish may end up in salvage in the upcoming week. Therefore, the overall entrainment risk into the facilities is estimated to remain at medium this week.

Section 3: Distribution and Biology

- Adult escapement:
 - Adult SR have completed their spawning.
- Redd distribution and fry emergence timing:
 - YOY SR eggs are emerging. There have been detections of emergence and downstream migration based on detections at the Tisdale RST, Lower Sacramento RST, and Knights Landing on the Sacramento River and at the Eye-side RST and Lower Feather RST on the Feather River. Butte Creek RSTs are also observing higher juvenile counts which indicate that fry emergence and downstream migration is occurring.
- Hatchery releases (Feather River Fish Hatchery and Coleman National Fish Hatchery):
 - Coleman National Fish Hatchery (CNFH) have released four late fall-run Chinook Salmon release groups into Battle Creek on 11/20/24, 11/25/24, 12/13/24, and 1/17/25.
 - The release that occurred on 11/20/24 will count towards COA 8.4.5 for yearling SR surrogate releases as Group #1 and tracking of these fish in the SWP and CVP facilities will be closely monitored.
 - The release that occurred on 12/13/24 will count towards COA 8.4.5 for yearling SR surrogate releases as Group #2 and tracking of these fish in the SWP and CVP facilities will be closely monitored.
 - The release that occurred on 1/17/25 will count towards COA 8.4.5 for yearling SR surrogate releases as Group #3 and tracking of these fish in the SWP and CVP facilities will be closely monitored.
 - Loss has occurred from the SR surrogate Group #1 and Group #2. See the *Thresholds for Relevant Conditions of Approval (COAs)* section for more detailed information.
- Distribution of length-at-date (LAD) natural-origin young-of-year (YOY) and yearling SR:

- Feather River: Lower Feather RSTs have caught LAD SR so far this season. Juveniles are emerging from redds and migrating downstream.
 - Butte Creek: Butte Creek Carcass Surveys ended on 10/28/24. Only 20 carcasses were observed. 1 juvenile SR was observed passing through the RSTs on 12/3/24.
- Sacramento River: Carcass surveys are still ongoing. Red Bluff Diversion Dam (RBDD) RSTs are observing juveniles passing through.
 - Mill and Deer Creek: As of 12/16/24, 3 yearling SR were observed at the Mill Creek RST. The RSTs had not been trapping in the previous few weeks due to a storm event that damaged the traps. Mill Creek RST began trapping again but have not observed any new juveniles. Deer Creek RST is expected to begin trapping next week.
- Distribution of natural-origin yearling SR:
 - Yearling SR are likely still migrating downstream into the Delta due to the continued hatchery-origin yearling spring-run surrogates that are being observed in the SWP and CVP facilities. Genetically-identified yearling fall-run Chinook Salmon have been observed at the CVP facility over the previous week and many hatchery-origin yearling SR surrogates have been observed at both the SWP and CVP salvage facilities. This indicates that natural-origin yearling SR are continuing to migrate downstream and present near the salvage facilities.
 - Any genetic SR that is larger than the LAD YOY SR, according to the Delta Model, will be classified as a yearling SR.

Thresholds for Relevant Conditions of Approval (COAs)

COA 8.4.3 Winter-run Chinook Salmon Annual Loss Thresholds

- The final natural-origin WR JPE for BY 2024 was 98,893 and was distributed on 1/10/25. The thresholds below are based on the final JPE for natural-origin WR and hatchery-origin WR from both Livingston Stone National Fish Hatchery (LSNFH) and Battle Creek.
- Natural-origin WR: **494.47** [0.5% of the natural-origin WR JPE]
 - Current Annual Loss: 2.54
 - 50% Threshold based on natural-origin WR JPE: 247.24
 - Risk of exceeding threshold: Low
 - Days Threshold was exceeded in previous week: None
 - Days Operated to Threshold after Exceedance: None
 - 75% Threshold based on natural-origin WR JPE: 370.85
 - Risk of exceeding threshold: Low
 - Winter-run Chinook Salmon Machine Learning Model Prediction: N/A
 - 100% Threshold based on natural-origin WR JPE: 494.47
 - Risk of exceeding threshold: Low
 - LSNFH Hatchery-origin WR: **162.41** [0.12% of the LSNFH release JPE]
 - Current Annual Loss: 0
 - 50% Threshold based on hatchery WR JPE: 81.21
 - Risk of exceeding threshold: Releases have not occurred
 - 75% Threshold based on hatchery WR JPE: 121.81
 - Risk of exceeding threshold: Releases have not occurred
 - 100% Threshold based on hatchery WR JPE: 162.41
 - Risk of exceeding threshold: Releases have not occurred
 - Battle Creek Hatchery-origin WR: **3.44** [0.12% of the Battle Creek release JPE]
 - Current Annual Loss: 0
 - 50% Threshold based on hatchery WR JPE: 1.72
 - Risk of exceeding threshold: Releases have not occurred
 - 75% Threshold based on hatchery WR JPE: 2.58
 - Risk of exceeding threshold: Releases have not occurred
 - 100% Threshold based on hatchery WR JPE: 3.44
 - Risk of exceeding threshold: Releases have not occurred

COA 8.4.4 Natural-origin Winter-run Chinook Salmon Weekly Distributed Loss Thresholds

- January Weekly Loss Thresholds based on final natural-origin CHNWR JPE: [50% of the annual loss threshold x Weekly percentage of CHNWR in the Delta x Annual Loss Threshold based on final JPE]
 - January 15 – January 21 (Week 3): $0.50 \times 0.013 \times 494.47 = \mathbf{3.21}$
 - Date(s) threshold was triggered in previous week: None
 - Days operated to threshold: Initially triggered on 1/20/25; however, genetics confirmed that the LAD older juvenile was NOT a WR and 7-day rolling sum of loss decreased below the threshold.
 - January 22 – January 28 (Week 4): $0.50 \times 0.013 \times 494.47 = \mathbf{3.21}$
 - Date(s) threshold was triggered in previous week: N/A
 - Days operated to threshold: N/A
 - January 29 – February 4 (Week 5): $0.50 \times 0.0691 \times 494.47 = \mathbf{17.08}$
 - Date(s) threshold was triggered in previous week: N/A

- Days operated to threshold: N/A
- February 5 – February 11 (Week 6): $0.50 \times 0.1313 \times 494.47 = \mathbf{32.46}$
 - Date(s) threshold was triggered in previous week: N/A
 - Days operated to threshold: N/A

COA 8.4.5 Spring-run Chinook Salmon Protection Action and Surrogate Annual Loss Threshold

- COA 8.4.5 requires a weekly risk assessment for spring-run Chinook Salmon. See above section (*Spring-run Chinook Salmon Assessment for 1/28/25 – 2/3/25*) for weekly risk assessment that fulfills that requirement.
- Hatchery-origin Yearling SR Surrogates (0.25% of total in-river FR releases for each release group from Coleman National Fish Hatchery (CNFH):
 - Group 1 Loss Threshold: 1,747.23
 - Total Loss as of 1/20: 990.33
 - Highest Daily Loss: 252.2 on 12/4
 - Group 2 Loss Threshold: 193.39
 - Total Loss as of 1/20: 72.52
 - Highest Daily Loss: 17.64
 - Group 3 Loss Threshold: 186.06
 - Total Loss as of 1/12: 0
 - Highest Daily Loss: 0
- Hatchery-origin Young-of-Year SR Surrogates (0.25% of total in-river FR releases for each release group from Coleman National Fish Hatchery (CNFH)): Releases have not yet occurred.
- Hatchery Origin Young-of-Year SR Surrogates (0.25% of total in-river SR releases for each release group from Feather River Hatchery (FRH)): Releases have not yet occurred.

Hydrology and Operations Updates

Water Operations

Antecedent Actions: (e.g., Actions such as integrated early winter pulse protection, etc.)

- None.

Georgiana Slough Bio-Acoustic Fish Fence (BAFF):

- The Georgiana Slough BAFF is installed and began operating on 11/15/24. However, a car collided into the facility which caused the aerator machine to break and is unrepairable. A temporary aerator is likely to be installed soon; however, in the meantime the lights and sound are the only parts working on the BAFF until the temporary aerator is installed.
- Releases of acoustically-tagged hatchery fish are anticipated to occur from December through March to study the effectiveness of the BAFF. These studies are included in the table below and on CalFishTrack (https://oceanview.pfeg.noaa.gov/CalFishTrack/pageGSSMB_LFCS_2025.html).

Table 1. Late fall-run Chinook Salmon acoustically tagged releases for efficiency of Georgiana BAFF.

| Release Date | Race | # of Fish Released | % Entrained into Georgiana Slough |
|--------------|---------------|--------------------|-----------------------------------|
| 12/4/24 | Late Fall-Run | 478 | 14.6% |

Real-time Monitoring Data

SacPAS Tools

Section 1: STARS Model

Available on SacPAS at: [Delta STARS Model](#)

Table 2. STARS Model

| <u>Date:</u> (1/24/25) | <u>DCC</u> <u>Gates</u> | <u>Georgiana</u> <u>Slough</u> | <u>Sacramento</u> <u>River</u> | <u>Sutter and</u> <u>Steamboat Slough</u> | <u>Yolo</u> <u>Bypass</u> |
|---|----------------------------|-----------------------------------|-----------------------------------|--|------------------------------|
| Late Fall-Run Proportion of Entrainment (Routing Probability) | N/A- not open | 0.25 | 0.47 | 0.29 | N/A |
| Late Fall-Run Survival Probability | N/A- not open | 0.22 | 0.58 | 0.47 | N/A |

Section 2: Historical Migration

Knights Landing RST and Chipps Island Trawls Historical Timing from Brood Years 2009-2023. Available at: [Unclipped Winter Chinook Cohort Juvenile Migration Timing and Conditions Graph and Table: SacPAS Sacramento Prediction and Assessment of Salmon and other fishes](#)

Delta Monitoring Stations

Rotary Screw Trap Data

Red Bluff Diversion Dam RST: Estimated juvenile WR passage at Red Bluff Diversion Dam for 12/15/24 is 414,399 fish.

Table 3. Fish monitoring data for RST data for the 1/28/25 SaMT meeting. The following table presents fish monitoring data summarized over the past week. Unless otherwise noted, reported sizes are fork length. FR = fall-run, WR = winter-run, SR = spring-run, LFR = late-fall-run.

| Location | Butte Creek RST | Tisdale RST | Knights Landing RST | Lower Sac RST | Lower Feather RST | Feather at Eye- Side RST | Feather at Herringer RST |
|----------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|--------------------------------|-----------------------------------|
| Sample Date | 1/20/25 – 1/25/25 | 1/20/25 – 1/25/25 | 1/20/25 – 1/25/25 | 1/20/25 – 1/25/25 | 1/20/25 - 1/25/25 | 1/20/25 - 1/25/25 | 1/20/25 – 1/25/25 |
| FR Chinook | 0 | NA | 149 | 25 | 64 | 12,828 | 5,759 |
| SR Chinook | 244 | NA | 0 | 2 | 2 | 5 | 14 |
| WR Chinook | 0 | NA | 2 | 0 | 0 | 0 | 0 |

| Location | Butte Creek RST | Tisdale RST | Knights Landing RST | Lower Sac RST | Lower Feather RST | Feather at Eye-Side RST | Feather at Herringer RST |
|-------------------|-----------------|-------------|---------------------|---------------|-------------------|-------------------------|--------------------------|
| LFR Chinook | 0 | NA | 1 | 0 | 0 | 0 | 0 |
| Chinook (ad-clip) | 0 | NA | 0 | 0 | 0 | 0 | 0 |

Delta Trawl and Seine Data

Table 4. Fish monitoring data for trawl and seine data for the 1/28/25 SaMT meeting. The following table presents fish monitoring data summarized over the past week. Unless otherwise noted, reported sizes are fork length. FR = fall-run, WR = winter-run, SR = spring-run, LFR = late-fall-run.

| Location | Chippis Island Midwater Trawls | Mossdale Kodiak Trawls | Beach Seines | Sac Trawls | EDSM Trawls |
|-------------------|--------------------------------|------------------------|-------------------|-------------------|-------------------|
| Sample Date | 1/19/25 – 1/25/25 | 1/19/25 - 1/25/25 | 1/19/25 - 1/25/25 | 1/19/25 - 1/25/25 | 1/19/25 - 1/25/25 |
| FR Chinook | 0 | 0 | 283 | 2 | 0 |
| SR Chinook | 0 | 0 | 52 | 1 | 0 |
| WR Chinook | 0 | 0 | 0 | 0 | 0 |
| LFR Chinook | 0 | 0 | 0 | 0 | 0 |
| Chinook (ad-clip) | 0 | 0 | 0 | 0 | 0 |

Hatchery Release Information

Telemetry Data:

Information for telemetry data can be found at: [CalFishTrack](#)

Tracking Hatchery Releases:

Currently there have not been any hatchery-origin WR releases so far this WY.

Table 5. COA 8.4.5 Young-of-Year and Yearling Spring-run Chinook Salmon Hatchery Surrogate Summary Table, WY 2025.

| Hatchery | Release Group | Date | Race | Total Fish Released | CWT Fish | Tag Codes | Loss Threshold |
|---|---------------|---------------|---------------|---------------------|----------|-----------|----------------|
| Coleman National Fish Hatchery (Late Fall-run Chinook Salmon) | Group 1 | 11/20/24 | Late fall-run | 698,892 | 698,892 | 05-00-38 | 1,747.23 |
| | | | | | | 05-00-39 | |
| | | | | | | 05-00-40 | |
| | | | | | | 05-00-41 | |
| | | | | | | 05-00-42 | |
| | | | | | | 05-00-43 | |
| | | | | | | 05-00-44 | |
| | | | | | | 05-26-00 | |
| | | | | | | 05-33-00 | |
| | | | | | | 05-34-00 | |
| Coleman National Fish Hatchery (Late Fall-run Chinook Salmon) | Group 1 | 11/20/24 | Late fall-run | 698,892 | 698,892 | 05-35-00 | 1,747.23 |
| | | | | | | 05-31-00 | |
| | | | | | | 05-30-00 | |
| Group 2 | 12/13/24 | Late fall-run | 77,355 | 77,355 | 05-31-00 | 193.39 | |
| Group 3 | 1/17/25 | Late fall-run | 74,425 | 74,425 | 05-30-00 | 186.06 | |
| Feather River Fish Hatchery (Spring-run Chinook Salmon) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Feather River Fish Hatchery (Fall-run Chinook Salmon) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

LAD/Genetic Loss Data for Older Juvenile Chinook Salmon and Spring-run Chinook Salmon

SWP and CVP Weekly Loss Updates:

- Loss of yearling SR surrogates from CNFH were observed at the SWP and CVP facilities last week that counted towards the COA 8.4.5 threshold. See Table 6 for weekly and total loss estimates for each group.
- LAD natural-origin older juveniles were observed at the SWP and CVP facilities over the previous week that counted towards the threshold for COA 8.4.4. See Table 7 for weekly and total loss estimates.
- [SacPAS - Salvage Timing](#)

Table 6. Hatchery-origin Chinook Salmon data taken from Aasen Geir’s spreadsheet (Salmon_2025_01272025.csv). Only Chinook Salmon data that are associated with the hatchery-origin Chinook Salmon COA’s that are in effect will be included, which includes COA 8.4.5. Loss data from other fish were not included. *FR = fall-run, WR = winter-run, SR = spring-run, LFR = late-fall-run.*

| Race (CWT) | Associated COA for Tracking Loss | Weekly Total Loss 1/19 - 1/26 | Total Loss for WY 2025 |
|------------|----------------------------------|-------------------------------|------------------------|
| LFR | COA 8.4.5: Group 1 | 4.33 | 990.33 |

| | | | |
|-----|-----------------------|---|-------|
| LFR | COA 8.4.5: Group 2 | 0 | 72.52 |
| LFR | COA 8.4.5: Group 3 | 0 | N/A |

Table 7. Natural-origin Chinook Salmon data taken from Aasen Geir’s spreadsheet (Salmon_2025_01272025.csv). Only Chinook Salmon data that are associated with the natural-origin Chinook Salmon COA’s that are in effect will be included, which includes COA 8.4.4. Loss data from other fish were not included. Older juvenile is defined as any Chinook Salmon measured above the minimum length for CHNWR, according to the Delta Model LAD criteria. *FR = fall-run, WR = winter-run, SR = spring-run, LFR = late-fall-run.*

| Race (LAD) | Genetically Confirmed as: (FR, LFR, WR, SR) | Associated COA for Tracking Loss | Weekly Total Loss 1/20 - 1/26 | 7-day Rolling Sum of Loss |
|---------------------------------|--|----------------------------------|-------------------------------|---------------------------|
| LFR (older juvenile) | N/A | COA 8.4.4 | 0 | 0 |
| Yearling FR (older juvenile) | N/A | COA 8.4.4 | 0 | |
| WR (older juvenile) | N/A | COA 8.4.4 | 0 | |