



Weekly Assessment for Delta Operations on ESA and CESA-listed Osmerids and Salmonids

Last updated: January 05, 2026

Executive Summary

- First flush conditions were met on 12/23/25, and the action was implemented on 12/25/25. The First flush action implementation period will end on 1/7/26, then other entrainment management actions will become active.
- Smelt takeaways
 - Delta smelt are primarily distributed west of the confluence, in Suisun Marsh.
 - No Delta smelt or longfin smelt salvage has been observed this water year.
 - Turbidity in the central/south Delta is high.
- Salmon takeaways
 - Salvage of LAD fall-run, late-fall-run, and spring-run of both Clipped and Unclipped Chinook Salmon and clipped and unclipped CCV steelhead has occurred in the past week.
 - Exceeding loss thresholds for target salmon species is unlikely in the next week.

Operational and Regulatory Conditions

- See current Weekly Fish and Water Operations Outlook document.
- Additional information also available on the [SacPAS SMT page](#) and [SaMT page](#).

Current Conditions

Most recent inflow at Freeport in the Sacramento River and Vernalis in the San Joaquin River is 66,749 and 2,566 cfs respectively. Most recent 1-day, 5-day, and 14-day OMRI

measurements were -4,904, -4,197, and -5,061 respectively, and most recent export data were 3,551 for Jones Pumping Plant and 1,734 for Henry O. Banks Pumping Plant.

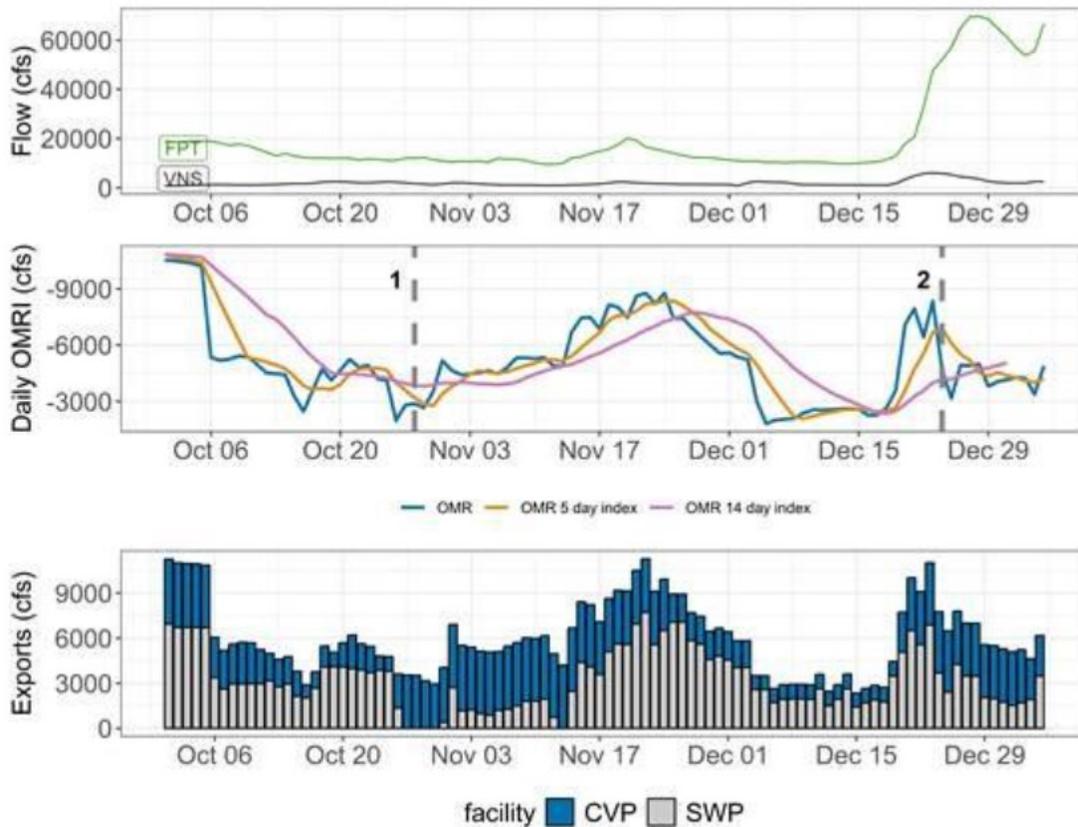


Figure 1: Operations and Action Summary, WY 2026. The colors in the OMRI plot indicate different types of triggers (see Table 1). OMRI data calculated by SacPAS, Freeport (FPT), and Vernalis (VNS) flow data from CDEC, and CVP (TRP), and SWP (HRO) exports data from CDEC.

Figure 1 depicts three stacked graphs. The first two are line charts depicting flow and daily OMRI in cfs for OMR, and OMR 5- and 14-day indexes. The last chart is a bar graph depicting exports in cfs through the Central Valley Project and State Water Project facilities. The x-axis for all three graphs list October 6 – December 29.

Table 1: Summary of Actions and Triggers, WY 2026

Label	Action	Date Triggered	Date Implemented	Number Days Implemented
1	DCC Gate Closure	10/28/2025	10/30/2025	Ongoing

Label	Action	Date Triggered	Date Implemented	Number Days Implemented
2	First Flush	12/24/2025	12/25/2025	Ongoing (Jan 7 end date)

Zone of Influence

Zone of Influence (ZOI) analysis is discussed in detail in the December 22 assessment. Current conditions were queried from most recent Freeport flow data on the Sacramento River and Vernalis flow data on the San Joaquin river from [SacPAS](#). Forecasted flows were queried from short range deterministic flows provided by the [California Nevada River Forecast Center](#).

Current conditions at Freeport and Vernalis indicate that delta hydrology falls within the 'himed' category. Forecasted conditions averaged across the next 7 days falls within the 'himed' category.

The altered channel length for the current "himed" hydrology is 23, 53, 118 and 111 kilometers (km) across OMR bins of -2000, -3500, -5000 and <-5500 respectively. The altered channel length for forecasted "himed" hydrology is 23, 53, 118 and 111 kilometers (km) across OMR bins of -2000, -3500, -5000 and <-5500 respectively.

Change in altered channel length between OMR levels is 88 km for current conditions and 88 km for forecasted conditions indicating that ZOI impacts across OMR scenarios would not change between current and forecasted conditions. Across the nine hydrology bins, changes in altered channel length across OMR scenarios are moderate (between 25th and 75th percentiles) for both current and forecasted hydrology.

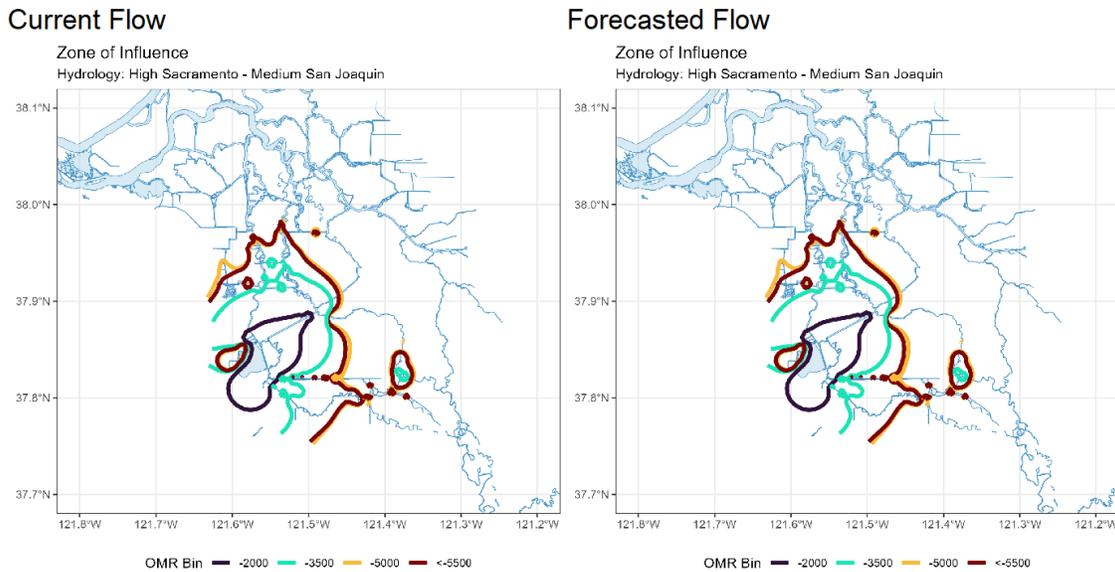


Figure 2: Modeled Zone of Influence at different OMRI scenarios based on current inflow hydrology (left) and forecasted inflow hydrology (right) from the Sacramento River and San Joaquin River

Figure 2 contains two maps of current and forecasted flow for the zone of influence. Each map contains lines of different colors depicting OMRI Bin -2000, -3500, -500, and less than -5500 modeling scenarios.

Delta smelt

Biological

- **Delta smelt life stages:** Adult, Juvenile
- **Abundance estimate:** 6,821 (95% CL: 1,477 to 20,185) as of the week of December 29, 2025–January 2, 2026
- **Releases:** A total of 163,349 cultured Delta smelt have been released for WY 2026. The most recent release of 24,606 fish occurred in Sacramento River at Rio Vista on Dec 16, 2025.
- **Delta smelt count:** 29 adult Delta smelt and 22 juvenile Delta smelt have been detected this water year. See Table 2 for recent detections, Figure 3 for spatial distribution, and Figure 4 for temporal distribution.
- **Delta smelt salvage:** 0 Delta smelt have been salvaged, and the cumulative seasonal salvage is 0.

Notes

- Since there are few recent detections of Delta smelt, estimation of distribution within the Delta is limited.
- As mentioned in EDSM reporting, fork length ranges reported for Delta smelt and longfin smelt life stages are defined by permit reporting requirements and are not intended to delineate cohorts or distinguish from hatchery or wild origin. See Table 2 caption for fork-length ranges for age groups of Delta smelt.
- See [SacPAS SMT Page](#) for additional details on releases and detection in surveys and salvage.
- Historical salvage trends can be found at: [SacPAS Salvage Timing](#)

Table 2: Delta smelt Detections in the last 2 weeks. Fork Length > 58mm = Adult, Fork Length 20-58mm = Juvenile, Fork Length < 20mm = Larva.

Survey	Date	Region	Stratum	Life Stage	Catch
EDSM	2025-12-29	West	Suisun Marsh	Adult	2
EDSM	2026-01-02	West	Suisun Marsh	Adult	2
EDSM	2026-01-02	West	Suisun Marsh	Juvenile	1

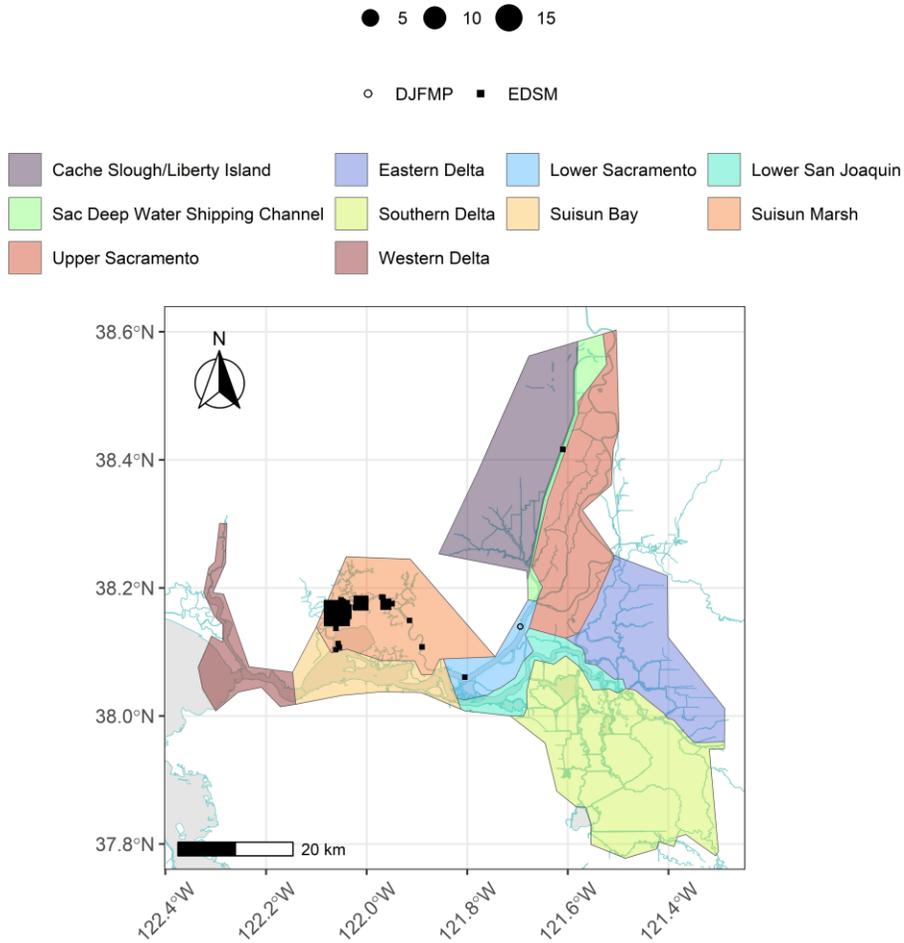


Figure 3: Delta Smelt Distribution for WY 2026

Figure 3 is a map of Smelt distribution for WY 2026 through different areas of the Delta. The map includes different color shading for Cach Slough/Liberty Island, Sac Deep Water Shipping Channel, Upper and Lower Sacramento, Eastern, Western, and Southern Delta, Suisin Bay and Marsh, and Lower San Joaquin. The number of Smelt is shown by the size of a black circle.

Table 3: Delta smelt Water Year Totals by Life Stage

Survey	Region	Life Stage	Total
DJFMP	North	Juvenile	1
EDSM	North	Adult	1
EDSM	West	Adult	28
EDSM	West	Juvenile	21

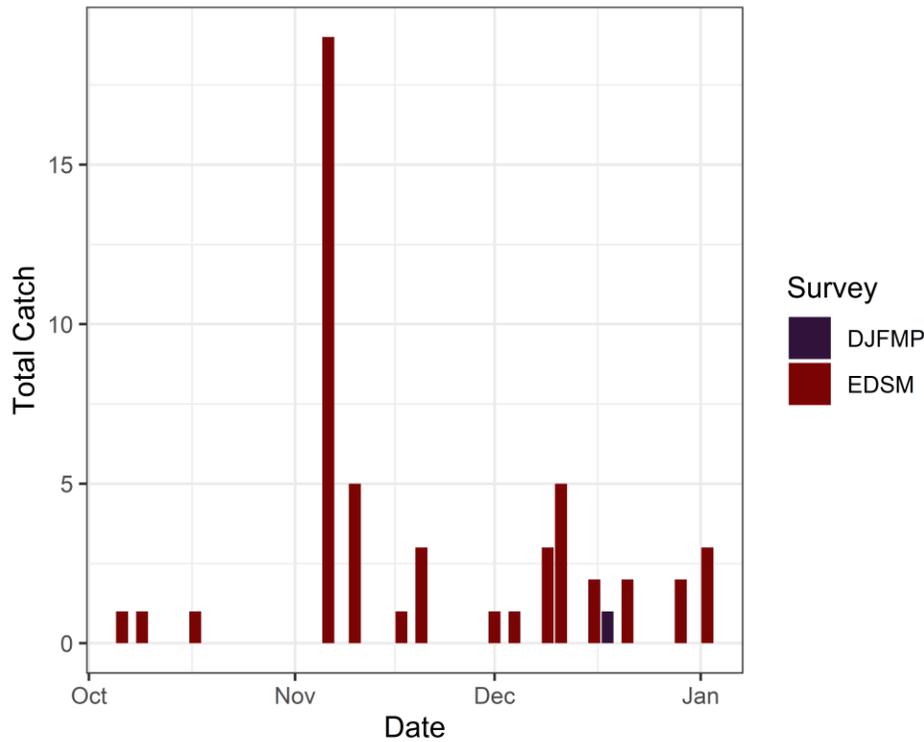


Figure 4: Time Series of Delta Smelt Catch, WY 2026

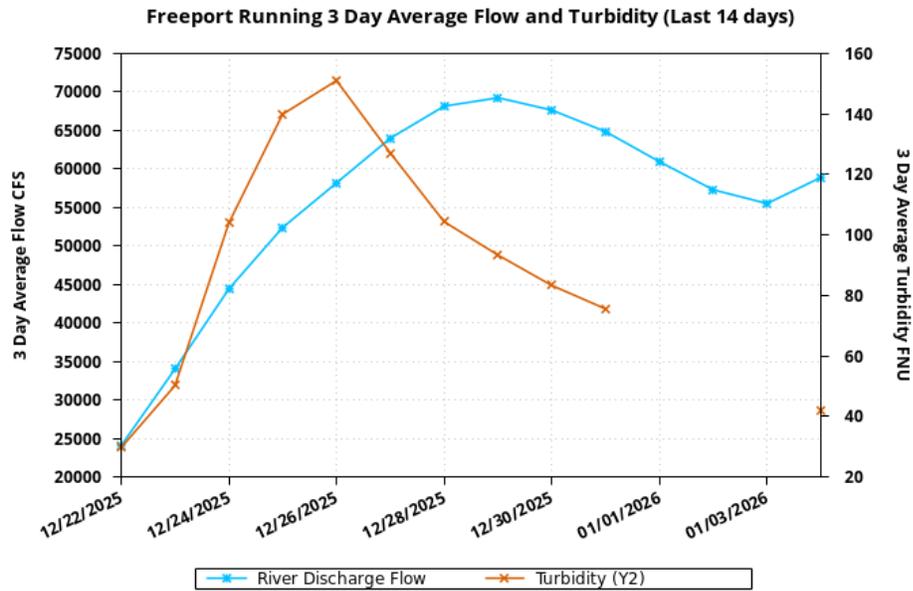
Figure 4 is a bar chart showing total catch for the DJFMP and EDSM by date from October to January. The highest catch recorded was for the EDSM survey in early November, with almost 20 catches.

Environmental

First Flush

Threshold: 3-day avg FPT flow \geq 25,000 cfs and 3-day avg FPT turbidity \geq 50 FNU

- **FPT Flow (3-day average):** 58,900 cfs as of Jan 04, 2026
- **FPT Turbidity (3-day average):** 41.88 FNU as of Jan 04, 2026



Preliminary data from CDEC; subject to revision.

www.cbr.washington.edu/sacramento/
05 Jan 2026 09:35:01 PST

Figure 5. Freeport running 3-day average flow and turbidity for the previous 14 days.

Figure 5 is a line chart depicting the 3 day average flow in cfs and the 3-day average turbidity in FNU at Freeport from December 12, 2025 to January 3, 2026. Turbidity peaked at 150 FNU on December 26, while river discharge flow slowly ramped up between December 22 and December 29 with a peak of ~70,000 cfs.

Real-time Assessment Thresholds

Adult Delta smelt

Threshold: If daily average JPF < 0 AND turbidity \geq 12 FNU at OBI, HOL and OSJ

JPF: 7866 cfs as of Jan 01, 2026

- **OBI Turbidity:** 15.7, 5.48, 5.88 FNU as of Jan 04, 2026
- **HOL Turbidity:** 5.61, 6.12, 6.43 FNU as of Jan 04, 2026
- **OSJ Turbidity:** 25.34, 24.47, 21.84 FNU as of Jan 04, 2026

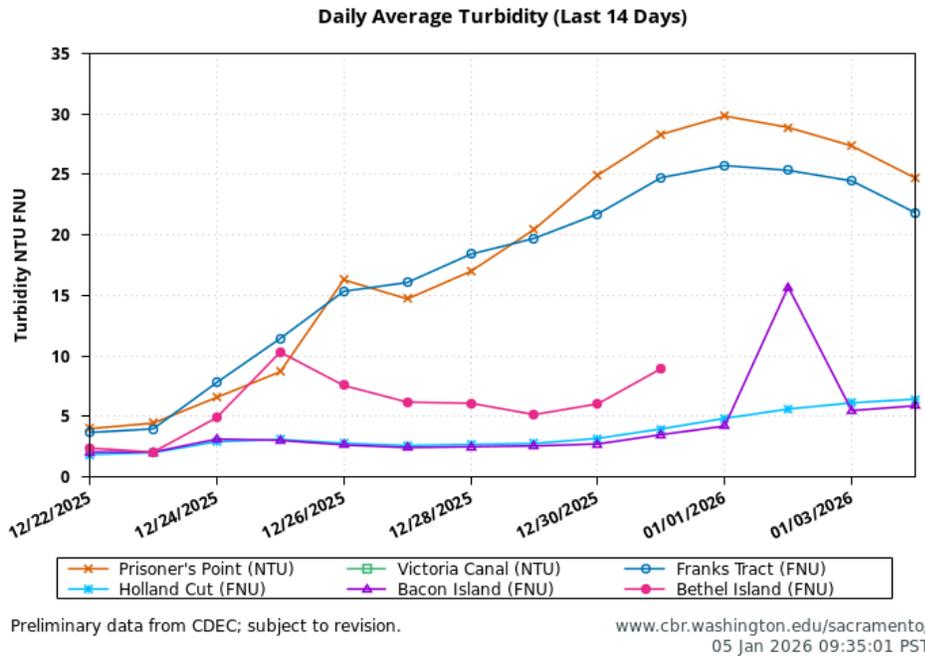


Figure 6. Daily average turbidity at several south and central Delta stations.

Figure 6 is a line chart showing the daily average turbidity from December 22, 2025 to January 3, 2026 for Prisoner’s Point (in NTU), Victoria Canal (in NTU), Franks Tract (in FNU), Holland Cut (in FNU), Bacon Island (in FNU) and Bethel Island (in FNU). The highest turbidity occurred on January 1, 2026 at Prisoner’s Point at 30 NTU’s.

- See the [Bay-Delta Live website](#) for recent Delta-wide turbidity conditions.

Offramp Adult/Onramp Larval and Juvenile Protections when RVB or SJJ > 12°C

- RVB temperature (3-day average): 10.37°C as of Jan 04, 2026

Larval/Juvenile Delta Smelt

Threshold: After the onset of spawning, if JPF < 0 cfs AND turbidity is ≥ 12 FNU in the south Delta AND PTM modeling indicates the action would avoid ≥ 5% entrainment of Delta smelt population after 30 days

- **12-station South Delta Turbidity (SLS):** The most recent average turbidity was 19.1 FNU as of Dec 30, 2025

Evaluation

- After the start of entrainment management, is JPF < 0, is daily average turbidity ≥ 12 FNU in the OMR corridor (stations OBI, HOL, and OSJ), and has the average water temperature at Jersey Point or Rio Vista not exceeded 53.6°F (12°C) consecutively for 3 days? **No, these three conditions will not be met this week.**

- Has this action already been taken during WY 2026? **The Delta smelt adult entrainment management action has not been taken in WY 2026.**
- What is the evidence for the onset of Delta smelt spawning? Upstream migration for Delta smelt occurs between September and December and in response to “first flush” conditions (Sommer et al. 2011, Grimaldo et al. 2009). **Migration typically ranges one to four weeks after flow and turbidity increases, based on salvage data (Sommer et al. 2011). Historically, detections of ripe Delta smelt began in January and peaked in February and March and the majority of Delta Smelt spawning occurs within a temperature range of 9-18° C (Damon et al. 2016). Based on historical monitoring data from the past few years, available on the [Delta-Stewardship Council GitHub](#), first detection of larvae in the Central and South Delta has typically occurred by mid to late March. Based on historic data the migration is likely occurring now, and the onset of spawning has likely not yet occurred.**
- After the onset of spawning, have the following conditions occurred: JPF < 0, daily average turbidity is ≥12FNU in the South Delta, and PTM modeling indicates OMRI no more negative than -3500 cfs for at least 7 days would avoid ≥5% entrainment of the Delta smelt population at facilities after 30 days? **The onset of spawning is unlikely to have occurred and JPF is not < 0 cfs.**

Longfin Smelt

Biological

- Longfin smelt life stages: Juvenile, Adult
- Longfin smelt count: 270 adult, 435 juvenile, and 3 larval longfin smelt have been detected this water year. See Table 4 for recent detections, Figure 7 for spatial distribution, and Figure 8 for temporal distribution.
- Longfin smelt salvage: 0 Longfin Smelt have been salvaged, and the cumulative seasonal salvage is 0.

Table 4: Longfin Smelt Detections in the last 2 weeks. Fork Length > 84mm = Adult, Fork Length 20-84mm = Juvenile, Fork Length < 20mm = Larva.

Survey	Date	Region	Stratum	Life Stage	Catch
DJFMP	2025-12-29	N/A	Chippis Island	Adult	21
DJFMP	2025-12-30	N/A	Chippis Island	Adult	54
DJFMP	2025-12-30	N/A	Chippis Island	Juvenile	1
DJFMP	2025-12-31	N/A	Chippis Island	Adult	44
DJFMP	2025-12-31	N/A	Chippis Island	Juvenile	2
DJFMP	2026-01-05	N/A	Chippis Island	Adult	1
DJFMP	2026-01-06	N/A	Chippis Island	Adult	1

Survey	Date	Region	Stratum	Life Stage	Catch
EDSM	2025-12-29	West	Suisun Marsh	Adult	2
EDSM	2025-12-29	West	Suisun Marsh	Juvenile	3
EDSM	2025-12-30	West	Suisun Bay	Adult	2
EDSM	2025-12-30	West	Suisun Bay	Juvenile	1
EDSM	2025-12-31	Far West	Suisun Bay	Adult	2
EDSM	2025-12-31	Far West	Suisun Bay	Juvenile	1
EDSM	2026-01-05	Far West	Suisun Bay	Adult	2
EDSM	2026-01-05	Far West	Suisun Bay	Juvenile	2
EDSM	2026-01-06	West	Suisun Bay	Juvenile	1
sls	2025-12-29	Far West	Western Delta	Larva	9
sls	2025-12-30	Far West	Western Delta	Larva	3
sls	2025-12-30	Far West	Western Delta	Larva	4
sls	2025-12-30	West	Lower San Joaquin	Larva	4

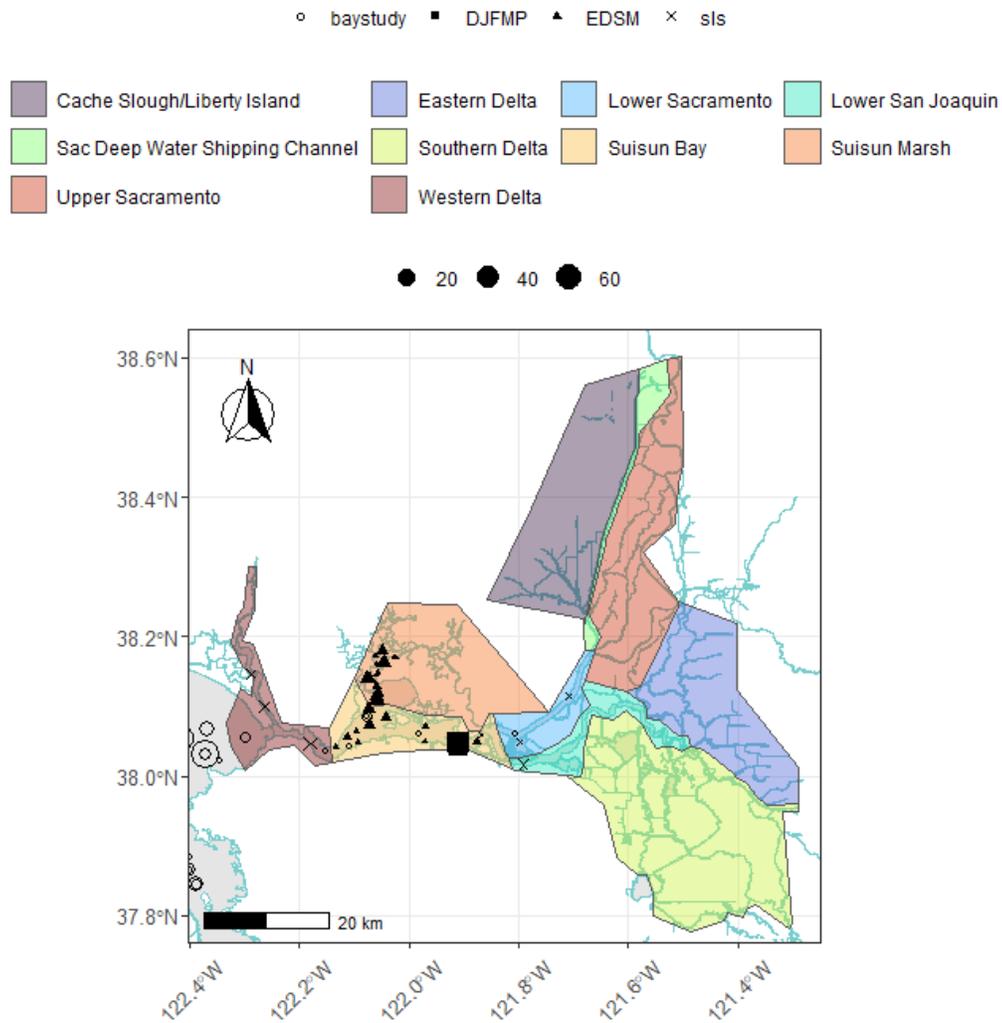


Figure 7: Longfin Smelt Distribution for WY 2026

Figure 7 is a map of Longfin Smelt distribution for WY 2026 through different areas of the Delta. The map includes different color shading for Cach Slough/Liberty Island, Sac Deep Water Shipping Channel, Upper and Lower Sacramento, Eastern, Western, and Southern Delta, Suisin Bay and Marsh, and Lower San Joaquin. The number of Smelt is shown by the size of a black circle and the survey type is shown by either a hollow circle for baystudy, black square for DJFMP, a black triangle for EDSM and black cross for sls.

Table 5: Longfin Smelt Water Year Totals by Life Stage

Survey	Region	Life Stage	Total
DJFMP	N/A	Adult	237
DJFMP	N/A	Juvenile	14
EDSM	Far West	Adult	7

Survey	Region	Life Stage	Total
EDSM	Far West	Juvenile	13
EDSM	West	Adult	22
EDSM	West	Juvenile	74
baystudy	Bay	Adult	6
baystudy	Bay	Juvenile	320
baystudy	Far West	Adult	2
baystudy	Far West	Juvenile	11
baystudy	West	Juvenile	6
sls	Far West	Larva	3
sls	North	Larva	1
sls	West	Larva	6

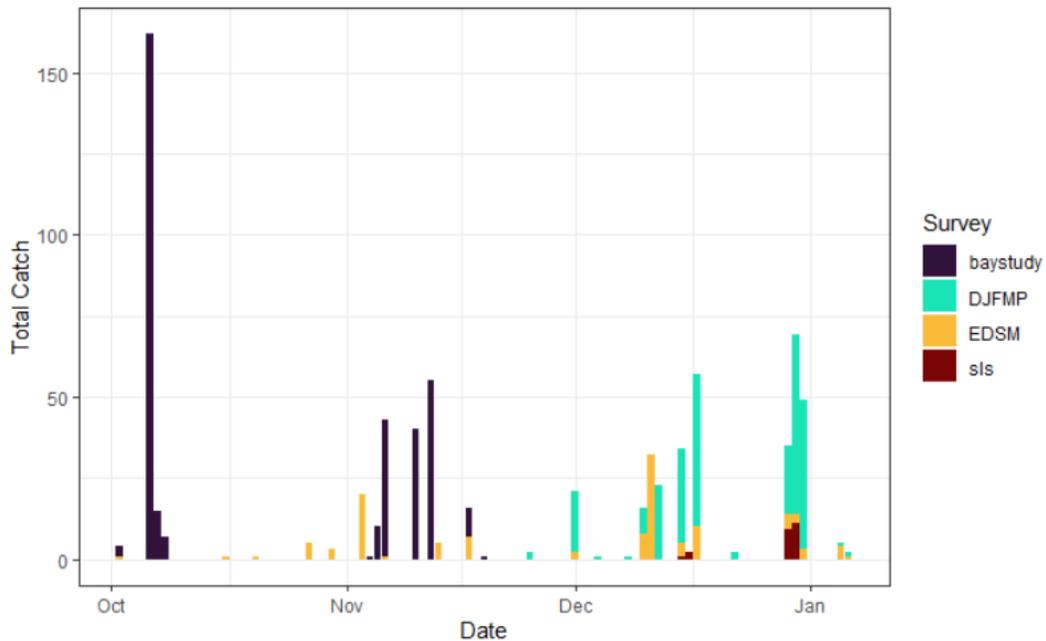


Figure 8: Time Series of Longfin Smelt Catch, WY 2026

Figure 8 is a bar chart depicting total catch by survey, baystudy, DJFMP, EDSM, and sls from October 2025 to January 2026. The largest amount of catch, ~175, was achieved during a baystudy in early October.

Real-time Assessment Thresholds

Adult Longfin Smelt

- **Threshold:** JPF < 0 cfs, annual loss is on a trajectory to exceed 5% of the adult population abundance, and reduced exports will reduce entrainment in the south Delta

- Daily average JPF: 7866 cfs as of Jan 01, 2026
- Water year total adult longfin smelt salvage = 0

Larval/Juvenile Longfin Smelt

- **Threshold:** JPF < 0 cfs AND population model demonstrates need to reduce entrainment to avoid population decline
 - Daily average JPF: 7866 cfs as of Jan 01, 2026

Evaluation

1. If JPF < 0, what is the trajectory of annual loss of adult longfin smelt and is it likely to exceed 5% of the adult population estimate? Is South Delta entrainment expected to decrease due to a reduction in export pumping? **JPF is not < 0 cfs and we have not detected any adult longfin smelt in salvage. The ZOI analysis indicates little change in the hydraulic footprint between current and forecasted flows this week. The analysis showed a 65 km difference in hydrodynamic footprint between OMRI of -3500 cfs and -5000 cfs, indicating a low risk of entrainment.**
2. For larval and juvenile longfin smelt, if JPF < 0 cfs, do particle tracking models show a moderate to high difference in particle fates across different OMRI scenarios? Does Zone of Influence modeling show moderate to high changes in hydrodynamic footprint across different OMRI scenarios? Are these effects anticipated to cause a population decline? **JPF is not less than zero. No PTM was run this week. ZOI modeling shows moderate changes in hydrodynamic footprint between OMRI scenarios.**
3. Is there additional information or other analyses that should be considered in this evaluation? **Additional information may be discussed if needed at the DAT call.**

Natural Winter-run Chinook

Juvenile Production Estimate

The Juvenile Production Estimate for winter-run has not been established for the current water year.

Current Status

Entry Timing - Historically, as of Jan 04, 69% 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 6: Average Percent of annual emigrating population for unclipped LAD winter-run captured at the following locations and LAD and DNA confirmed winter-run 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)	Chippis Island Trawl	Salvage
Chinook, LAD Winter-run, Unclipped	97%	72%	69%	38%	2%	10%
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 - No catch has been reported at Delta Entry RSTs (Tisdale, Knights Landing, Lower Sacramento River) in the past two weeks. Total catch at Sacramento Trawl and Beach Seines in the delta between Dec 22 and Jan 02 is 194 individuals. Total catch at Delta Exit at Chippis Island between Dec 22 and Dec 31 is 0 individuals.

Annual Loss

The Juvenile Production Estimate has not been established for the current water year so thresholds are absent or are included from the previous water year. As of January 04 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.

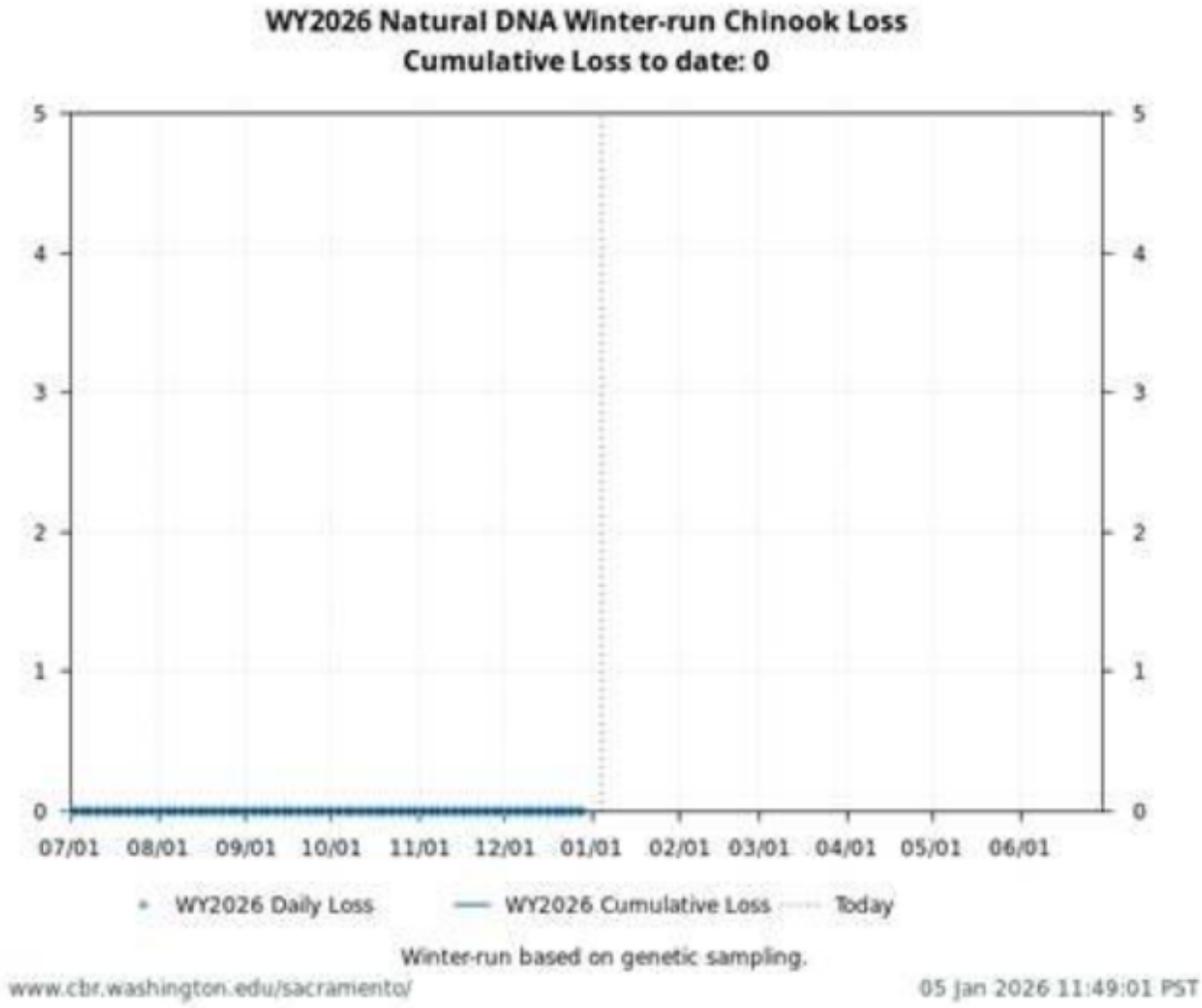


Figure 9: Cumulative loss of natural-origin winter-run for WY 2026. Cumulative loss is based on genetically confirmed winter-run captured in salvage or length-at-date winter-run in which genetic confirmation was unable to be obtained

Figure 9 is a line graph showing the daily loss and cumulative loss for water year 2026 and today's loss. The graph shows no loss has been observed for water year 2026.

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 04, overall through delta STARS estimated survival probability (with 80% credible intervals) is 0.79 (0.73-0.85) placing it in the 99th 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 0.07 (0.05-0.1) and 0.81 (0.72-0.89), respectively, corresponding to the 5th and 96th percentiles of historical January estimates (WYs 2018-2025).

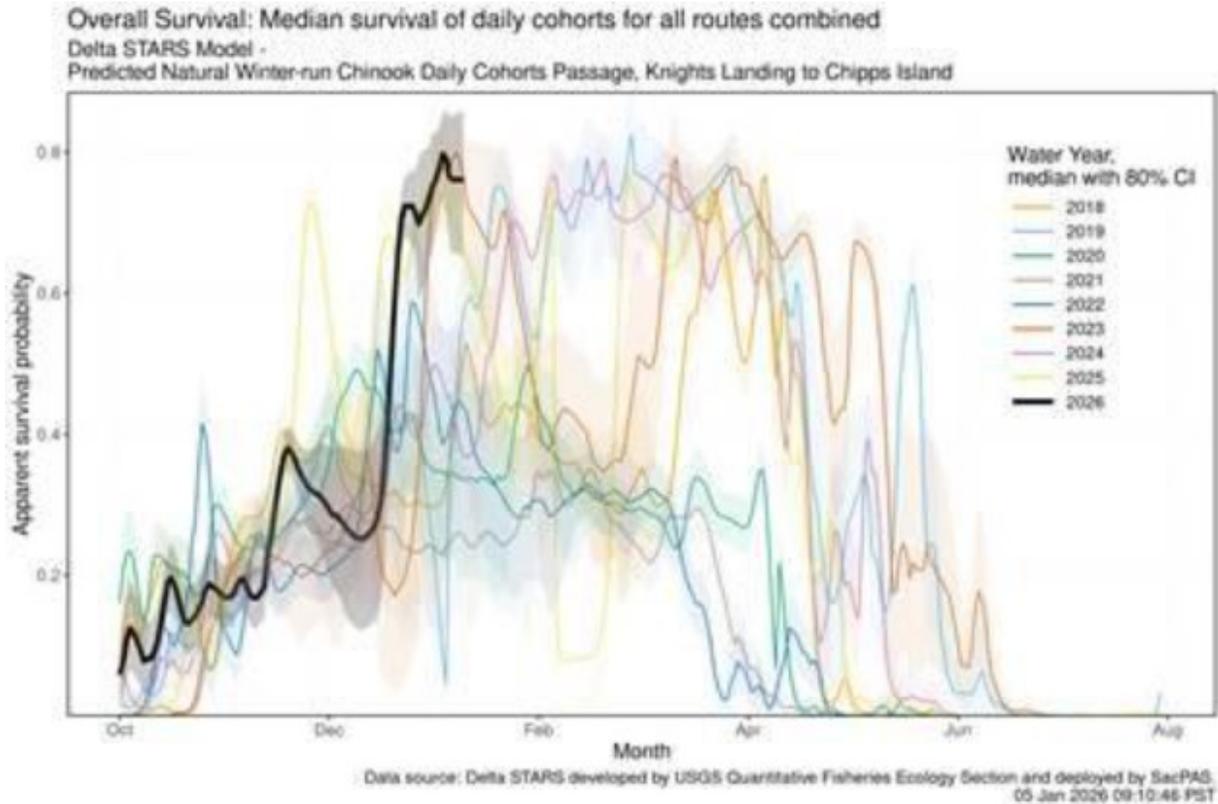


Figure 10: Estimated overall winter-run survival from Knights Landing to Chipps Island. Black line indicates the current water-year, and other colored lines correspond to past water years.

Figure 10 is a line graph depicting median survival of daily cohorts for all routes combined from Knights Landing to Chipps Island. The survival is shown by water year for 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, and 2026, with different-colored lines from October to August with an 80% confidence interval.

Interior Delta Route-specific Survival Probability: Median survival of daily cohorts using the Interior Delta STARS Model - Predicted Natural Winter-run Chinook Daily Cohorts Passage, Knights Landing to Chipps Island

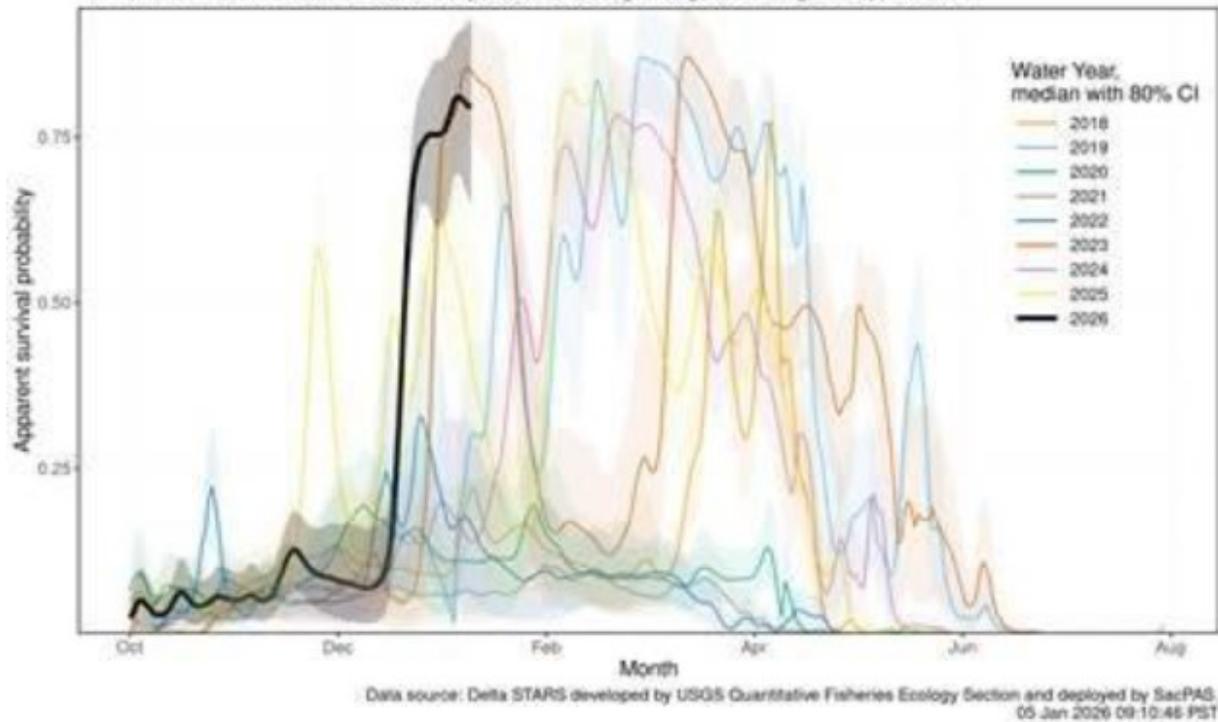


Figure 11: Estimated survival from Knights Landing to Chipps Island of simulate winter-run cohorts that route through the interior delta. Black line indicates the current water-year, and other colored lines correspond to past water years.

Figure 11 is a line graph depicting median survival of daily cohorts using the Interior Delta routes from Knights Landing to Chipps Island. The survival is shown by water year for 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, and 2026, with different-colored lines from October to August with an 80% confidence interval.

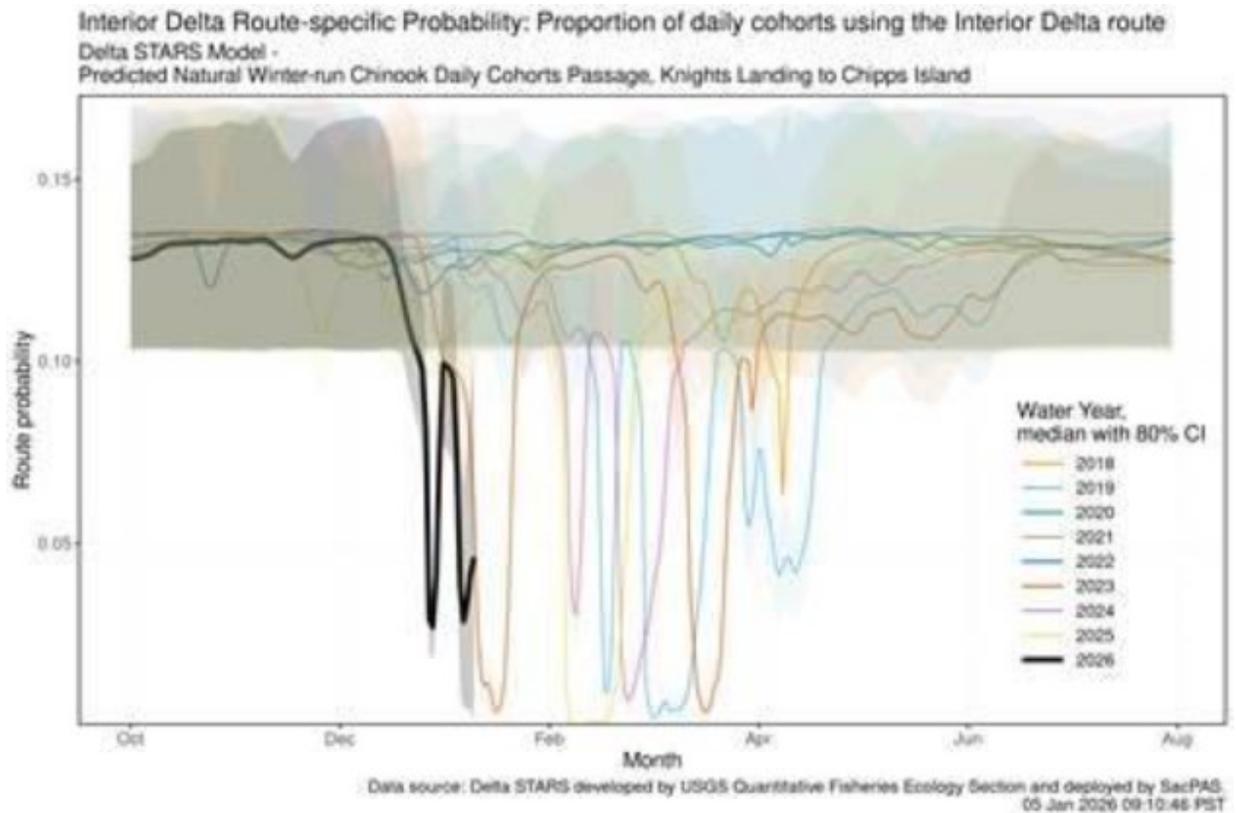


Figure 12: Estimated probability of winter-run routing into the interior delta. Black line indicates the current water-year, and other colored lines correspond to past water years.

Figure 12 is a line graph depicting survival probability for winter-run Chinook daily cohorts using the Interior Delta routes from Knights Landing to Chipps Island. The survival is shown by water year for 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, and 2026, with different-colored lines from October to August with an 80% confidence interval.

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 Livingstone Stone hatchery winter-run has not been established for the current water year.

Annual Loss

The Juvenile Production Estimate has not been established for the current water year so thresholds are absent or are included from the previous water year. 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 04, 0% 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 4% have been salvaged.

Table 7: 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.

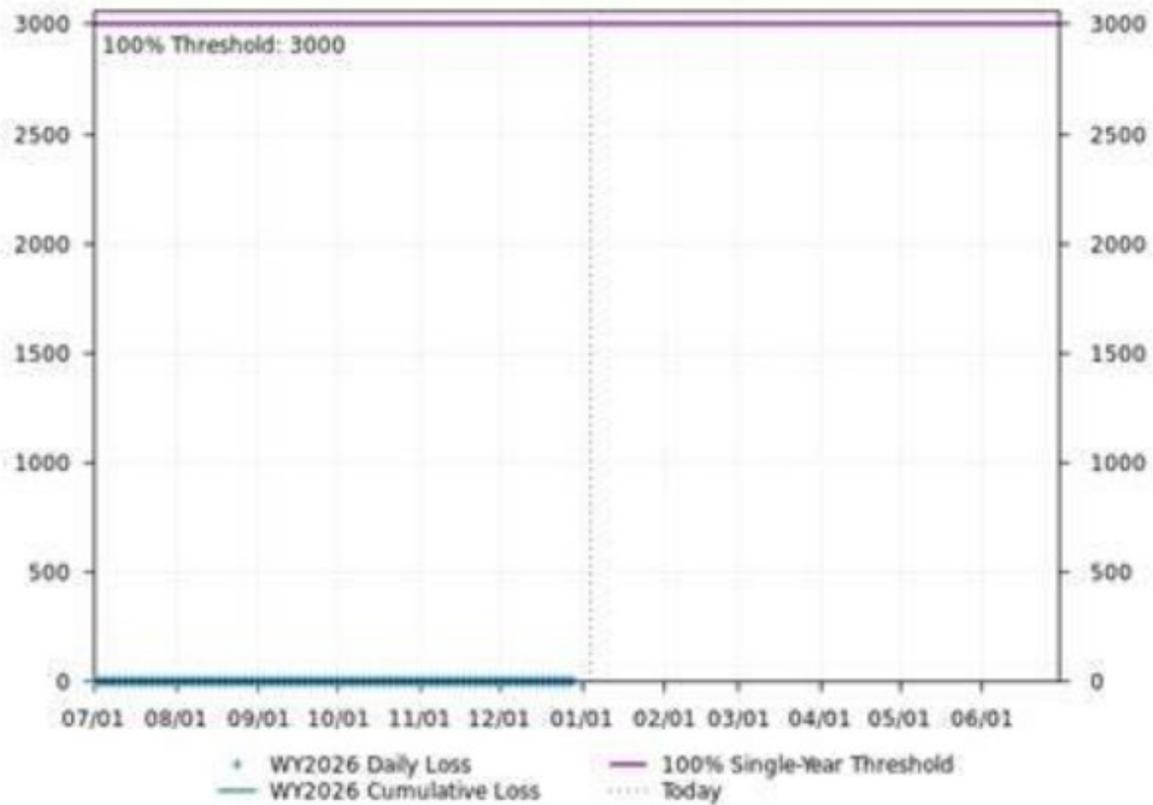
Species	Red Bluff Diversion Dam	Tisdale RST	Knights Landing RST	Sac Trawl (Sherwood)	Chipps Island Trawl	Salvage
Steelhead, Unclipped	0%	0%	0%	0%	1%	4%

Delta Monitoring - No catch has been reported at Delta Entry RSTs (Tisdale, Knights Landing, Lower Sacramento River) in the past two weeks. Total catch at Sacramento Trawl and Beach Seines in the delta between Dec 22 and Jan 02 is 0 individuals. Total catch at Delta Exit at Chipps Island between Dec 22 and Dec 31 is 0 individuals.

Annual Loss

As of January 04 cumulative loss of unclipped steelhead is 2.72 or 0.09% of the annual loss threshold. Cumulative loss in the past 7 days has been 0.

WY2026 Natural Steelhead Loss
Cumulative Loss to date: 2.72
Cumulative Loss percent of Threshold: 0.09%



www.cbr.washington.edu/sacramento/

05 Jan 2026 11:49:01 PST

Figure 13: Cumulative loss of natural-origin steelhead for WY 2026.

Figure 13 is a line graph showing daily and cumulative loss, today's loss, and the 100% single-year threshold for natural steelhead for water year 2026. The graph shows the loss for this year is 0.

Hatchery-origin Central Valley Steelhead

Surrogate Releases

Methodology for determining the JPE of hatchery-origin steelhead is described in the Action 5 Operation Plan (USBR 2025). 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. Total loss of hatchery-origin steelhead is 24 or 0.67% 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.

Table 8: 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

Spring-run

Current Status

Delta Entry Timing- Historically, as of Jan 04, 24% 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 9: 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%	12%	24%	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- No catch has been reported at Delta Entry RSTs (Tisdale, Knights Landing, Lower Sacramento River) in the past two weeks. Total catch at Sacramento Trawl and Beach Seines in the delta between Dec 22 and Jan 02 is 0 individuals. Total catch at Delta Exit at Chipps Island between Dec 22 and Dec 31 is 0 individuals.

Surrogate Releases

A total of 135,992 yearling surrogate fish have been released across 2 releases and a total of 0 young-of-year surrogate fish have been released across 0 releases. See details in table below.

Table 10: Spring-run Chinook Salmon Hatchery Surrogate Summary Table.

Type	Hatchery	Release Start	Release End	Race	# of CWT Fish Released	Loss Threshold (1% of CWT Released)	Observed Loss (% of threshold)
Yearling	Coleman NFH	2025-11-17	2025-11-17	Late-Fall	75119	751.19	0 (0.00%)
Yearling	Coleman NFH	2025-12-22	2025-12-22	Late-Fall	60873	608.73	11.53 (1.9%)

Salmonid Evaluation

- 1. What is the trajectory of annual salvage loss for juvenile winter-run Chinook salmon and is it likely to exceed 1% of the juvenile production estimate?** Trajectory of loss is difficult to evaluate early in the season as the majority of natural winter-run are salvaged in February and March. Assessing the likelihood of exceeding thresholds will not be possible until the winter-run JPE is finalized.
- 2. What is the trajectory of annual salvage loss for juvenile spring-run Chinook salmon and is it likely to exceed 1% of any of the surrogate releases?** To date, three yearling spring-run surrogate salmon have been salvaged indicating that loss trajectory will remain low, and that exceedance of 1% threshold for the CWT releases is unlikely with a high level of uncertainty.
- 3. What is the trajectory of annual salvage loss for juvenile Central Valley steelhead and is it likely to exceed 1% of the juvenile production estimate for steelhead hatchery surrogates?** Current trajectory of annual loss is difficult to evaluate early in the season, but cumulative loss tracks with historic daily mean loss for the past 10 years with a high level of uncertainty. In the past 10 years, clipped steelhead loss has only exceeded 5,000 fish a single time, and considering the JPE is expected to expand past 5,000 fish as more hatchery releases occur, likelihood of exceeding 1% of the JPE is low.

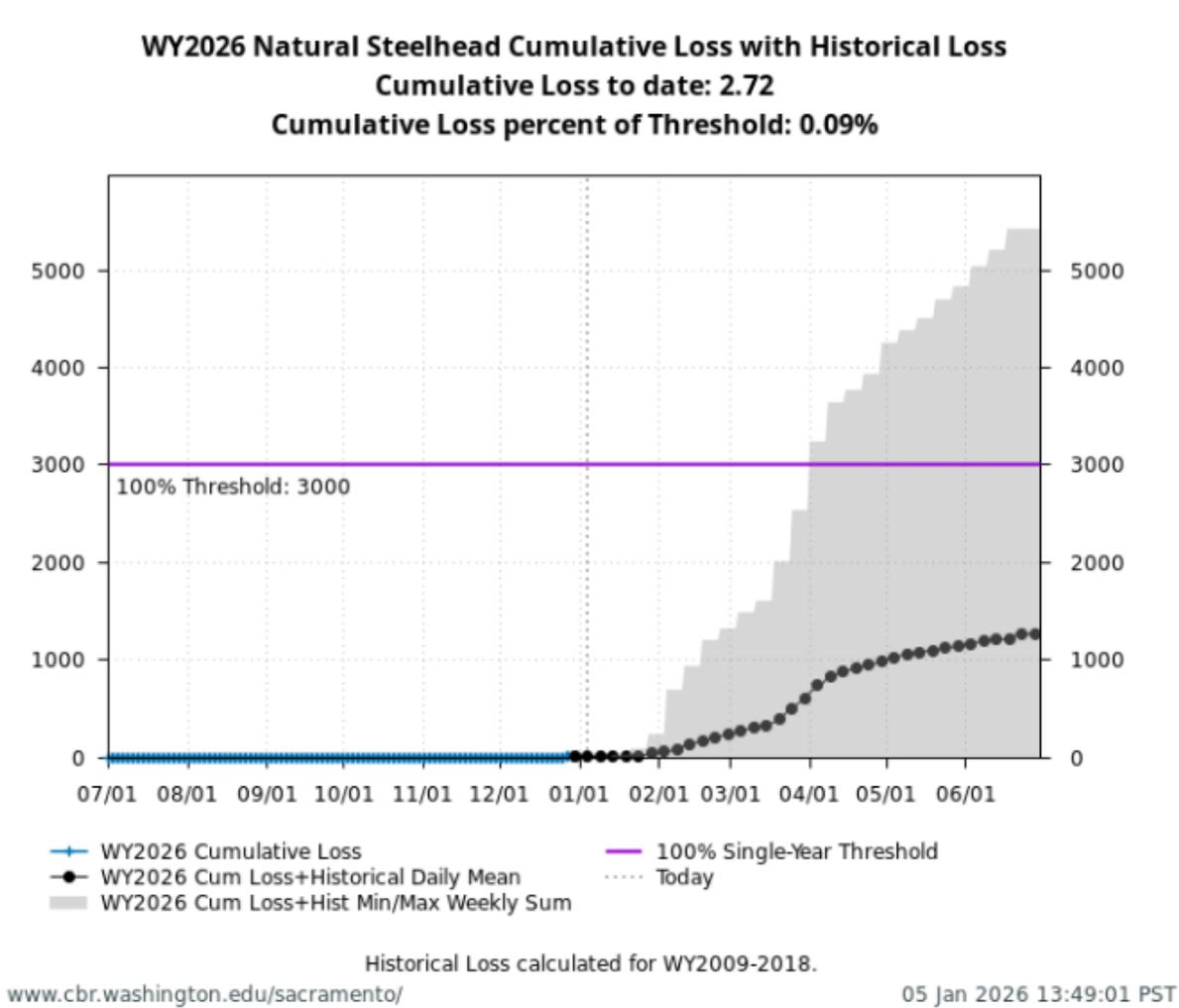


Figure 14. Natural steelhead cumulative and historic loss for WY26.

Figure 14 is a line chart depicting cumulative, cumulative and historic daily mean, cumulative loss and historical minimum and maximum weekly sum loss for natural steelhead. The graph also shows the 100% single-year threshold and today's (January 5, 2026) loss.

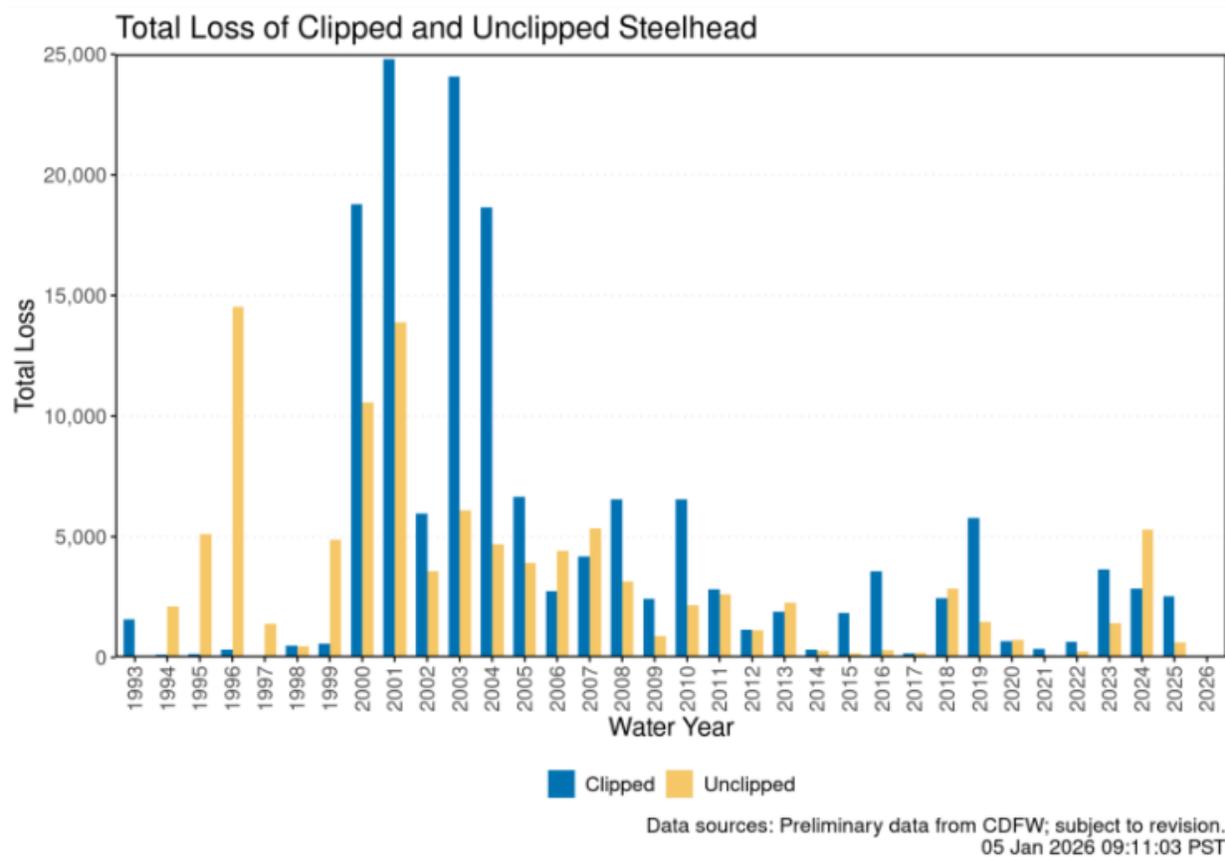


Figure 15: Cumulative loss of natural-origin steelhead with historical estimates (top) and total annual loss for clipped and unclipped steelhead by year (bottom).

Figure 15 is a bar chart showing clipped, in blue, and unclipped, in yellow, cumulative loss for natural-origin steelhead for water years 1993 – 2026. The largest loss occurred in water years in the early 2000's with multiple years of clipped loss exceeding 15,000.

References

Damon, L. J., S. B. Slater, R. D. Baxter, and R. W. Fujimura. 2016. Fecundity and reproductive potential of wild female Delta smelt in the upper San Francisco Estuary, California. *California Fish and Game* 102(4):188–210.

Grimaldo, L. F., T. Sommer, N. Van Ark, G. Jones, E. Holland, P. B. Moyle, B. Herbold & P. Smith (2009) Factors Affecting Fish Entrainment into Massive Water Diversions in a Tidal Freshwater Estuary: Can Fish Losses be Managed? *North American Journal of Fisheries Management*, 29:5, 1253-1270, DOI: 10.1577/M08-062.1

Sommer, T., F. Mejia, M. Nobriga, and L. Grimaldo. 2011. The Spawning Migration of Delta Smelt in the Upper San Francisco Estuary. *San Francisco Estuary and Watershed Science* 9(2).

U.S. Bureau of Reclamation. 2025. LTO Action 5, Exhibit 5, Entrainment Management. 33pp.