FINAL State Water Project Incidental Take Permit Risk Assessment for Winter-run and Spring-run Chinook Salmon

Section 1: Overview

Date: 11/5/2024

Life Stages Present:

Winter-run Chinook Salmon (juveniles)
Spring-run Chinook Salmon (adults)

Advice to the Water Operations Management Team (WOMT):

No advice is warranted.

For the week beginning 11/5/24, D-1641's Water Quality is controlling exports at the Central Valley Project (CVP) and the State Water Project (SWP). Combined exports on 11/5/24 are 6,700 cfs resulting in an Old and Middle River Index (OMRI) of -5,700 cfs and 42.8% of inflow diverted (3-day average). The Delta Cross Channel (DCC) gates are open and will remain open for the week. The SWP is exporting this week and no outages are planned.

SaMT estimates an overall medium risk of entrainment into the central Delta for juvenile natural-origin winter-run (WR) Chinook salmon. DCC gates remain open, Freeport flows remain low, and WR have been observed at a few real-time monitoring sites in the upper Sacramento River the previous few weeks. Due to the recent storm events, WR are likely to begin moving downstream in the upcoming week, which increases the likelihood of entrainment into the central Delta; therefore, the overall risk has increased to medium this week. SaMT estimates an overall low risk of juvenile natural-origin spring-run Chinook salmon (SR) entrainment into the central Delta. SR spawning is nearing an end and eggs are still in gravel. SR are still rearing and have not been seen in any real-time monitoring locations in the Delta or upper Sacramento River; therefore, entrainment downstream of their spawning area and into the central Delta is unlikely this week.

SaMT estimates an overall low risk of entrainment of juvenile WR into the export facilities this week. Salvage of WR is unlikely due to low numbers of WR estimated in the Delta and no salvage of WR yet this season. SaMT also estimates an overall low risk of juvenile SR into the export facilities due to no salvage of SR occurring so far this season and seasonal timing of SR. SaMT does not anticipate that COA 8.6.2 Early Season Natural Origin WR Discrete Daily Loss Threshold of 6 older juvenile Chinook salmon will be triggered this upcoming week. If any amount of salvage does occur, then the entrainment risk into the Delta will increase to medium because of the low number of loss associated with COA 8.6.2.

Risk Assessment:

Section 2-A: Operations and Fish Distribution Table

The 2024 SWP ITP was signed on 11/4/2024. This risk assessment will include 2020 SWP ITP COA's due to the lack of time to include an updated 2024 SWP ITP risk assessment. The only COA that will be affected this week due to the new operation of the 2024 SWP ITP is COA 8.6.2 Early Season Natural-Origin WR Discrete Daily Loss Threshold. The 2024 SWP ITP has a new COA, in place of the 2020 SWP ITP COA 8.6.2, which is COA 8.17: 2024 Early Season Natural Winter-run Chinook Salmon Discrete Daily Loss Threshold. This COA states that from the effective date of the 2024 SWP ITP through 12/20/24, Permittee will operate to the same thresholds as in the 2020 SWP ITP COA 8.6.2.

COA 8.6.2 Early Season Natural-Origin WR Discrete Daily Loss Threshold, now known as COA 8.17, is in effect this week with a daily loss threshold of 6 or more older juvenile Chinook salmon.

No LAD WR were observed in the Lower Sacramento RST and Knights Landing RST this week so SaMT did not move any WR into the Delta this week.

Table 1: Current Juvenile Fish Distribution. The SaMT group agreed to provide distribution estimates in five percent increments when feasible.

Location	Yet to Enter Delta	In the Delta	Exited the Delta
Young-of-year winter-run Chinook salmon	Current 98-99% Last week 98-99%	Current 1-2% Last Week 1-2%	Current 0% Last Week 0%
Young-of-year spring-run Chinook salmon	Current 100% Last week 100%	Current 0% Last Week 0%	Current 0% Last Week 0%
Hatchery origin winter-run Chinook salmon	Current NA Last week NA	Current NA Last Week NA	Current NA Last Week NA

Section 2-B: Sacramento River and Confluence

Assessment of risk of entrainment into the central Delta for WR and SR in the Sacramento River: (8.1.5.1 C ii, iii, iv and 8.1.5.1 B iii)

- Exposure Risk:
  - WR: Low
  - SR: Low
- Routing Risk:
  - WR: Medium
  - SR: Medium
- Overall Entrainment Risk:
  - WR: Medium
  - SR: Low
- Change in risk of entrainment into the central Delta (increased/decreased risk compared to last week):
  - WR: Increased from previous week
    - Exposure Risk is estimated as low this week due to few WR being observed in the Delta. Routing Risk is estimated at medium for WR this week due to low flows at Freeport and DCC gates being open for the rest of the week. There will likely to be an increase in movement of WR through the Sacramento River and into the Delta this week from the

rainfall that occurred over the weekend; therefore, the overall entrainment into the central Delta is estimated as medium.

- SR: Similar to previous week
  - Exposure Risk is estimated as low this week. SR are not estimated to be in the Delta this week due to seasonal timing. SR adults spawning is nearly complete, and eggs are still in gravel. Routing Risk is estimated as medium this week based on hydrologic conditions. Although the DCC gates are projected to remain open and Freeport flows remain low, SR are not anticipated to be migrating downstream where they would be affected by Delta operations. Therefore, the overall entrainment into the central Delta is low.

Section 2-C: Facilities Risk

Central Valley Project/State Water Project (CVP/SWP) facilities entrainment risk for WR and SR in the central Delta over the next week (8.1.5.1 D iii, iv, v)

- Exposure Risk:
  - WR: Low
  - SR: Low
- Reporting OMR/Export Risk:
  - Baseline OMR (-5,600 cfs)
    - WR: High
    - SR: High
  - Scenario 1 OMR: (-3,500 cfs)
    - WR: Low
    - SR: Low
  - Scenario 2 OMR: (-5,700 cfs)
    - WR: High
    - SR: High
- Overall Entrainment Risk:
  - WR: Low
  - SR: Low
- Change in risk of entrainment into the facilities (increased/decreased risk compared to last week):
  - WR: Similar to previous week
    - Exposure Risk are both low this week due to no WR salvage occurring for WY 2024. Reporting OMR/Export Risk is high this week due to a more negative than -5,000 cfs OMRI anticipated this upcoming week and exports estimated to be high. However, since WR are not expected to be near the export facilities at this time due to seasonal timing, the overall entrainment risk into the export facilities is estimated to be low this week.
  - SR: Similar to previous week
    - Exposure Risk are both low this week due to no WR salvage occurring for WY 2024. Reporting OMR/Export Risk is high this week due to a more negative than -5,000 cfs OMRI anticipated this upcoming week and exports estimated to be high. No SR have been observed at the export facilities for WY 2024 and it is unlikely for SR to be near the export facilities due to seasonal timing. SR are also not expected to be near the export facilities due to seasonal timing; therefore, the overall entrainment risk into the facilities is estimated to be low this week.

Section 2-D: Annual Loss Threshold Risk

- Annual loss threshold risk and Alternative Actions (8.1.5.1. E I, ii, iii and 8.1.5.1 F I, ii)

- Loss at the SWP and CVP facilities compared to the estimated remaining population in the Delta and upstream of the Delta: Salvage of California Endangered Species Act (CESA)-listed Chinook salmon has not occurred.
    - Define risk of hitting a threshold, 50%, or 75%, or 100%, and likelihood of exceeding a threshold:
        - Natural-origin WR: N/A [1.17% of the natural-origin WR Juvenile Production Estimate (JPE)]
            - Current Annual Loss: N/A
            - 50% Threshold based on natural-origin WR JPE: N/A
                - Risk of exceeding threshold: N/A
            - 75% Threshold based on natural-origin WR JPE: N/A
                - Risk of exceeding threshold: N/A
            - 100% Threshold based on natural-origin WR JPE: N/A
                - Risk of exceeding threshold: N/A
        - Hatchery WR: N/A [0.12% of the Livingston Stone National Fish Hatchery (LSNFH) hatchery release JPE]
            - Current Annual Loss: N/A
            - 50% Threshold based on hatchery WR JPE: N/A
                - Risk of exceeding threshold: N/A
            - 75% Threshold based on hatchery WR JPE: N/A
                - Risk of exceeding threshold: N/A
            - 100% Threshold based on hatchery WR JPE: N/A
                - Risk of exceeding threshold: N/A

Section 2-E: Daily Loss Threshold Risk

- Daily loss threshold risk and Alternative Actions
    - Loss at the SWP and CVP facilities compared to estimated remaining population in Delta and upstream of the Delta:
        - Daily loss thresholds and subsequent loss and associated operations:
            - 2020 SWP ITP COA 8.6.2 Early Season Natural-Origin WR Discrete Daily Loss Threshold/2024 SWP ITP COA 8.17 Early Season Natural-Origin WR Discrete Daily Loss Threshold:
                - November Monthly Daily Loss Threshold: 6 per day older juvenile Chinook salmon
                    - Highest Daily Loss: 0
                    - Risk of exceeding threshold: Low

Section 3: Basis for Advice

The 2020 Incidental Take Permit for Long-Term Operation of the State Water Project in the Sacramento-San Joaquin Delta 2081-2019-066-00 (SWP ITP) states that advice to Water Operations Management Team (WOMT) shall be consistent with the Project Description, COA in the ITP, and the applicable ESA authorizations. This week's advice is based on the following COAs which are currently applicable:

List relevant COA number and title based on species/life stage, time of year, etc.:

8.1.4 Collaborative Approach to Real-time Risk Assessment. Beginning no later than October 1 through the end of OMR Management (see Condition of Approval 8.8) the Smelt and Salmon Monitoring Teams shall meet

weekly, or more often as required, to consider survey data, salvage data, and other pertinent biotic and abiotic factors and prepare risk assessments as described in Conditions of Approval 8.1.1, 8.1.2, 8.1.5.1 and 8.1.5.2.

The Smelt and Salmon Monitoring Teams shall prepare operations advice for the WOMT as required by Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.7, and 8.8, including advice on operations. The Smelt and Salmon Monitoring Teams shall each prepare risk assessments and operations advice. Within each team, staff jointly develop the risk assessment and supporting documentation to accompany operations advice (see Conditions of Approval 8.1.5.1 and 8.1.5.2). DWR and CDFW Smelt and Salmon Monitoring Team staff may conclude different operations advice is warranted, in which case the difference shall be noted and elevated as described in this Condition of Approval.

The Smelt and Salmon Monitoring Teams shall communicate their advice to WOMT. The WOMT shall then confer and attempt to reach a resolution and agreed-upon Project operations. If a resolution is reached, Permittee shall operate consistent with the decision regarding Project operations from WOMT. If the WOMT does not reach a resolution, the CDFW Director may require Permittee to implement an operational recommendation provided by CDFW. CDFW will provide its operational decision to Permittee in writing. Permittee shall implement the operational decision required by CDFW. Permittee shall ensure that its proportional share (see Condition of Approval 8.10) of the OMR flow requirement as a part of the operational decision is satisfied.

8.1.5 Real-time Risk Assessments. The Smelt and Salmon Monitoring Teams (Conditions of Approval 8.1.1 and 8.1.2) shall prepare weekly risk assessments, or more often as required, and operations advice (as required by Conditions of Approval 8.3.1, 8.3.3, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.6.3, 8.6.4, and 8.7) during their discussions and analyses. The Smelt and Salmon Monitoring Teams shall provide the risk assessments and pertinent supporting information to the WOMT (Condition of Approval 8.1.3) within one business day of each meeting.

8.6.1 Winter-run Single-year Loss Threshold. In each year, Permittee shall, in coordination with Reclamation, operate the Project to avoid exceeding the following single-year loss thresholds:

- *Natural WR (loss = 1.17% of natural WR JPE)*
- *Hatchery WR (loss = 0.12% of hatchery WR JPE)*

The loss threshold and loss tracking for hatchery WR does not include releases into Battle Creek.

Loss of WR at the CVP and SWP salvage facilities shall be calculated based on LAD criteria for run assignment.

Annual loss of natural and hatchery WR at the CVP and SWP salvage facilities shall be counted cumulatively beginning November 1 each calendar year through June 30 the following calendar year.

WR shall be identified based on the Delta Model LAD criteria. Loss shall be calculated for the South Delta Export Facilities using the 2018 CDFW loss equation (Attachment 6).

During the water year, if cumulative loss of natural or hatchery WR exceeds 50% of the annual loss threshold, Permittee shall restrict south Delta exports to maintain a 14-day average OMR index no more negative than -3,500 cfs through the end of OMR Management (see Condition of Approval 8.8). After 14 days of operations to maintain an OMR index no more negative than -3,500 cfs, Permittee may convene the Salmon Monitoring Team to conduct a risk assessment (Condition of Approval 8.1.5.1) and determine whether the risk of entrainment and loss of natural and hatchery WR is no longer present. Risks shall be measured against the potential to exceed the next single-year loss threshold. The results of this risk assessment and associated OMR

advice shall be provided to WOMT according to Condition of Approval 8.1.3 and the decision-making process shall follow the process described in Condition of Approval 8.1.4.

The -3,500 cfs OMR flow operational criteria, adjusted and informed by this risk assessment, shall remain in effect until the end of OMR Management (Condition of Approval 8.8).

During the water year, if cumulative loss of natural or hatchery WR at the CVP and SWP salvage facilities exceeds 75% of the single-year loss threshold, Permittee shall restrict OMR to a 14-day moving average OMR flow index that is no more negative than -2,500 cfs through the end of OMR Management (Condition of Approval 8.7). After 14 days Permittee may convene the Salmon Monitoring Team to conduct a risk assessment (Condition of Approval 8.1.5.1) and determine whether the risk of entrainment and take of natural and hatchery WR is no longer present. The results of this risk assessment and associated OMR advice shall be provided to WOMT according to Condition of Approval 8.1.3 and the decision-making process shall follow the process described in Condition of Approval 8.1.4.

The -2,500 cfs OMR flow operational criteria adjusted and informed by this risk assessment shall remain in effect until the end of OMR Management (Condition of Approval 8.8).

During the water year, if natural or hatchery WR cumulative loss at the CVP and SWP salvage facilities exceeds the single-year loss threshold, Permittee shall immediately convene the Salmon Monitoring Team to review recent fish distribution information and operations and provide advice regarding future planned Project operations to minimize subsequent loss during that year. The Salmon Monitoring Team shall report the results of this review and advice to the WOMT (see Condition of Approval 8.1.3). Operational decisions shall be made following the process described in Condition of Approval 8.1.4 (Collaborative Real Time Risk Assessment).

If the single-year loss threshold is exceeded, Permittee and Reclamation shall also convene an independent panel to review Project operations and the single-year loss threshold prior to November 1, as described in Condition of Approval 8.2. The purpose of the independent panel is to review the actions and decisions contributing to the loss trajectory that lead to an exceedance of the single-year loss threshold, and make recommendations on modifications to Project implementation, or additional actions to be conducted to stay within the single-year loss threshold in subsequent years.

Permittee shall, in coordination with Reclamation, continue monitoring and reporting salvage at the CVP and SWP salvage facilities. Permittee and Reclamation shall continue the release and monitoring of yearling Coleman National Fish Hatchery (NFH) late fall-run and yearling SR surrogates. The Salmon Monitoring Team shall use reported real-time salvage counts along with qualitative and quantitative tools to inform risk assessments (see Condition of Approval 8.1.5.1).8.3.2 Salmonid Presence. After January 1 each year, if Conditions of Approval 8.3.1 or 8.3.3 have not already been triggered, the OMR Management season shall begin when the Salmon Monitoring Team first estimates that 5% of the CHNWR or CHNSR population is in the Delta whichever is sooner. Upon initiation of the OMR Management season, Permittee shall reduce exports to achieve, and shall maintain a 14-day average OMR index no more negative than -5,000 cfs, until the OMR Management season ends (see Condition of Approval 8.8). In the event that a salmon daily or single-year loss threshold is exceeded (Conditions of Approval 8.6.1, 8.6.2, 8.6.3, or 8.6.4) prior to the start of OMR Management season the requirements in those Conditions shall control operations.

8.6.2 Early-season Natural Winter-run Chinook Salmon Discrete Daily Loss Threshold. To minimize entrainment, salvage, and take of early-migrating natural CHNWR Permittee shall restrict south Delta exports for five consecutive days to achieve a five-day average OMR index no more negative than -5,000 cfs when daily

loss of older juveniles (natural older juvenile Chinook salmon) and yearling CHNSR used as a surrogate for CHNWR) at the SWP and CVP salvage facilities exceeds the following thresholds:

- *From November 1 – November 30: 6 older juvenile Chinook salmon*
- *From December 1 – December 31: 26 older juvenile Chinook salmon*

All natural older juvenile Chinook salmon juveniles shall be identified based on the Delta Model length-at-date criteria. Loss shall be calculated for the South Delta Export Facilities using the equation provided in CDFW 2018 (Attachment 6). This Condition of Approval may be modified through the process described in Condition of Approval 8.6.6 and an amendment to this ITP.

Section 4: Hydrology and Operations

Assessment of hydrologic, operational, and meteorological information. 8.1.5.1 A

Section 4-A: Water Operations, Water Operations Outlook, and Projected Conditions C 8.1.5.1 A. i, iii, iii:

- Antecedent Actions: (e.g., Actions such as integrated early winter pulse protection, etc.)
  - N/A
- Water Temperature (ITP COA 8.8 threshold: daily average water temperature exceeds 22.2° C for 7 non-consecutive days in June):
  - Mossdale (MSD): Mossdale - CDEC
    - Number of days threshold exceeded: Not applicable until June.
    - Days exceeded: N/A
  - Prisoners Point (PPT): Prisoners Point - CDEC
    - Number of days threshold exceeded: Not applicable until June.
    - Days exceeded: N/A
- Tidal Cycle: *(Spring/Neap. Note if tidal cycle has potential to affect south Delta hydrology or X2)*
  - Exiting a spring cycle and entering into a neap cycle with a full moon on 11/15/24.
- Turbidity: Not discussed
- Salinity (X2): >81 km on 11/5/24
- Outages:
  - SWP: None projected
  - CVP: None projected
- Exports: 11/5/24 – 11/11/24
  - SWP: 1,000 to 3,500 cfs
  - CVP: 3,500 cfs
- Meteorological Forecast:
  - *"Critical fire weather conditions from gusty north winds and dry conditions expected through Wednesday for portions of the Central Valley and Delta. A brief period of calmer weather arrives through the end of the week before the weather pattern becomes more unsettled this weekend into early next week."*
  - *NOAA - National Weather Service Forecast*
- Weather/Storm Event Projection:
  - A small rain event is anticipated over this upcoming weekend.
- DCC Gates position:
  - DCC gates opened on 10/11 and will remain open for the remainder of the week.
- Sacramento River flow at Freeport: 9,127 cfs
  - Sacramento River Flows - CDEC
- San Joaquin River flow at Vernalis: 2,371 cfs.
  - San Joaquin River Flows - CDEC
  - San Joaquin River Guidance Plots - CDEC
- QWEST: +2,000 cfs
  - QWEST is likely to become less positive this week.
- Future export modifications: *Describe anticipated or potential changes to exports*
  - Not applicable at this time.

Table 2: Comparison of USGS Tidally Filtered OMR and OMR Index data.

Date	Averaging Period	USGS gauges (cfs)	OMR Index (cfs)
11/2/24	Daily	-5,400	-4,200
11/2/24	5-day	-6,600	-5,300
11/2/24	14-day	-6,500	-5,400
11/4/24	Daily	Not Applicable	-3,200
11/4/24	5-day	Not Applicable	-4,500
11/4/24	14-day	Not Applicable	-5,100

Section 5: Distribution and Biology

8.1.5.1.B Assessment of biological information for WR and SR.

Section 5-A: WR Population Status 8.1.5.1.B i

- Adult escapement estimate:
  - Estimated spawning escapement for WR adults contributing to brood year (BY) 2024 is estimated at 1,296.
- Redd distribution and fry emergence timing:
  - Juvenile WR are still rearing in the upper Sacramento River and real-time monitoring stations indicate that they have begun their downstream migration to the Delta.
  - Red Bluff Diversion Dam is no longer sending biweekly data. Data is uploaded to SacPAS.
  - Red Bluff Juvenile Estimates Daily Table Query with Biweekly Totals: SacPAS Central Valley Prediction and Assessment of Salmon and other fishes
- Juvenile Production Estimate (JPE):
  - N/A
- Livingston Stone National Fish Hatchery releases:
  - Releases of juvenile WR have not occurred.
  - See Appendix 4
- Distribution of natural WR:
  - See Table 1
- Distribution of Livingston Stone National Fish Hatchery Sacramento River WR and Battle Creek WR:
  - No releases have occurred at this time.
  - CalFishTrack - Central Valley Enhanced Acoustic Tagging Project

Section 5-B: SR Population Status 8.1.5.1.B ii

- Adult escapement estimate:
  - SR carcass counts not available.
  - Adult SR will likely complete their spawning by mid-November.
- Redd distribution and fry emergence timing:
  - SR eggs are incubating in the gravel and beginning to emerge in the upper Sacramento River. There have been no detections in the Delta in the real-time monitoring stations.
- Hatchery release (in-river and downstream):
  - See Appendix 4
- Distribution of natural SR:
  - See Table 1.
- Distribution of Feather River Fish Hatchery SR:
  - Not applicable at this time.

Section 5-C: Additional Data Sources to Assess Sensitivity to Entrainment into the Central and South Delta 8.1.5.1.C & D

- Acoustic telemetry: *Summary of acoustic telemetry tracking*
  - Not applicable at this time.
  - CalFishTrack - Central Valley Enhanced Acoustic Tagging Project
- Trawls: See Appendix 1
  - Sacramento Trawl: No salmonids were caught this week.
  - Mossdale Trawl: No salmonids were caught this week.
  - Chipps Island Trawl: No salmonids were caught this week.
- Rotary Screw Traps:
  - Knights Landing, Tisdale and Lower Sacramento Rotary Screw Trap Data:

    - No salmonids were caught this week.
        - Middle Sacramento River Salmon and Steelhead Monitoring
    - Yuba River Rotary Screw Trap Data: Trapping was not conducted this week.
    - Redd Bluff Diversion Dam Rotary Screw Trap Data: Total passage estimates 355,150 juvenile WR have passed RBDD. Last updated on 10/20/24.
        - Red Bluff Juvenile Estimates Daily Table Query with Biweekly Totals: SacPAS Central Valley Prediction and Assessment of Salmon and other fishes
    - Butte Creek Rotary Screw Trap Data: Data was not received prior to SaMT meeting.
        - Butte Creek Monitoring Programs
- Seines:
    - Sacramento River Beach Seines: No salmonids have been caught this week.
- Carcass Survey Data:
    - Lower American River Carcass Survey Data:
        - Middle Sacramento River Salmon and Steelhead Monitoring
        - The American River Power Bypass proposal began on 10/18/24 starting at 100 cfs power bypass and increasing each day after until fulling ramping up to 250 cfs with the intent to cool temperatures in the river; however, the fisheries agencies have elevated the power bypass proposal to WOMT with the intent to increase the power bypass from 250 cfs to 500 cfs. WOMT discussed the power bypass on 10/30/24 and Reclamation stated that if conditions worsen they will consider continuing the bypass.
        - Fall-run (FR) Carcass Surveys began on 10/14/24 on the Lower American River. For the week of 10/28/24 – 10/31/24, there were 2 female prespawn mortalities, 0 partial spawned females, and 3 spawned females.
- Additional hatchery release notifications: *List all relevant hatchery release notifications.*
    - No hatchery releases have occurred (See Appendix 4)
- New monitoring (as required by Condition of Approval 7.5.1, 7.5.2, and 7.5.3): *Upstream monitoring results during transfer window, additional rotary screw trap monitoring updates, additional acoustic tag study results, genetic identification results, trap capture efficiency trial results, and pathology results if available and relevant.*
    - Lower Feather RST is anticipated to begin trapping on 11/24/24.
- Anticipated emigration to continue into the Delta:
    - WR are still rearing downstream of their spawning grounds. Hydrological and meteorological environmental cues may trigger movement into the Delta this week, especially with multiple observations of WR in real-time monitoring sites the previous week. Adult SR are nearing the end of spawning and eggs are still in gravel. No anticipation of SR emigrating into the Delta this week.
    - SacPAS - Migration Timing and Conditions by Cohort
    - SacPAS - Salvage Timing
- Routing and Survival Analysis:
    - Delta STARS Model: See Table 6 in Appendix 1
        - STARS Model
- Tillotson entrainment model or other entrainment models as they become available:
    - The entrainment tool estimates a median of 0 WR and a maximum loss of 0 WR this week (SacPas last updated on 11/5/24).
    - SacPAS - Loss and Salvage Predictor
- Salvage trends in relation to OMRI: *Provide overview of salvage data and insert salvage table as attachment at end of document*: Not applicable due to no salvage of salmonids for WY 2025.

- USFWS - Fish Salvage Monitoring

Appendix 1: SaMT Monitoring and Modeling Data

Table 3: Fish monitoring data for the 11/5/24 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	GCID RST	Butte Creek RST	Tisdale RST	Knights Landing RST	Lower Sac RST	Beach Seines	Sacramento Trawl
Sample Date	N/A	N/A	10/28/24-11/4/24	10/28/24-11/3/24	10/30/24-11/2/24	10/27/24-11/2/24	10/27/24-11/2/24
Chinook Adults	N/A	N/A	0	0	0	0	0
FR Chinook	N/A	N/A	0	0	0	0	0
SR Chinook	N/A	N/A	0	0	0	0	0
WR Chinook	N/A	N/A	0	0	0	0	0
LFR Chinook	N/A	N/A	0	0	0	0	0
Chinook (ad-clip)	N/A	N/A	0	0	0	0	0
Steelhead (wild)	N/A	N/A	0	0	0	0	0
Steelhead (ad-clip)	N/A	N/A	0	0	0	0	0
Green Sturgeon	N/A	N/A	0	0	0	0	0
Flows (avg. cfs)	N/A	N/A	5,110	4,539	7,269	N/A	N/A
W. Temp. (avg. °F/C)	N/A	N/A	12.97 °C	13.3 °C	13.4 °C	N/A	N/A
Turbidity (avg. NTU)	N/A	N/A	5.6	5.9	3.5	N/A	N/A

Table 3 Continued: Fish monitoring data for the 11/5/24 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	Chipps Is. Midwater Trawl	Mossdale Kodiak Trawl	Lower Feather RST	Feather at Herringer RST	Feather at Eye-Side RST
Sample Date	10/27/24-11/2/24	10/27/24-11/2/24	N/A	N/A	N/A
Chinook Adults	0	0	N/A	N/A	N/A
FR Chinook	0	0	N/A	N/A	N/A
SR Chinook	0	0	N/A	N/A	N/A
WR Chinook	0	0	N/A	N/A	N/A
LFR Chinook	0	0	N/A	N/A	N/A
Chinook (ad-clip)	0	0	N/A	N/A	N/A
Steelhead (wild)	0	0	N/A	N/A	N/A
Steelhead (ad-clip)	0	0	N/A	N/A	N/A
Green Sturgeon	0	0	N/A	N/A	N/A
Flows (avg. cfs)	N/A	N/A	N/A	N/A	N/A
W. Temp. (avg. °F/C)	N/A	N/A	N/A	N/A	N/A
Turbidity (avg. NTU)	N/A	N/A	N/A	N/A	N/A

Table 4: Delta sturgeon tagging and monitoring.

Date	Comments
11/5/24	• 1 juvenile green sturgeon located/ tagged near Grizzly Bay • 2 juvenile white sturgeon located/tagged near Grizzly Bay

Table 5: CDFW adult monitoring surveys.

Location	American River Carcass Survey	Stanislaus River Carcass Survey
Sample Dates	10/28/24 – 10/31/24	10/28/24 – 10/31/24
Live Fish	Not Available	109

Location	American River Carcass Survey	Stanislaus River Carcass Survey
Redds	Not Available	40
Carcasses	17	0
Ad-clipped	4	0
Spawn Condition	Prespawn Mortality: 29%	Not Available
Flows (avg. cfs)	2,000 cfs	683
Water Temp (avg. °F)	60.3 °F	Not Available

Table 6: STARS Modeling

Date: (11/5/24)	DCC	Georgiana Slough	Sacramento River	Sutter and Steamboat Slough	Yolo Bypass
Late Fall-Run Proportion of Entrainment	0.21	0.19	0.35	0.25	N/A
Late Fall-Run Survival	0.11	0.15	0.35	0.32	N/A
Winter-Run Proportion of Entrainment	N/A	0.13	0.58	0.29	N/A
Winter-Run Survival	N/A	0.06	0.22	0.55	N/A

Appendix 2: Relevant Actions

Table 12. Relevant WY 2024 Criteria and Status for Listed Chinook Salmon under the SWP Long-Term Incidental Take Permit.

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
Onset of OMR Mgmt. Salmonid Presence (8.3.2)	Jan. 1 - Jun. 30 *(when ≥ 5% of winter-run or spring- run are in the Delta)*	Not In effect	5% of the winter-run or spring-run population are present in the Delta	Winter-run = 1-2% estimated in the Delta Spring-run = 0% estimated in the Delta	N/A	**11/5/24**	N/A
Winter-run yearly loss (8.6.1)	Nov. 1 - Jun. 30	In effect	Natural CHNWR (loss = 1.17% of JPE) 50% of 1.17% of JPE = N/A Hatchery CHNWR (loss = 0.12% of JPE) 50% of 0.12% of JPE = N/A	Current yearly WR loss (natural LAD) = N/A Current yearly WR loss (hatchery) = N/A	N/A	**11/5/24**	N/A

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
Winter-run discrete daily loss (8.6.2)	Nov. 1 - Dec. 31	In effect	11/1-11/30: loss of 6/day unclipped older juv. Chinook salmon 12/1-12/31: loss of 26/day unclipped older juv. Chinook salmon	Max single daily loss from previous week = 0.00 fish (No older juveniles observed yet)	No change expected	**11/5/24**	This COA has been updated in the 2024 SWP ITP. The thresholds are the same but the name has been updated COA 8.17. An updated list of COA's will be listed in next weeks assessment.
Mid- and Late-season Natural WR Daily Loss Threshold defined as natural origin juvenile Chinook salmon (8.6.3)	Jan 1 – May 31	Not in effect	January 1 – 31: 0.00635% of the CHNWR JPE February 1 – 28: 0.00991% of the CHNWR JPE March 1 – 31: 0.0146% of the CHNWR JPE April 1 – 30: 0.00507% of the CHNWR JPE May 1 – 31: 0.0077% of the CHNWR JPE	N/A	N/A	**11/5/24**	N/A

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
Spring-run surrogate protection (8.6.4)	Feb. 1 - Jun. 30	Not in effect	Coleman National Fish Hatchery (CNFH) Group 1: 0.25% of total in-river CWT fall-run release Feather River Fish Hatchery (FRFH) Group 1: 0.25% of total in-river CWT spring-run release Nimbus Fish Hatchery (NIM) Group 1: 0.25% of total in-river CWT fall-run release	N/A	N/A	**11/5/24**	N/A

Action	Timeframe	Current Action Status	Threshold(s)	Current Relevant Data	Weekly Trend	Last Updated	Comments
End of OMR Management (8.8)	Jan – Jun. 30	Not in effect	More than 95% of WR and SR have migrated past Chipps Island as determined by SaMT, **AND** Daily average water temperature at Mossdale exceeds 22.2°C (71.96°F) for 7 non-consecutive days in June, **AND** Daily average water temperature at Prisoner's Point exceeds 22.2°C (71.96°F) for 7 non-consecutive days in June	N/A	N/A	**11/5/24**	N/A

Appendix 4: Hatchery Releases

Table 13. Hatchery salmon release data for BY 2024 and WY 2025.

Release Date	Hatchery	Race	CWT	Marked Release Number	Total Release	Percent Marked	Release Location	Mark	Agency	Release Type
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 14. Hatchery steelhead release data for BY 2024 and WY 2025.

Release Date	Hatchery	CWT	Marked Release Number	Total Release	Percent Marked	Release Location	Mark	Agency	Release Type
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 15. COA 8.6.4 Young-of-Year 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	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feather River Fish Hatchery	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nimbus Fish Hatchery	N/A	N/A	N/A	N/A	N/A	N/A	N/A