BUREAU OF RECLAMATION

Weekly Assessment for Delta Operations on ESA and CESA-listed Salmonids and Osmerids including Current Delta Hydrologic Conditions

Last updated: Tuesday, May 12, 2026 at 8 AM

Executive Summary

ESA and CESA-listed Salmonids

- Entrainment management season is active.
- Annual Loss: 45 (0.43% of annual loss threshold) natural winter-run, 58 (4.45% of annual loss threshold) hatchery winter-run (Sac River), 251 natural steelhead, 1890 (28.89% of annual loss threshold) hatchery steelhead, 1075 (48.90% of annual loss threshold) spring-run surrogate yearlings (Coleman Late-Fall), and 0 (0.00% of annual loss threshold) spring-run surrogate YOY (Feather River Spring-Run).
- Single-year Incidental Take Limit (ITL) Status: 45 (0.76% of 5,922 ITL) natural winter-run; 58 (4.46% of 1,301 ITL) hatchery winter-run (Sac River); 2 (3.85% of 52 ITL) hatchery winter-run (Battle Creek); 251 (4.74% of 5,294 ITL) natural steelhead.
- Spring-run surrogate ITL status (0.5% per release group, BiOp Table 184): YOY - Feather River Hatchery (2026-03-18): 0 (0% of 4,927 ITL); YOY - Feather River Hatchery (2026-03-19): 0 (0% of 5,245 ITL); YOY - Feather River Hatchery (2026-03-23): 0 (0% of 2,441 ITL); Yearling - Coleman NFH (2025-11-13): 9 (1.21% of 717 ITL); Yearling - Coleman NFH (2025-11-17): 0 (0% of 376 ITL); Yearling - Coleman NFH (2025-12-17): 774 (33.02% of 2,344 ITL); Yearling - Coleman NFH (2025-12-22): 257 (84.64% of 304 ITL); Yearling - Coleman NFH (2026-01-08): 35 (12.26% of 286 ITL).
- LAD winter-run presence in the Delta is decreasing based on historical Chipps Island Trawl monitoring.
- Steelhead presence in the Delta is decreasing based on historical Chipps Island Trawl monitoring.

ESA and CESA-listed Osmerids

- Delta smelt were most recently detected at Suisun Marsh.

- No longfin smelt salvage has been observed this water year.
- Turbidity in the central/south Delta is low.
- Temperature in the south Delta is increasing.

Current Delta Hydrologic Conditions

Operational and Regulatory Conditions

The current controlling factor is D-1641, 100% of Vernalis flows until May 13 and OMRI no more negative than –5,000 cfs (after May 13). See most recent weekly outlook for more information.

Current Conditions

Most recent inflow at Freeport in the Sacramento River and Vernalis in the San Joaquin River is 14,923 and 1,326 cfs respectively. Most recent Jersey Point Flow (JPF) is 2,572 cfs. Most recent 1-day, 5-day, and 14-day OMRI measurements were -1,245, -1,189, and -1,343 cfs, respectively, and most recent export data were 3,551 cfs for Jones Pumping Plant and 1,734 cfs for Henry O. Banks Pumping Plant.

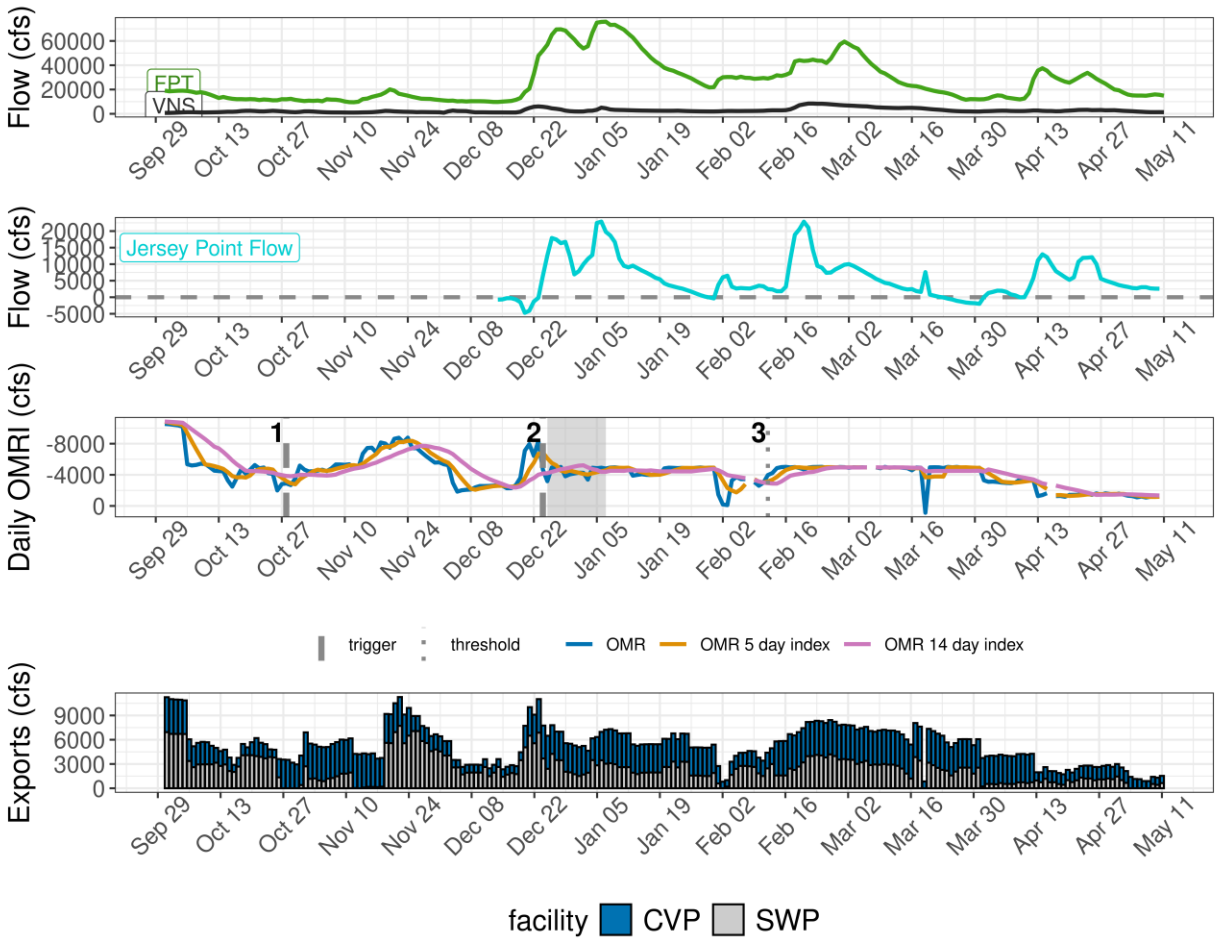

Figure 1: Operations and Action Summary, WY 2026. The numbers and lines in the OMRI plot indicate different triggers and thresholds (see Table 1), with shading representing specific action periods. Dashed and dotted vertical lines represent triggered actions and thresholds, respectively. OMRI data (colored lines) calculated by SacPAS, Freeport (FPT) and Vernalis (VNS) flow data from CDEC, Jersey Point Flow (JPF) from DWR, and CVP (TRP) and SWP (HRO) exports data from CDEC.

Figure 1 depicts four stacked graphs summarizing operations and hydrologic conditions for Water Year 2026 from late September through early May. The first three panels are line graphs showing Freeport and Vernalis flows, Jersey Point Flow, and daily OMRI values including OMR, OMR 5-day index, and OMR 14-day index. The bottom panel is a bar graph showing export levels at the Central Valley Project and State Water Project facilities over time.

Table 1: Summary of Actions and Triggers, WY 2026

Label	Action	Date Triggered	Date Implemented	Number Days Implemented	Regulation
1	DCC Gate Closure	10/28/2025	2025-10-30	Ongoing	DCC gates
2	First Flush	12/24/2025	2025-12-25	14 days	Entrainment Management
3	Offramp temperature threshold	2/12/2026	N/A	3 consecutive days	Delta Smelt Adult Entrainment, no action taken WY26

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 'medlo' category. Forecasted conditions averaged across the next 7 days falls within the 'medmed' category.

The altered channel length for the current "medlo" hydrology is 17, 44, 112 and 168 kilometers (km) across OMR bins of -2000, -3500, -5000 and <-5500 respectively. The altered channel length for forecasted "medmed" hydrology is 26, 49, 101 and 163 kilometers (km) across OMR bins of -2000, -3500, -5000 and <-5500 respectively.

Change in altered channel length between OMR levels is 151 km for current conditions and 137 km for forecasted conditions indicating that ZOI impacts across OMR scenarios would decrease between current and forecasted conditions. Across the nine hydrology bins, changes in altered channel length across OMR scenarios are high (>75th percentile) for both current and forecasted hydrology.

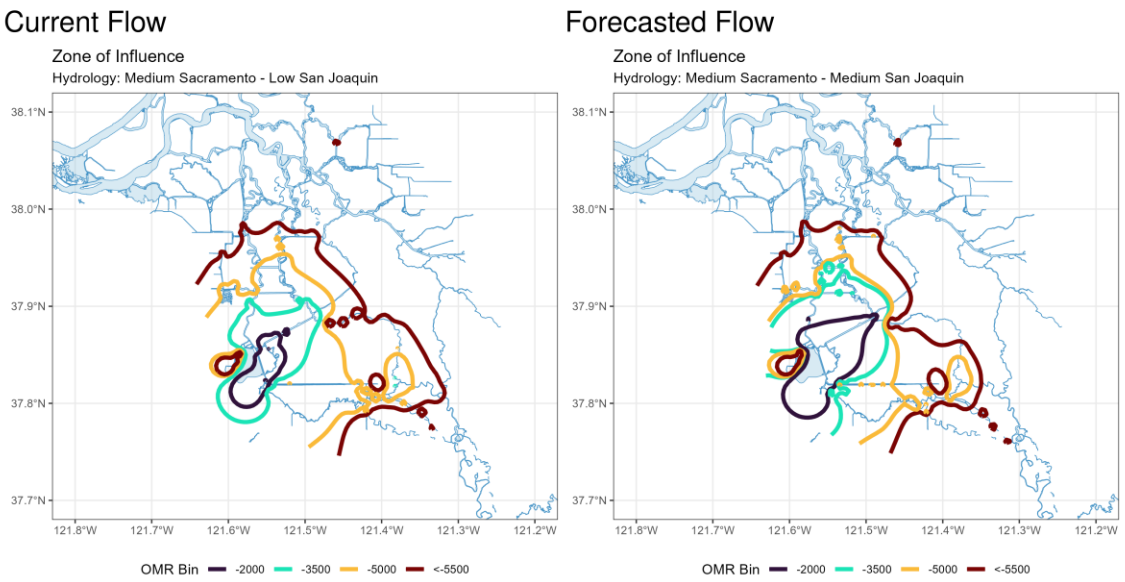

Figure 2: Modeled Zone of Influence at different OMRI scenarios based on current inflow hydrology (left) and forecasted inflow hydrology (right) from the Sacramento River and San Joaquin River

Figure 2 depicts two side-by-side maps of the Sacramento-San Joaquin Delta showing modeled zones of influence under different OMRI scenarios based on current inflow hydrology (left) and forecasted inflow hydrology (right). Colored contour lines represent OMRI flow scenarios ranging from -2,000 to less than -5,500 cfs, illustrating differences in the spatial extent of hydrologic influence throughout the central and southern Delta.

Assessment for Delta Operations on Salmonids

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

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

Delta Entry Timing - Historically, as of May 11, 100% of length-at-date (LAD) winter-run have entered the Delta based on Knights Landing RST catch, 100% have exited the Delta based on Chipps Island Trawl Catch, and 100% of DNA confirmed winter-run have been salvaged.

Table 2: Average percent of annual emigrating population for unclipped LAD winter-run captured at monitoring locations and salvaged at 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 Winter-run, Unclipped	100%	100%	100%	100%	100%	100%
Chinook, DNA Winter-run, Unclipped (Water Year)	N/A	N/A	N/A	N/A	N/A	100%

Red Bluff Diversion Dam Passage Estimate - As of Apr 29 estimated passage to date of LAD winter-run at Red Bluff Diversion is approximately 4.18 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 Apr 27 and May 09 is 0 individuals. Total catch at Sacramento Trawl and Beach Seines in the delta between Apr 27 and May 07 is 0 individuals. Total catch at Delta Exit at Chipps Island between Apr 27 and May 07 is 0 individuals.

Annual Loss

The annual loss threshold for natural winter-run is 1% of the JPE or 10,575 fish. The single-year incidental take limit (ITL) is 0.56% of the JPE (5,922 fish) or 0.36% on a 3-year rolling average (BiOp Table 184). As of May 11, cumulative loss of genetically confirmed winter-run is 45 or 0.43% of the annual loss threshold. Cumulative loss in the past 7 days has been 0.

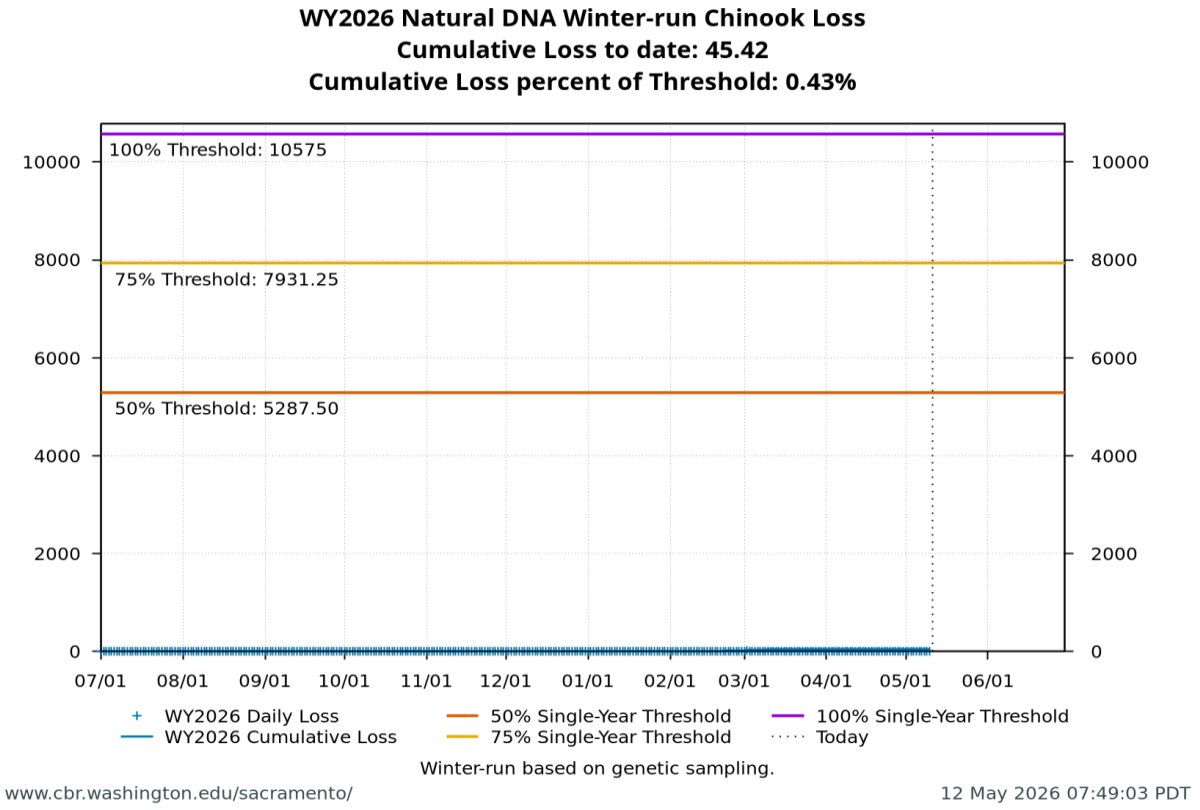

Figure 3: Cumulative loss of natural-origin winter-run for WY 2026. Cumulative loss is based on genetically confirmed winter-run captured in salvage or length-at-date winter-run in which genetic confirmation was unable to be obtained.

Figure 3 is a line graph showing cumulative natural-origin winter-run Chinook loss for Water Year 2026 from July through June. The graph displays daily loss observations and cumulative loss relative to the 50%, 75%, and 100% single-year threshold lines, with cumulative loss remaining substantially below all thresholds throughout the evaluation period.

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 May 10, overall through delta STARS estimated survival probability (with 80% credible intervals) is 0.02 (0-0.05) placing it in the 63rd percentile of historical STARS survival estimates for the month of May (WYs 2018-2025). STARS estimated routing and survival probabilities (with 80% credible intervals) into the interior delta are 0.13 (0.1-0.16) and 0.01 (0-0.02), respectively, corresponding to the 50th and 60th percentiles of historical May estimates (WYs 2018-2025).

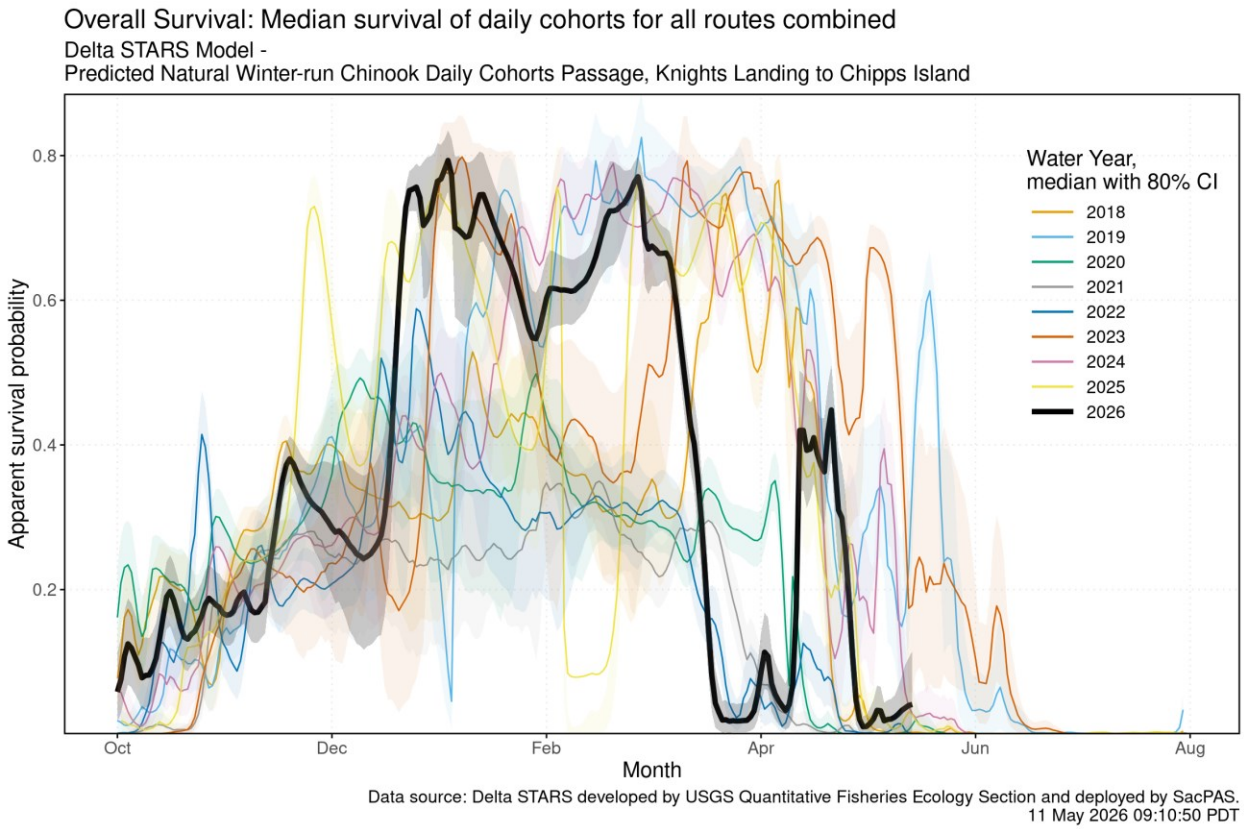

Figure 4: Estimated overall winter-run survival from Knights Landing to Chipps Island. Black line indicates the current water-year, and other colored lines correspond to past water years.

Figure 4 is a line graph showing estimated overall winter-run Chinook survival probability from Knights Landing to Chipps Island across multiple water years from October through August. Colored lines represent historical water years from 2018–2025, while the black line represents Water Year 2026, with shaded bands indicating 80% confidence intervals. The 2026 survival probability generally increases through winter, peaks near 0.8 in January and February, and declines sharply to near 0 by late spring.

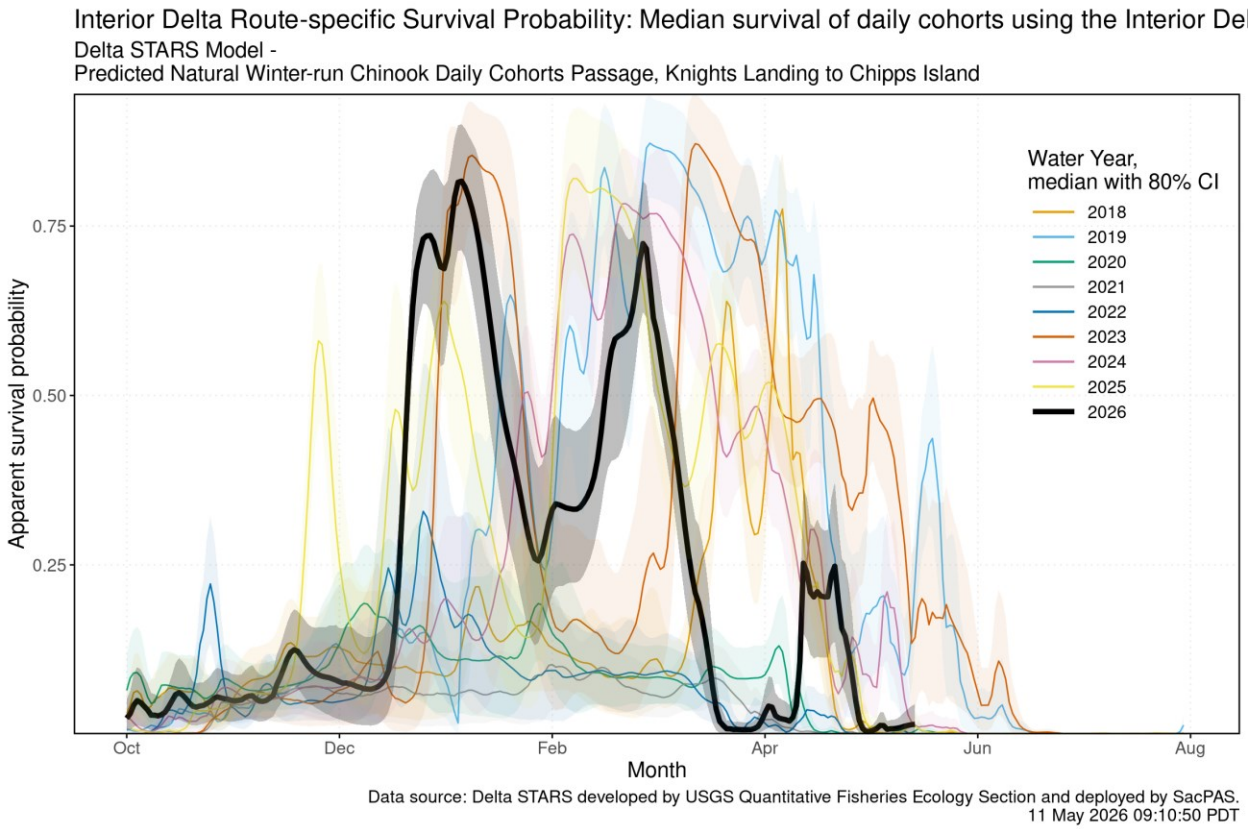

Figure 5: Estimated survival from Knights Landing to Chipps Island of simulated winter-run cohorts that route through the interior Delta. Black line indicates the current water-year, and other colored lines correspond to past water years.

Figure 5 is a line graph showing estimated survival probability of simulated winter-run Chinook cohorts routing through the interior Delta from Knights Landing to Chipps Island across multiple water years from October through August. Colored lines represent historical water years from 2018–2025, while the black line represents Water Year 2026, with shaded bands indicating 80% confidence intervals. The 2026 survival probability increases through winter, peaks near 0.8 in January and February, and declines sharply to near 0 by early spring.

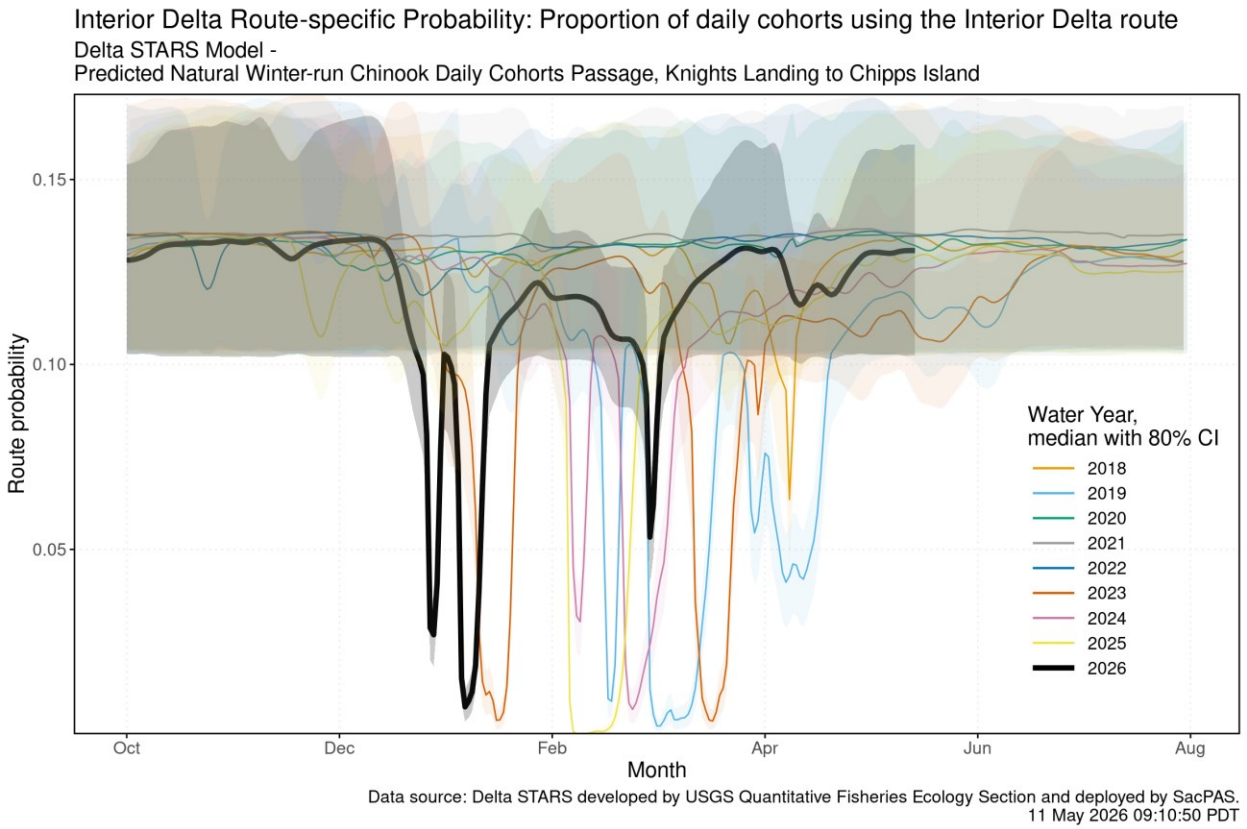

Figure 6: Estimated probability of winter-run routing into the interior Delta. Black line indicates the current water-year, and other colored lines correspond to past water years.

Figure 6 is a line graph showing the estimated probability of winter-run Chinook routing into the interior Delta across multiple water years from October through August. Colored lines represent historical water years from 2018–2025, while the black line represents Water Year 2026, with shaded bands indicating 80% confidence intervals. The 2026 route probability generally remains near 0.12–0.13 throughout the evaluation period, with several sharp declines during winter months before returning to historical ranges by late spring.

Hatchery Winter-run Chinook – Sacramento River

Hatchery Releases

Livingston Stone National Fish Hatchery released a total of 466,344 winter-run Chinook salmon (February 18). All fish were 100% CWT-marked production fish released at the Sacramento River at John F. Reginato River Access. Release details are shown in the table below and available on SacPAS.

Table 3: Livingston Stone NFH winter-run Chinook salmon releases into the Sacramento River in Water Year 2026. Data sourced from SacPAS.

Release Date	Hatchery	Release Site	Release Type	Fish Released	% CWT Marked	CWT Tagcodes
February 18, 2026	Livingston Stone NFH	Sacramento River at John F. Reginato River Access	Production	466,344	100%	053800 056770 056788 056789

Juvenile Production Estimate

The Juvenile Production Estimate for hatchery winter-run (Sacramento River releases) is 130,096 for Livingston Stone releases. The annual loss threshold is 1% of the JPE (1,301 fish), which is the same as the single-year ITL (BiOp Table 184).

Annual Loss

As of May 12, cumulative loss of Livingston Stone hatchery fish (Sacramento River releases) is 58 or 4.45% of the annual loss threshold (which equals the single-year ITL). Cumulative loss in the past 7 days has been 0.

Hatchery Winter-run Chinook – Battle Creek

Hatchery Releases

Livingston Stone National Fish Hatchery released a total of 207,067 winter-run Chinook salmon into Battle Creek (February 19). Release details are available on SacPAS.

Table 4: Livingston Stone NFH winter-run Chinook salmon releases into Battle Creek in Water Year 2026. Data sourced from SacPAS.

Release Date	Hatchery	Release Site	Release Type	Fish Released	% CWT Marked	CWT Tagcodes
February 19, 2026	Coleman NFH	North Fork Battle Creek Manton CA	Jumpstart	207,067	100%	056769

Juvenile Production Estimate

The Juvenile Production Estimate for hatchery winter-run released into Battle Creek is 5,186 based on 207,067 fish released. The single-year incidental take limit (ITL) is 1.0% of the JPE (52 fish) or 0.8% on a 3-year rolling average (BiOp Table 184).

Incidental Take

As of May 12, cumulative loss of Livingston Stone hatchery fish (Battle Creek releases) is 2 or 4.47% of the single-year ITL (52 fish). Cumulative loss in the past 7 days has been 0.

Natural-origin Central Valley Steelhead

Current Status

Delta Entry Timing - Historically, as of May 11, 80% of CCV steelhead have entered the Delta based on Knights Landing RST catch, 83% have exited the Delta based on Chipps Island Trawl Catch, and 87% have been salvaged.

Table 5: Average percent of annual emigrating population for unclipped CCV steelhead captured at monitoring locations and salvaged at Delta facilities for the past 10 years.

Species	Chipps Island Trawl	Knights Landing RST	Red Bluff Diversion Dam	Sac Trawl (Sherwood)	Salvage	Tisdale RST
Steelhead, Unclipped	83%	77%	22%	80%	87%	80%

Delta Monitoring - Total catch of unclipped steelhead at RSTs at Delta Entry (Tisdale, Knights Landing, Lower Sacramento River) between Apr 27 and May 09 is 0 individuals. Total catch at Sacramento Trawl and Beach Seines in the delta between Apr 27 and May 07 is 0 individuals. Total catch at Delta Exit at Chipps Island between Apr 27 and May 07 is 0 individuals.

Annual Loss

As of May 11, cumulative loss of unclipped steelhead is 251 or 4.74% of the single-year incidental take limit (ITL). There is no annual loss threshold for natural steelhead. The single-year ITL is 5,294 juveniles or 2,319 juveniles as a 3-year rolling average (BiOp Table 184). Cumulative loss in the past 7 days has been 3.

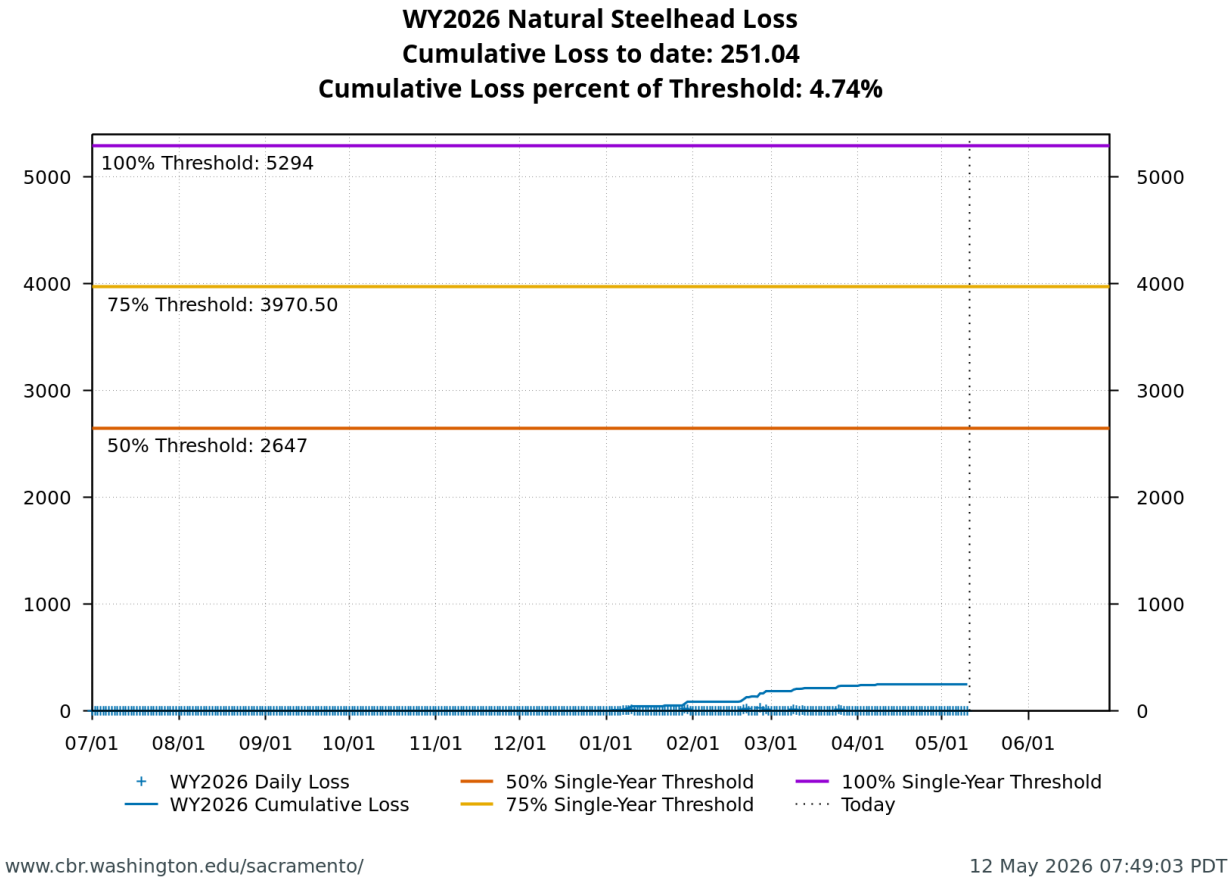

Figure 7: Cumulative loss of natural-origin steelhead for WY 2026. The 5,294 line represents the single-year incidental take limit (ITL), not a loss threshold.

Figure 7 is a line graph showing cumulative natural-origin steelhead loss for Water Year 2026 from July through June. The graph displays daily loss observations and cumulative loss relative to the 50%, 75%, and 100% single-year incidental take limit lines, with cumulative loss gradually increasing through spring but remaining substantially below all threshold levels throughout the evaluation period.

Hatchery-origin Central Valley Steelhead

Surrogate Releases

There have been a total of 10 releases totaling 1,618,274 steelhead in Water Year 2026. JPE for the hatchery releases as of today is 654,130 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 6,541, but is subject to change with additional steelhead releases.

Table 6: Summary of steelhead hatchery releases in Water Year 2026. JPE calculated using hatchery-specific survival estimates to Delta entry from release location.

Hatchery	Date of Release	Number Released	Estimated Survival	Juvenile Production Estimate
NIM	2025-11-10	233,109	72%	167,838
Coleman	2025-12-15	555,720	38%	211,174
Coleman	2025-12-17	90,019	38%	34,207
FRH	2026-01-06	376,640	36%	135,590
FRH	2026-01-09	117,715	36%	42,377
MOK	2026-02-17	39,130	25%	9,783
MOK	2026-02-18	39,131	25%	9,783
MOK	2026-03-18	41,550	27%	11,219
MOK	2026-03-19	42,150	27%	11,381
MOK	2026-04-16	83,110	25%	20,778

Table 7: Hatchery-specific survival estimates used for JPE calculations.

Hatchery	Survival Estimate	Source
Coleman NFH	0.205 – 0.433	Sandstrom et al. 2020
Feather River Hatchery	0.09 – 0.45	Kurth 2013
Nimbus Hatchery	0.62 – 0.83	Brodsky et al. 2020
Mokelumne River Hatchery	0.25 – 0.33	Del Real et al. 2012

Total loss of hatchery-origin steelhead is 1890 or 28.89% of the annual loss threshold. Note that hatchery origin of salvaged fish cannot be determined at this time and salvage is based on the assumption of similar routing and survival probabilities of individual hatchery releases.

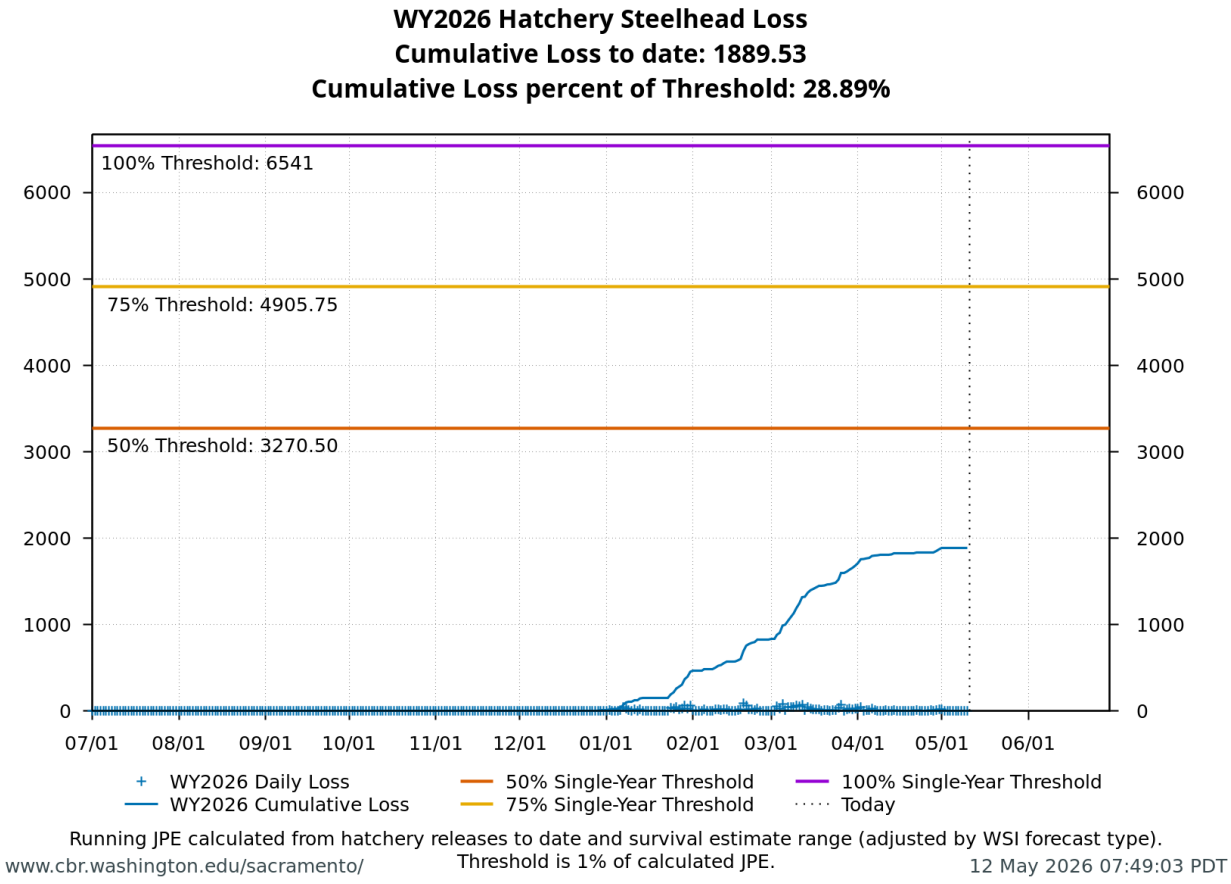

Figure 8: Cumulative loss of hatchery steelhead for WY 2026.

Figure 8 is a line graph showing cumulative hatchery steelhead loss for Water Year 2026 from July through June. The graph displays daily loss observations and cumulative loss relative to the 50%, 75%, and 100% single-year threshold lines, with cumulative loss increasing steadily from January through April and remaining below all threshold levels throughout the evaluation period.

Spring-run Chinook

Current Status

Delta Entry Timing - Historically, as of May 11, 99% of LAD spring-run have entered the Delta based on Knights Landing RST catch, 96% have exited the Delta based on Chipps Island Trawl Catch, and 79% have been salvaged.

Table 8: Average percent of annual emigrating population for LAD spring-run Chinook salmon captured at monitoring locations and salvaged at 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	98%	100%	100%	99%	96%	79%

Red Bluff Diversion Dam Passage Estimate - As of Apr 29 estimated passage to date of LAD spring-run at Red Bluff Diversion is approximately 0.93 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 spring-run at RSTs at Delta Entry (Tisdale, Knights Landing, Lower Sacramento River) between Apr 27 and May 09 is 7 individuals. Total catch at Sacramento Trawl and Beach Seines in the delta between Apr 27 and May 07 is 9 individuals. Total catch at Delta Exit at Chipps Island between Apr 27 and May 07 is 122 individuals.

Spring-run Surrogate Releases

A total of 3,327,812 spring-run surrogate fish have been released in Water Year 2026, with an estimated Juvenile Production Estimate (JPE) of 1,130,892 fish entering the Delta. This includes 805,323 Coleman Late-Fall Run Chinook yearlings (JPE: 219,852) released from Coleman National Fish Hatchery across 12 coded-wire tag groups, and 2,522,489 Feather River Hatchery Spring-Run young-of-year (JPE: 911,040) across 7 coded-wire tag groups. See details in table below.

Table 9: Spring-run Chinook salmon surrogate releases: Coleman Late-Fall yearlings and Feather River Spring-Run young-of-year (production and experimental). ITL is 0.5% of each release group (BiOp Table 184).

Hatchery	Release Date	Stock	Life Stage	Type	CWT Released	JPE	ITL (0.5%)	Loss	CWT Codes
Feather River Hatchery	2026-03-18	Spring-Run	YOY	Production	985,324	355,866	4,927	0	063227, 063229
Feather River Hatchery	2026-03-19	Spring-Run	YOY	Production	1,048,948	378,846	5,245	0	063036, 063236, 063239
Feather River Hatchery	2026-03-23	Spring-Run	YOY	Production	488,217	176,328	2,441	0	062858, 063234
Coleman NFH	2025-11-13	Late-Fall	Yearling	Production	143,346	39,134	717	9	056808, 056809
Coleman NFH	2025-11-17	Late-Fall	Yearling	Experimental	75,119	20,507	376	0	056810
Coleman NFH	2025-12-17	Late-Fall	Yearling	Production	468,876	128,002	2,344	774	053700, 056806, 056811, 056812, 056814, 056815, 056817
Coleman NFH	2025-12-22	Late-Fall	Yearling	Experimental	60,873	16,618	304	257	056813
Coleman NFH	2026-01-08	Late-Fall	Yearling	Experimental	57,109	15,591	286	35	056816

Annual Loss

The annual loss threshold (Action 5) is 1% of the JPE entering the Delta, tracked cumulatively but separately for yearlings and young-of-year. Yearling surrogates (Coleman Late-Fall): the threshold is 2,199 fish; as of May 11, cumulative loss is 1,075 fish or 48.90% of the threshold. YOY surrogates (Feather River Spring-Run): the threshold is 9,110 fish; as of May 11, cumulative loss is 0 fish or 0.00% of the threshold. The single-year incidental take limit (ITL) is 0.5% of the estimated number of each surrogate release group (BiOp Table 184). ITL status by release group: YOY - Feather River Hatchery (2026-03-18, Production): 0 loss of 4,927 ITL (0%); YOY - Feather River Hatchery (2026-03-19, Production): 0 loss of 5,245 ITL (0%); YOY - Feather River Hatchery (2026-03-23, Production): 0 loss of 2,441 ITL (0%); Yearling - Coleman NFH (2025-11-13, Production): 9 loss of 717 ITL (1.21%); Yearling - Coleman NFH (2025-11-17, Experimental): 0 loss of 376 ITL (0%); Yearling - Coleman NFH (2025-12-17, Production): 774 loss of 2,344 ITL (33.02%); Yearling - Coleman NFH (2025-12-22, Experimental): 257 loss of 304 ITL (84.64%); Yearling - Coleman NFH (2026-01-08, Experimental): 35 loss of 286 ITL (12.26%)

Loss Prediction and Trajectories

The following figures display the current loss predictor model outputs for winter-run Chinook salmon and steelhead.

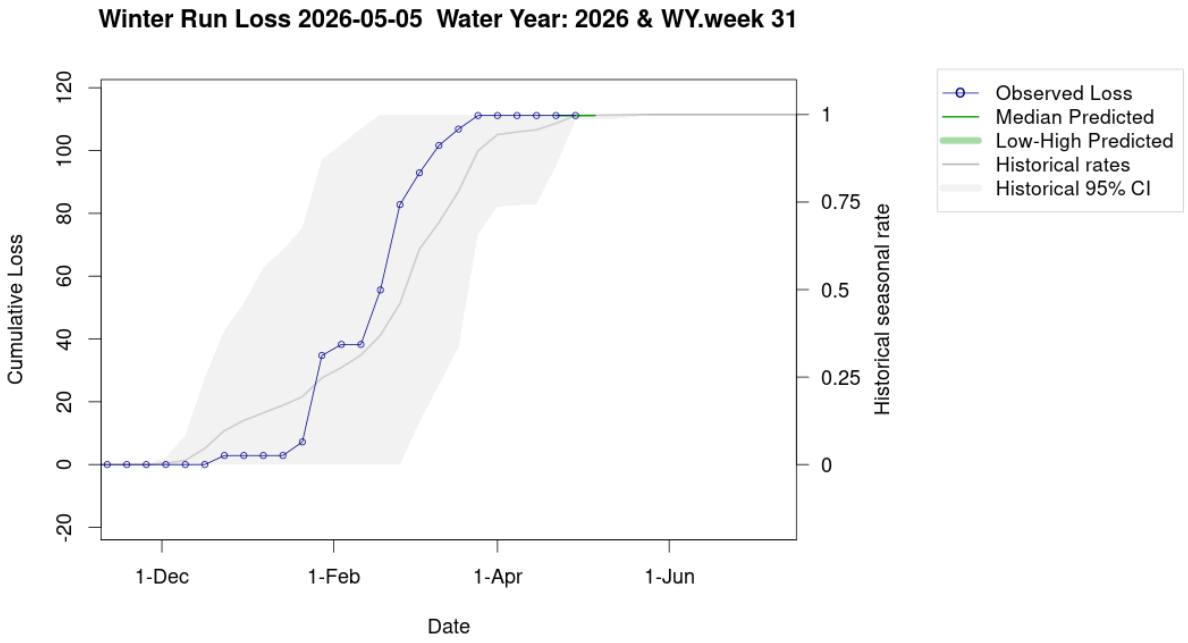

Figure 9: Estimates of winter-run Chinook loss generated by Loss and Salvage Predictor tool.

Figure 9 is a line graph showing estimated cumulative winter-run Chinook loss for Water Year 2026 generated by the Loss and Salvage Predictor tool from November through June. The graph displays observed loss, median predicted loss, historical rates, and historical 95% confidence intervals, with cumulative observed loss increasing rapidly between February and March before leveling near 110 by April. Predicted losses remain within the historical confidence interval throughout the evaluation period.

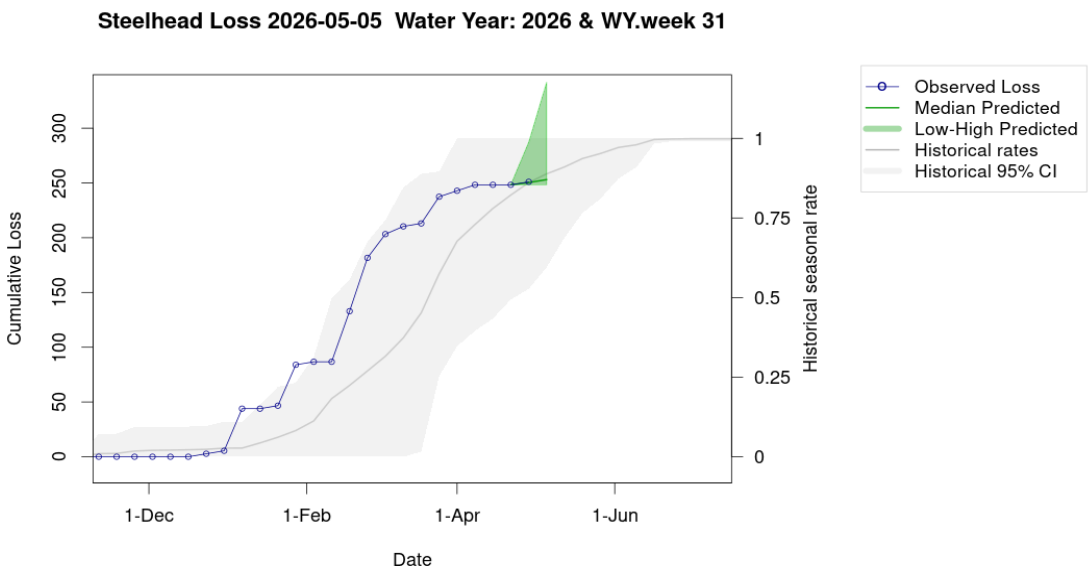

Figure 10: Estimates of steelhead loss generated by Loss and Salvage Predictor tool.

Figure 10 is a line graph showing estimated cumulative steelhead loss for Water Year 2026 from November through June. Observed cumulative loss increases steadily from January through April before leveling near 250 by May, while predicted losses remain within the historical 95% confidence interval.

Evaluation

1. What is the probability of exceeding natural or hatchery winter-run Chinook salmon loss thresholds in the upcoming week?
    a. **LOW RISK**: Natural winter-run cumulative loss is currently 0.43% of the threshold. **LOW RISK**: Hatchery winter-run (Sac River) cumulative loss is currently 4.45% of the threshold. **LOW RISK**: Hatchery winter-run (Battle Creek) cumulative loss is currently 4.47% of the threshold.
2. What is the probability of exceeding spring-run Chinook salmon surrogate loss thresholds (yearling and YOY) in the upcoming week?
    a. **LOW RISK**: Spring-run surrogate yearlings (Coleman Late-Fall) cumulative loss is currently 48.90% of the threshold. **LOW RISK**: Spring-run surrogate YOY (Feather River Spring-Run) cumulative loss is currently 0.00% of the threshold.
3. What is the probability of exceeding natural or hatchery steelhead loss thresholds in the upcoming week?
    a. **LOW RISK**: Natural steelhead cumulative loss is currently 4.74% of the threshold.
    b. **LOW RISK**: Hatchery steelhead cumulative loss is currently 28.89% of the threshold.

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

Operational and Regulatory Conditions

- See current Weekly Fish and Water Operations Outlook document.
- Additional information also available on the SacPAS SMT page.

Delta smelt

Biological

- Delta smelt life stages detected in surveys:
- **Abundance estimate:** 2034 (95% CL: 162 to 8,959) as of the week of March 23–27, 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:** 44 adult Delta smelt and 30 juvenile Delta smelt have been detected this water year. See Table 10 for recent detections, Figure 11 for spatial distribution, and Figure 12 for temporal distribution.
- **Delta smelt salvage:** 1 Delta smelt has been salvaged, and the cumulative seasonal salvage is 4.

Notes

- EDSM is currently in phase 2 (20-mm); detections are marked as *Hypomesus sp.* until genetic verification is returned, which may be 4-6 weeks delay. As a result, 'recent catch' in this assessment may be low until genetic verification has occurred.
- 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 purposes and are not intended to delineate cohorts or distinguish from hatchery or wild origin. See Table 10 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 10: 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
NA	NA	NA	NA	NA	NA

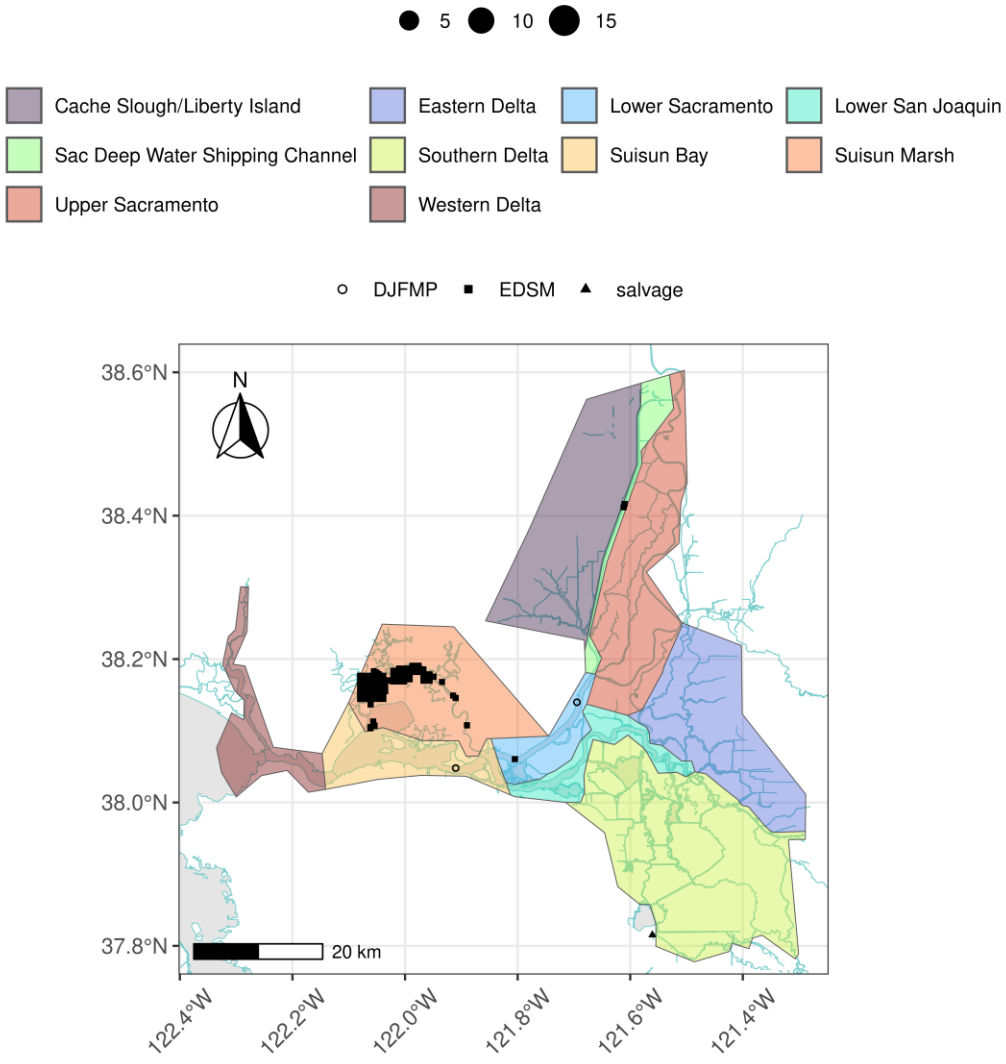

Figure 11: Delta smelt distribution for WY 2026

Figure 11 is a map of the Sacramento–San Joaquin Delta showing Delta smelt distribution across multiple colored subregions for Water Year 2026. Sampling locations from DJFMP, EDSM, and salvage surveys are displayed using different point symbols, with larger symbols representing greater catch counts. Most Delta smelt observations are concentrated in the Suisun Bay region, particularly within EDSM survey locations.

Table 11: Delta smelt water year totals by life stage

Survey	Region	Life Stage	Total
DJFMP	N/A	Adult	1
DJFMP	North	Juvenile	1
EDSM	North	Adult	2
EDSM	West	Adult	40
EDSM	West	Juvenile	29
salvage	South	Adult	1

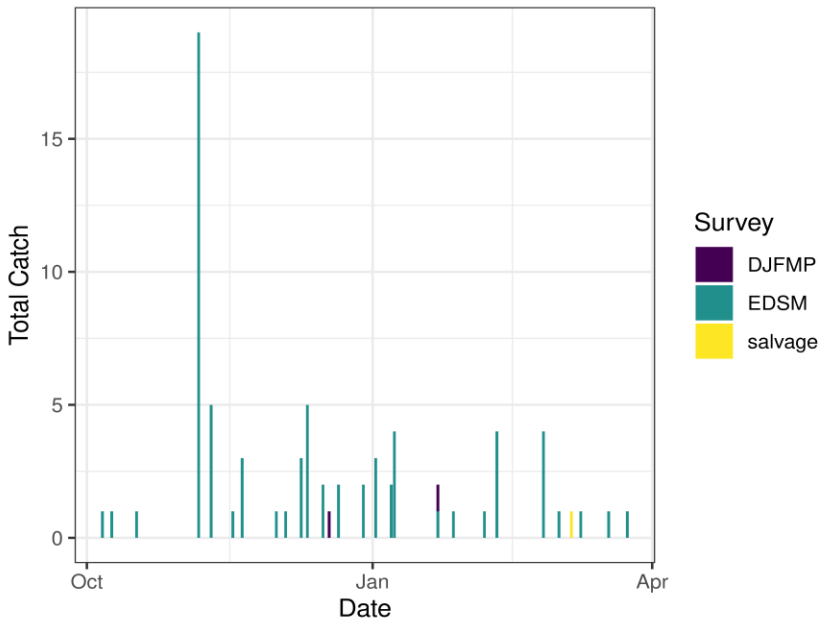

Figure 12: Time series of Delta smelt catch, WY 2026

Figure 12 is a time series bar graph showing total Delta smelt catch by survey type from October 2025 through April 2026. Catch observations from DJFMP, EDSM, and salvage surveys are represented by different colors, with EDSM surveys accounting for the majority of catches throughout the period. The highest single catch occurs in November, reaching approximately 18 fish, while most other catches remain below five fish.

Environmental

First Flush

- Implemented 12/25/25-01/7/26

Real-time Assessment Thresholds

Adult Delta smelt

- Adult Delta smelt action offramped on 02/12/2026
- No adult Delta smelt action was taken in WY26

- See Bay-Delta Live for recent Delta-wide turbidity conditions.

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: The most recent average turbidity was 4.2 FNU as of Apr 29, 2026

Evaluation

Delta smelt:

1. After the start of entrainment management, is JPF < 0, is daily average turbidity ≥ 12 FNU in the OMR corridor (stations OBI, HOL, and OSJ)? Has the average water temperature at Jersey Point or Rio Vista not exceeded 53.6° F (12° C) for 3 consecutive days and/or has this action already been taken during WY 2026?
    a. The adult Delta smelt entrainment action is not active and no action was taken in WY26. Temperature at Jersey Point exceeded the threshold on February 12th, 2025. Jersey Point 3-day average temperature was 12.05°C on February 10th, 12.09°C on February 11th, and 12.13°C on February 12th.
2. What is the evidence for the onset of Delta smelt spawning?
    a. Upstream migration for Delta smelt occurs between December and March and in response to "first flush" conditions (Sommer et al., 2011; Grimaldo et al. 2009; 2021). Historically, detections of ripe Delta smelt began in January and peaked in February and March and the majority of Delta Smelt spawning occurs at 11-15˚C (but can occur from 8-18˚C) (Damon et al. 2016). Based on historical monitoring data from the past few years, first detection of larvae in the Central and South Delta has typically occurred by mid to late March. The large majority of Delta smelt recaptures continue to be from Suisun Marsh, close to where supplemental fish were released in the fall. Spawning is most likely completed due to increased water temperatures.
3. After the onset of spawning, have the following conditions occurred: JPF < 0 cfs, average turbidity is ≥ 12 FNU in the south Delta, and PTM modeling indicates the action would avoid ≥ 5% entrainment of the Delta smelt population at facilities after 30 days?
    a. The most recent 11-station average turbidity in the South Delta was 4.2 FNU on April 29, 2026 (station 918 could not be sampled due to bridge clearance issues). JPF may be < 0 cfs for part of this week. However, PTM results for this week for neutrally buoyant particles injected at

Chipps Island (using the most recent adult detections as a proxy for potential larval locations) showed 0% particle entrainment at both facilities for OMRI of -2,000, -3,500, and -5,000 cfs this week and next week. These results indicate that, if Delta smelt larvae were present, the risk of entrainment would be low.

b. No Delta smelt larvae have been captured in SLS or 20-mm surveys to date in WY2026 (pending genetic results from EDSM 20mm survey). Because turbidity conditions remain below the ≥12 FNU threshold and modeling shows a low risk of entrainment, the conditions required to initiate the larval and juvenile Delta smelt entrainment action are not met.

Longfin smelt

Biological

- Longfin smelt life stages detected in surveys:
- Longfin smelt count: 475 adult, 1288 juvenile, and 8877 larval longfin smelt have been detected this water year. See Table 12 for recent detections, Figure 13 for spatial distribution, and Figure 14 for temporal distribution.
- Longfin smelt salvage: 0 longfin smelt have been salvaged, and the cumulative seasonal salvage is 0.

Table 12: 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
NA	NA	NA	NA	NA	NA

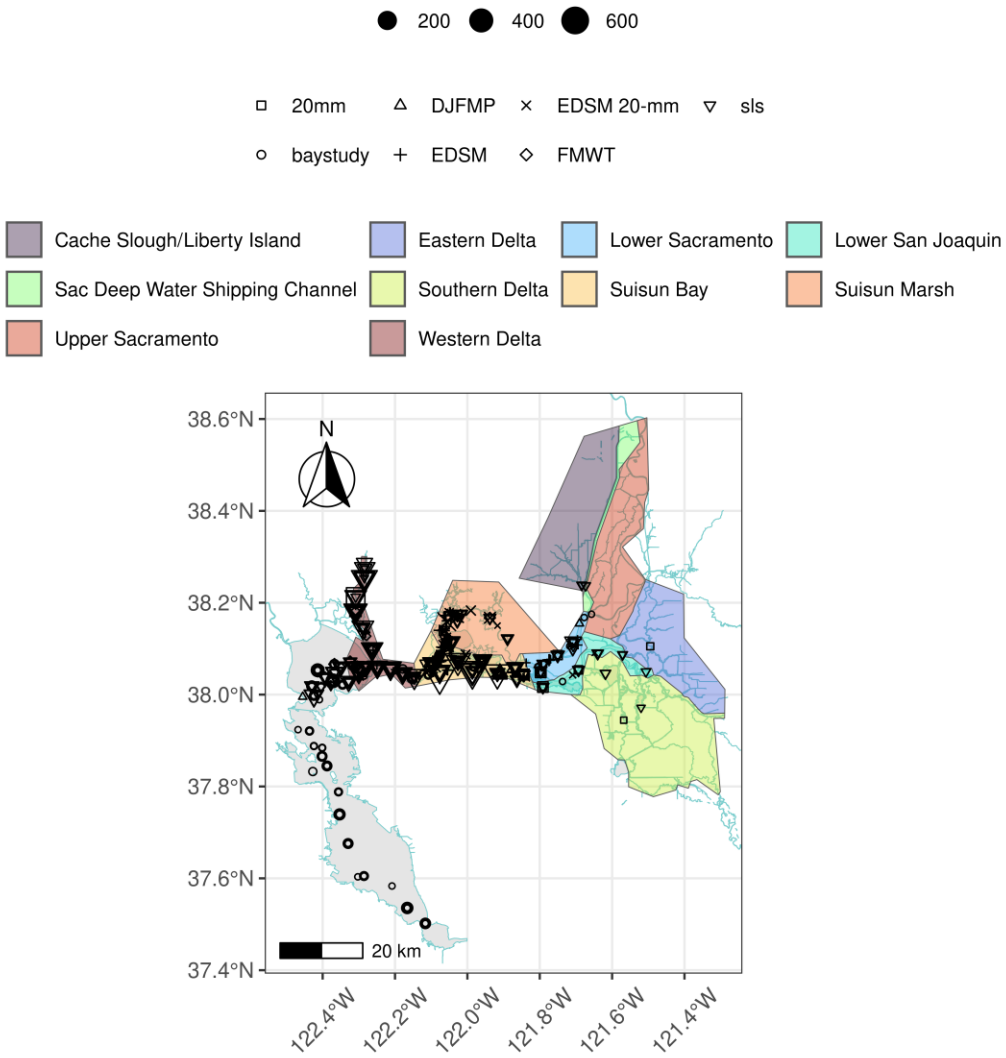

Figure 13: Longfin Smelt Distribution for WY 2026

Figure 13 is a map of the Sacramento–San Joaquin Delta showing Longfin Smelt distribution across multiple colored subregions for Water Year 2026. Sampling locations from several surveys, including 20mm, Bay Study, DJFMP, EDSM, FMWT, and SLS, are represented by different point symbols, with larger symbols indicating higher catch counts. Most Longfin Smelt observations are concentrated along Suisun Bay, the Western Delta, and adjacent Lower Sacramento regions, with comparatively fewer detections in the eastern and southern Delta.

Table 13: Longfin smelt water year totals by life stage

Survey	Region	Life Stage	Total
20mm	Far West	Larva	270
20mm	North	Larva	13
20mm	South	Larva	17
20mm	West	Larva	121
DJFMP	Bay	Juvenile	1
DJFMP	N/A	Adult	268
DJFMP	N/A	Juvenile	31
EDSM	Far West	Adult	24
EDSM	Far West	Juvenile	100
EDSM	North	Adult	1
EDSM	North	Juvenile	1
EDSM	West	Adult	83
EDSM	West	Juvenile	204
EDSM 20-mm	Far West	Juvenile	1
EDSM 20-mm	Far West	Larva	2
EDSM 20-mm	North	Larva	1
EDSM 20-mm	South	Larva	1
EDSM 20-mm	West	Juvenile	113
EDSM 20-mm	West	Larva	663
FMWT	Bay	Adult	1
FMWT	Bay	Juvenile	14
FMWT	Far West	Adult	2
FMWT	Far West	Juvenile	14
FMWT	West	Adult	4
FMWT	West	Juvenile	18
FMWT	NA	Adult	2
FMWT	NA	Juvenile	28
baystudy	Bay	Adult	53
baystudy	Bay	Juvenile	624
baystudy	Far West	Adult	27
baystudy	Far West	Juvenile	111
baystudy	North	Adult	3
baystudy	North	Juvenile	1
baystudy	West	Adult	7
baystudy	West	Juvenile	24
sls	Bay	Larva	448
sls	Far West	Larva	4274
sls	North	Larva	91
sls	South	Larva	54
sls	West	Larva	2531
sls	NA	Juvenile	3
sls	NA	Larva	391

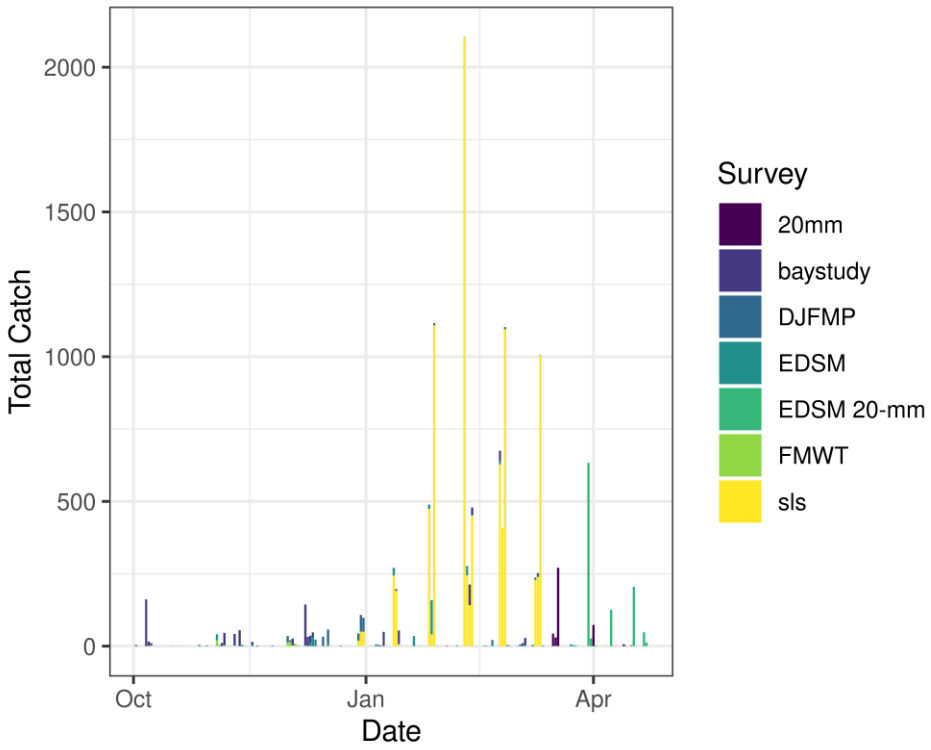

Figure 14: Time series of longfin smelt catch, WY 2026

Figure 14 is a time series bar graph showing total Longfin Smelt catch by survey type from October 2025 through April 2026. Multiple survey programs, including 20mm, Bay Study, DJFMP, EDSM, EDSM 20-mm, FMWT, and SLS, are represented by different colors, with SLS surveys accounting for the highest catches during late winter and early spring. Catch levels increase substantially beginning in January, with the largest single catch exceeding 2,000 fish in February.

Real-time Assessment Thresholds

Start of Entrainment Management (Adult Longfin Smelt)

- This action was not taken in WY26

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: 2,572 cfs as of May 10, 2026
    - Adult abundance (Age 1+ LFS index): 2479.2 fish
        - 5% of abundance + 1: 125.0
    - 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: 2,572 cfs as of May 10, 2026

Evaluation

Longfin smelt:

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?
    1. While JPF may decrease to < 0 cfs during this week, no adult longfin smelt have been detected in salvage this water year and so conditions are not met for the adult longfin smelt entrainment protection action.
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?
    a. JPF may decrease to < 0 cfs this week. However, PTM and Zone of Influence modeling indicate a low risk of entrainment for the larval and juvenile Longfin Smelt population. The Longfin smelt larval population and PTM analysis projects low entrainment relative to estimated abundance* for this week. The model shows the estimated entrainment for this week is estimated to be <0.1% for the -2,000, -3,500, and -5,000 cfs OMRI scenarios. In addition, PTM for surface-oriented particles injected at both Chipps Island and Jersey Point show 0-0.1% entrainment at the projects for this week for OMRI of –2,000, -3,500, and –5,000 cfs.

    *Please note that due to processing/posting time for 20-mm survey data results, larval longfin smelt abundance for this model is being calculated from completed SLS survey data, and has not yet been updated to use 20-mm data. As a result, data from this model should be interpreted with caution.

    b. Zone of Influence modeling indicates high differences in the hydrodynamic footprint across OMRI scenarios; however, the Zone of Influence does not extend into the western or far western regions where the majority of Longfin Smelt larvae and juveniles have been detected. Therefore, these effects are not anticipated to result in a population decline.

3. Is there additional information or other analyses that should be considered in this evaluation?

    a. Please see Appendix A for additional information.

End of smelt Entrainment Management

- **Threshold**: CLC ≥ 25° C (77° F) for 3 consecutive days OR June 30
    - Clifton Court Temperature: 20.8, 21.1, 21.9° C as of May 11, 2026

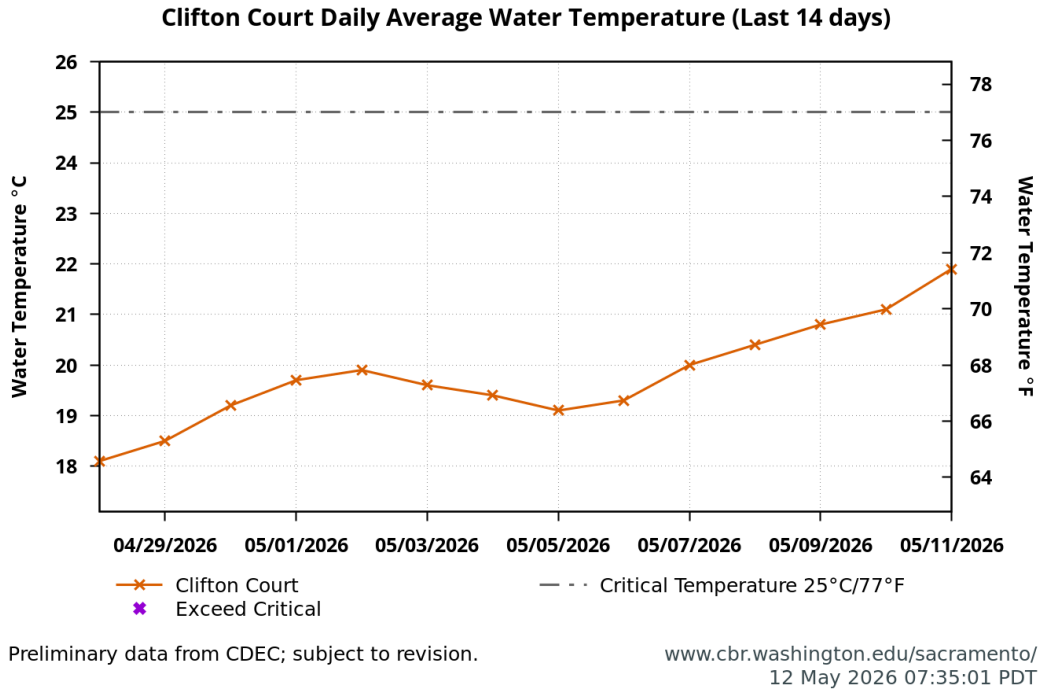

Figure 15. Clifton Court Daily Average Water Temperature

Figure 15 is a line graph showing daily average water temperature at Clifton Court from April 28 through May 11, 2026. Water temperature is displayed in both degrees Celsius and Fahrenheit, with temperatures gradually increasing from approximately 18°C (64°F) to nearly 22°C (71°F) over the 14-day period. A horizontal dashed line marks the critical temperature threshold of 25°C (77°F), which was not exceeded during the evaluation period.

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Appendix A. Delta Real-Time Forecast Summary for 05/05/2026

Date Published: 05/11/2026

Forecast Period: 05/05/2026 – 05/25/2026

Forecast Week 1: 05/05/2026 – 05/11/2026 Forecast

Week 2: 05/12/2026 –05/18/2026

Forecast Week 3: 05/19/2026 – 05/25/2026

Contents

Common Assumptions

The model run results cover the period May 5, 2026 through May 25, 2026 and are based on the following assumptions established by DWR:

1. CCFB Gates are operating to Priority 2.
2. The Delta Cross Channel gates are closed.
3. Suisun Marsh Salinity Control flashboards are in. All three gates are in open position from March 2.
4. San Joaquin River flow at Vernalis is at 1845 cfs at the beginning of the forecast period and is estimated to decrease 1100 cfs by the end of the forecast period.
5. San Joaquin River EC at Vernalis is at 394 umhos/cm at the beginning of the forecast period and is estimated to increase to 698 umhos/cm at the end of the forecast period.

6. Sacramento River flow at Freeport is at 14313 cfs at the beginning of the forecast period and is expected to decrease to 13250 cfs by the end of the forecast period.
7. CCFB inflow is at 599 cfs at the beginning of the forecast period and is expected to increase to 600 cfs by the end of the forecast period.
8. Export at Jones Pumping Plant is at 1150 cfs at the beginning of the forecast period and is expected to increase to 3100 cfs to the end the forecast period.
9. The Middle River is scheduled to be closed on May 7. Intermediate culvert operations begin on May 15.

As shown in the next section, assumptions 4 and 6 are updated based on Reclamation forecast data, and assumption 8 and exports at Banks Pumping Plant have been modified to include four different forecast scenarios at an Old and Middle River (OMR) index of -6,500 cfs, -5,000 cfs, -3,500 cfs, and -2,000 cfs.

Reclamation Forecast Flow and Export Data

Table 1. Weekly Averaged Forecasted Flow Data and Flow Bins

Forecast Week	Sacramento River at Freeport (cfs)	Sac Flow Bin	San Joaquin River at Vernalis (cfs)	SJR Flow Bin	Delta Inflow Bin
Week 1: 05/05/2026 - 05/11/2026	11,629	lo	1,685	lo	lolo
Week 2: 05/12/2026 - 05/18/2026	10,589	lo	1,786	lo	lolo
Week 3: 05/19/2026 - 05/25/2026	10,000	lo	2,000	med	lomed

Key: cfs = cubic feet per second Sac = Sacramento River SJR = San Joaquin River

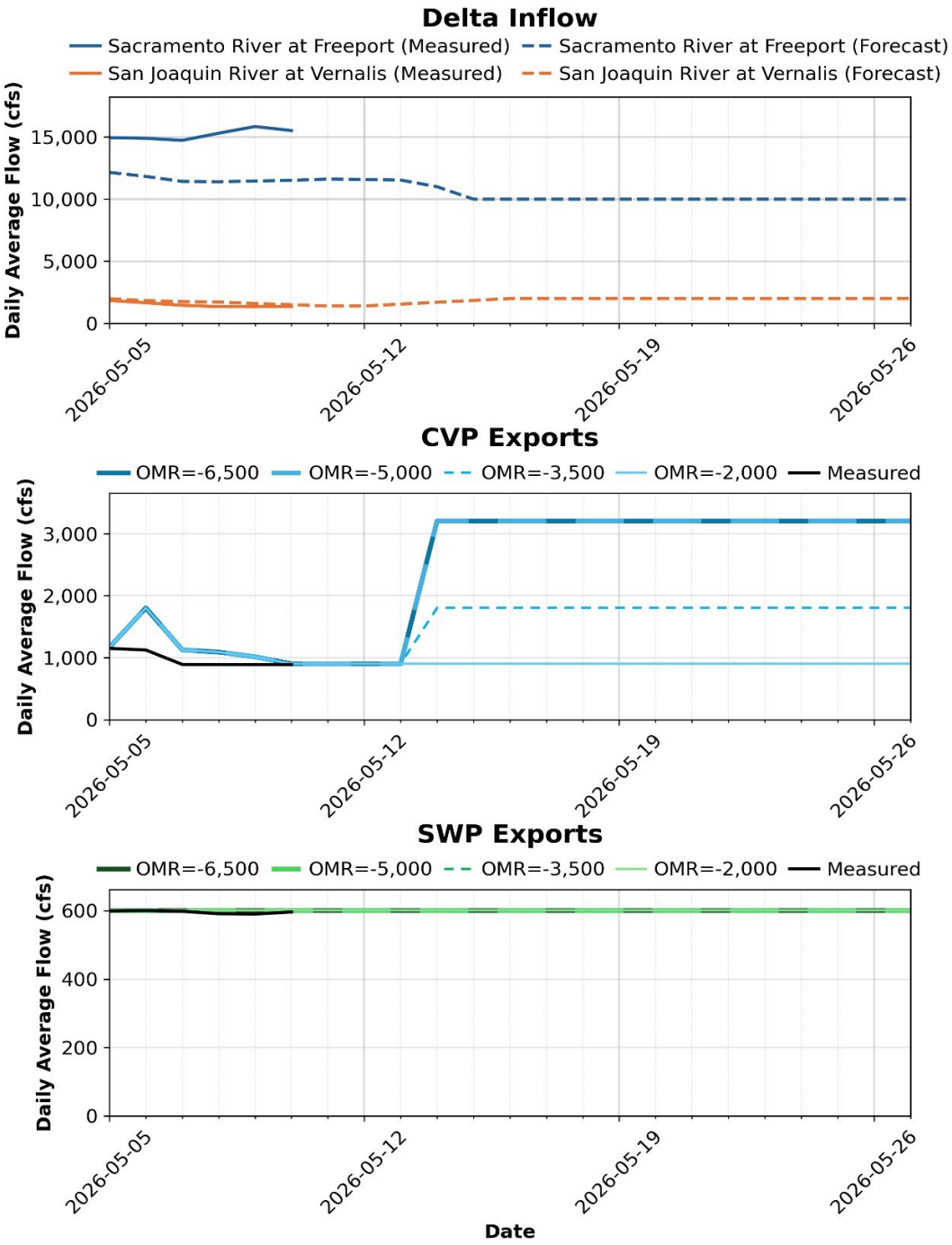
Table 2. Weekly Averaged CVP and SWP Exports by OMR Bin

Week	OMR Bin (cfs)	CVP Exports (cfs)	SWP Exports (cfs)	Total Exports (cfs)	CVP Exports (% of total)	SWP Exports (% of total)
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	1,143	601	1,744	66%	34%
Week 1: 05/05/2026 - 05/11/2026	-3,500	1,143	601	1,744	66%	34%
Week 1: 05/05/2026 - 05/11/2026	-2,000	1,143	601	1,744	66%	34%
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	2,547	601	3,148	81%	19%
Week 2: 05/12/2026 - 05/18/2026	-3,500	1,545	601	2,146	72%	28%
Week 2: 05/12/2026 - 05/18/2026	-2,000	902	601	1,503	60%	40%
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	3,206	601	3,807	84%	16%
Week 3: 05/19/2026 - 05/25/2026	-3,500	1,803	601	2,404	75%	25%
Week 3: 05/19/2026 - 05/25/2026	-2,000	902	601	1,503	60%	40%

Key: cfs = cubic feet per second CVP = Central Valley Project OMR = Old and Middle River

Notes:

- One pumping unit is currently out of service at Jones Pumping Plant until August 2026. The current maximum pumping rate at Jones Pumping Plant (CVP Exports) is 4,200 cfs.
- Per the State Water Project (SWP) Incidental Take Permit (ITP) 8.12.1, the State is required to curtail exports April 1 through May 31. This change in exports is expected to persist for the two-month period unless Vernalis flows change. This is reflected in the forecast SWP exports starting on April 1.
- From April 11 to mid-May CVP exports will be reduced to roughly 900 cfs due to D-1641.
- The OMR bin for all three weeks reflects the OMR levels at the end of Week 3. OMR levels during Week 1 are similar for the three scenarios, but after mid-May (Weeks 2 and 3) CVP exports are no longer restricted by D-1641 and exports increase, creating a larger range of OMR forecasts. There is still a low probability an OMR of -6,500 cfs would be realized, so that scenario is omitted from this assessment.



Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project

Figure 1. Daily Average Flow for Measured and Forecasted Delta Inflow, CVP Exports, and SWP Exports

Figure 1 is a collection of three stacked line graphs showing measured and forecasted Delta inflow, CVP exports, and SWP exports from May 5, 2026 to May 26, 2026. The top graph displays measured and forecasted Sacramento River flows at Freeport and San Joaquin River flows at Vernalis in daily average flow (cfs). The bottom two graphs show CVP and SWP export scenarios in daily average flow (cfs) for OMR flow conditions of -6,500, -5,000, -3,500, and -2,000, represented by different colored lines and line styles.

Delta Export Zone of Influence

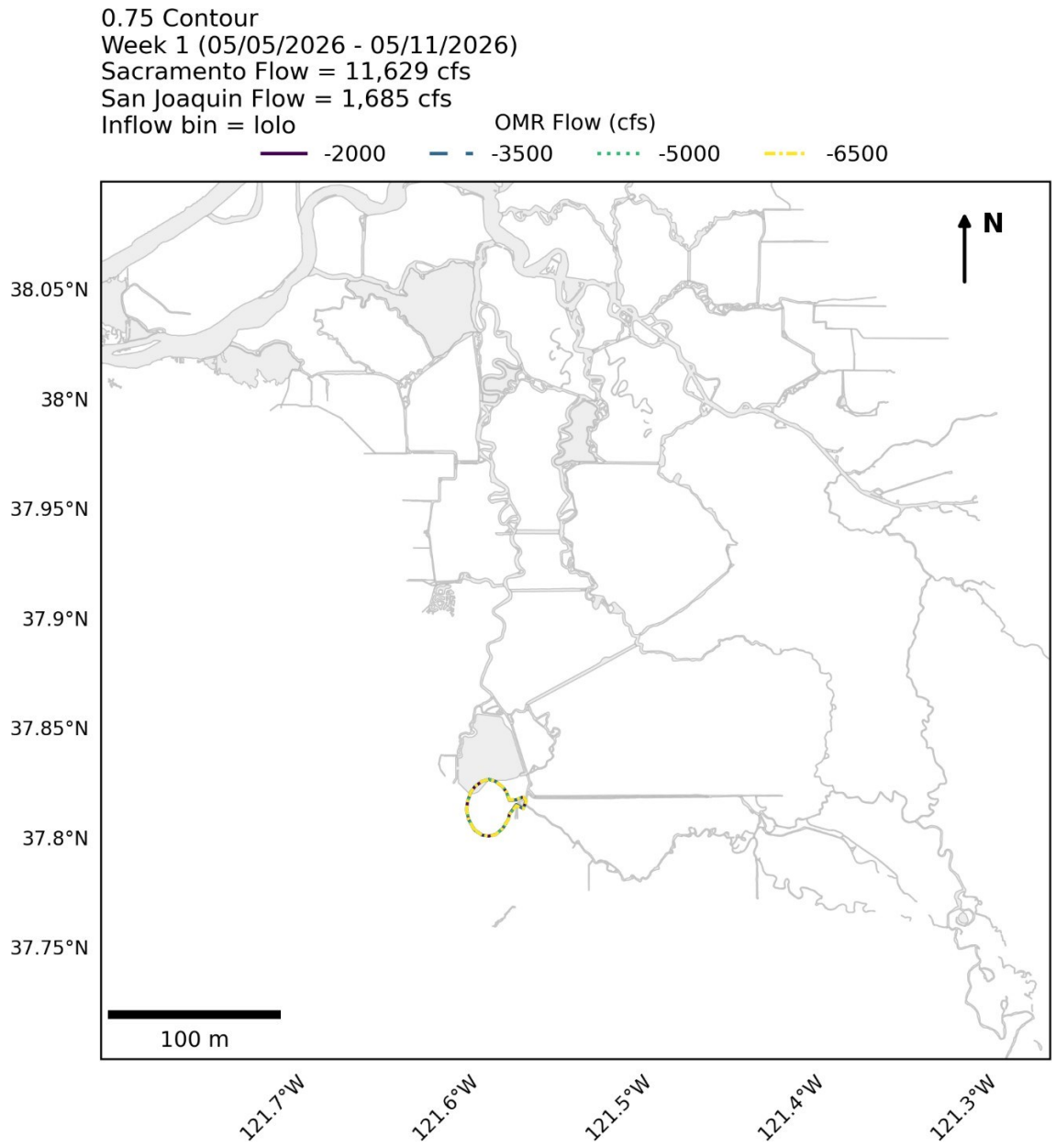


Figure 2: Delta Export Zone of Influence

Figure 2 is a map of the central and southern Sacramento–San Joaquin Delta showing the modeled Delta Export Zone of Influence for Week 1 (May 5–11, 2026). Colored contour lines represent different OMR flow scenarios (-2,000, -3,500, -5,000, and -6,500 cfs) under low Sacramento and San Joaquin River inflow conditions, with the zone of influence concentrated near the south Delta export facilities.

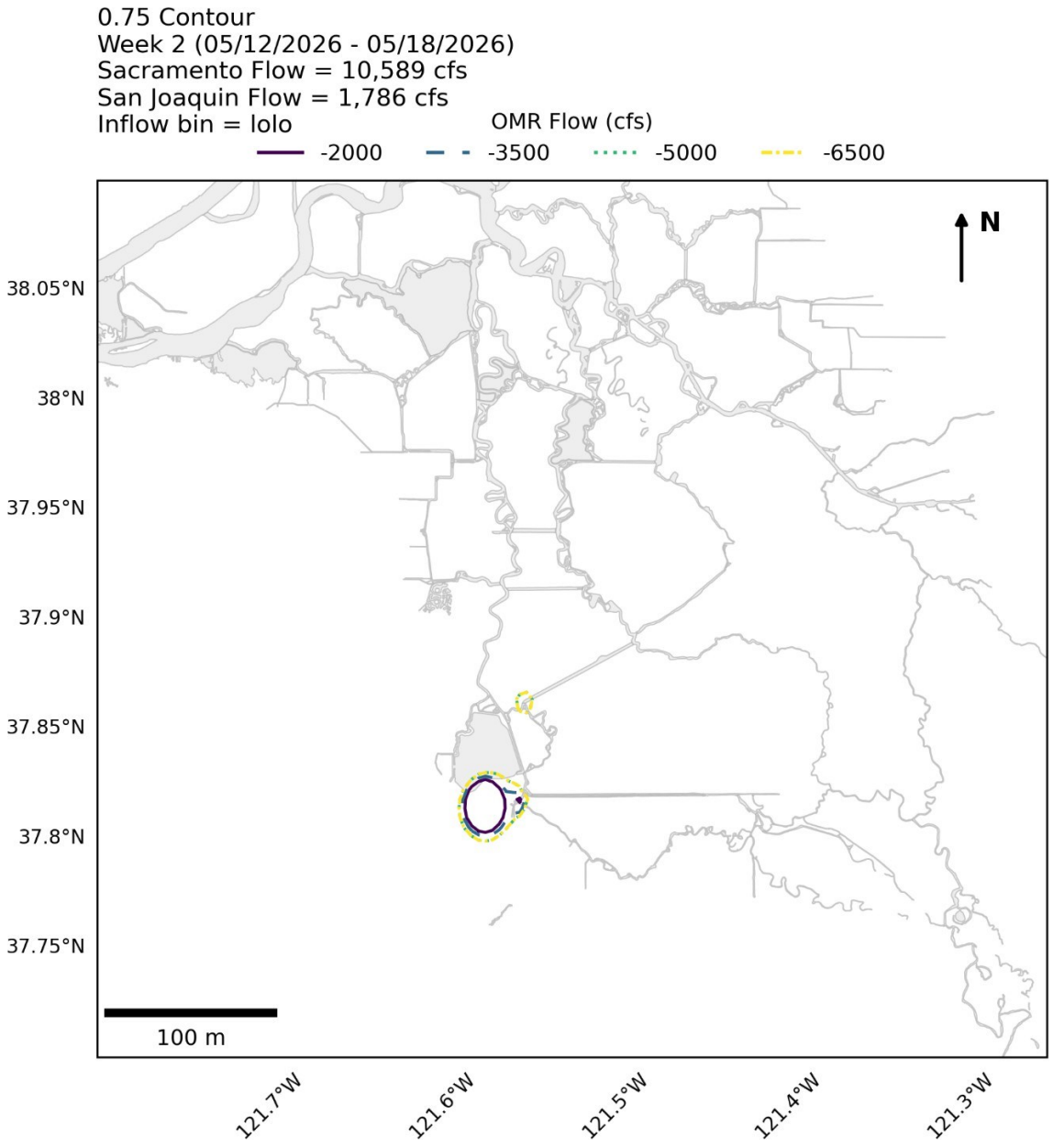


Figure 3: Delta Export Zone of Influence

Figure 3 is a map of the central and southern Sacramento–San Joaquin Delta showing the modeled Delta Export Zone of Influence for Week 2 (May 12–18, 2026). Colored contour lines represent different OMR flow scenarios (-2,000, -3,500, -5,000, and -6,500 cfs) under low Sacramento and San Joaquin River inflow conditions, with the modeled zone of influence expanding slightly compared to Week 1 and remaining concentrated near the south Delta export facilities.

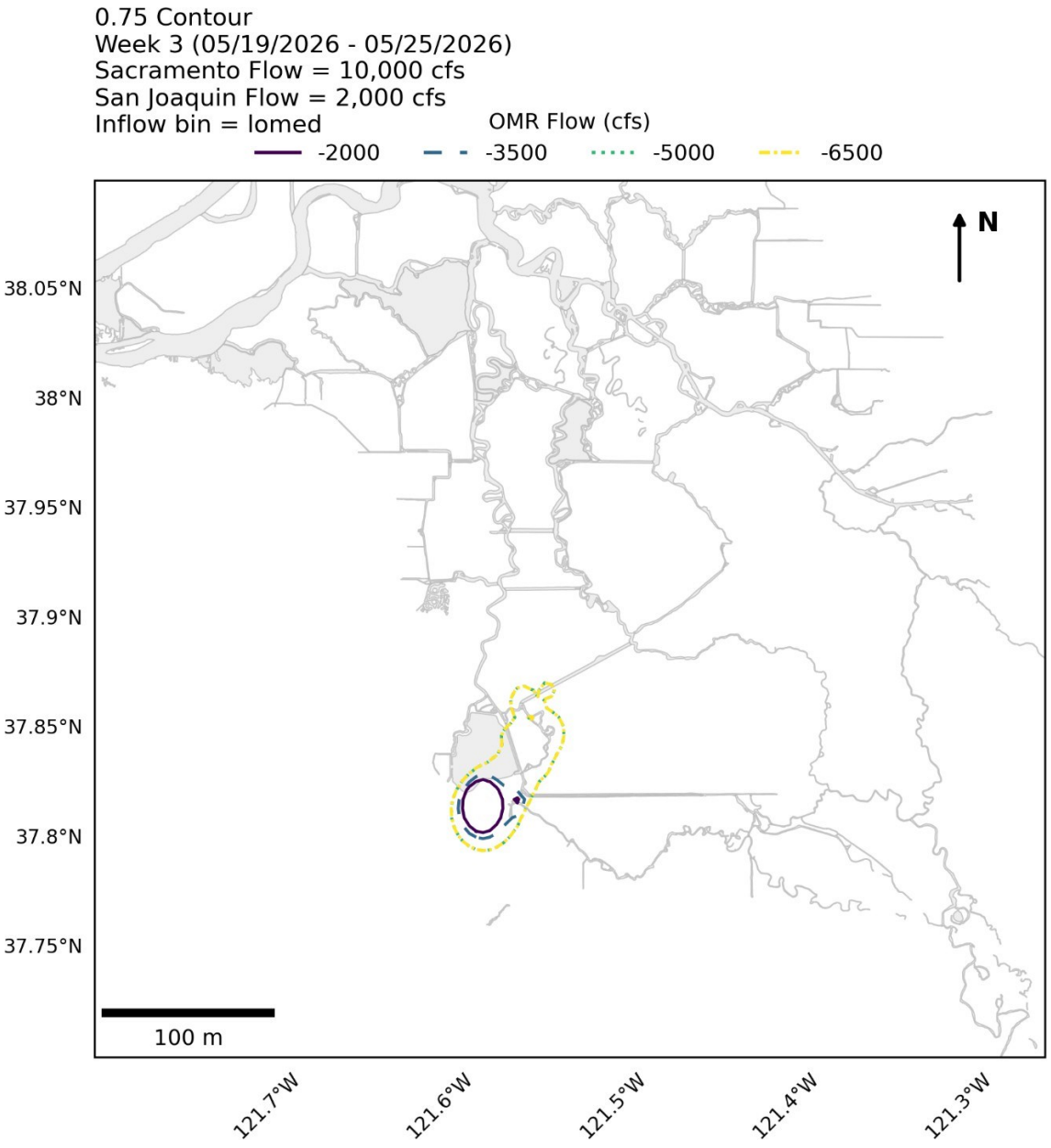


Figure 4: Proportion of DSM2 Channel Length with Hydrologic Alteration from Pumping

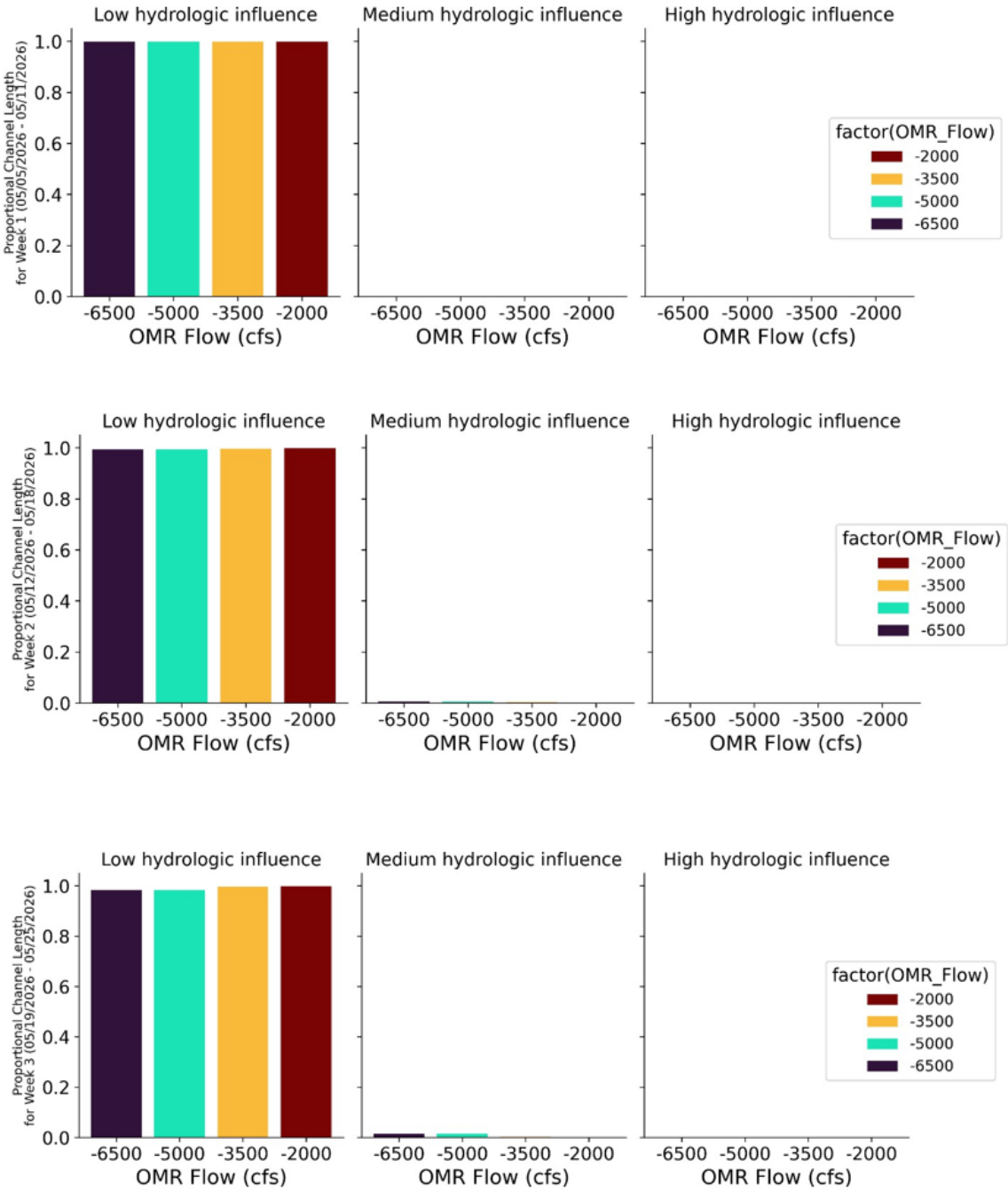
Figure 4 is a map of the central and southern Sacramento–San Joaquin Delta showing the modeled Delta Export Zone of Influence for Week 3 (May 19–25, 2026). Colored contour lines represent different OMR flow scenarios (-2,000, -3,500, -5,000, and -6,500 cfs) under low Sacramento and medium San Joaquin River inflow conditions, with the zone of influence extending farther north compared to prior weeks while remaining centered near the south Delta export facilities.

Table 3 Proportion of DSM2 Channel Length with Hydrologic Alteration from Pumping

Weekly Model Run	OMR Bin (cfs)	Sum Channel Length with Low HA (miles)	Channel Length with Low HA (%)	Sum Channel Length with Medium HA (miles)	Channel Length with Medium HA (%)	Sum Channel Length with High HA (miles)	Channel Length with High HA (%)
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	672.07	99.8%	0.73	0.1%	0.85	0.1%
Week 1: 05/05/2026 - 05/11/2026	-3,500	672.07	99.8%	0.73	0.1%	0.85	0.1%
Week 1: 05/05/2026 - 05/11/2026	-2,000	672.07	99.8%	0.73	0.1%	0.85	0.1%
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	669.63	99.4%	3.16	0.5%	0.85	0.1%
Week 2: 05/12/2026 - 05/18/2026	-3,500	671.25	99.6%	1.55	0.2%	0.85	0.1%
Week 2: 05/12/2026 - 05/18/2026	-2,000	672.07	99.8%	0.73	0.1%	0.85	0.1%
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	662.65	98.4%	10.15	1.5%	0.85	0.1%
Week 3: 05/19/2026 - 05/25/2026	-3,500	671.25	99.6%	1.55	0.2%	0.85	0.1%
Week 3: 05/19/2026 - 05/25/2026	-2,000	672.07	99.8%	0.73	0.1%	0.85	0.1%

Key: HA = hydrologic alteration OMR = Old and Middle River

Notes: Sum channel length includes the length of channels within the Delta that have a calculated hydrologic alteration level falling within each category



Key: cfs = cubic feet per second, OMR = Old and Middle River

Figure 5. Proportional Channel Length for Weeks 1 to 3

Figure 5 is a collection of nine bar graphs showing the proportion of DSM2 channel length with hydrologic alteration from pumping for Weeks 1–3 under low, medium, and high hydrologic influence conditions. Bar colors represent different OMR flow scenarios (-2,000, -3,500, -5,000, and -6,500 cfs). Across all three weeks, low hydrologic influence conditions account for nearly all proportional channel length, while medium and high hydrologic influence conditions remain minimal or absent across scenarios.

PTM (Particle Tracking Model) Results

PTM Flux Evaluation Period: 05/05/2026 – 05/25/2026

Particles Injected: 05/05/2026

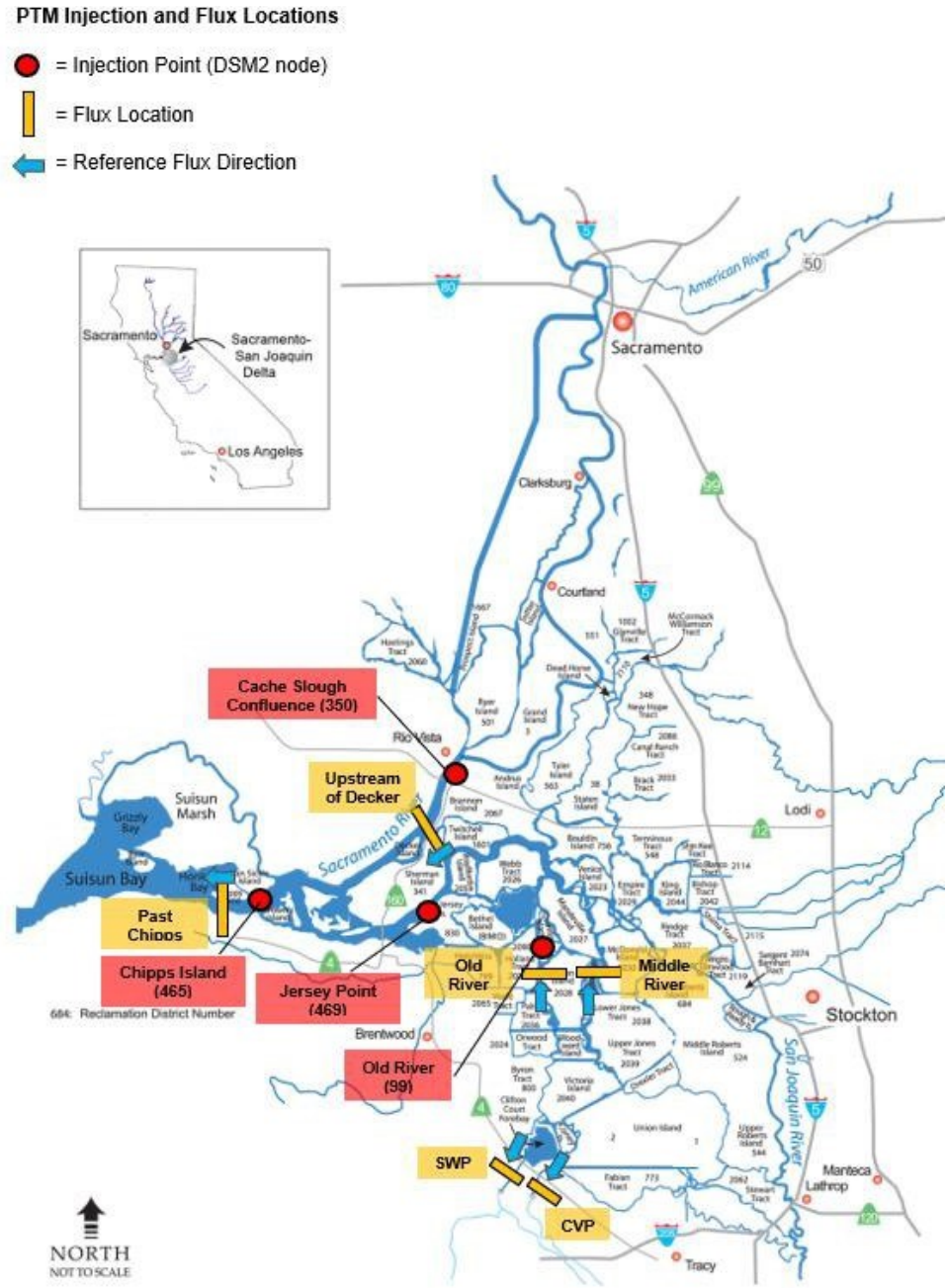


Figure 6: PTM Injection and Flux Locations in the Sacramento-San Joaquin Delta

Figure 6 is a map of the Sacramento-San Joaquin Delta showing PTM injection points (DSM2 nodes) and flux locations used for the May 5–May 25, 2026 evaluation period, with particles injected on May 5, 2026. Five injection points are marked with red circles and five flux locations with yellow bars, with blue arrows indicating reference flux direction. An inset shows the Delta's location within California.

Neutrally Buoyant Particles (NP)

Table 4. Neutral Particle Fate (percent flux across boundary) for Particles Injected at Chipps (DSM2 Node 465)

Week	OMR Flow Bin	Past Chipps	Upstream of Decker	Unresolved in Central Delta	Unresolved in OMR corridor	CVP Entrainment	SWP Entrainment
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	92.9	0.0	7.1	0.0	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-3,500	71.0	0.0	29.0	0.0	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-2,000	71.0	0.0	29.0	0.0	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	96.8	0.0	3.3	0.0	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-3,500	81.6	-0.1	18.4	0.0	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-2,000	83.4	0.2	16.6	0.0	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	96.0	0.0	4.0	0.0	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-3,500	82.6	-0.1	17.4	0.0	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-2,000	86.2	-0.1	13.8	0.0	0.0	0.0

Note: Values between 0.0 and 0.1 are indicated with <0.1.

Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project

Table 5. Neutral Particle Fate (percent flux across boundary) for Particles Injected at Cache Slough (DSM2 Node 350)

Week	OMR Flow Bin	Past Chipps	Upstream of Decker	Unresolved in Central Delta	Unresolved in OMR corridor	CVP Entrainment	SWP Entrainment
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	23.7	80.0	76.4	0.1	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-3,500	0.5	68.3	99.5	0.0	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-2,000	0.5	68.3	99.5	0.0	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	65.4	83.2	34.8	0.2	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-3,500	29.7	75.6	70.7	0.4	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-2,000	30.9	75.3	69.4	0.3	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	70.3	85.9	30.4	0.6	0.0	0.1
Week 3: 05/19/2026 - 05/25/2026	-3,500	41.1	77.6	59.6	0.5	0.1	0.1
Week 3: 05/19/2026 - 05/25/2026	-2,000	44.9	77.9	55.5	0.4	0.0	0.0

Note: Values between 0.0 and 0.1 are indicated with <0.1.

Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project\

Table 6. Neutral Particle Fate (percent flux across boundary) for Particles Injected at Jersey Point (DSM2 Node 469)

Week	OMR Flow Bin	Past Chipps	Upstream of Decker	Unresolved in Central Delta	Unresolved in OMR corridor	CVP Entrainment	SWP Entrainment
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	8.3	9.4	91.8	0.1	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-3,500	1.0	11.7	99.1	0.1	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-2,000	1.0	11.7	99.1	0.1	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	43.7	14.3	57.1	0.8	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-3,500	21.6	20.6	79.3	0.9	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-2,000	23.2	20.8	77.2	0.4	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	56.6	15.9	45.5	1.3	0.7	0.1
Week 3: 05/19/2026 - 05/25/2026	-3,500	34.1	23.2	67.5	1.4	0.1	0.1
Week 3: 05/19/2026 - 05/25/2026	-2,000	37.6	23.9	62.8	0.4	0.0	0.0

Note: Values between 0.0 and 0.1 are indicated with <0.1.

Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project

Table 7. Neutral Particle Fate (percent flux across boundary) for Particles Injected at Old River (DSM2 Node 99)

Week	OMR Flow Bin	Past Chipps	Upstream of Decker	Unresolved in Central Delta	Unresolved in OMR corridor	CVP Entrainment	SWP Entrainment
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	0.1	1.0	64.1	35.8	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-3,500	0.0	0.5	54.0	46.0	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-2,000	0.0	0.5	54.0	46.0	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	4.0	5.9	48.7	35.4	11.7	0.3
Week 2: 05/12/2026 - 05/18/2026	-3,500	1.0	4.3	44.7	43.7	10.0	0.7
Week 2: 05/12/2026 - 05/18/2026	-2,000	0.9	4.5	47.4	48.9	2.3	0.5
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	7.6	9.6	38.9	25.1	26.7	1.7
Week 3: 05/19/2026 - 05/25/2026	-3,500	3.9	6.4	36.0	38.0	19.3	2.8
Week 3: 05/19/2026 - 05/25/2026	-2,000	4.0	6.6	41.7	45.5	6.3	2.5

Note: Values between 0.0 and 0.1 are indicated with <0.1.

Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project

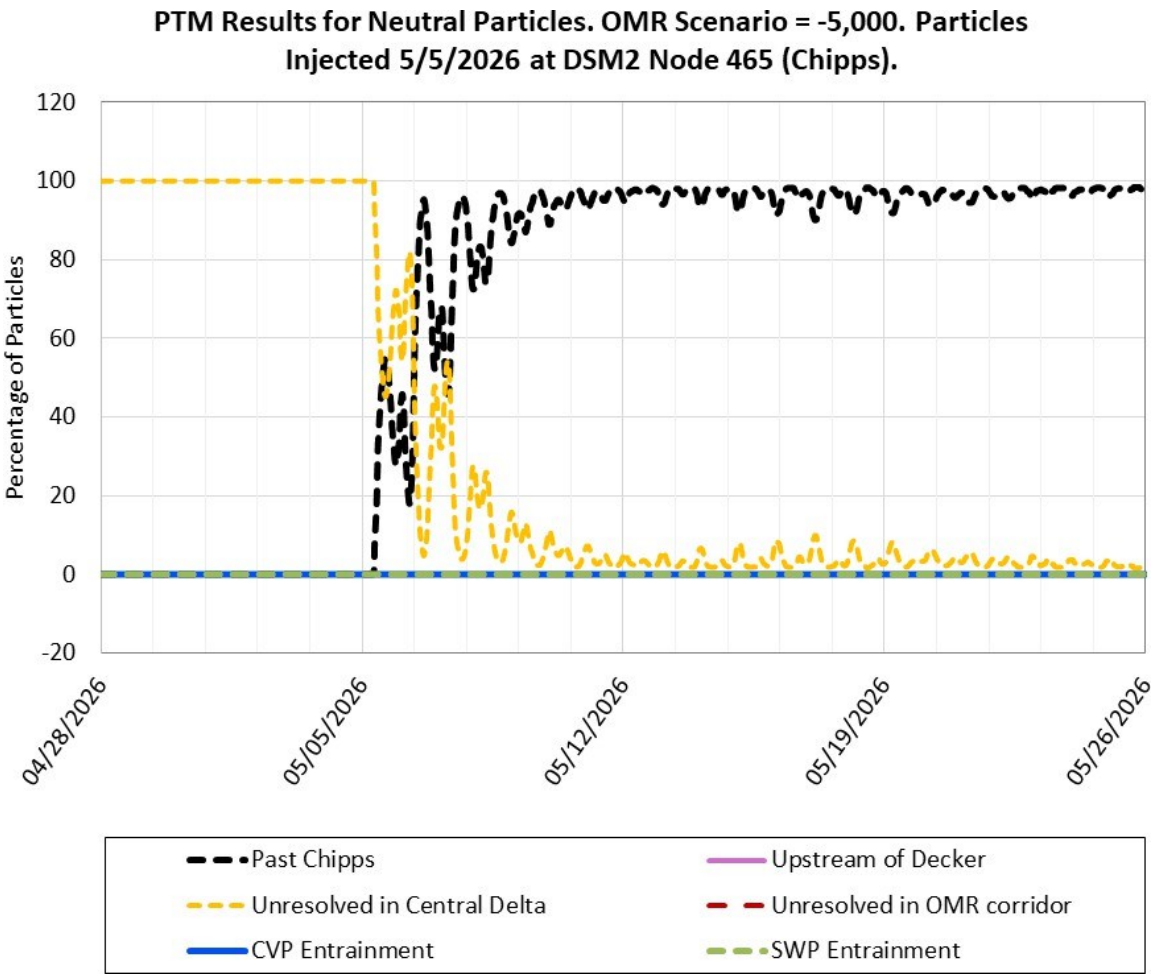


Figure 7: PTM Results for Neutral Particles at Chipps Island, OMR Scenario -5,000

Figure 7 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, injected on May 5, 2026 at DSM2 Node 465 (Chipps). Six flux locations are represented by different colored dashed lines, with Past Chipps (black) and Unresolved in Central Delta (yellow) showing the most notable particle percentages across the evaluation period.

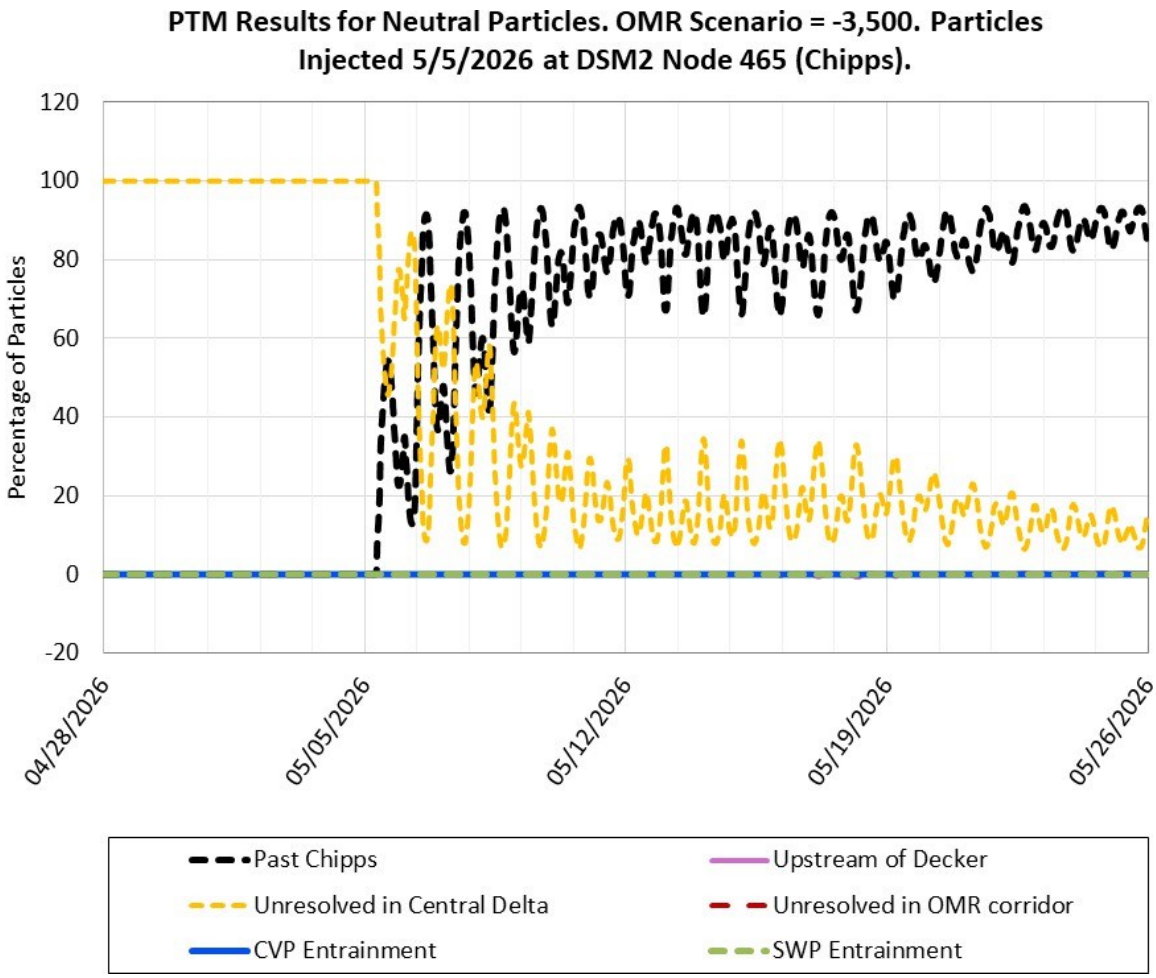


Figure 8: PTM Results for Neutral Particles at Chipps Island, OMR Scenario -3,500

Figure 8 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, injected on May 5, 2026 at DSM2 Node 465 (Chipps). Six flux locations are represented by different colored dashed lines, with Past Chipps (black) and Unresolved in Central Delta (yellow) showing the most notable particle percentages across the evaluation period.

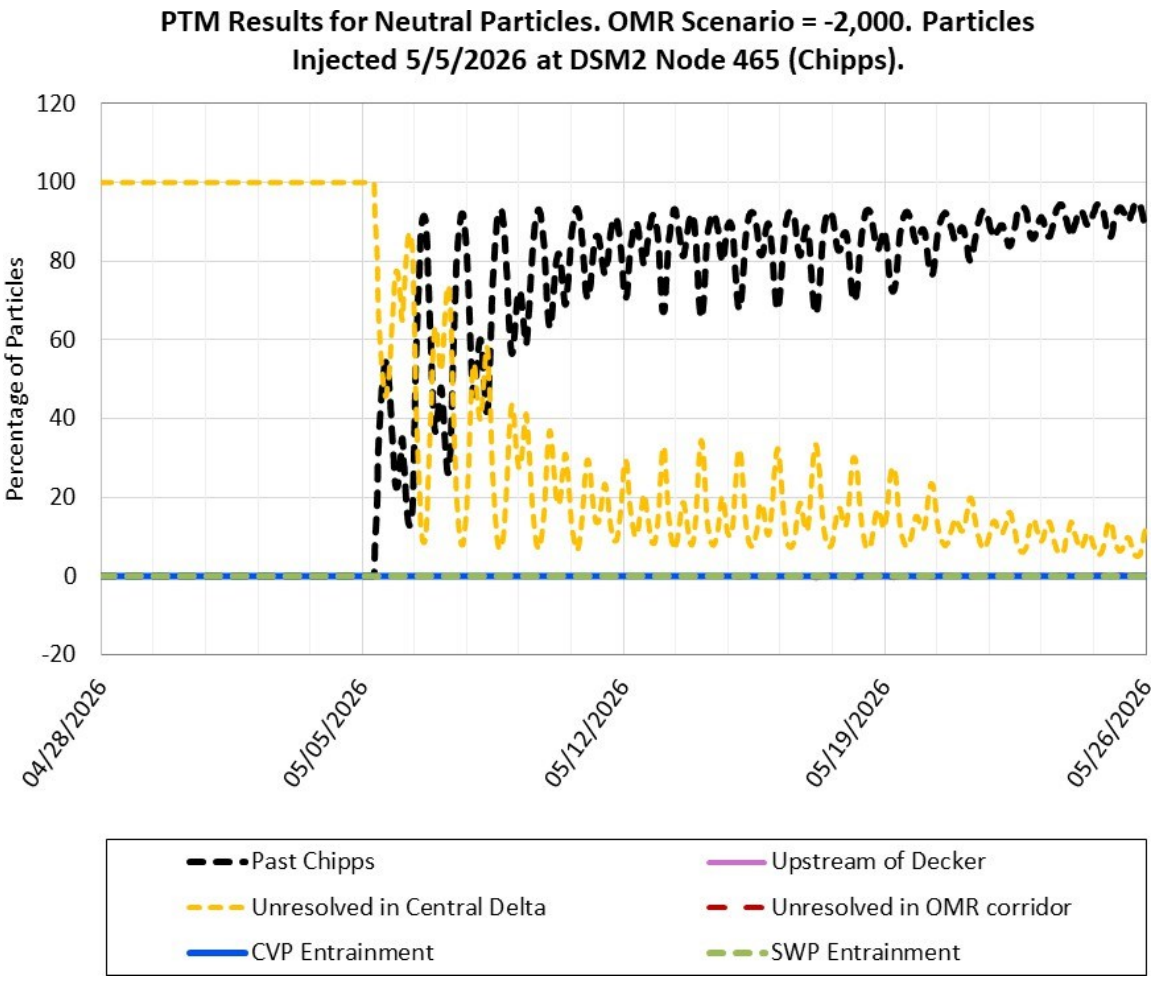


Figure 9: PTM Results for Neutral Particles at Chipps Island, OMR Scenario -2,000

Figure 9 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, injected on May 5, 2026 at DSM2 Node 465 (Chipps). Six flux locations are represented by different colored dashed lines, with Past Chipps (black) and Unresolved in Central Delta (yellow) showing the most notable particle percentages across the evaluation period.

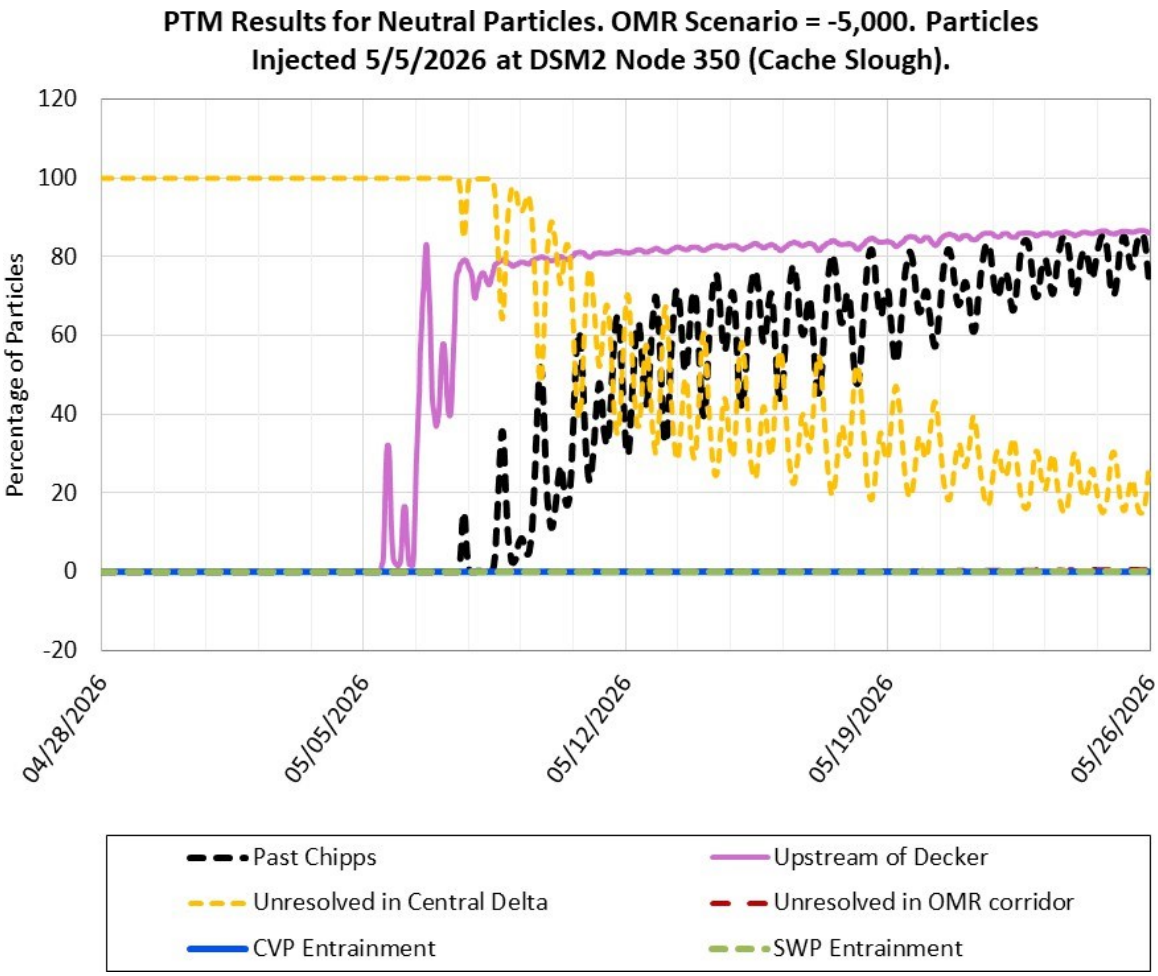


Figure 10: PTM Results for Neutral Particles at Cache Slough, OMR Scenario -5,000

Figure 10 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, injected on May 5, 2026 at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored dashed lines, with Past Chipps (black), Upstream of Decker (purple), and Unresolved in Central Delta (yellow) showing the most notable particle percentages across the evaluation period.

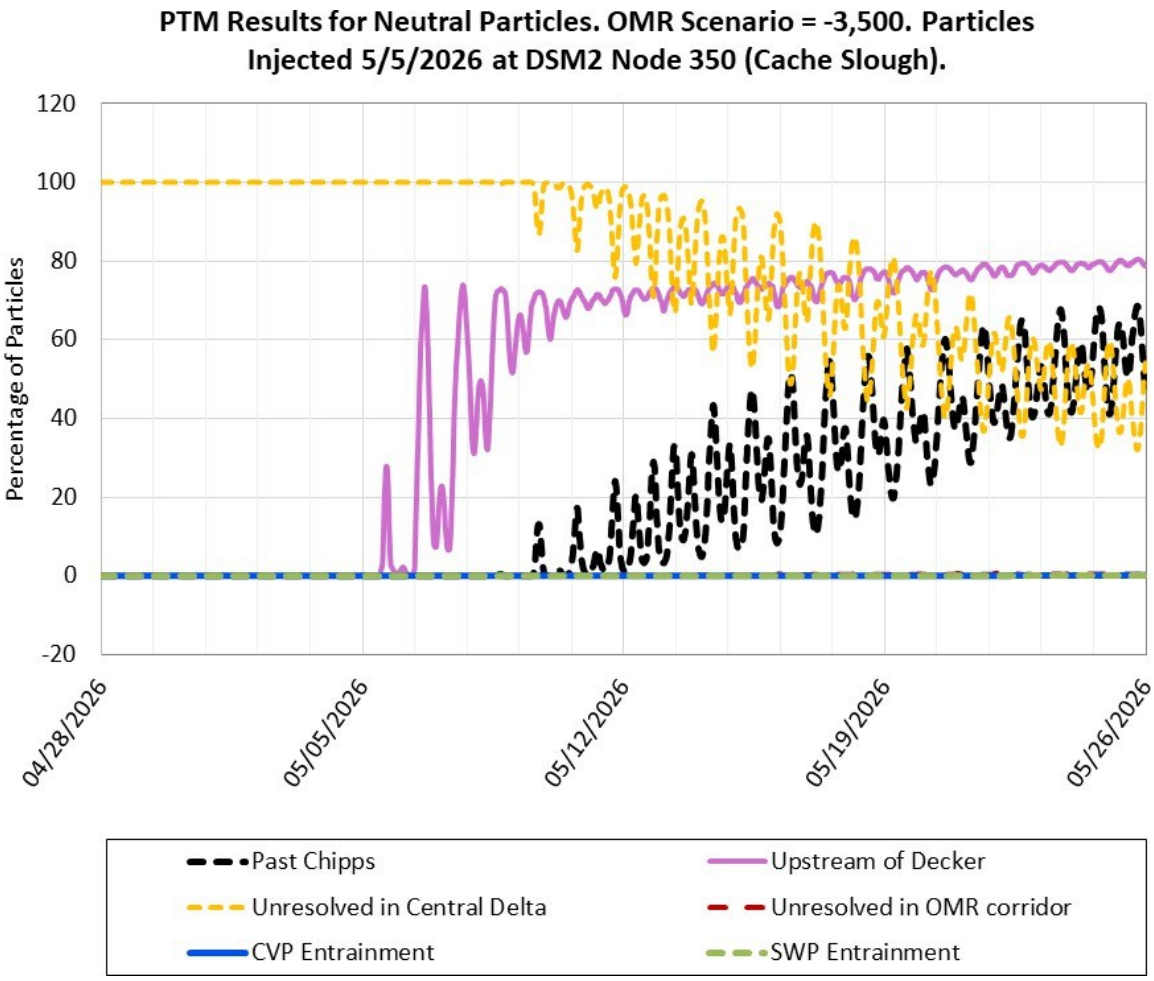


Figure 11: PTM Results for Neutral Particles at Cache Slough, OMR Scenario -3,500

Figure 11 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, injected on May 5, 2026 at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored dashed lines, with Upstream of Decker (purple), Unresolved in Central Delta (yellow), and Past Chipps (black) showing the most notable particle percentages across the evaluation period.

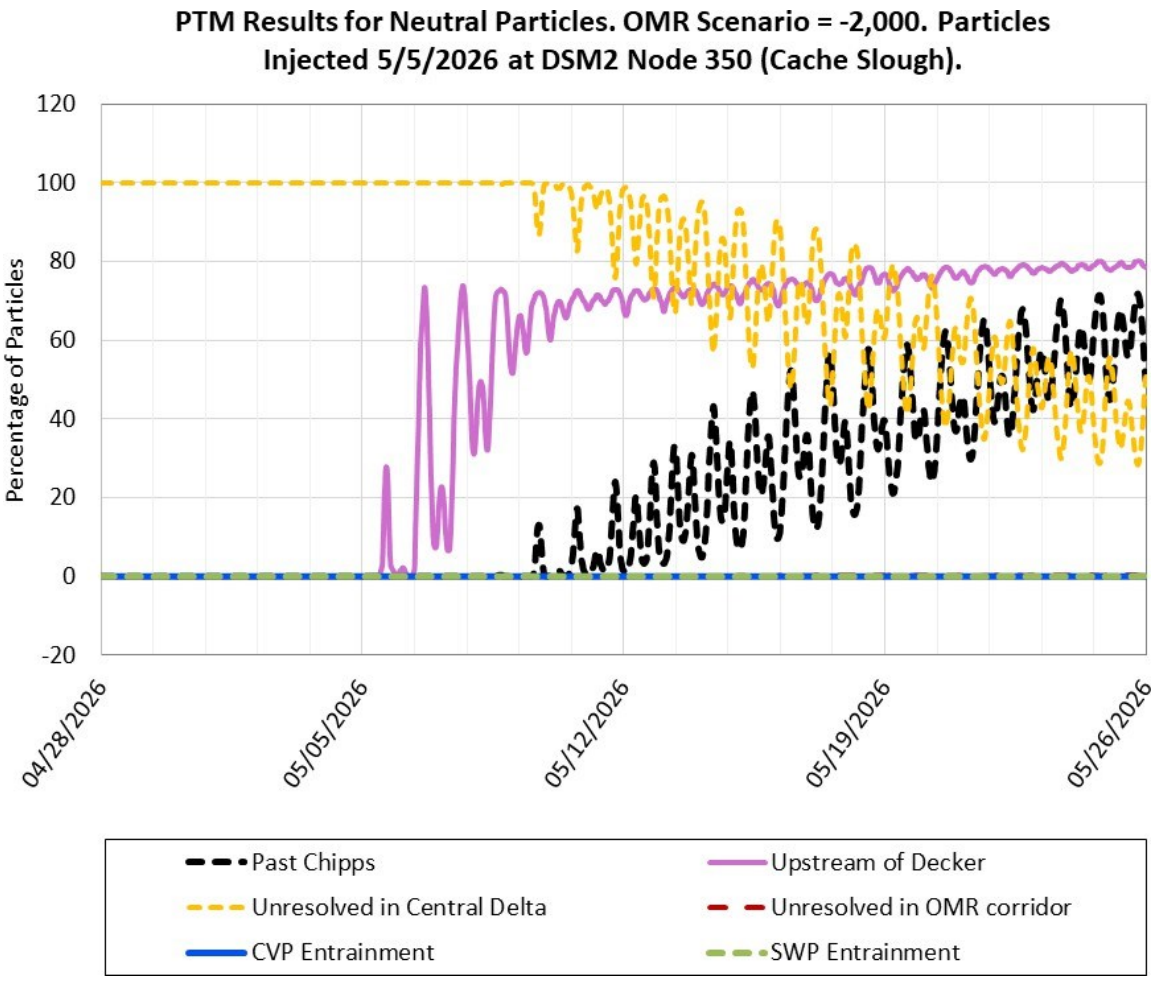


Figure 12: PTM Results for Neutral Particles at Cache Slough, OMR Scenario -2,000

Figure 12 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) begins at nearly 100 percent before gradually decreasing across the evaluation period, while Upstream of Decker (purple) increases rapidly after injection and stabilizes near 80 percent. Past Chipps (black) also increases over time with notable oscillations, while CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero throughout the simulation period.

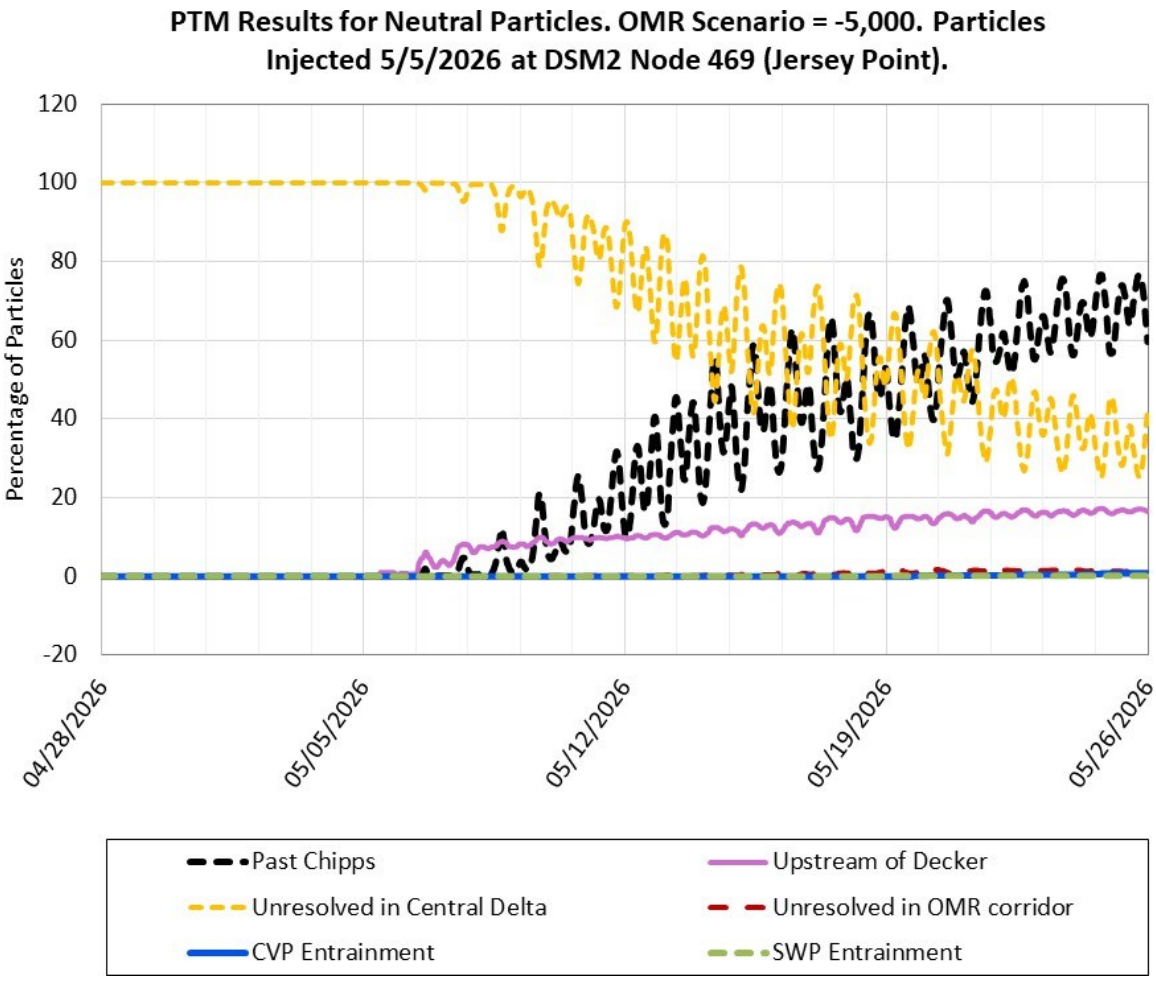


Figure 13: PTM Results for Neutral Particles at Jersey Point, OMR Scenario -5,000

Figure 13 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) begins near 100 percent and gradually declines throughout the evaluation period, while Past Chipps (black) increases steadily with periodic oscillations and becomes the dominant resolved pathway by late May. Upstream of Decker (purple) shows a smaller but consistent increase over time, while CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero for most of the simulation period.

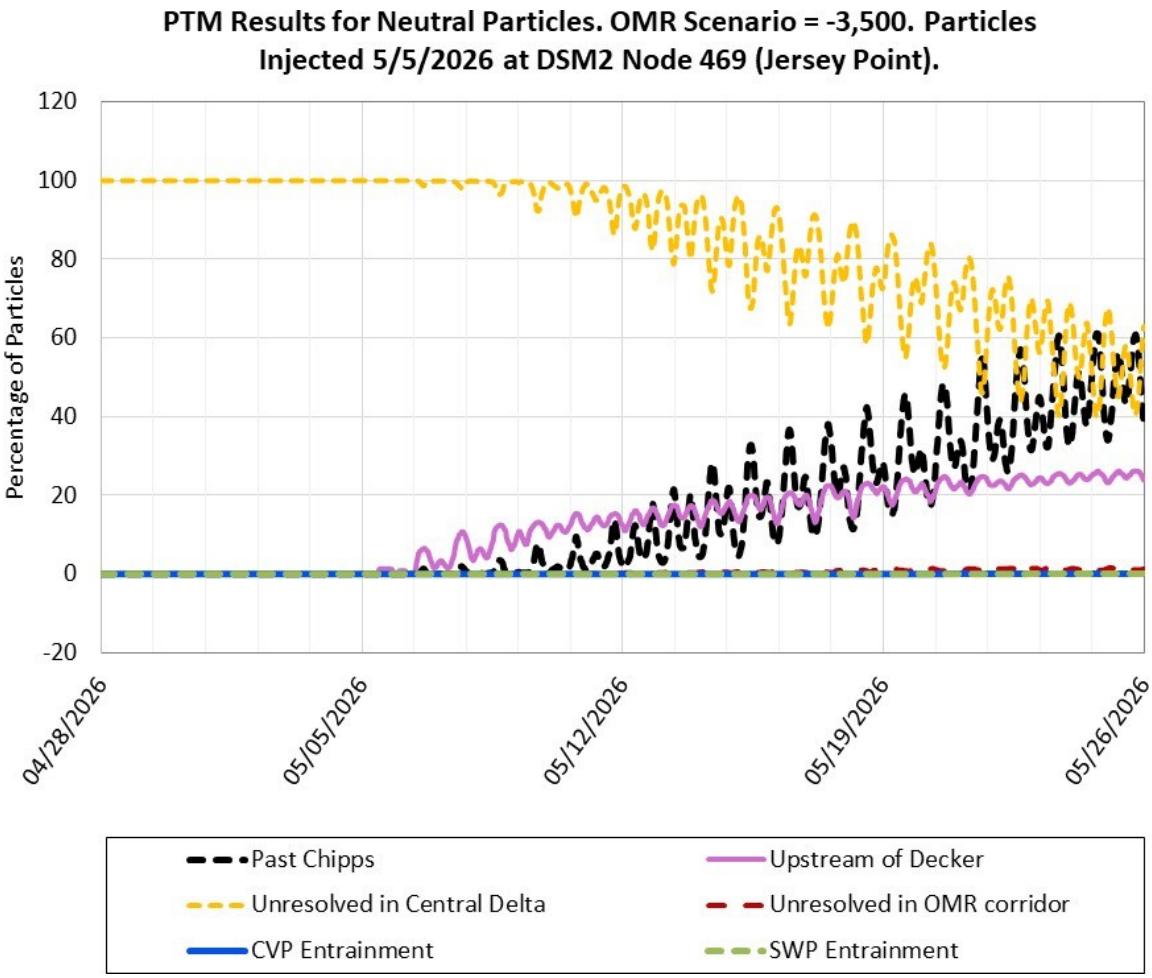


Figure 14: PTM Results for Neutral Particles at Jersey Point, OMR Scenario -3,500

Figure 14 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) remains the dominant category throughout the evaluation period but gradually decreases over time, while Past Chipps (black) steadily increases with periodic oscillations. Upstream of Decker (purple) also shows a gradual increase across the simulation period, though at lower percentages than Past Chipps. CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero throughout the evaluation period.

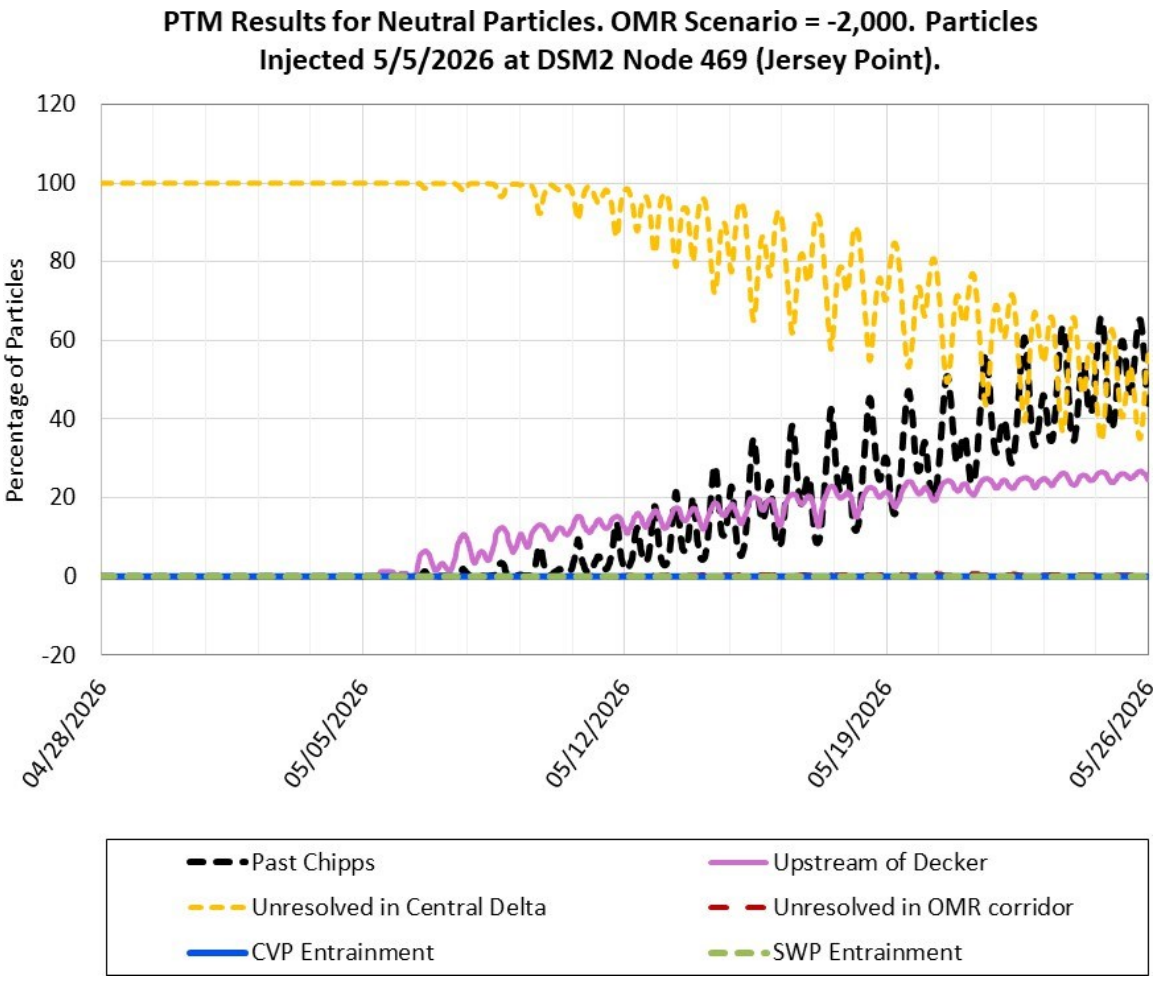


Figure 15: PTM Results for Neutral Particles at Jersey Point, OMR Scenario -2,000

Figure 15 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) remains the dominant category through most of the evaluation period but declines steadily over time, while Past Chipps (black) increases progressively with strong periodic oscillations and approaches similar particle percentages by late May. Upstream of Decker (purple) shows a gradual increase throughout the simulation period, while CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero across the evaluation period.

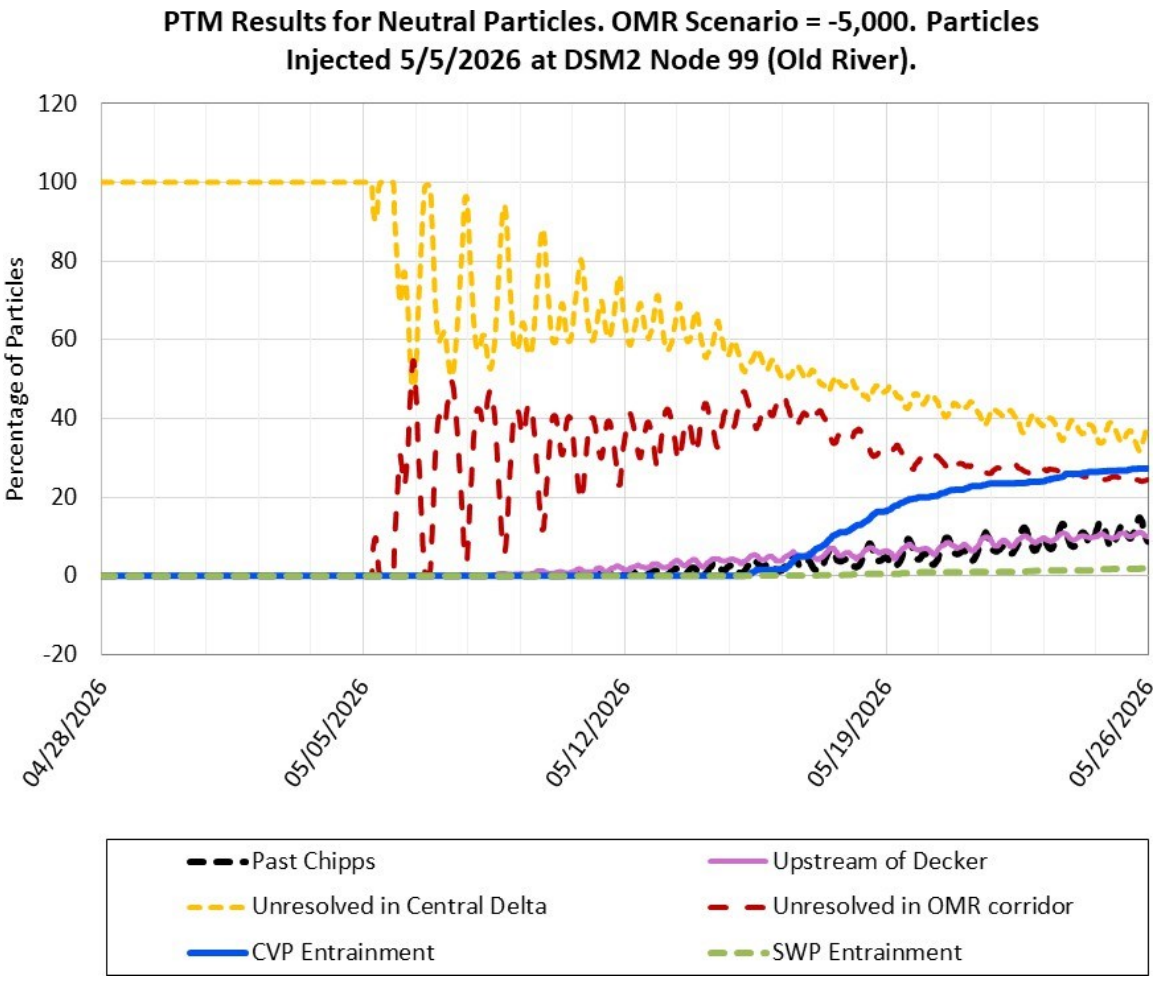


Figure 16: PTM Results for Neutral Particles at Old River, OMR Scenario -5,000

Figure 16 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 99 (Old River). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) remains the dominant category throughout the evaluation period but gradually decreases over time, while Unresolved in OMR Corridor (red) increases sharply following particle injection and fluctuates between approximately 20 and 45 percent. CVP Entrainment (blue) increases steadily beginning in mid-May and stabilizes near 25 percent by late May. Past Chipps (black) and Upstream of Decker (purple) show smaller gradual increases, while SWP Entrainment (green) remains near zero throughout the simulation period.

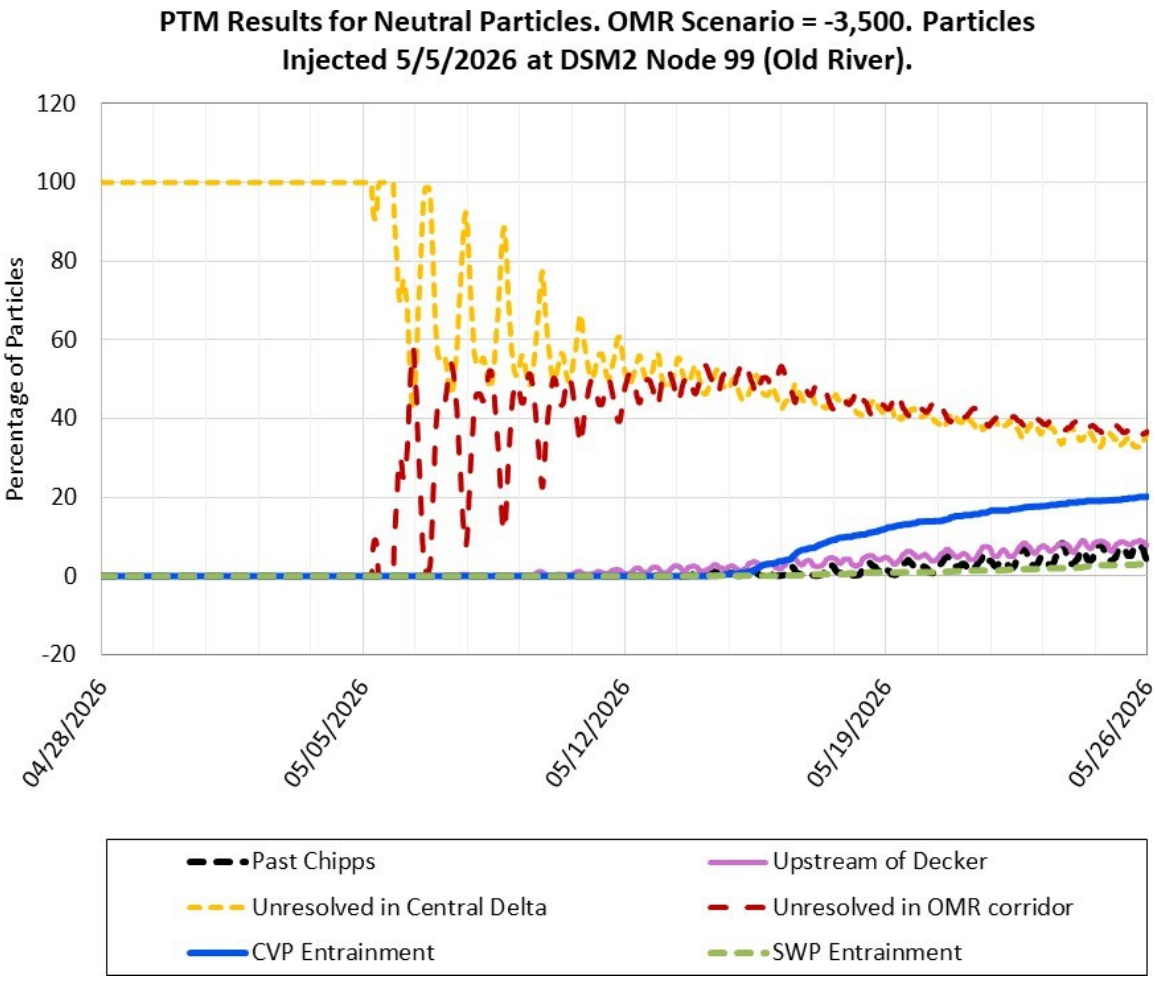


Figure 17: PTM Results for Neutral Particles at Old River, OMR Scenario -3,500

Figure 17 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 99 (Old River). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) decreases steadily throughout the evaluation period, while Unresolved in OMR Corridor (red) increases rapidly after particle injection and remains near 35 to 50 percent for much of the simulation period. CVP Entrainment (blue) begins increasing in mid-May and gradually reaches approximately 20 percent by late May. Past Chipps (black) and Upstream of Decker (purple) show smaller gradual increases over time, while SWP Entrainment (green) remains near zero throughout the simulation period.

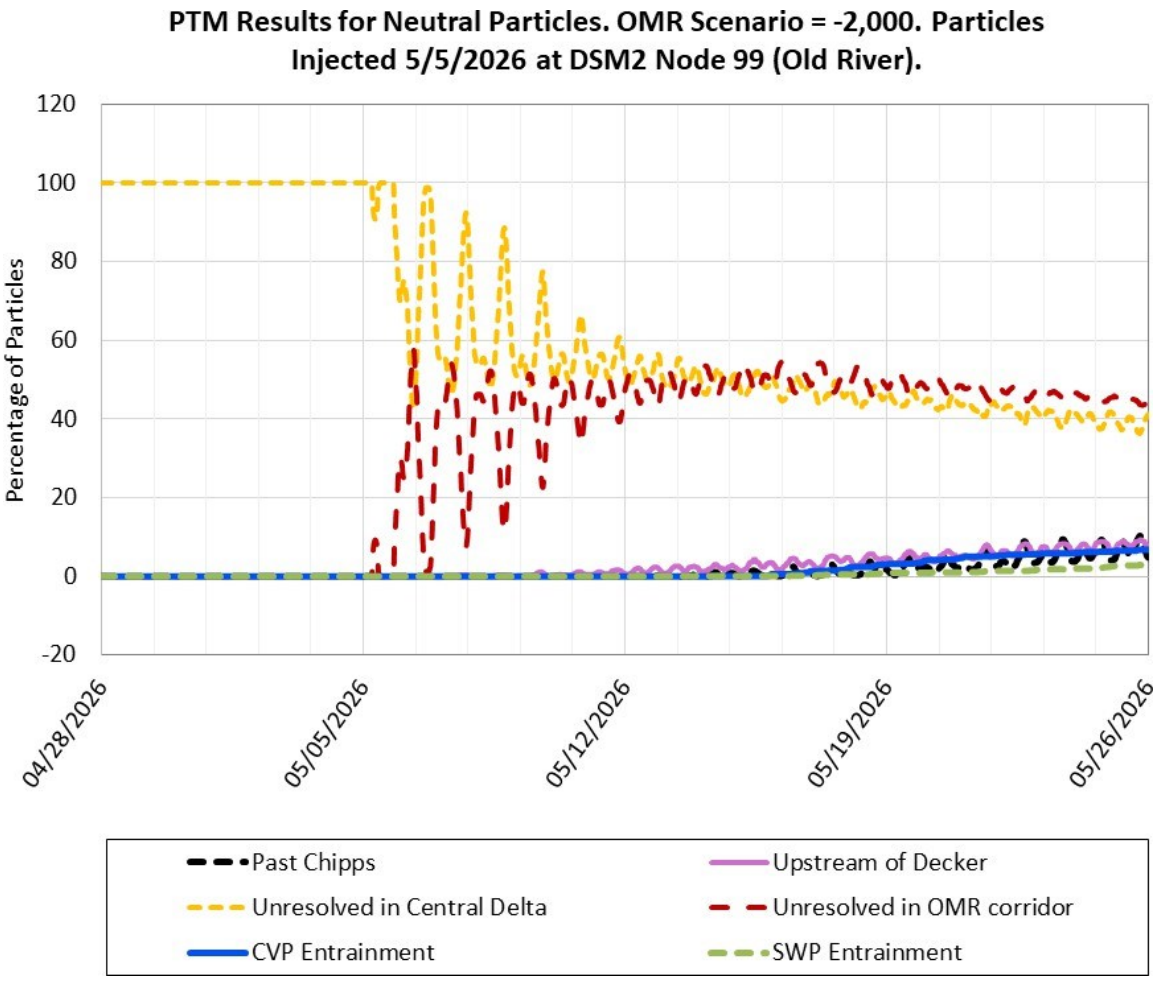


Figure 18: PTM Results for Neutral Particles at Old River, OMR Scenario -2,000

Figure 18 is a line graph showing the percentage of neutral particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 99 (Old River). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) decreases gradually throughout the evaluation period, while Unresolved in OMR Corridor (red) increases sharply following particle injection and remains near 40 to 50 percent for much of the simulation period. CVP Entrainment (blue) shows a smaller gradual increase beginning in mid-May, while Past Chipps (black) and Upstream of Decker (purple) increase modestly over time. SWP Entrainment (green) remains near zero throughout the simulation period.

Surface Oriented Particles (PP)

Table 8. Surface Oriented Particle Fate (percent flux across boundary) for Particles Injected at Chipps (DSM2 Node 465)

Week	OMR Flow Bin	Past Chipps	Upstream of Decker	Unresolved in Central Delta	Unresolved in OMR corridor	CVP Entrainment	SWP Entrainment
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	97.5	0.0	2.5	0.0	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-3,500	82.3	0.0	17.7	0.0	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-2,000	82.3	0.0	17.7	0.0	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	98.3	0.0	1.8	0.0	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-3,500	91.2	0.1	8.8	0.0	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-2,000	91.8	0.0	8.2	0.0	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	98.8	0.0	1.2	0.0	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-3,500	94.3	-0.1	5.9	0.1	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-2,000	94.5	-0.2	5.5	0.0	0.0	0.0

Note: Values between 0.0 and 0.1 are indicated with <0.1.

Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project

Table 9. Surface Oriented Particle Fate (percent flux across boundary) for Particles Injected at Cache Slough (DSM2 Node 350)

Week	OMR Flow Bin	Past Chipps	Upstream of Decker	Unresolved in Central Delta	Unresolved in OMR corridor	CVP Entrainment	SWP Entrainment
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	38.3	76.6	61.7	0.0	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-3,500	6.0	68.2	94.0	0.0	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-2,000	6.0	68.2	94.0	0.0	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	73.9	81.8	26.2	0.1	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-3,500	46.4	77.4	54.0	0.4	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-2,000	48.1	78.0	52.1	0.2	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	82.5	83.4	17.8	0.2	0.0	0.1
Week 3: 05/19/2026 - 05/25/2026	-3,500	60.9	81.1	39.9	0.7	0.0	0.1
Week 3: 05/19/2026 - 05/25/2026	-2,000	63.8	80.4	36.7	0.3	0.0	0.1

Note: Values between 0.0 and 0.1 are indicated with <0.1.

Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project

Table 10. Surface Oriented Particle Fate (percent flux across boundary) for Particles Injected at Jersey Point (DSM2 Node 469)

Week	OMR Flow Bin	Past Chipps	Upstream of Decker	Unresolved in Central Delta	Unresolved in OMR corridor	CVP Entrainment	SWP Entrainment
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	23.7	9.3	76.4	0.1	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-3,500	8.4	10.1	91.7	0.1	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-2,000	8.4	10.1	91.7	0.1	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	66.6	12.5	33.8	0.3	0.1	0.0
Week 2: 05/12/2026 - 05/18/2026	-3,500	41.3	17.5	59.4	0.7	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-2,000	44.1	17.3	56.4	0.5	0.0	0.0
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	80.1	13.6	21.2	0.7	0.6	0.0
Week 3: 05/19/2026 - 05/25/2026	-3,500	58.1	19.3	43.3	1.3	0.1	0.0
Week 3: 05/19/2026 - 05/25/2026	-2,000	63.0	18.9	38.1	1.1	0.0	0.0

Note: Values between 0.0 and 0.1 are indicated with <0.1.

Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project

Table 11. Surface Oriented Particle Fate (percent flux across boundary) for Particles Injected at Old River (DSM2 Node 99)

Week	OMR Flow Bin	Past Chipps	Upstream of Decker	Unresolved in Central Delta	Unresolved in OMR corridor	CVP Entrainment	SWP Entrainment
Week 1: 05/05/2026 - 05/11/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 05/05/2026 - 05/11/2026	-5,000	0.1	0.9	66.7	33.2	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-3,500	0.1	0.4	59.4	40.5	0.0	0.0
Week 1: 05/05/2026 - 05/11/2026	-2,000	0.1	0.4	59.4	40.5	0.0	0.0
Week 2: 05/12/2026 - 05/18/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 05/12/2026 - 05/18/2026	-5,000	5.2	7.9	52.4	28.7	13.3	0.4
Week 2: 05/12/2026 - 05/18/2026	-3,500	1.6	5.0	50.6	36.7	10.2	0.9
Week 2: 05/12/2026 - 05/18/2026	-2,000	2.6	5.3	50.8	41.4	4.3	0.9
Week 3: 05/19/2026 - 05/25/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 05/19/2026 - 05/25/2026	-5,000	13.9	11.1	37.8	22.2	24.6	1.4
Week 3: 05/19/2026 - 05/25/2026	-3,500	7.3	7.5	40.6	30.5	18.2	3.4
Week 3: 05/19/2026 - 05/25/2026	-2,000	8.9	7.8	41.6	37.8	8.7	3.0

Note: Values between 0.0 and 0.1 are indicated with <0.1.

Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project

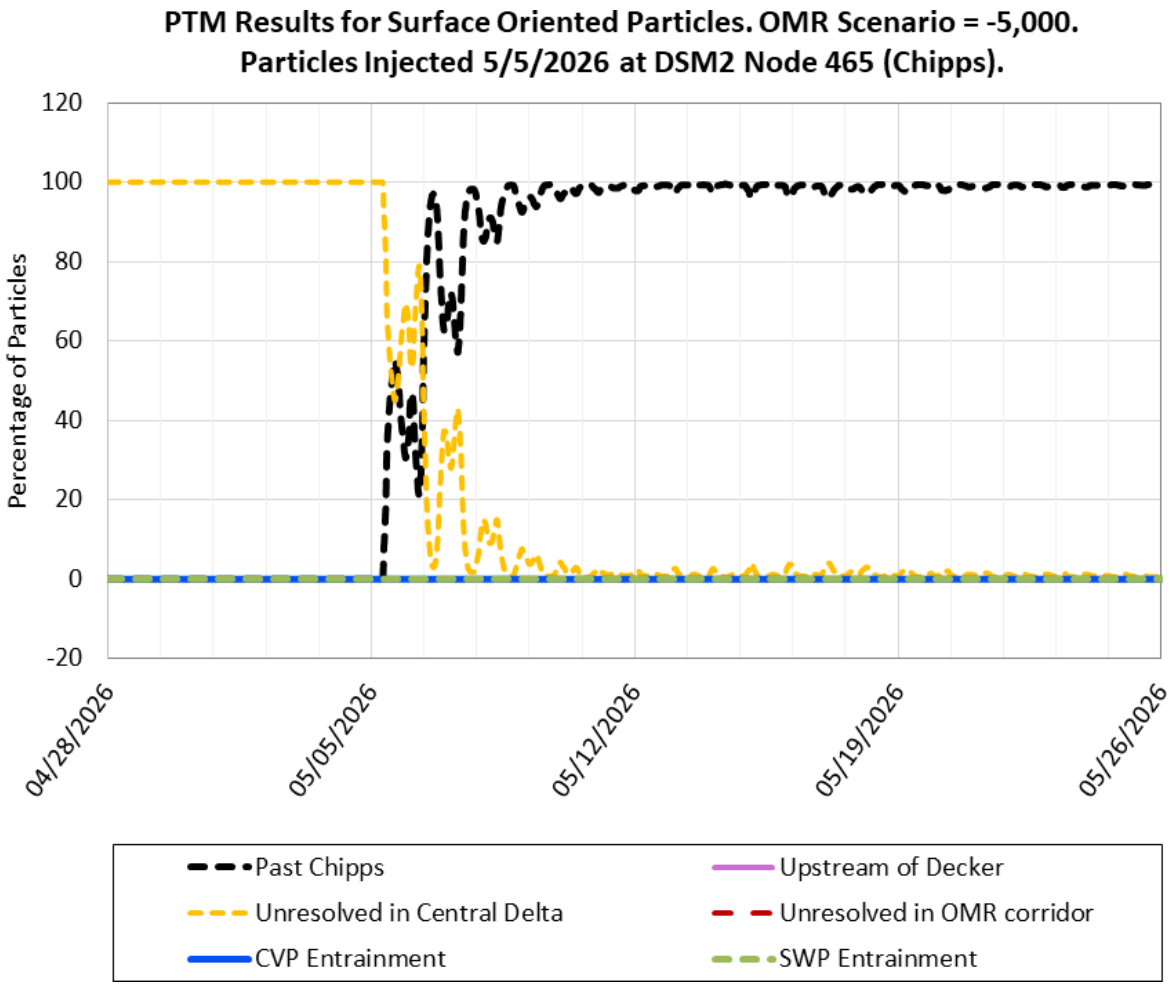


Figure 19: PTM Results for Surface Oriented Particles at Chipps, OMR Scenario -5,000

Figure 19 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 465 (Chipps). Six flux locations are represented by different colored dashed and solid lines. Past Chipps (black) increases rapidly following particle injection and approaches nearly 100 percent by early May, remaining dominant throughout the evaluation period. Unresolved in Central Delta (yellow) declines sharply after injection and approaches zero by mid-May. CVP Entrainment, SWP Entrainment, Upstream of Decker, and Unresolved in OMR Corridor remain near zero throughout the simulation period.

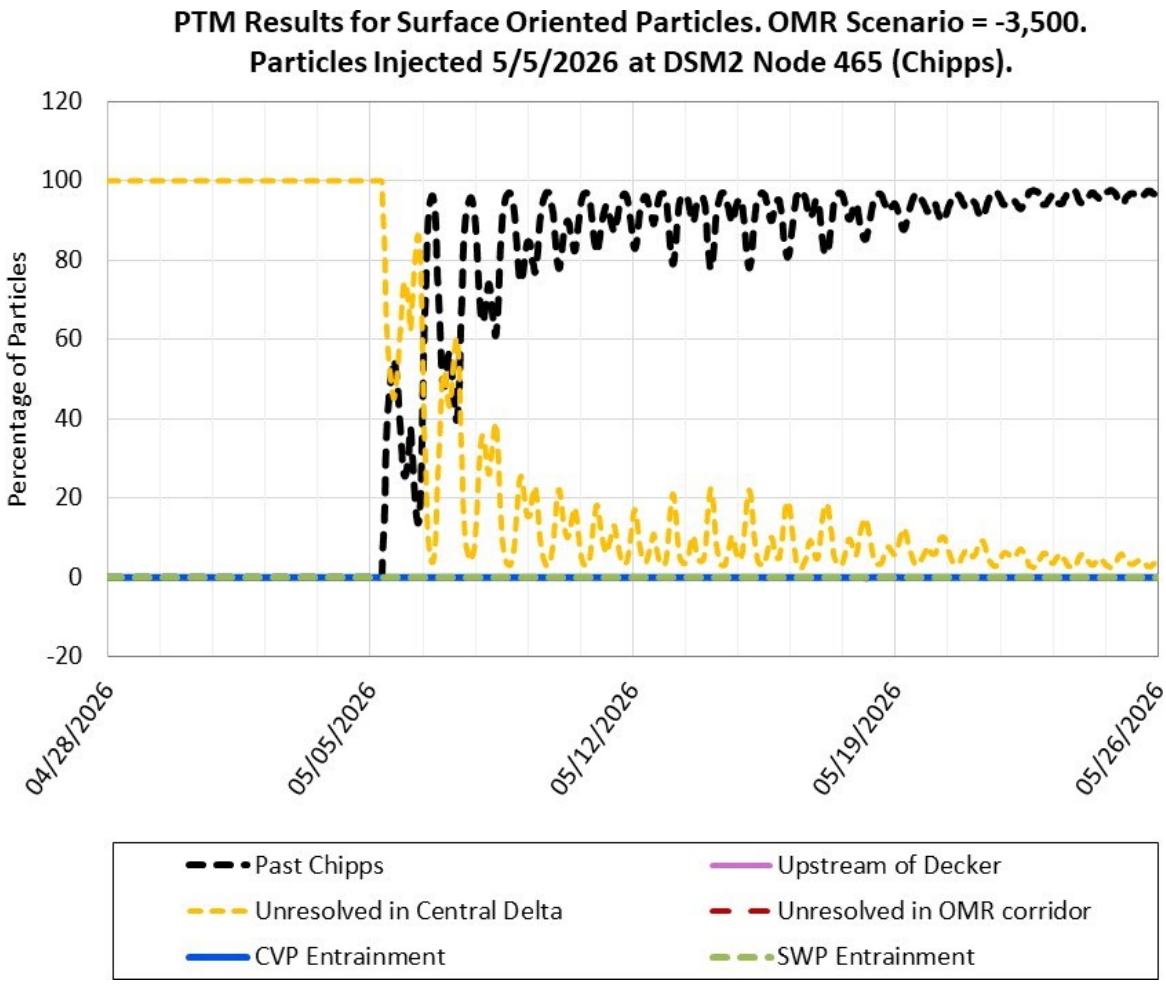


Figure 20: PTM Results for Surface Oriented Particles at Chipps, OMR Scenario -3,500

Figure 20 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 465 (Chipps). Six flux locations are represented by different colored dashed and solid lines. Past Chipps (black) increases rapidly after particle injection and remains the dominant pathway throughout the evaluation period, stabilizing near 90 to 95 percent by mid-May. Unresolved in Central Delta (yellow) decreases sharply following injection but continues to show periodic oscillations at lower percentages through late May. CVP Entrainment, SWP Entrainment, Upstream of Decker, and Unresolved in OMR Corridor remain near zero throughout the simulation period.

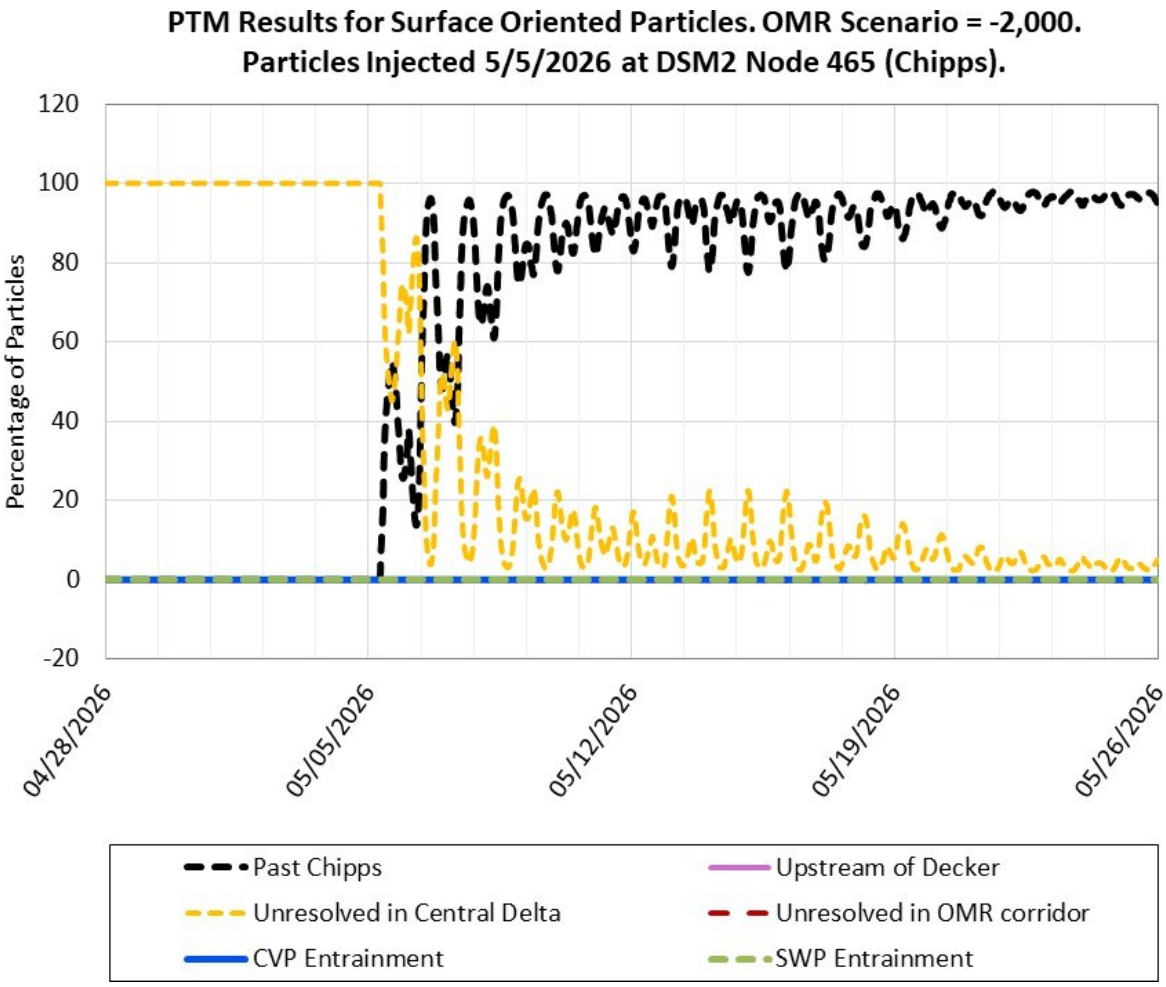


Figure 21: PTM Results for Surface Oriented Particles at Chipps, OMR Scenario -3,500

Figure 21 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 465 (Chipps). Six flux locations are represented by different colored dashed and solid lines. Past Chipps (black) increases rapidly after particle injection and remains the dominant pathway throughout the evaluation period, stabilizing near 90 to 95 percent by mid-May. Unresolved in Central Delta (yellow) decreases sharply following injection but continues to show periodic oscillations at lower percentages through late May. CVP Entrainment, SWP Entrainment, Upstream of Decker, and Unresolved in OMR Corridor remain near zero throughout the simulation period.

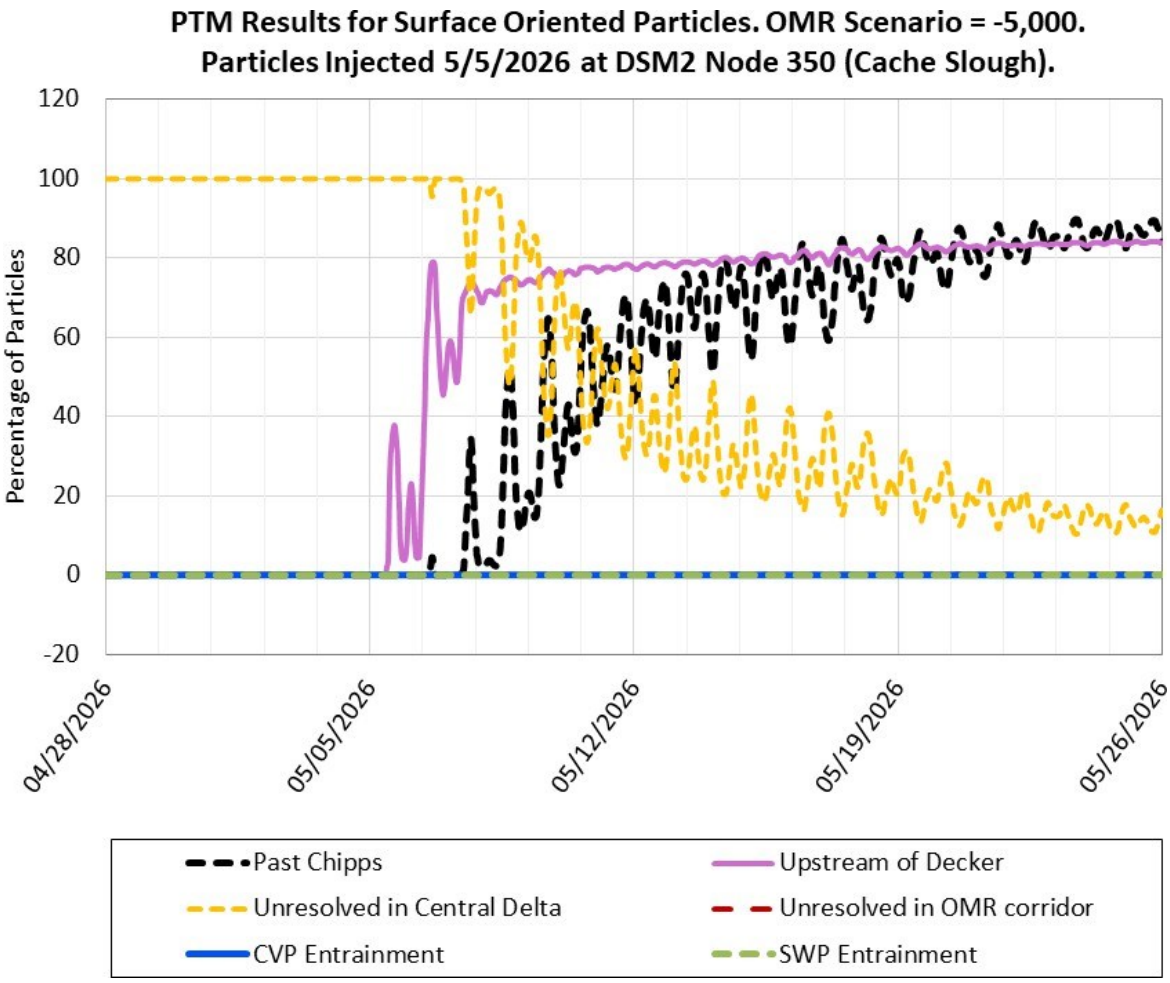


Figure 22: PTM Results for Surface Oriented Particles at Cache Slough, OMR Scenario -5,000

Figure 22 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored dashed and solid lines. Upstream of Decker (purple) increases rapidly following particle injection and stabilizes near 80 percent throughout much of the evaluation period, while Past Chipps (black) increases steadily over time and becomes the dominant pathway by late May. Unresolved in Central Delta (yellow) decreases substantially across the simulation period but remains present through late May with periodic oscillations. CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero throughout the simulation period.

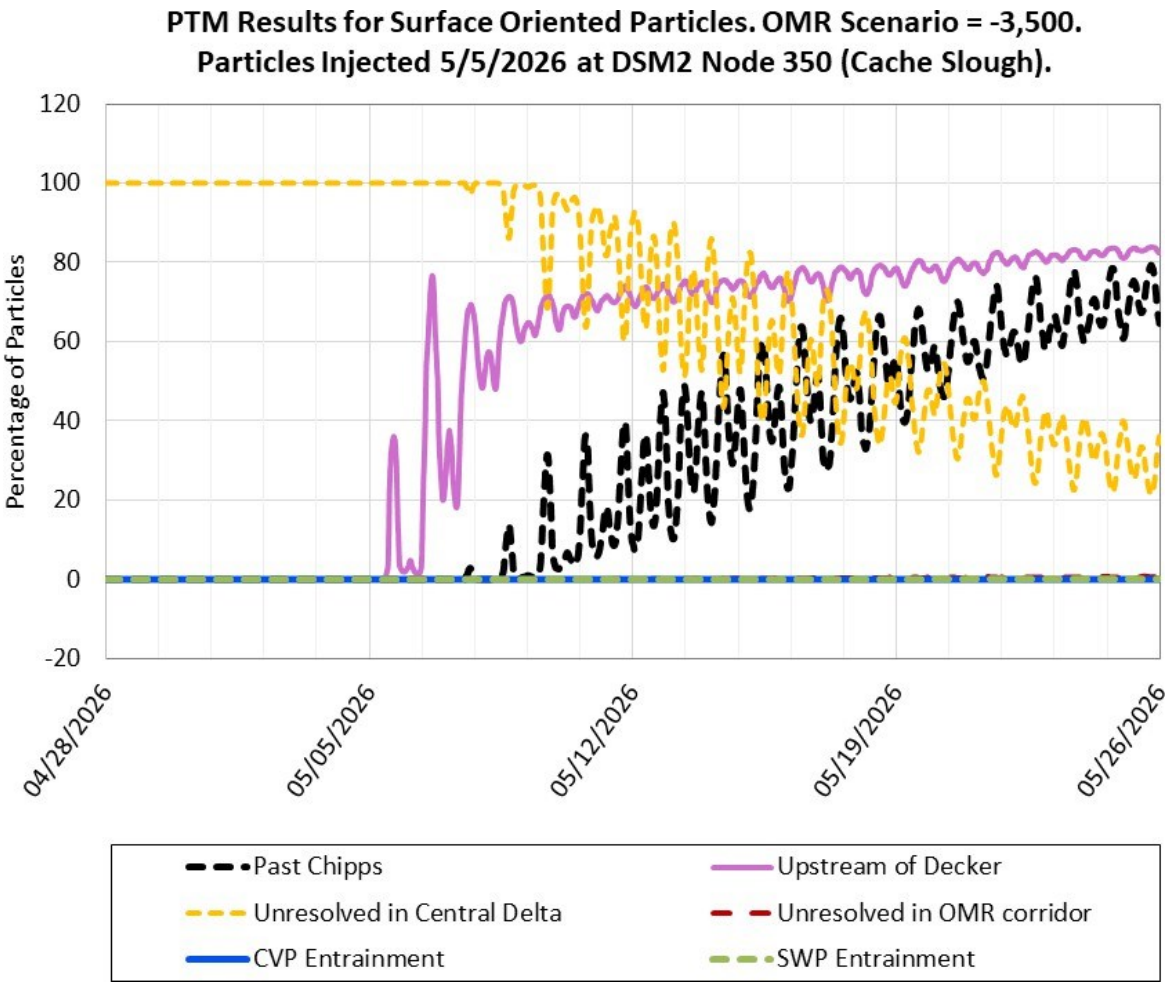


Figure 23: PTM Results for Surface Oriented Particles at Cache Slough, OMR Scenario -3,500

Figure 23 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored dashed and solid lines. Upstream of Decker (purple) increases rapidly following particle injection and stabilizes near 70 to 80 percent throughout much of the evaluation period. Past Chipps (black) increases steadily over time with periodic oscillations, while Unresolved in Central Delta (yellow) decreases throughout the simulation period but remains present through late May. CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero throughout the evaluation period.

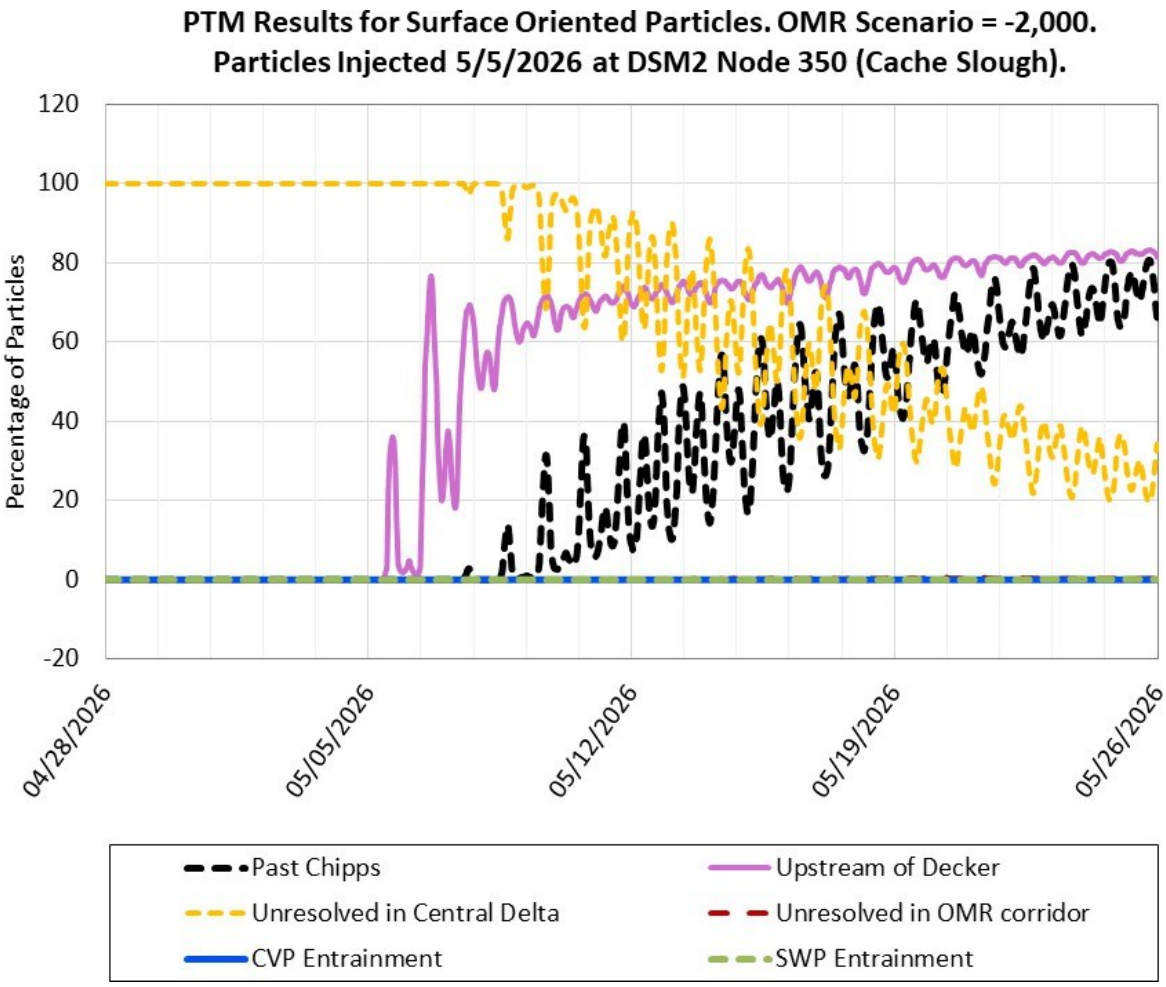


Figure 24: PTM Results for Surface Oriented Particles at Cache Slough, OMR Scenario -2,000

Figure 24 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored dashed and solid lines. Upstream of Decker (purple) increases rapidly following particle injection and stabilizes near 70 to 80 percent throughout much of the evaluation period. Past Chipps (black) increases steadily over time with periodic oscillations and approaches similar particle percentages to Upstream of Decker by late May. Unresolved in Central Delta (yellow) decreases throughout the simulation period but remains present through late May. CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero throughout the evaluation period.

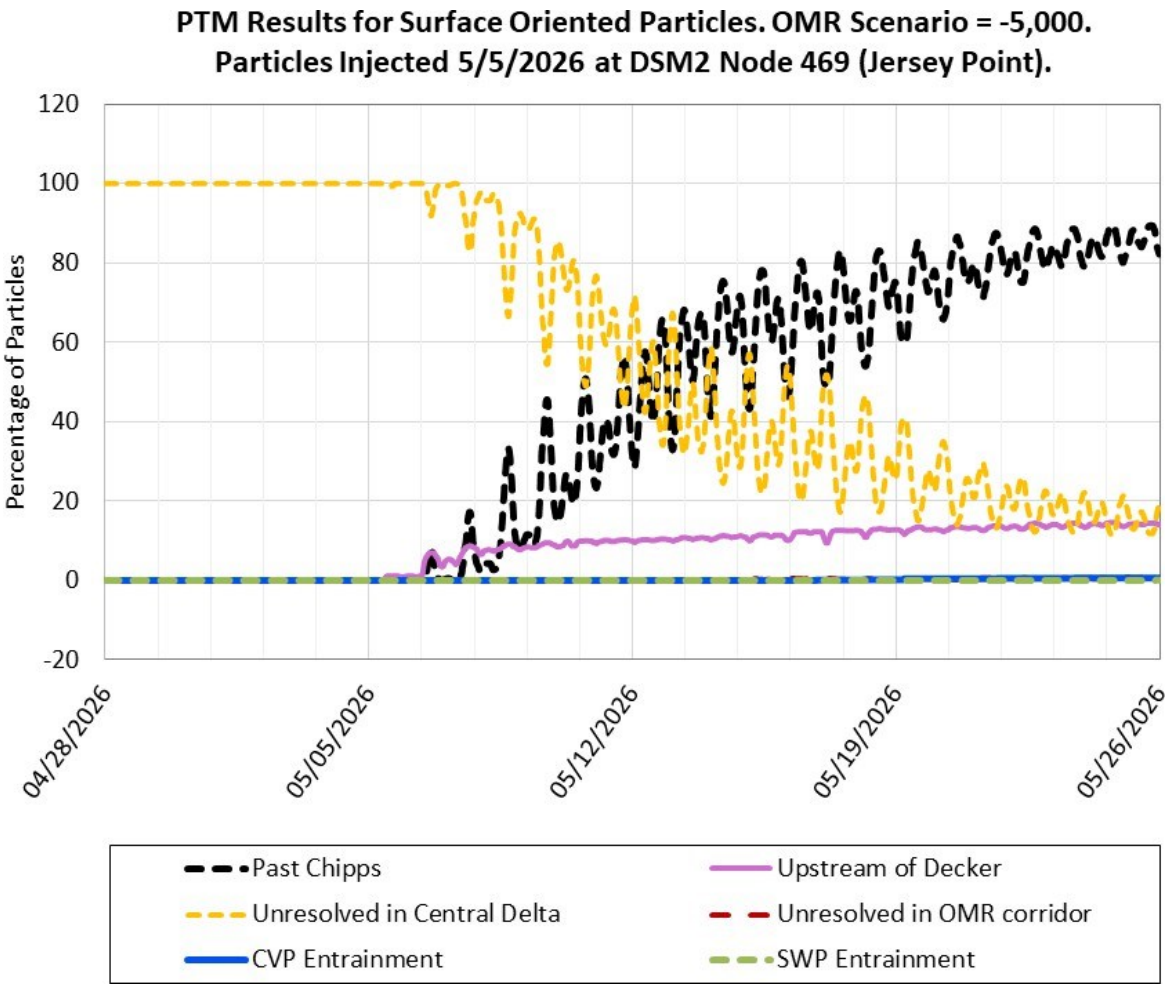


Figure 25: PTM Results for Surface Oriented Particles at Jersey Point, OMR Scenario -5,000

Figure 25 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored dashed and solid lines. Past Chipps (black) increases steadily following particle injection and becomes the dominant pathway by mid-May, reaching approximately 85 percent by late May. Unresolved in Central Delta (yellow) decreases substantially throughout the simulation period but remains present through late May with periodic oscillations. Upstream of Decker (purple) shows a smaller gradual increase over time, while CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero throughout the evaluation period.

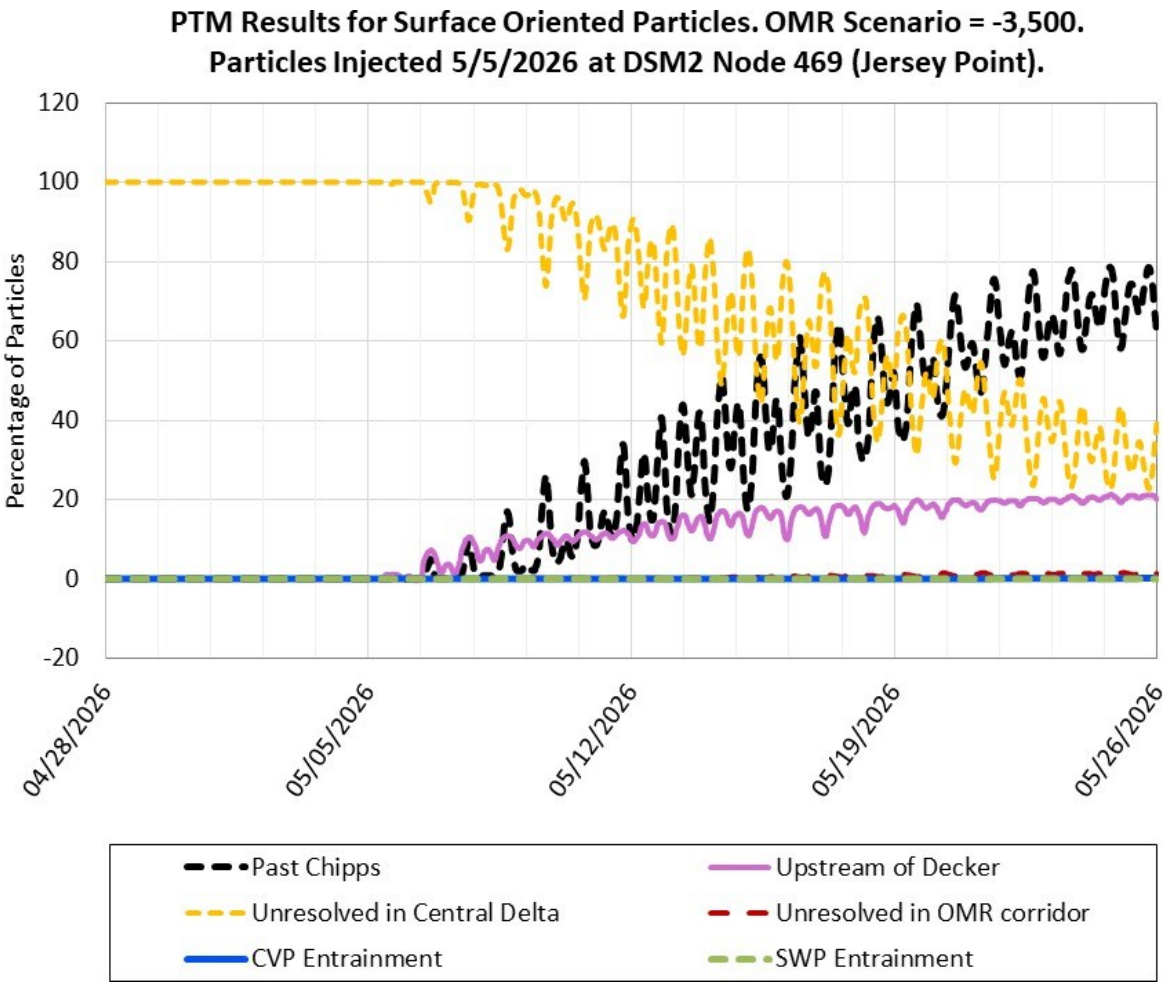


Figure 26: PTM Results for Surface Oriented Particles at Jersey Point, OMR Scenario -3,500

Figure 26 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored dashed and solid lines. Past Chipps (black) increases steadily throughout the simulation period with periodic oscillations and becomes the dominant pathway by late May. Unresolved in Central Delta (yellow) decreases over time but remains present through the evaluation period with continued oscillations. Upstream of Decker (purple) shows a gradual increase throughout the simulation period, while CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero throughout the evaluation period.

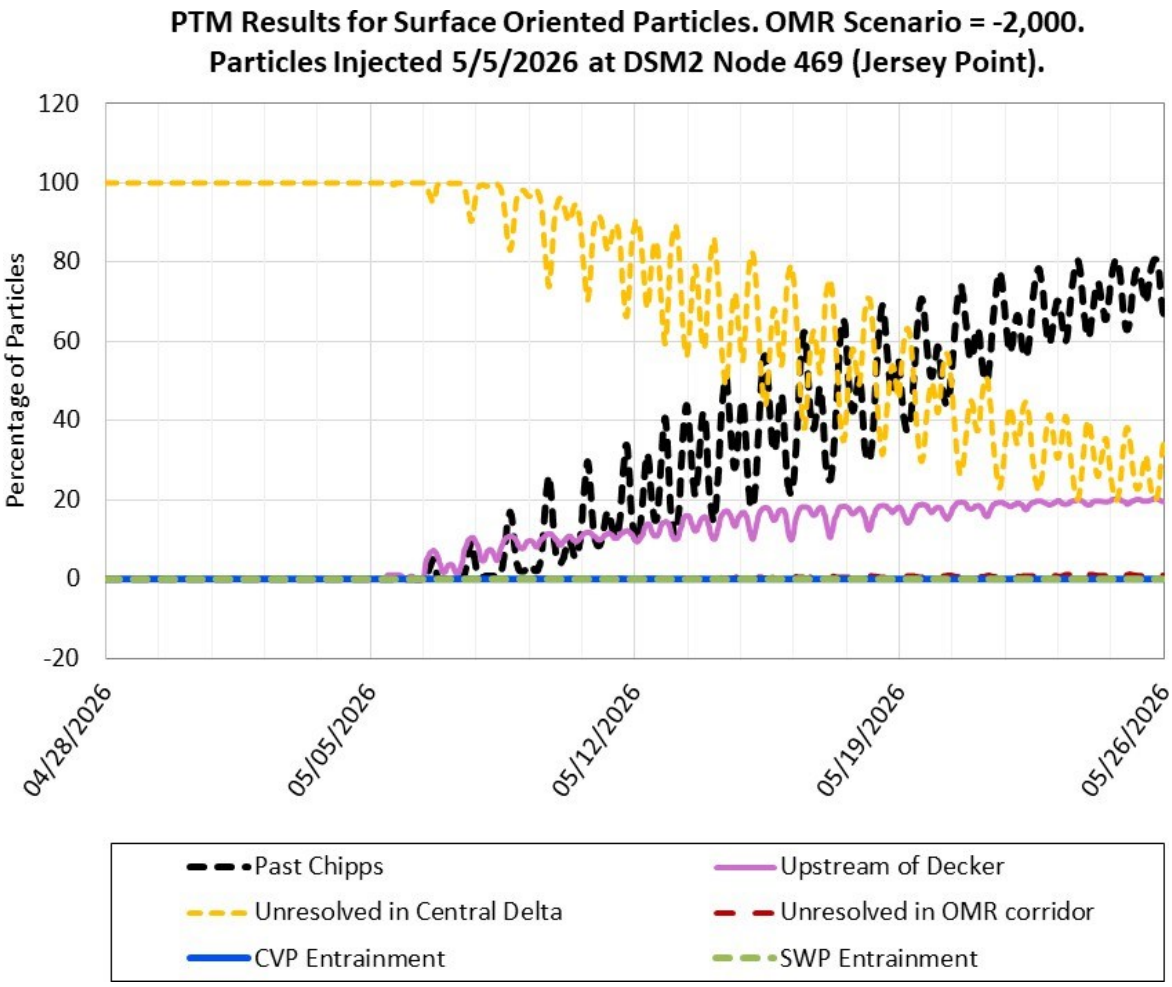


Figure 27: PTM Results for Surface Oriented Particles at Jersey Point, OMR Scenario -2,000

Figure 27 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored dashed and solid lines. Past Chipps (black) increases steadily throughout the simulation period with periodic oscillations and becomes the dominant pathway by late May. Unresolved in Central Delta (yellow) decreases gradually over time but remains present throughout the evaluation period with continued oscillations. Upstream of Decker (purple) shows a gradual increase across the simulation period, while CVP Entrainment, SWP Entrainment, and Unresolved in OMR Corridor remain near zero throughout the evaluation period.

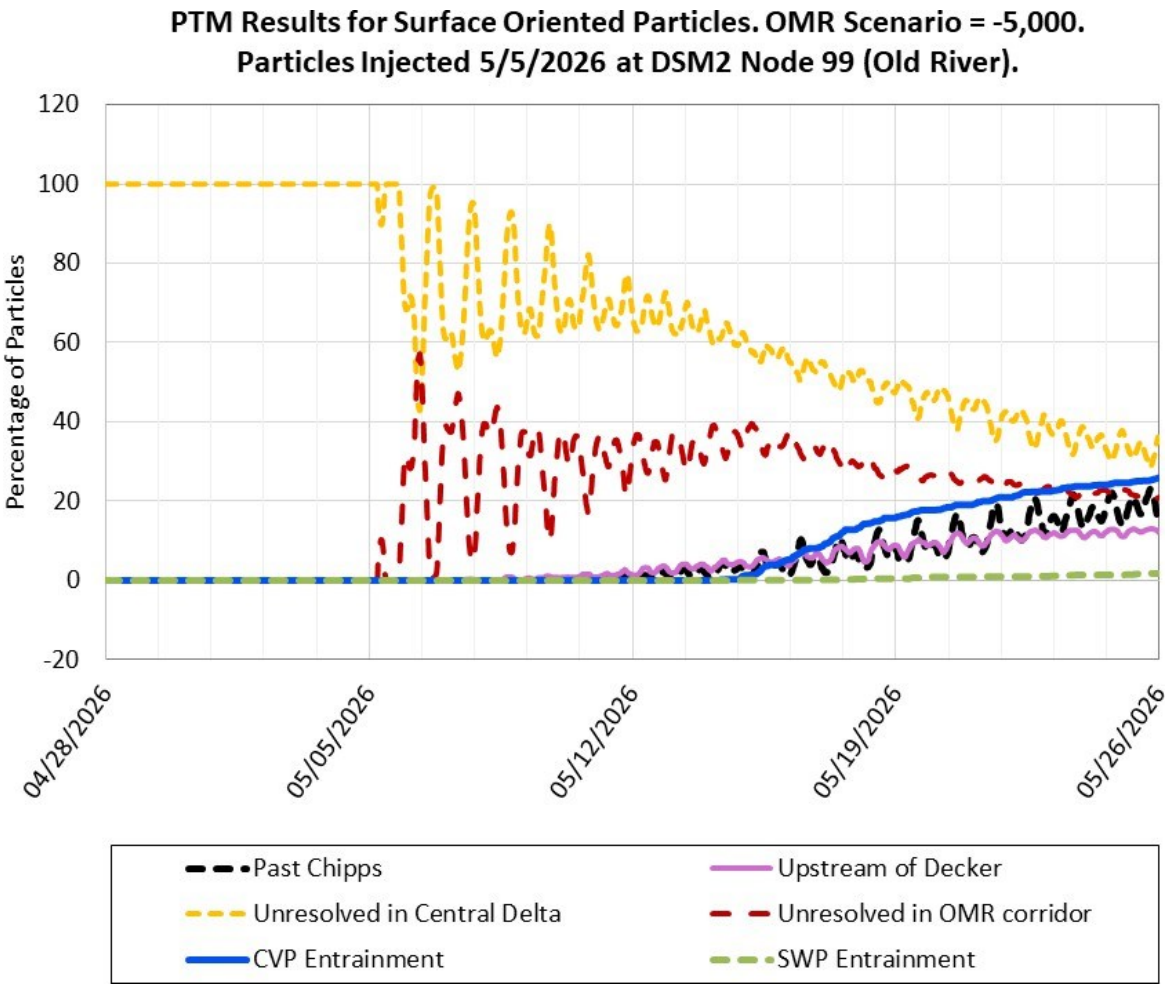


Figure 28: PTM Results for Surface Oriented Particles at Old River, OMR Scenario -5,000

Figure 28 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 99 (Old River). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) decreases gradually throughout the evaluation period but remains the dominant category through much of the simulation period. Unresolved in OMR Corridor (red) increases rapidly following particle injection and fluctuates between approximately 20 and 40 percent before gradually declining in late May. CVP Entrainment (blue) increases steadily beginning in mid-May and reaches approximately 25 percent by late May. Past Chipps (black) and Upstream of Decker (purple) show smaller gradual increases over time, while SWP Entrainment (green) remains near zero throughout the evaluation period.

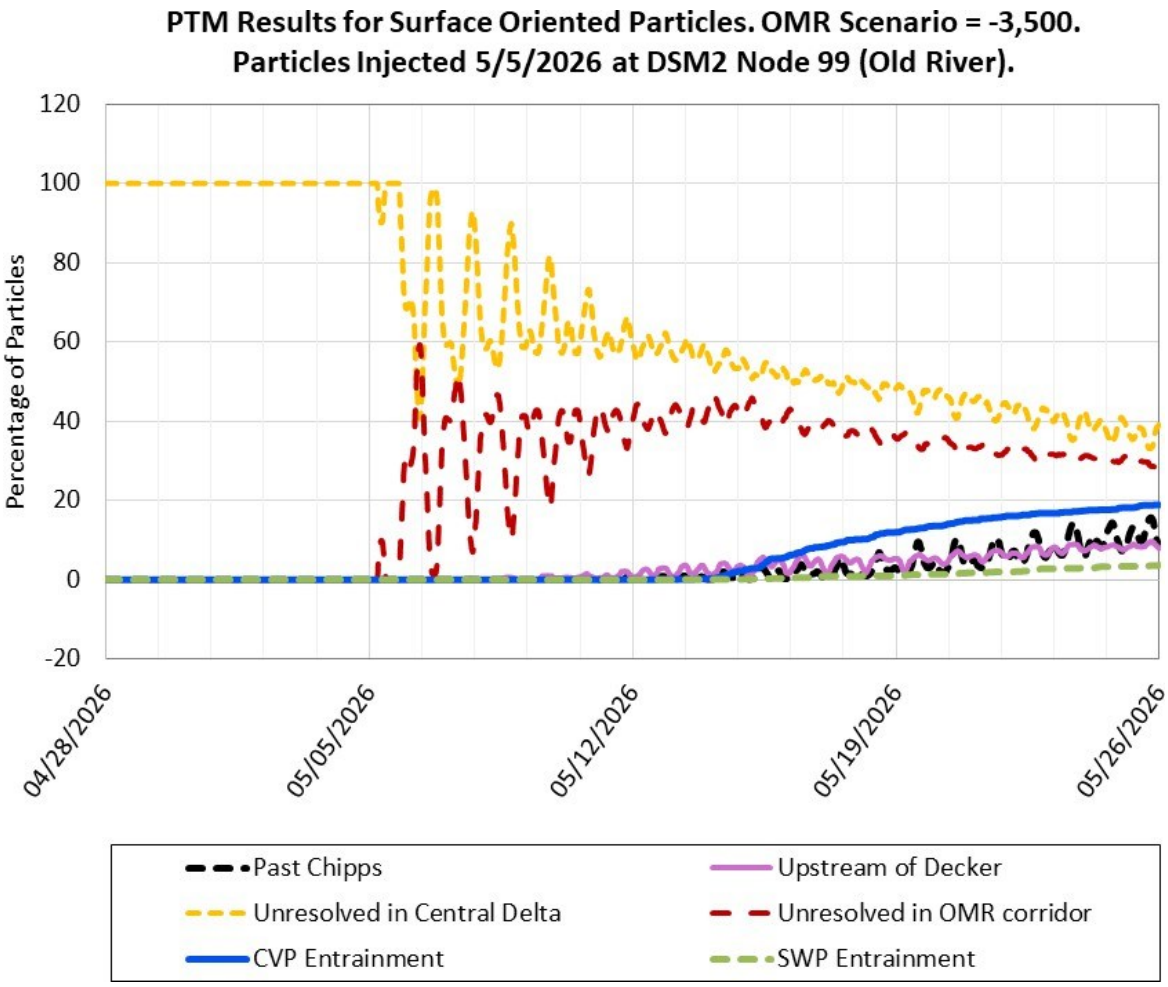


Figure 29: PTM Results for Surface Oriented Particles at Old River, OMR Scenario -3,500

Figure 29 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 99 (Old River). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) decreases gradually throughout the evaluation period but remains the dominant category through much of the simulation period. Unresolved in OMR Corridor (red) increases rapidly following particle injection and fluctuates between approximately 30 and 45 percent before gradually declining in late May. CVP Entrainment (blue) increases steadily beginning in mid-May and reaches approximately 20 percent by late May. Past Chipps (black) and Upstream of Decker (purple) show smaller gradual increases over time, while SWP Entrainment (green) remains near zero throughout the evaluation period.

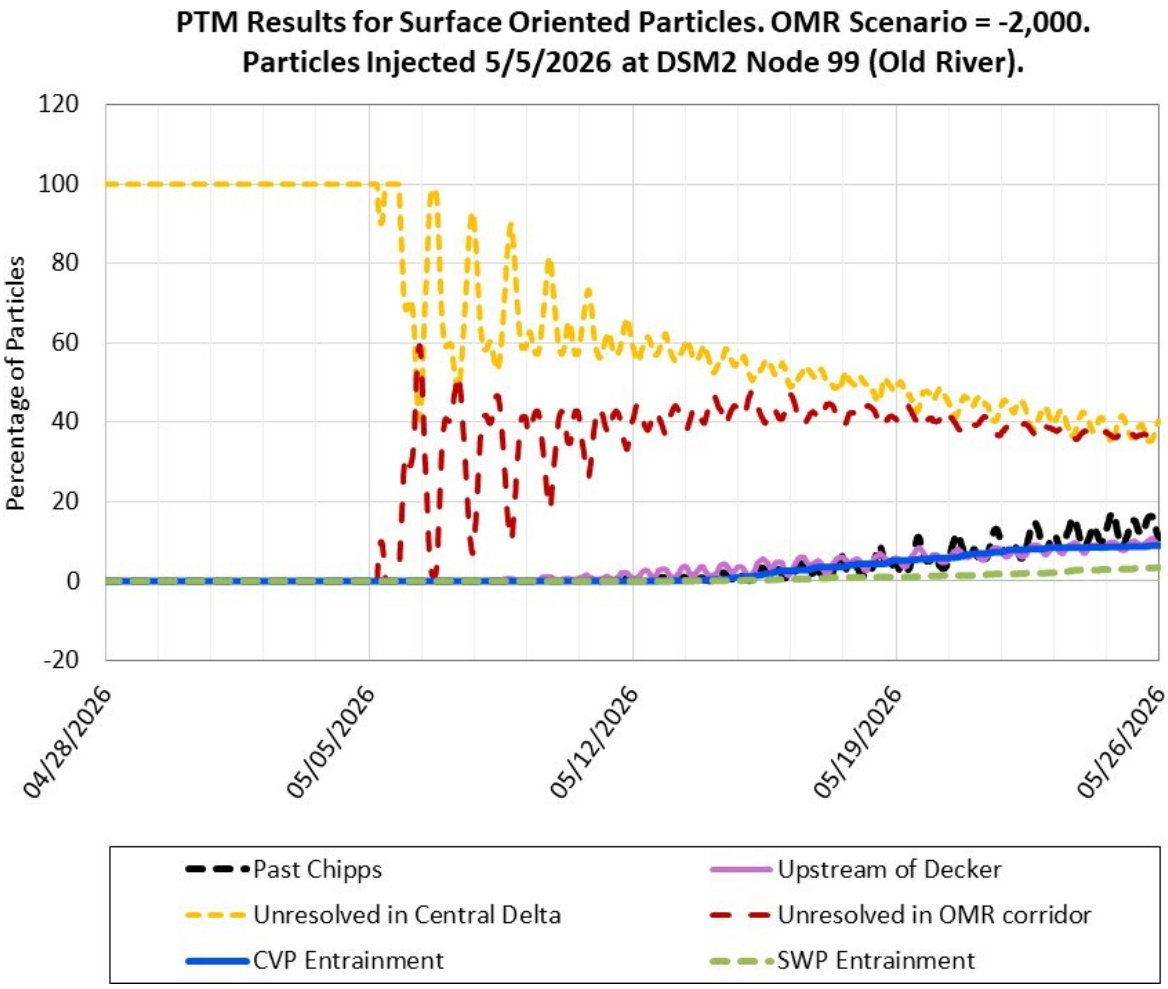


Figure 30: PTM Results for Surface Oriented Particles at Old River, OMR Scenario -2,000

Figure 30 is a line graph showing the percentage of surface oriented particles over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 at DSM2 Node 99 (Old River). Six flux locations are represented by different colored dashed and solid lines. Unresolved in Central Delta (yellow) decreases gradually throughout the evaluation period but remains the dominant category through much of the simulation period. Unresolved in OMR Corridor (red) increases rapidly following particle injection and remains near 35 to 45 percent for much of the simulation period before gradually declining in late May. CVP Entrainment (blue) shows a smaller gradual increase over time, while Past Chipps (black) and Upstream of Decker (purple) increase modestly throughout the evaluation period. SWP Entrainment (green) remains near zero throughout the simulation period.

ECO-PTM (Ecological Particle Tracking Model)

ECO-PTM Results Evaluation Period: 05/05/2026 – 05/25/2026

Particles Injected: 05/05/2026

Injection Location: Sacramento River at Freeport

Table 12. Salmon Particle Route Ratio After 3 Weeks Ending 05/25/2026

OMR Flow Bin (cfs)	Sutter Slough Route	Steamboat Slough Route	Sacramento River (SS) Route	Sacramento River (GEO) Route	Georgiana Slough Route
-6,500	N/A	N/A	N/A	N/A	N/A
-5,000	0.10	0.14	0.76	0.69	0.31
-3,500	0.09	0.07	0.84	0.71	0.29
-2,000	0.09	0.07	0.84	0.71	0.29

Note: Salmon particle route ratio for the Sacramento River (SS) Route reflects particles inserted at Freeport that are not routed through either Sutter Slough or Steamboat Slough. Salmon particle route ratio for the Sacramento River (GEO) Route reflects particles inserted at Freeport that are not routed through either Sutter Slough, Steamboat Slough, Georgiana Slough, or the Delta Cross Channel (when operational).

Key: cfs = cubic feet per second, OMR = Old and Middle River

Table 13. Salmon Particle Route-Specific Survival After 3 Weeks Ending 05/25/2026

OMR Flow Bin (cfs)	Sutter Slough Route	Steamboat Slough Route	Sacramento River Route	Georgiana Slough Route	All Routes Combined
-6,500	N/A	N/A	N/A	N/A	N/A
-5,000	45%	57%	52%	24%	45%
-3,500	38%	52%	45%	28%	41%
-2,000	40%	54%	47%	27%	42%

Key: cfs = cubic feet per second, OMR = Old and Middle River

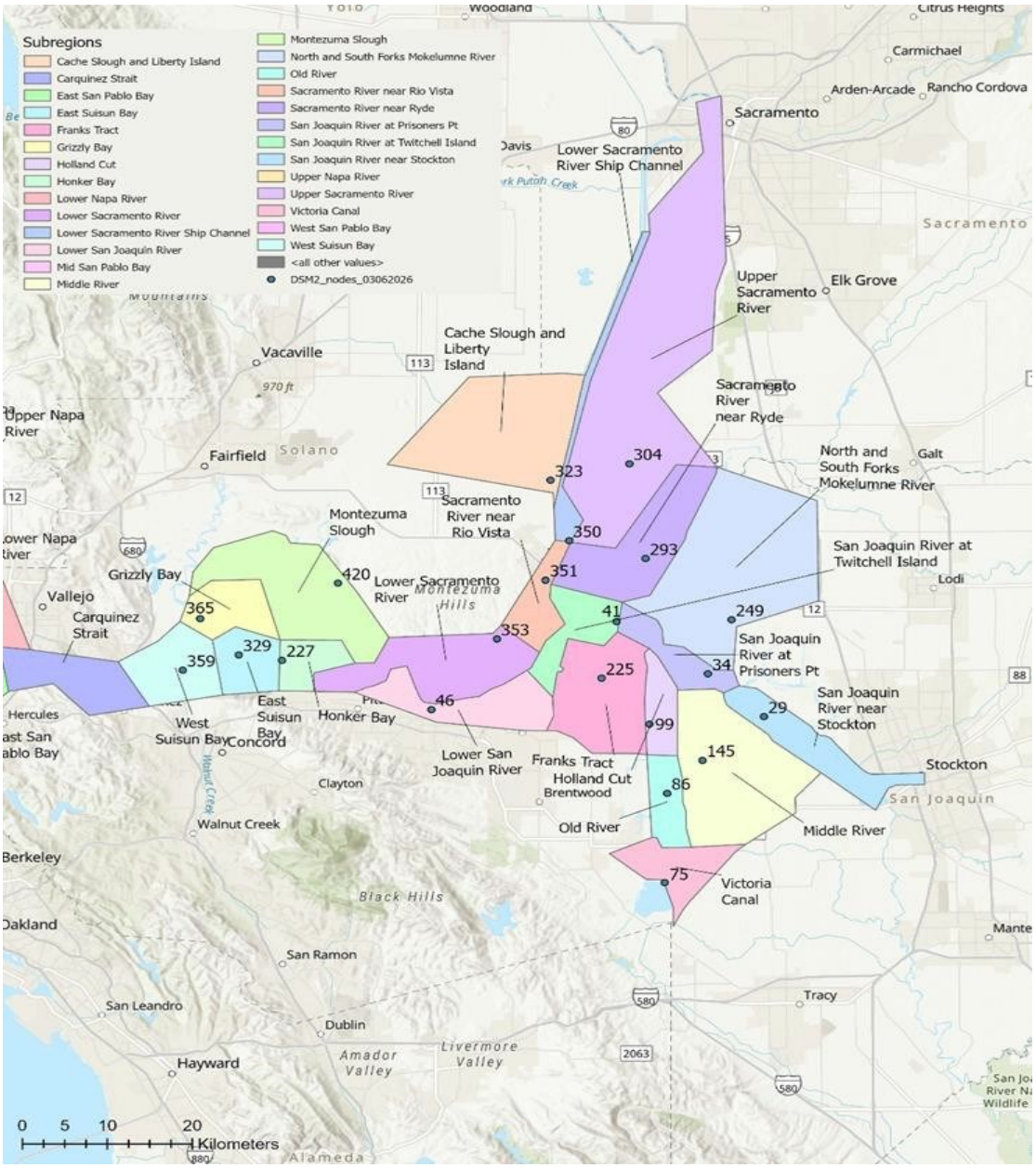
Longfin Smelt Larval Population and PTM Analysis

PTM Results Evaluation Period: 05/05/2026 – 05/25/2026

Particles Injected: 05/05/2026

PTM Injection Location: node(s) within each Delta Region identified in map below

PTM Analysis Method: LFS larva abundance is estimated in each Enhanced Delta Smelt Monitoring (EDSM) program subregion. Cumulative particle flux into CVP and SWP facilities is represented in PTM by one injection location per subregion (Figure 41). LFS larva entrainment is estimated by multiplying the LFS subregion abundance by cumulative particle flux into CVP and SWP facilities from the corresponding subregion injection point. LFS entrainment from each subregion is added together and reported at the LFS Region scale (Figure 42).



Note: No DSM2 nodes are west of the West Suisun Bay subregion, so the furthest west node in the DSM2 domain is used to represent particle entrainment for all subregions west of West Suisun Bay.

Figure 31. Map of Delta Showing Longfin Smelt Subregions and DSM2 Nodes

Figure 31 is a map of the Sacramento–San Joaquin Delta showing Longfin Smelt subregions and associated DSM2 nodes used in the particle tracking analysis. Subregions are represented by different colored polygons spanning areas including Cache Slough and Liberty Island, Sacramento River near Rio Vista, Lower San Joaquin River, Old River, Suisun Bay, and other Delta waterways. Black labeled points indicate DSM2 node locations distributed throughout the Delta system. The figure also includes major waterways, surrounding cities, and a scale bar for geographic reference.

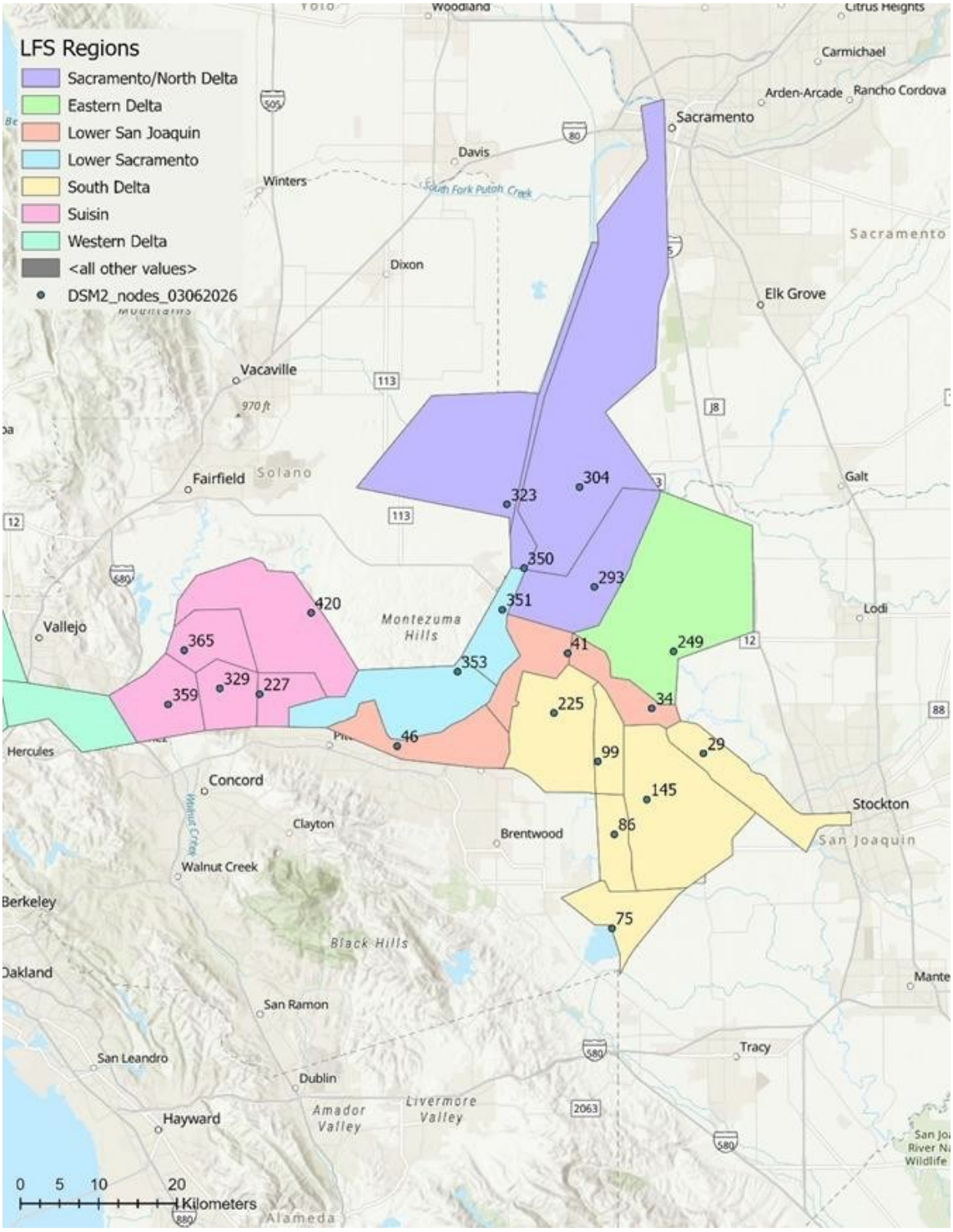


Figure 32. Map of Delta Showing Longfin Smelt Regions and DSM2 Nodes

Figure 32 is a map of the Sacramento–San Joaquin Delta showing aggregated Longfin Smelt (LFS) regions and associated DSM2 nodes used in the particle tracking analysis. Regions are represented by different colored polygons, including Sacramento/North Delta, Eastern Delta, Lower San Joaquin, Lower Sacramento, South Delta, Suisun, and Western Delta. Black labeled points indicate DSM2 node locations distributed across the Delta system. The figure also includes major waterways, nearby cities, and a scale bar for geographic reference.

Regional and Delta-wide longfin smelt (LFS) larval population is estimated using SLS survey data from Survey 6 (3/9/2026 – 3/11/2026) and volumetric expansion methods developed by the Six-Agency Monitoring Survey Design Team. As of 04/21/2026, all SLS survey catch data has been processed (Table 14). CDFW has transitioned from the SLS to the 20-mm survey to collect distribution data for post larval-juvenile Longfin Smelt. As of 04/28/2026, processing of the 20mm survey for Suisun, San Pablo and Carquinez remains at 0% complete, and the overall processing for Survey 1 is at 36% complete. Due to the lack of processed 20mm data from any of the more westerly regions, any proportional entrainment estimates would be strongly biased upward, and SLS Survey 6 data is used to estimate proportional entrainment risk for this assessment.

Table 14. Percent of Smelt Larva Survey Sample Results Processed as of 03/27/2026

SLS Survey Number	Survey Date	Eastern Delta	Lower Sacramento	Lower San Joaquin	Sacramento/ North Delta	South Delta	Suisun	Western Delta
1	12/29/2025	100%	100%	100%	100%	100%	100%	100%
2	1/12/2026	100%	100%	100%	100%	100%	100%	100%
3	1/26/2026	100%	100%	100%	100%	100%	100%	100%
4	2/9/2026	100%	100%	100%	100%	100%	100%	100%
5	2/23/2026	100%	100%	100%	100%	100%	100%	100%
6	3/9/2026	100%	100%	100%	100%	100%	100%	100%

Key: SLS = Smelt Larva Survey

The DSM2 node used as an injection point, EDSM subregion, and LFS Region for reporting are shown in Table 15.

Table 15. DSM2 Injection Node, EDSM Subregion, and LFS Region

DSM2 Injection Node	EDSM Subregion	LFS Region
329	East Suisun Bay	Suisun
365	Grizzly Bay	Suisun
227	Honker Bay	Suisun
420	Montezuma Slough	Suisun
359	West Suisun Bay	Suisun
359	Carquinez Strait	Western Delta
359	Upper Napa River	Western Delta
359	Lower Napa River	Western Delta
359	East San Pablo Bay	Western Delta
359	West San Pablo Bay	Western Delta
359	Mid San Pablo Bay	Western Delta
353	Lower Sacramento River	Lower Sacramento
351	Sacramento River near Rio Vista	Lower Sacramento
350	Lower Sacramento River Ship Channel	Sacramento/ North Delta
293	Sacramento River near Ryde	Sacramento/ North Delta
323	Cache Slough and Liberty Island	Sacramento/ North Delta
304	Upper Sacramento River	Sacramento/ North Delta
249	North and South Forks Mokelumne River	East
46	Lower San Joaquin River	Lower San Joaquin
41	San Joaquin River at Twitchell Island	Lower San Joaquin
34	San Joaquin River at Prisoners Point	Lower San Joaquin
225	Franks Tract	South Delta
99	Holland Cut	South Delta
86	Old River	South Delta
29	San Joaquin River near Stockton	South Delta
145	Middle River	South Delta
75	Victoria Canal	South Delta

Table 16. LFS Entrainment Estimate using PTM with Surface Oriented Particles: Week 1 ending 05/11/2026

OMR (cfs)	Combined Exports (cfs)	Region Metric	West	Suisun	Sacra-mento/ North Delta	Lower San Joaquin	Lower Sacra-mento	South Delta	East	Total (#)	Total (%)
N/A	N/A	LFS Larva Abundance (Survey 6: 3/9/2026)	117,633,687	145,677,478	304,865	4,078,739	3,695,676	0	0	271,390,445	N/A
-6,500	1,744	PTM Entrained (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	1,744	PTM Entrained (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A	N/A
-3,500	1,744	PTM Entrained (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A	N/A
-2,000	1,744	PTM Entrained (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A	N/A
-6,500	1,744	LFS Larva Entrained (#)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	1,744	LFS Larva Entrained (#)	0	0	0	0	0	0	0	0	0.0%
-3,500	1,744	LFS Larva Entrained (#)	0	0	0	0	0	0	0	0	0.0%
-2,000	1,744	LFS Larva Entrained (#)	0	0	0	0	0	0	0	0	0.0%

Notes:
Values between 0.0 and 0.1 are indicated with <0.1
The PTM entrained (%) value reflects the total entrained particles from all subregions within an LFS Region divided by the estimated LFS Region abundance.
Key: cfs = cubic feet per second LFS = longfin Smelt OMR = Old and Middle River

Table 17. LFS Entrainment Estimate using PTM with Surface Oriented Particles: Week 2 ending 05/18/2026

OMR (cfs)	Combined Exports (cfs)	Region Metric	West	Suisun	Sacra-mento/ North Delta	Lower San Joaquin	Lower Sacra-mento	South Delta	East	Total (#)	Total (%)
N/A	N/A	LFS Larva Abundance (Survey 6: 3/9/2026)	117,633,687	145,677,478	304,865	4,078,739	3,695,676	0	0	271,390,445	N/A
-6,500	3,148	PTM Entrained (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	3,148	PTM Entrained (%)	0.0	0.0	0.0	0.2	0.0	0.0	0.0	N/A	N/A
-3,500	2,146	PTM Entrained (%)	0.0	0.0	0.0	0.2	0.0	0.0	0.0	N/A	N/A
-2,000	1,503	PTM Entrained (%)	0.0	0.0	0.0	<0.1	0.0	0.0	0.0	N/A	N/A
-6,500	3,148	LFS Larva Entrained (#)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	3,148	LFS Larva Entrained (#)	0	0	0	8,663	0	0	0	8,663	<0.1%
-3,500	2,146	LFS Larva Entrained (#)	0	0	0	7,142	0	0	0	7,142	<0.1%
-2,000	1,503	LFS Larva Entrained (#)	0	0	0	430	0	0	0	430	<0.1%

Notes:
Values between 0.0 and 0.1 are indicated with <0.1
The PTM entrained (%) value reflects the total entrained particles from all subregions within an LFS Region divided by the estimated LFS Region abundance.
Key: cfs = cubic feet per second LFS = longfin Smelt OMR = Old and Middle River

Table 18. LFS Entrainment Estimate using PTM with Surface Oriented Particles: Week 3 ending 05/25/2026

OMR (cfs)	Combined Exports (cfs)	Region Metric	West	Suisun	Sacra-mento/ North Delta	Lower San Joaquin	Lower Sacra-mento	South Delta	East	Total (#)	Total (%)
N/A	N/A	LFS Larva Abundance (Survey 6: 3/9/2026)	117,633,687	145,677,478	304,865	4,078,739	3,695,676	0	0	271,390,445	N/A
-6,500	3,807	PTM Entrained (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	3,807	PTM Entrained (%)	0.0	0.0	0.2	2.2	<0.1	0.0	0.0	N/A	N/A
-3,500	2,404	PTM Entrained (%)	0.0	0.0	0.0	1.0	0.1	0.0	0.0	N/A	N/A
-2,000	1,503	PTM Entrained (%)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	N/A	N/A
-6,500	3,807	LFS Larva Entrained (#)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	3,807	LFS Larva Entrained (#)	0	0	610	91,575	404	0	0	92,588	<0.1%
-3,500	2,404	LFS Larva Entrained (#)	0	0	0	40,458	4,099	0	0	44,557	<0.1%
-2,000	1,503	LFS Larva Entrained (#)	0	0	0	4,970	0	0	0	4,970	<0.1%

Notes:
Values between 0.0 and 0.1 are indicated with <0.1
The PTM entrained (%) value reflects the total entrained particles from all subregions within an LFS Region divided by the estimated LFS Region abundance.
Key: cfs = cubic feet per second LFS = longfin Smelt OMR = Old and Middle River

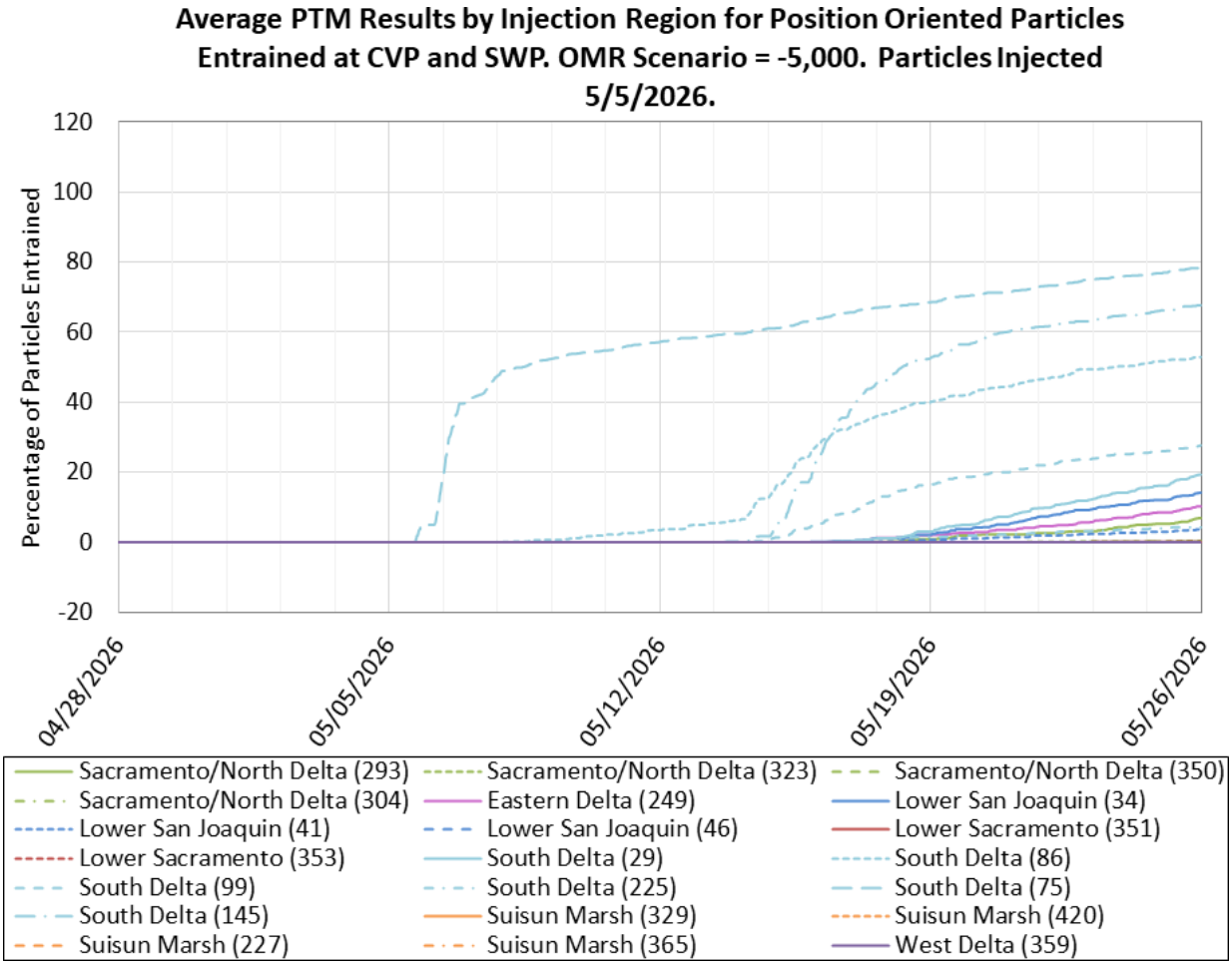


Figure 33: Average PTM Results by Injection Region for Position Oriented Particles Entrained at CVP and SWP, OMR Scenario -5,000

Figure 33 is a line graph showing the average percentage of position oriented particles entrained at the CVP and SWP over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 across multiple Delta regions and DSM2 nodes. Colored dashed and solid lines represent injection regions including Sacramento/North Delta, Eastern Delta, Lower San Joaquin, Lower Sacramento, South Delta, Suisun Marsh, and West Delta. South Delta injection locations show the highest entrainment percentages throughout the evaluation period, with several nodes exceeding 50 percent by late May. Other regions, including Sacramento/North Delta, Eastern Delta, Lower San Joaquin, Lower Sacramento, Suisun Marsh, and West Delta, remain comparatively low, generally below 20 percent throughout the simulation period.

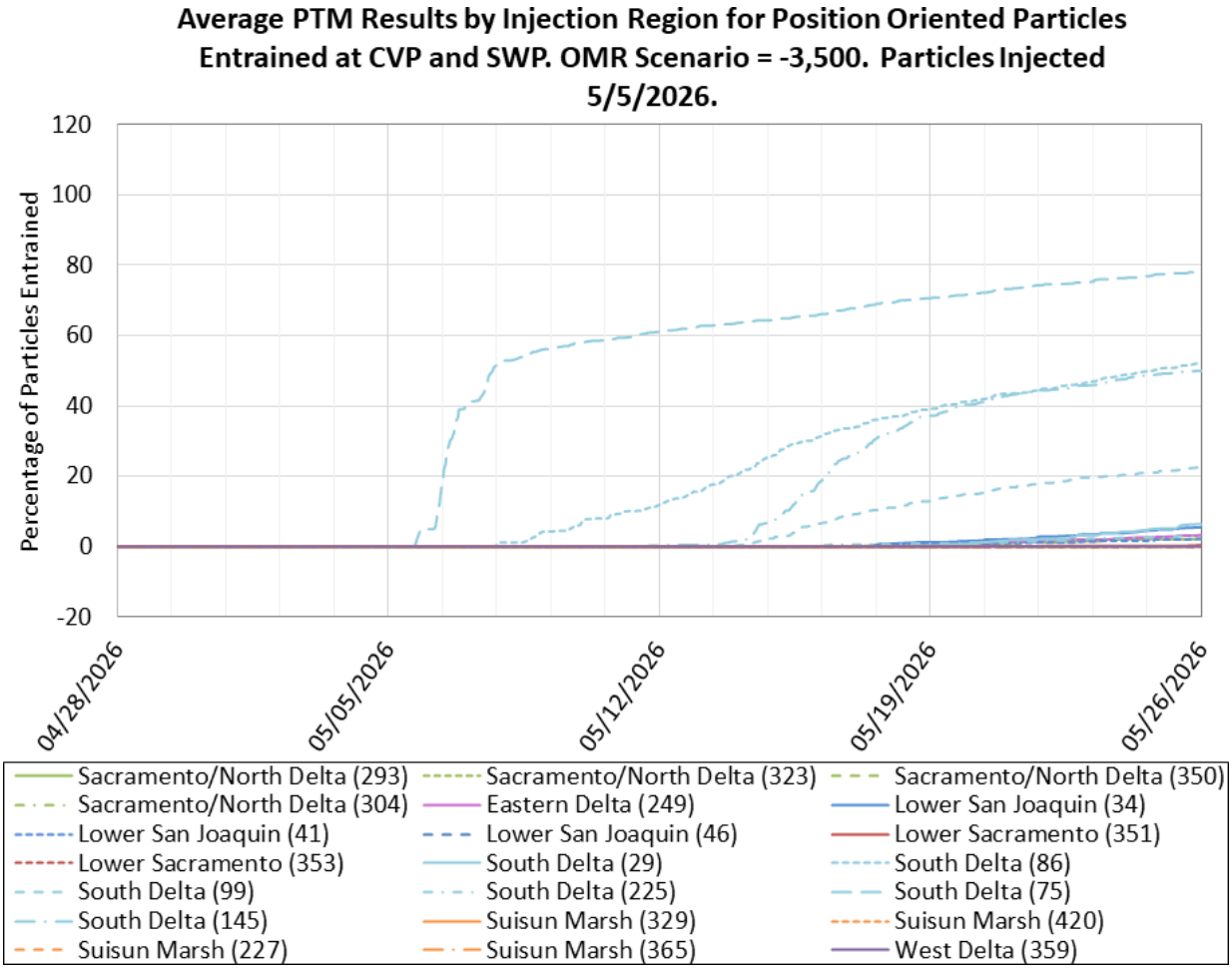


Figure 34: Average PTM Results by Injection Region for Position Oriented Particles Entrained at CVP and SWP, OMR Scenario -3,500

Figure 34 is a line graph showing the average percentage of position oriented particles entrained at the CVP and SWP over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 across multiple Delta regions and DSM2 nodes. Colored dashed and solid lines represent injection regions including Sacramento/North Delta, Eastern Delta, Lower San Joaquin, Lower Sacramento, South Delta, Suisun Marsh, and West Delta. South Delta injection locations continue to show the highest entrainment percentages throughout the evaluation period, with several nodes reaching approximately 50 to 80 percent by late May. Other regions, including Sacramento/North Delta, Eastern Delta, Lower San Joaquin, Lower Sacramento, Suisun Marsh, and West Delta, remain comparatively low, generally below 10 percent throughout the simulation period.

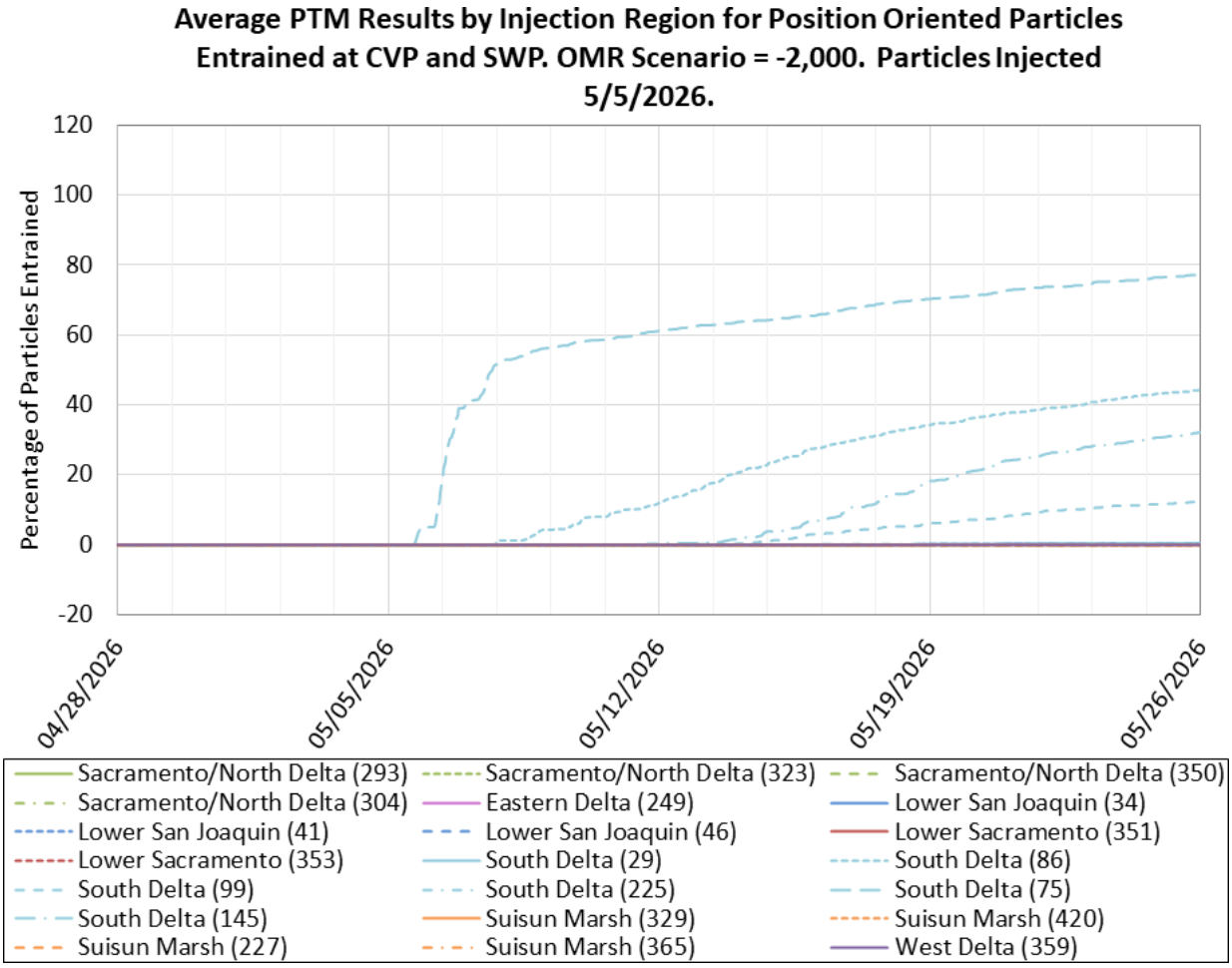


Figure 35: Average PTM Results by Injection Region for Position Oriented Particles Entrained at CVP and SWP, OMR Scenario -2,000

Figure 35 is a line graph showing the average percentage of position oriented particles entrained at the CVP and SWP over time from April 28 to May 26, 2026, with particles injected on May 5, 2026 across multiple Delta regions and DSM2 nodes. Colored dashed and solid lines represent injection regions including Sacramento/North Delta, Eastern Delta, Lower San Joaquin, Lower Sacramento, South Delta, Suisun Marsh, and West Delta. South Delta injection locations continue to show the highest entrainment percentages throughout the evaluation period, with several nodes reaching approximately 40 to 80 percent by late May. Other regions, including Sacramento/North Delta, Eastern Delta, Lower San Joaquin, Lower Sacramento, Suisun Marsh, and West Delta, remain comparatively low, generally near zero throughout the simulation period.