## Assessment for Delta Operations on Salmonids

Final: *Tuesday, January 13, 2026 at 4 PM*

For more detailed data on salmonid conditions in the Delta see corresponding webpage on SacPAS.

### Executive Summary

- Entrainment management season is **active**.
- Season Loss: **0** (0.00% of threshold) DNA Winter-run, **0** (0.00% of threshold) Hatchery Winter-run, **43.91** (0.83% of threshold) Natural Steelhead, **122.07** (3.42% of threshold) Hatchery Steelhead, and **872.69** (10.84% of threshold) Spring-run Surrogates.
- Winter-run presence in the Delta is **high** (historical peak).
- Steelhead presence in the Delta is **increasing**.

### Natural Winter-run Chinook

#### Juvenile Production Estimate

The Juvenile Production Estimate for winter-run is 1,057,452 for the current water year.

### Current Status

*Entry Timing* - Historically, as of Jan 12, 75% of length-at-date (LAD) winter-run have entered the delta based on Knights Landing RST catch, 2% have exited the delta based on Chipps Island Trawl Catch, and 0% of DNA confirmed winter-run have been salvaged.

Table 1

| Species | Red Bluff Diversion Dam | Tisdale RST | Knights Landing RST | Sac Trawl (Sherwood) | Chipps Island Trawl | Salvage |
|---|---|---|---|---|---|---|
| Chinook, LAD Winter-run, Unclipped | 98% | 78% | 75% | 38% | 2% | 15% |
| Chinook, DNA Winter-run, Unclipped (Water Year) | NA | NA | NA | NA | NA | 0% |

*Red Bluff Diversion Dam Passage Estimate* - As of Dec 16 estimated passage to date of LAD winter run at Red Bluff Diversion is approximately 3.61 million fish. * *Note that outmigration timing overlaps with spring run migrating fish, and true winter-run abundance likely differs from these estimates.*

*Delta Monitoring* - Total catch of LAD winter run at RSTs at Delta Entry (Tisdale, Knights Landing, Lower Sacramento River) between Dec 30 and Jan 12 is 190 individuals. Total catch at Sacramento Trawl and Beach Seines in the delta between Dec 30 and Jan 12 is 15 individuals. Total catch at Delta Exit at Chipps Island between Dec 30 and Jan 08 is 1 individuals.

## Annual Loss

The annual Loss threshold for natural winter-run is 1% of the jpe or 10,574.52 fish. As of January 12, cumulative loss of genetically confirmed winter-run is 0 or 0.00% of the annual loss threshold. Cumulative loss in the past 7 days has been 0.

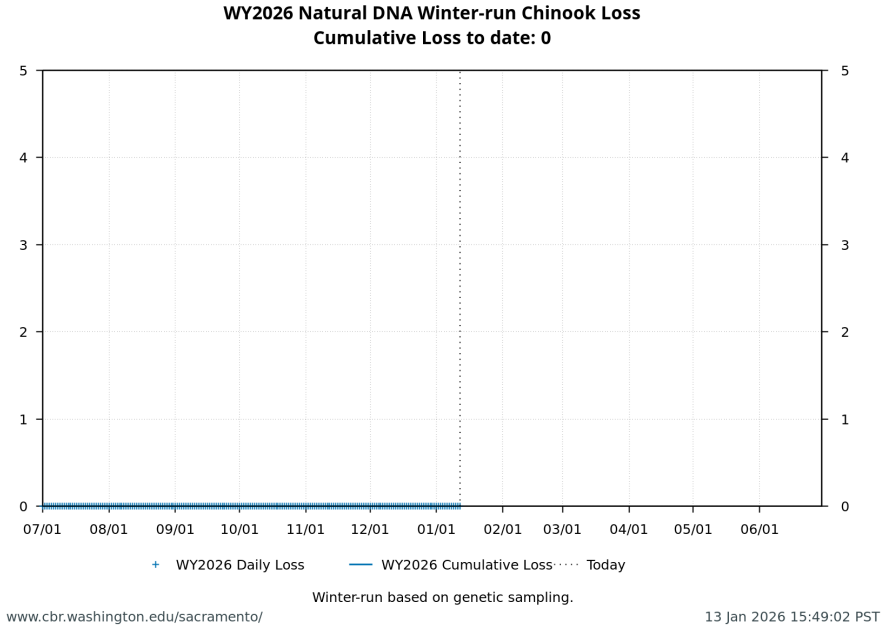


Figure 1: Cumulative loss of natural-origin winter-run for WY 2026. Cumulative loss is based on genetically confirmed winter-run captured in salvage or length-at-date winter-run in which genetic confirmation was unable to be obtained

## STARS

The Delta STARS Model is an individual-based simulation model that predicts survival, travel time, and routing of juvenile salmon migrating through the Sacramento–San Joaquin River

Delta. This model gives insight into survival and routing patterns of winter-run based on most current conditions.

As of January 12, overall through delta STARS estimated survival probability (with 80% credible intervals) is 0.73 (0.66-0.8) placing it in the 94th percentile of historical STARS survival estimates for the month of January (WYs 2018-2025). STARS estimated routing and survival probabilities (with 80% credible intervals) into the interior delta are 0.09 (0.08-0.11) and 0.61 (0.45-0.76), respectively, corresponding to the 6th and 90th percentiles of historical January estimates (WYs 2018-2025).

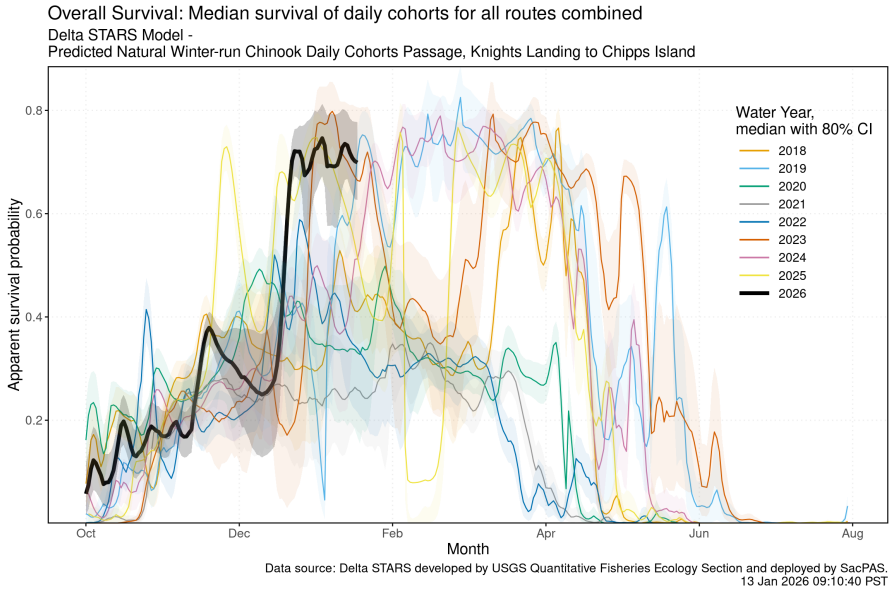


Figure 2: Estimated overall winter-run survival from Knights Landing to Chipps Island. Black line indicates the current water-year, and other colored lines correspond to past water years.

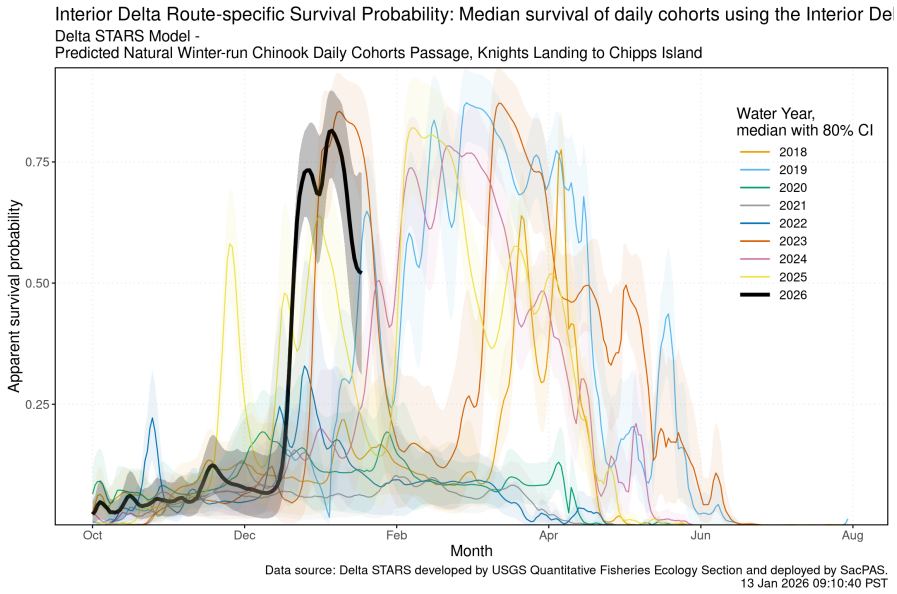


Figure 3: Estimated survival from Knights Landing to Chipps Island of simulate winter-run cohorts that route through the interior delta. Black line indicates the current water-year, and other colored lines correspond to past water years.

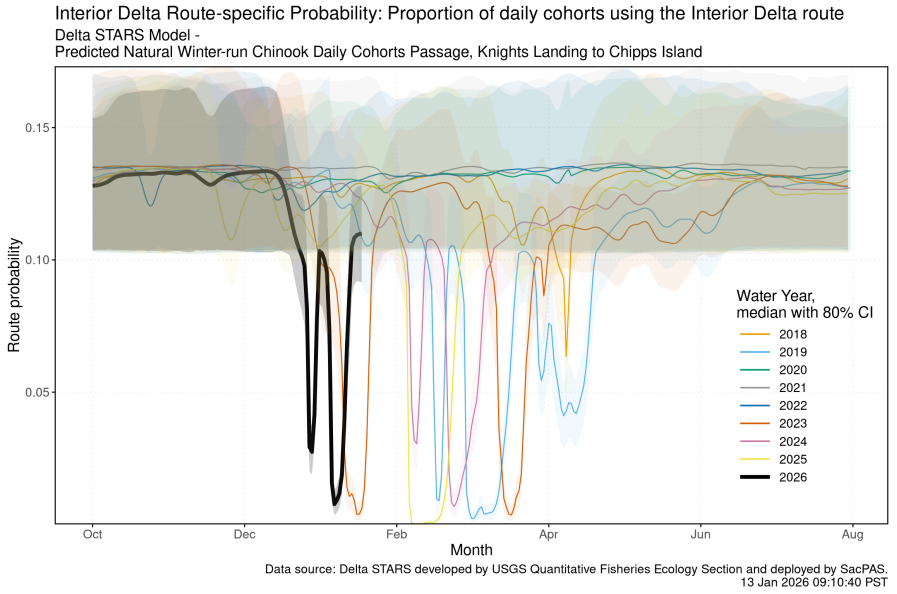


Figure 4: Estimated probability of winter-run routing into the interior delta. Black line indicates the current water-year, and other colored lines correspond to past water years.

### Hatchery Winter-run Chinook

### Hatchery Releases

To date, no winter-run Livingstone hatchery releases have occurred in WY 2026

### Juvenile Production Estimate

The Juvenile Production Estimate for hatchery winter-run is 130,096 for Livingston Stone releases.

### Annual Loss

To date, no loss has occurred as no hatchery winter-run have been released.

### Natural-origin Central Valley Steelhead

### Current Status

*Delta Entry Timing* - Historically, as of Jan 12, 16% of CCV steelhead have entered the delta based on Knights Landing RST catch, 1% have exited the delta based on Chipps Island Trawl Catch, and 6% have been salvaged.

Table 2: Average Percent of annual emigrating population for unclipped CCV steelhead captured at the following locations and salvaged at SWP and CVP Delta facilities for the past 10 years.

| Species | Red Bluff Diversion Dam | Tisdale RST | Knights Landing RST | Sac Trawl (Sherwood) | Chipps Island Trawl | Salvage |
|---|---|---|---|---|---|---|
| Steelhead, Unclipped | 1% | 15% | 16% | 0% | 1% | 6% |

*Delta Monitoring* - Total catch of LAD winter run at RSTs at Delta Entry (Tisdale, Knights Landing, Lower Sacramento River) between Dec 30 and Jan 12 is 0 individuals. Total catch at Sacramento Trawl and Beach Seines in the delta between Dec 30 and Jan 12 is 0 individuals. Total catch at Delta Exit at Chipps Island between Dec 30 and Jan 08 is 0 individuals.

### Annual Loss

As of January 12, cumulative loss of unclipped steelhead is 43.91 or 0.83% of the incidental take limit in the NMFS Biological Opinion. Cumulative loss in the past 7 days has been 97.59.

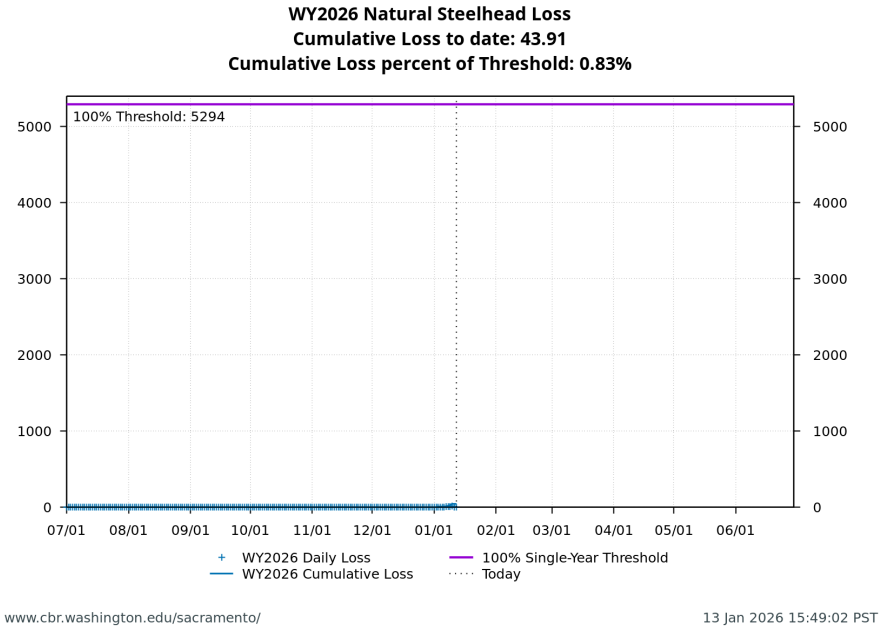


Figure 5: Cumulative loss of natural-origin steelhead for WY 2026.

### Hatchery-origin Central Valley Steelhead

### Surrogate Releases

There have been a total of 2 releases totaling 878,848 steelhead in Water Year 2026. JPE for the hatchery releases as of today is 356,526 based on estimated survivals using forecasted water year types (see details in table below). The annual loss threshold, equal to 1% of the JPE, is currently 3565, but is subject to change with additional steelhead releases.

Table 3: Summary of steelhead hatchery releases in Water Year 2026

| Hatchery | Date of Release | Mean Fork Length (mm) | Number Released | Estimated Survival | Juvenile Production Estimate |
|---|---|---|---|---|---|
| Nimbus | 2025-11-02 | 223 | 233,109 | 72% | 167,838 |
| Coleman | 2025-12-19 | 195 | 645,739 | 29% | 188,688 |

Total loss of hatchery-origin steelhead is 122.07 or 3.42% of the threshold. *Note that hatchery origin of salvaged fish can not be determined at this time and salvage is based on the assumption of similar routing and survival probabilities of individual hatchery releases.

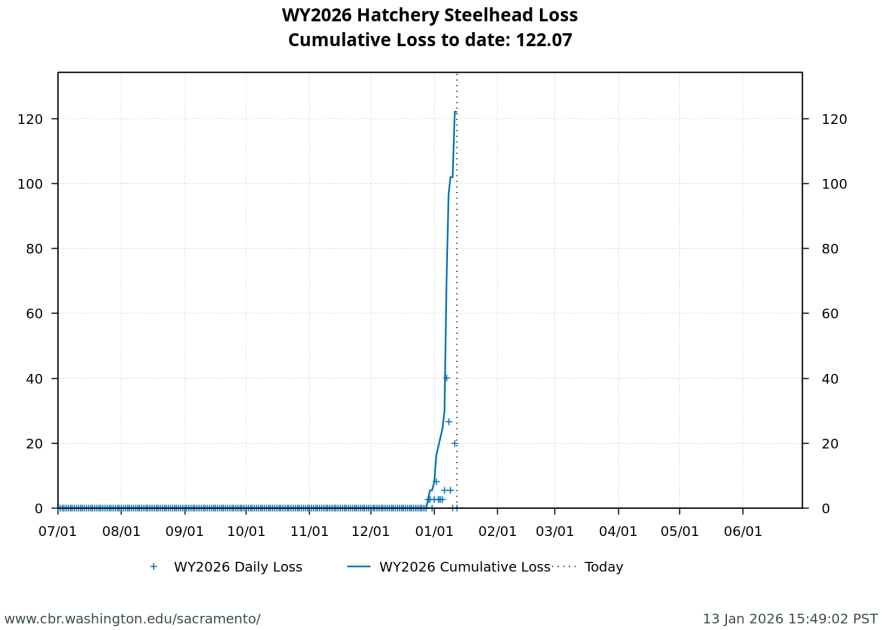


Figure 6: Cumulative loss of hatchery steelhead for WY 2026.

## Spring-run

## Current Status

*Delta Entry Timing*- Historically, as of Jan 12, 26% of LAD spring run have entered the delta based on Knights Landing RST catch, 0% have exited the delta based on Chipps Island Trawl Catch, and 0% have been salvaged.

Table 4: Average Percent of annual emigrating population for LAD Spring-run Chinook Salmon captured at the following locations and salvaged at SWP and CVP Delta facilities for the past 10 years.

| Species | Red Bluff Diversion Dam | Tisdale RST | Knights Landing RST | Sac Trawl (Sherwood) | Chipps Island Trawl | Salvage |
|---|---|---|---|---|---|---|
| Chinook, LAD Spring-run, Unclipped | 12% | 14% | 26% | 2% | 0% | 0% |

*Red Bluff Diversion Dam Passage Estimate* - As of Dec 16 estimated passage to date of LAD spring run at Red Bluff Diversion is approximately 0.01 million fish. * *Note that outmigration timing overlaps with winter run and fall run outmigration, and true spring run abundance likely differs from these estimates.*

*Delta Monitoring*- Total catch of LAD winter run at RSTs at Delta Entry (Tisdale, Knights Landing, Lower Sacramento River) between Dec 30 and Jan 12 is 172 individuals. Total catch at Sacramento Trawl and Beach Seines in the delta between Dec 30 and Jan 12 is 0 individuals. Total catch at Delta Exit at Chipps Island between Dec 30 and Jan 08 is 0 individuals.

### Spring-run Surrogate Releases

A total of 805,323 spring-run surrogate fish have been released in Water Year 2026. See details in table below.

Table 5: Spring-run Chinook Salmon Surrogate Releases.

| Hatchery | Release Date | Type | # of CWT Fish Released | Confirmed Loss | CWT Codes |
|---|---|---|---|---|---|
| Coleman NFH | 2025-11-13 | Yearling | 143346 | 8.7 | 056808, 056809 |
| Coleman NFH | 2025-11-17 | Yearling | 75119 | 0.0 | 056810 |
| Coleman NFH | 2025-12-17 | Yearling | 468876 | 639.9 | 053700, 056806, 056811, 056812, 056814, 056815, 056817 |

| Hatchery | Release Date | Type | # of CWT Fish Released | Confirmed Loss | CWT Codes |
|---|---|---|---|---|---|
| Coleman NFH | 2025-12-22 | Yearling | 60873 | 224.1 | 056813 |
| Coleman NFH | 2026-01-08 | Yearling | 57109 | 0.0 | 056816 |

### Annual Loss

The annual loss threshold is 1% of the total releases, which equals 8,053 fish. As of January 12, cumulative loss is 872.69 fish or 10.84% of the annual loss threshold.

### Loss Prediction and Trajectories

The following figures display the cumulative loss trajectories relative to historical years ("Spaghetti Plots") and the current loss predictor model outputs for Winter-run Chinook Salmon and Steelhead.

### Evaluation

1. **What is the probability of exceeding natural or hatchery winter-run Chinook Salmon loss thresholds in the upcoming week?**

   **LOW RISK:** Cumulative loss is currently 0% of the threshold. Current trajectory suggests the threshold is unlikely to be exceeded in the upcoming week.

2. **What is the probability of spring-run hatchery Chinook Salmon loss thresholds in the upcoming week?**

   **LOW RISK:** Cumulative loss is currently 10.8% of the threshold. Current trajectory suggests the threshold is unlikely to be exceeded in the upcoming week.

3. **What is the probability of hatchery Steelhead loss thresholds in the upcoming week?**

   **LOW RISK:** Cumulative loss is currently 3.4% of the threshold. Current trajectory suggests the threshold is unlikely to be exceeded in the upcoming week.

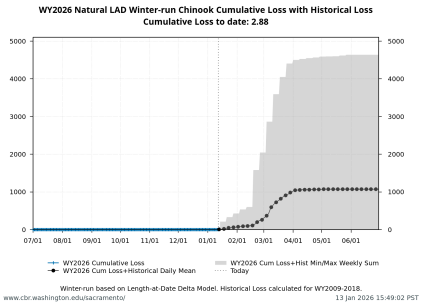


Figure 7: Natural LAD Winter-Run Chinook Salmon Loss Cumulative to Date with historical years and Single Year Loss Thresholds.

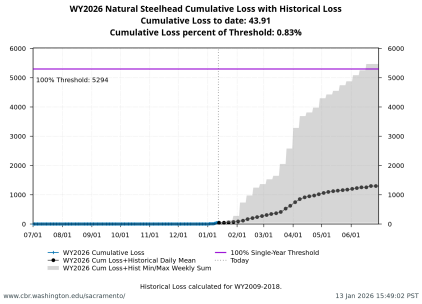


Figure 8: Natural Central Valley Steelhead Loss Cumulative to Date with historical years and Single Year Loss Thresholds.

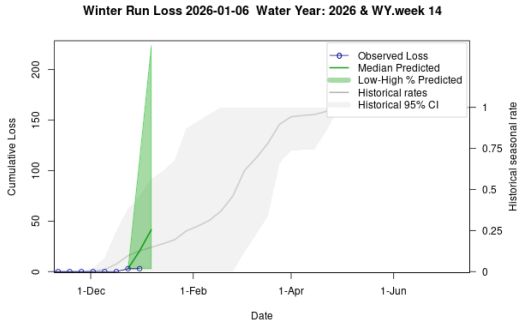


Figure 9: Estimates of Winter-run Chinook Loss generated by Loss and Salvage Predictor tool.

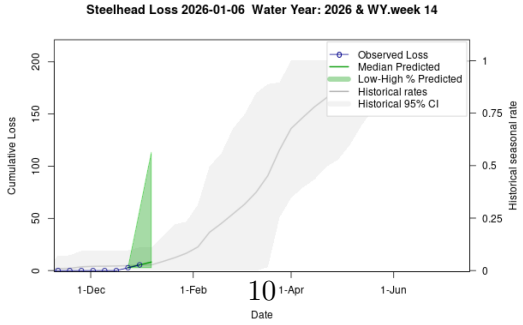




Figure 10: Estimates of Steelhead Loss generated by Loss and Salvage Predictor tool.