BUREAU OF RECLAMATION

Assessment for CVP and SWP Delta Operations on ESA and CESA-listed Species

June 23, 2025

CVP and SWP export modifications more positive than -5,000 and changes in proposed operations of the DCC gates are unlikely to reduce loss or change the population level effect of exports on Central Valley steelhead.

Executive Summary

Operational Conditions

Section 3.13.3.4.1 of the Proposed Action and Section 8.1.4. of the Incidental Take Permit provide that during Old and Middle River (OMR) Management, the California Department of Water Resources, in coordination with Reclamation, shall provide State Water Project (SWP) and Central Valley Project (CVP) operational outlooks and assessments on a weekly basis to Water Operations Management Team (WOMT).

- The steelhead annual and weekly distributed loss thresholds have not been exceeded.

Section 3.7.4.7 of the Proposed Action provide that Reclamation and DWR will conclude the management of OMR for salmonids on June 30 or when mean water temperatures at Mossdale and Prisoner's Point have exceeded 71.96°F (22.2°C) for 7 non-consecutive days.

- As of June 22, daily mean water temperature at Mossdale has exceeded temperature criteria for two days and water temperature at Prisoner's Point has exceeded temperature criteria for 13 days (Figure 1).

Central Valley Steelhead

Loss of natural-origin steelhead has not occurred in the past week. Based on historical data, loss of steelhead is possible but unlikely in the next week and will not exceed the annual or weekly distributed loss threshold. The steelhead incidental take limit will not be exceeded by any loss that may occur.

Operational and Regulatory Conditions

See current Weekly Fish and Water Operation Outlook document.

Evaluation

No loss of natural-origin steelhead has occurred since May 26 indicating that all significant loss of steelhead through the export facilities is complete for the remainder of the season as historically on average 99% of steelhead have been. Historic data also indicates that loss is unlikely to occur for the remainder of the season as historically on average 100% of steelhead have been lost to facilities and 95% have been observed at Chipps Island Trawls exiting the delta (Table 1). However, outliers may be observed at much reduced rates with no risk of exceeding any established thresholds (Table 2, Figure 2). Due to the absence of loss, predictive modeling with the Tillotson et al. (2022) machine learning model will not be viable or informative for the remainder of the season as it would predict median loss of 0 with high amounts of uncertainty at every OMRI scenario.

Hydrodynamics in the Delta suggest the export footprint does not extend into the Interior Delta and remains south of Frank's Tract. These conditions suggest a small risk on entrainment for migrating juvenile steelhead from the Sacramento River and San Joaquin rivers.

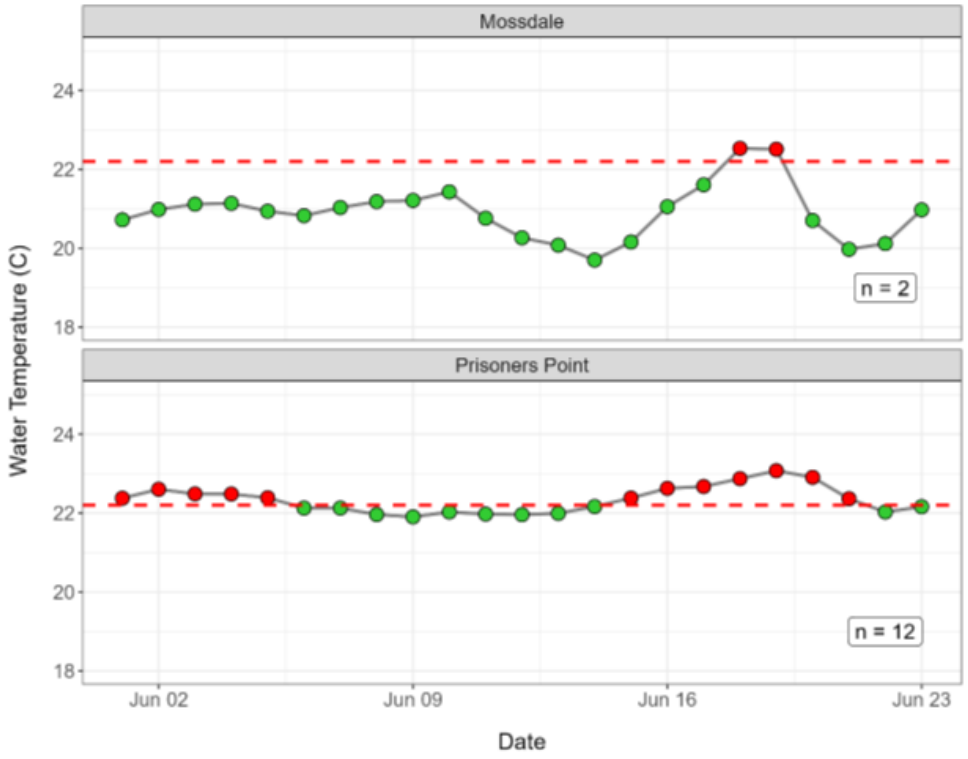

Figure 1. Mean Daily Water Temperature Measurements (in degrees Celsius) at Mossdale and Prisoners Point

Figure 1 is two line graphs showing water temperature (18-24 degrees Celsius) over dates June 02 to June 23. A dashed horizontal red line indicates a water temperature threshold of 22.2 degrees Celsius. Green points are below the threshold and red points are above the threshold.

Table 1. Historic migration and salvage patterns for salmon and steelhead. Average percentage and 95% confidence intervals in parentheses. Last updated 6/16/2025.

Species	Red Bluff RST	Knights Landing RST	Sac Trawl Catch	Chipps Island Trawl	Salvage
Steelhead, Unclipped (January-December)	43% (23%,62%) BY: 2015 - 2024	82% (65%,99%) BY: 2015 - 2024	98% (93%,103%) BY: 2015 - 2024	95% (91%,100%) BY: 2015 - 2024	N/A
Steelhead, Unclipped (Water Year)	N/A	N/A	N/A	N/A	100% (100%,100%) WY: 2015 - 2024

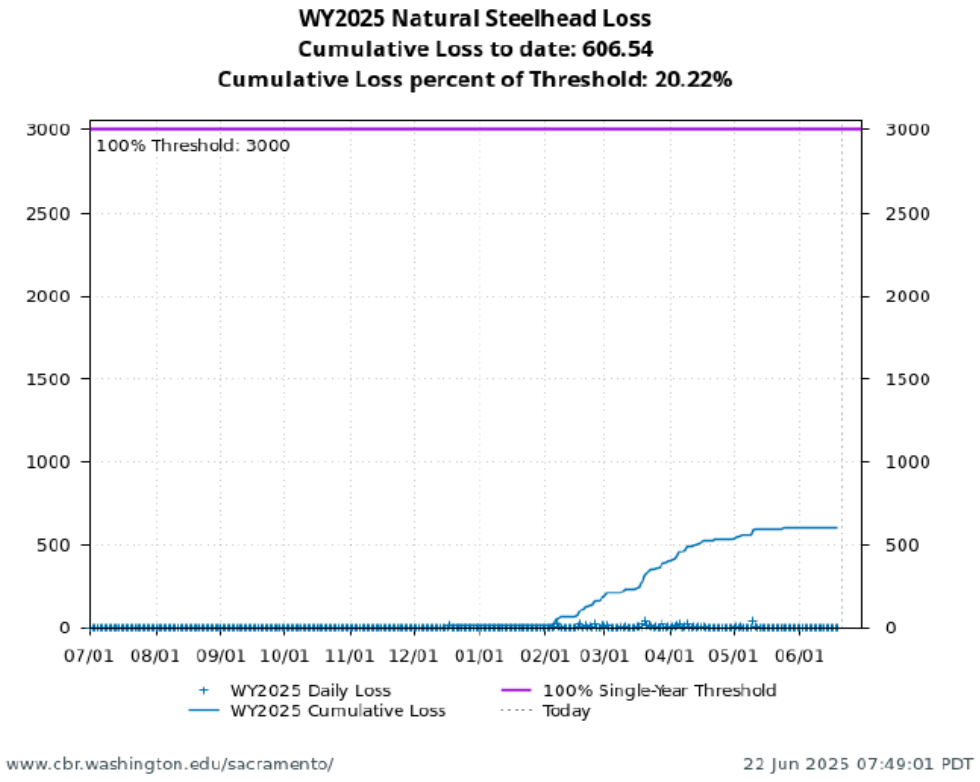

Figure 2. WY2025 Natural Steelhead Cumulative Loss as of June 22, 2025

Figure 2 is a line graph showing Cumulative Loss (0-3000) over Dates (07/01-06/01). Cumulative Loss to date is 606.54, and Cumulative Loss percent of Threshold is 20.22%.

Table 2. Summary of daily loss of steelhead to inform weekly distributed loss thresholds. Steelhead weekly distributed loss thresholds are triggered when 7-day rolling sum of estimated loss 120 fish.

Date	Steelhead Daily Salvage	Steelhead 7-day rolling sum loss	Steelhead Daily Trigger
Jun 16	0	0	No
Jun 17	0	0	No
Jun 18	0	0	No
Jun 19	0	0	No
Jun 20	0	0	No
Jun 21	0	0	No
Jun 22	0	0	No

References

U.S. Bureau of Reclamation. 2024. Attachment 1.5 Survival, Travel Time, and Routing Simulation Model. Environmental Impact Statement for the Long-term Operation of Central Valley Project and State Water Project. 33 p.

Attachment A: Relevant Proposed Action and Incidental Take Permit Sections

3.7.4.5.5 Steelhead Annual Threshold

In each year, Reclamation and DWR will manage exports to reduce loss at the CVP and SWP salvage facilities. To support survival and decrease entrainment loss, Reclamation and DWR will manage OMR to avoid exceeding the following annual loss threshold at CVP and SWP salvage facilities through the weekly distributed loss threshold described below.

- Unclipped juvenile California Central Valley steelhead loss = 3,000

Annual loss of unclipped juvenile CCV steelhead at the CVP and SWP salvage facilities will be counted cumulatively for each Brood Year, starting July 1st of the calendar year through June 30th of the following calendar year. Loss will be calculated for the South Delta Export Facilities using CDFW's steelhead loss multiplier until a loss method for steelhead (see Section 3.11.1 is approved by CDFW and NMFS. This loss threshold will be used until a new loss threshold is developed through the steelhead JPE Special Study (See Section 3.11.1).

3.7.4.5.6 Steelhead Weekly Distributed Loss Threshold

To minimize the potential for a disproportionate impact of entrainment of steelhead present in the Delta on any single week, Reclamation and DWR will manage OMR based on a weekly distributed loss threshold. The weekly loss threshold is the annual loss threshold distributed over the period of observed steelhead salvage between January 1 and June 30 using the 7-day weekly periods identified in the weekly distributed loss table for winter-run Chinook salmon, extended through June 30. DWR and Reclamation will reduce exports to achieve a 7-day average OMR value no more negative than -3,500 cfs for seven consecutive days when the 7-day rolling sum of steelhead salvage, calculated daily, exceeds the weekly loss threshold of 120 fish.