



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

Last updated: Tuesday, June 09, 2026 at 11 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), 265 (5.00%) natural steelhead, 1898 (29.02% 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); 265 (5.01% 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 variable, but increasing.

## **Current Delta Hydrologic Conditions**

### **Operational and Regulatory Conditions**

The current controlling factor is Delta water quality.

### **Current Conditions**

Most recent inflow at Freeport in the Sacramento River and Vernalis in the San Joaquin River is 13,306 and NA cfs respectively. Most recent Jersey Point Flow (JPF) is 1,188 cfs. Most recent 1-day, 5-day, and 14-day OMRI measurements were -3,365, -3,919, and -2,680 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.

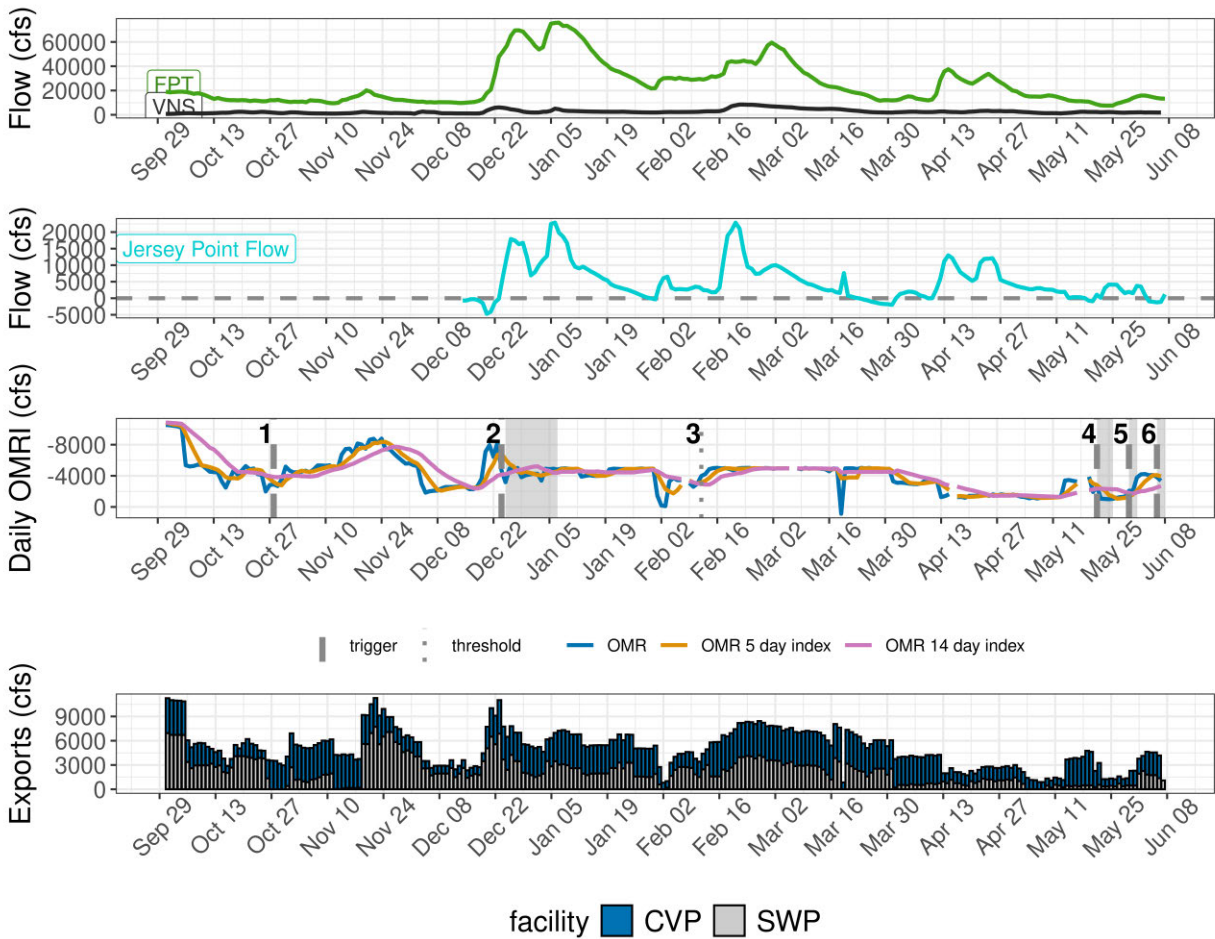


Figure 1: Operations and Action Summary, WY 2026. The numbers and lines in the OMRI plot indicate different triggers and thresholds (see Table 1), with shading representing specific action periods. Dashed and dotted vertical lines represent triggered actions and thresholds, respectively. OMRI data (colored 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. The first three are line charts depicting Sacramento River flow at Freeport (FPT), San Joaquin River flow at Vernalis (VNS), Jersey Point Flow (JPF), and daily OMRI values with corresponding 5-day and 14-day indices in cfs. The fourth graph is a bar chart depicting exports in cfs through the Central Valley Project (CVP) and State Water Project (SWP) facilities. The x-axis for all four graphs spans late September 2025 through early June 2026.

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
4	DCC Gate Open	5/22/2026	2026-05-22	4 days	DCC gates
5	DCC Gate Open	5/30/2026	2026-05-30	2 days	DCC gates
6	DCC Gate Open	6/6/2026	2026-06-06	2 days	DCC gates

### 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 'lolo' category. Forecasted conditions averaged across the next 7 days falls within the 'lolo' category.

The altered channel length for the current "lolo" hydrology is 16, 34, 104 and 163 kilometers (km) across OMR bins of -2000, -3500, -5000 and <-5500 respectively. The altered channel length for forecasted "lolo" hydrology is 16, 34, 104 and 163 kilometers (km) across OMR bins of -2000, -3500, -5000 and <-5500 respectively.

Change in altered channel length between OMR levels is 147 km for current conditions and 147 km for forecasted conditions indicating that ZOI impacts across OMR scenarios would not change between current and forecasted conditions. Across the nine hydrology bins, changes in altered channel length across OMR scenarios are high (>75th percentile) for both current and forecasted hydrology.

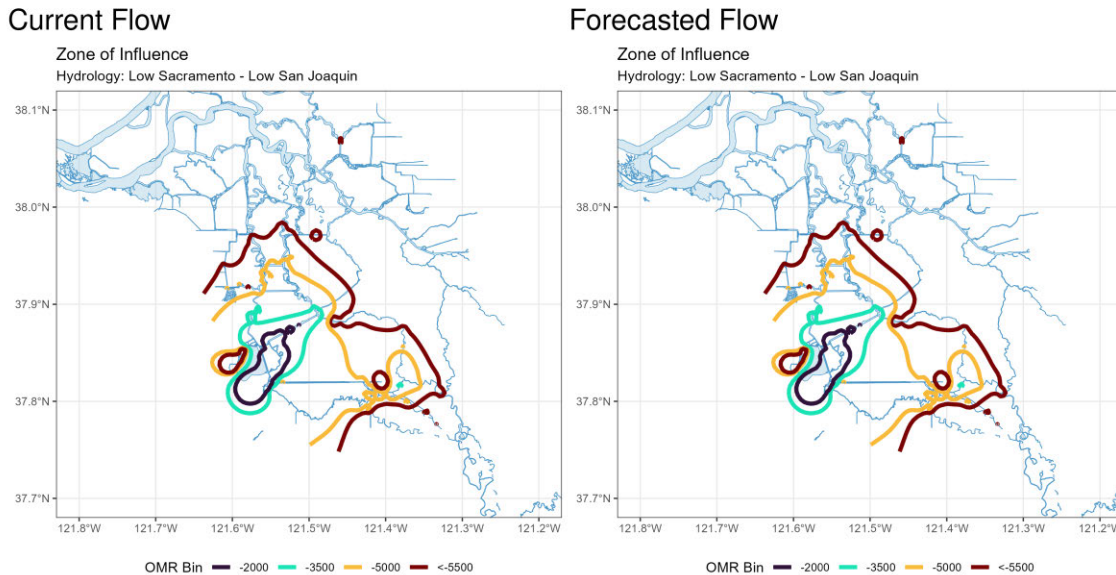


Figure 2: Modeled Zone of Influence at different OMR scenarios based on current inflow hydrology (left) and forecasted inflow hydrology (right) from the Sacramento River and San Joaquin River

Figure 2 depicts two maps showing the Delta export zone of influence under current and forecasted flow conditions. Colored contours represent the modeled extent of the zone of influence for OMR flow scenarios ranging from -2,000 to less than -5,500 cfs. The maps illustrate the projected spatial extent of hydrologic influence within the south Delta under low Sacramento-low San Joaquin hydrologic conditions.

## 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 Jun 07, 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)	Chippis 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%

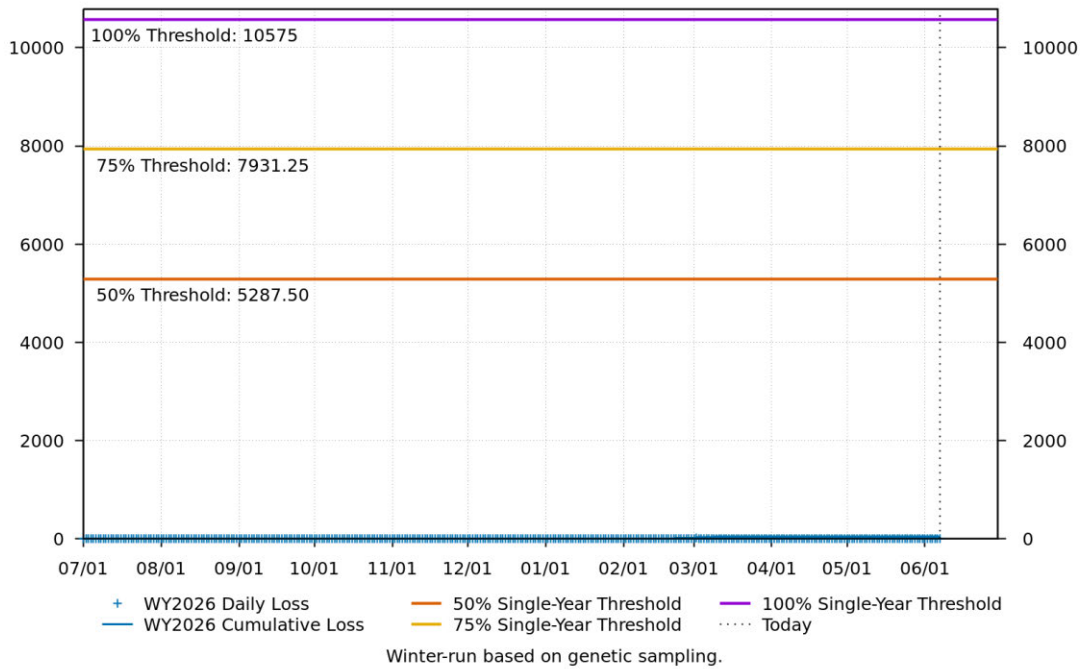
Red Bluff Diversion Dam Passage Estimate - As of Jun 03 estimated passage to date of LAD winter-run at Red Bluff Diversion is approximately 4.18 million fish. Note that outmigration timing overlaps with spring-run migrating fish, and true winter-run abundance likely differs from these estimates.

*Delta Monitoring* - No catch has been reported at Delta Entry RSTs (Tisdale, Knights Landing, Lower Sacramento River) in the past two weeks. Total catch at Sacramento Trawl and Beach Seines in the delta between May 26 and Jun 04 is 0 individuals. Total catch at Delta Exit at Chipps Island between May 27 and Jun 03 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 June 07, 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.

**WY2026 Natural DNA Winter-run Chinook Loss**  
**Cumulative Loss to date: 45.42**  
**Cumulative Loss percent of Threshold: 0.43%**



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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 depicts cumulative natural-origin winter-run Chinook salmon loss for Water Year 2026 relative to single-year loss thresholds. The graph shows daily and cumulative loss estimates, along with the 50%, 75%, and 100% threshold levels. The x-axis spans July 2025 through June 2026, and the y-axis represents cumulative winter-run loss. As of June 8, 2026, cumulative loss was estimated at 45.42 fish, or 0.43% of the annual loss threshold.

**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 June 07, overall through delta STARS estimated survival probability (with 80% credible intervals) is 0 (0-0) placing it in the 43rd percentile of historical STARS survival estimates for the month of June (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 (0-0), respectively, corresponding to the 42nd and 38th percentiles of historical June estimates (WYs 2018-2025).

Overall Survival: Median survival of daily cohorts for all routes combined  
Delta STARS Model -  
Predicted Natural Winter-run Chinook Daily Cohorts Passage, Knights Landing to Chipps Island

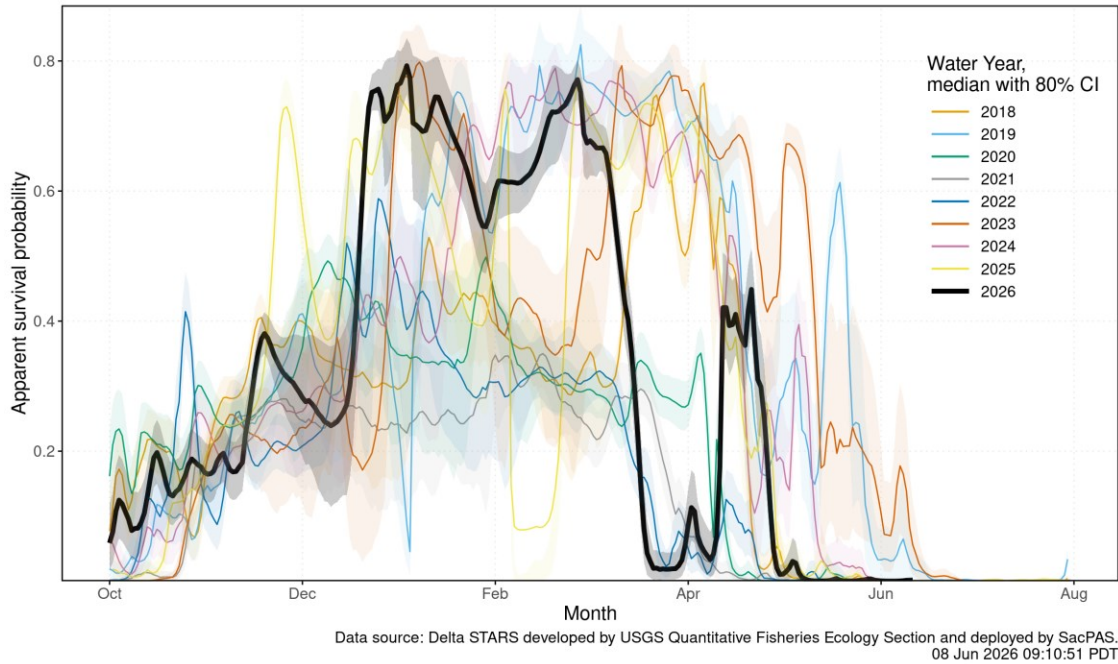


Figure 4: Estimated overall winter-run survival from Knights Landing to Chipps Island. Black line indicates the current water-year, and other colored lines correspond to past water years.

Figure 4 depicts estimated apparent survival probability for natural-origin winter-run Chinook salmon migrating from Knights Landing to Chipps Island. The graph compares median survival estimates for Water Years 2018–2026, with the current water year shown as a black line and previous water years shown as colored lines. Shaded areas represent the 80% confidence interval around the median survival estimate. The x-axis spans October through August, and the y-axis represents apparent survival probability.

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

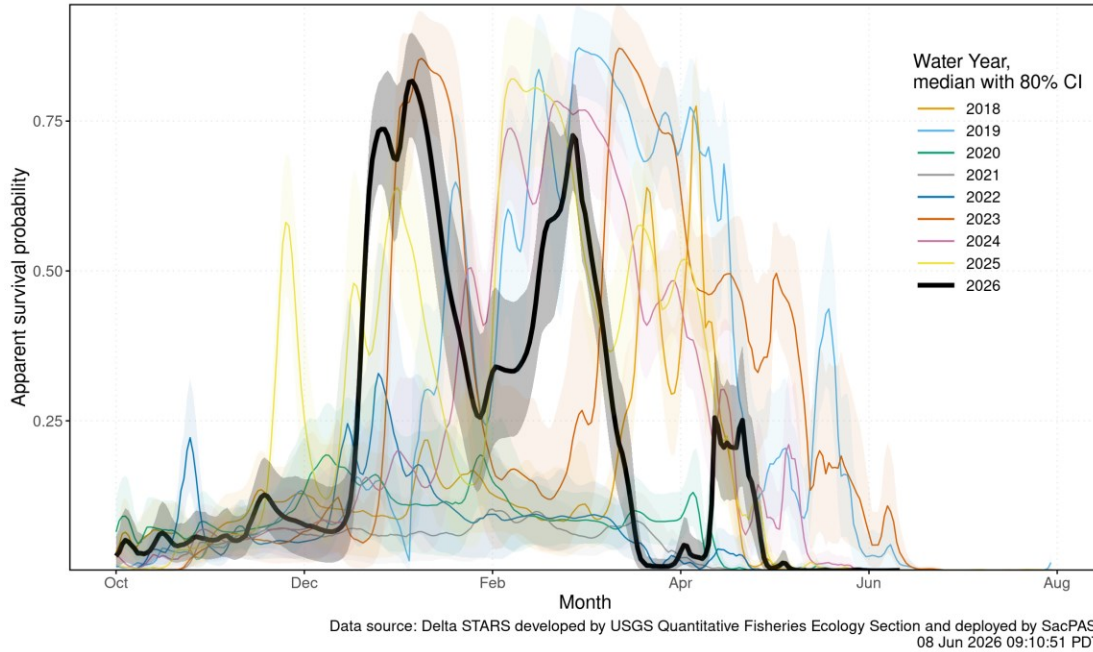


Figure 5: Estimated survival from Knights Landing to Chipps Island of simulated winter-run cohorts that route through the interior Delta. Black line indicates the current water-year, and other colored lines correspond to past water years.

Figure 5 depicts estimated apparent survival probability for simulated natural-origin winter-run Chinook salmon cohorts migrating from Knights Landing to Chipps Island through the Interior Delta route. The graph compares median survival estimates for Water Years 2018–2026, with the current water year shown as a black line and previous water years shown as colored lines. Shaded areas represent the 80% confidence interval around the median survival estimate. The x-axis spans October through August, and the y-axis represents apparent survival probability.

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

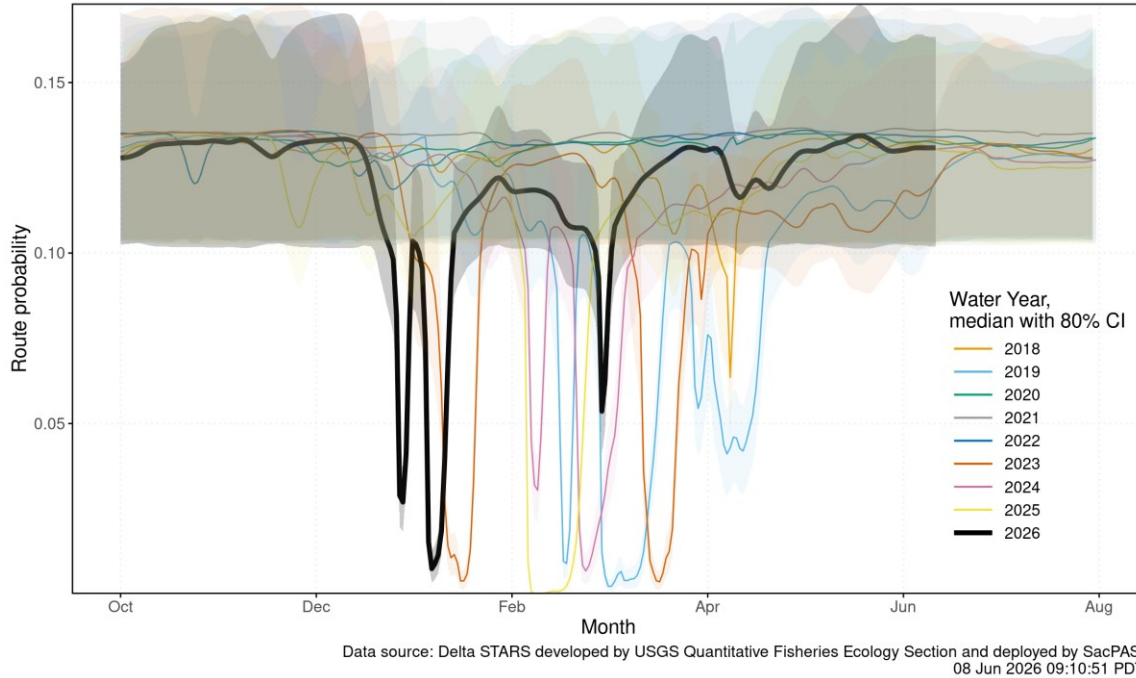


Figure 6: Estimated probability of winter-run routing into the interior Delta. Black line indicates the current water-year, and other colored lines correspond to past water years.

Figure 6 depicts the estimated probability that simulated natural-origin winter-run Chinook salmon cohorts route through the Interior Delta during migration from Knights Landing to Chipps Island. The graph compares route probabilities across Water Years 2018–2026, with the current water year shown as a black line and previous water years shown as colored lines. Shaded areas represent the 80% confidence interval around the median route probability estimate. The x-axis spans October through August, and the y-axis represents route probability.

## 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 June 08, 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 June 08, 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 Jun 07, 98% of CCV steelhead have entered the Delta based on Knights Landing RST catch, 94% have exited the Delta based on Chipps Island Trawl Catch, and 99% 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

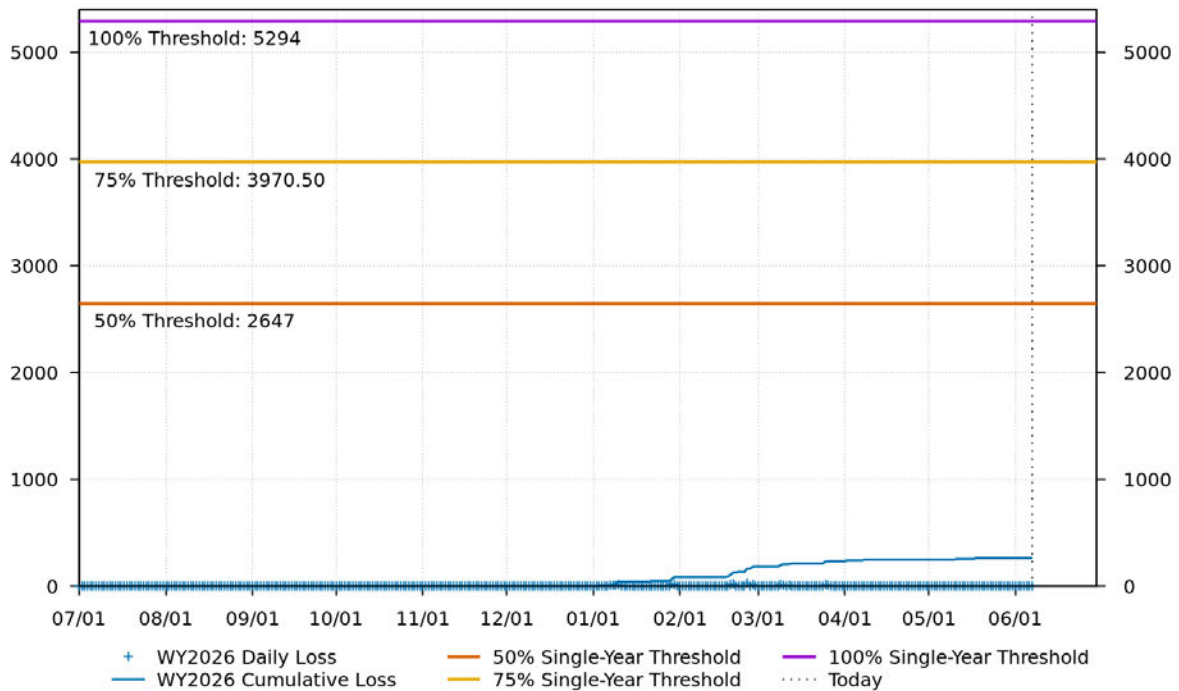
Species	Chipps Island Trawl	Knights Landing RST	Red Bluff Diversion Dam	Sac Trawl (Sherwood)	Salvage	Tisdale RST
Steelhead, Unclipped	94%	83%	35%	98%	99%	88%

*Delta Monitoring* - No catch has been reported at Delta Entry RSTs (Tisdale, Knights Landing, Lower Sacramento River) in the past two weeks. Total catch at Sacramento Trawl and Beach Seines in the delta between May 26 and Jun 04 is 0 individuals. Total catch at Delta Exit at Chipps Island between May 27 and Jun 03 is 0 individuals.

**Annual Loss**

As of June 07, cumulative loss of unclipped steelhead is 265 or 5.00% 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 0.

**WY2026 Natural Steelhead Loss**  
**Cumulative Loss to date: 264.64**  
**Cumulative Loss percent of Threshold: 5.00%**



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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 depicts cumulative loss of natural-origin steelhead during Water Year 2026. The graph shows daily and cumulative loss estimates relative to the single-year incidental take limit (ITL) of 5,294 fish, with reference lines marking 50%, 75%, and 100% of the ITL. The x-axis spans July through June, and the y-axis represents cumulative steelhead loss. A vertical dashed line indicates the current date.

## 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 1898 or 29.02% 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.

**WY2026 Hatchery Steelhead Loss**  
**Cumulative Loss to date: 1898.37**  
**Cumulative Loss percent of Threshold: 29.02%**

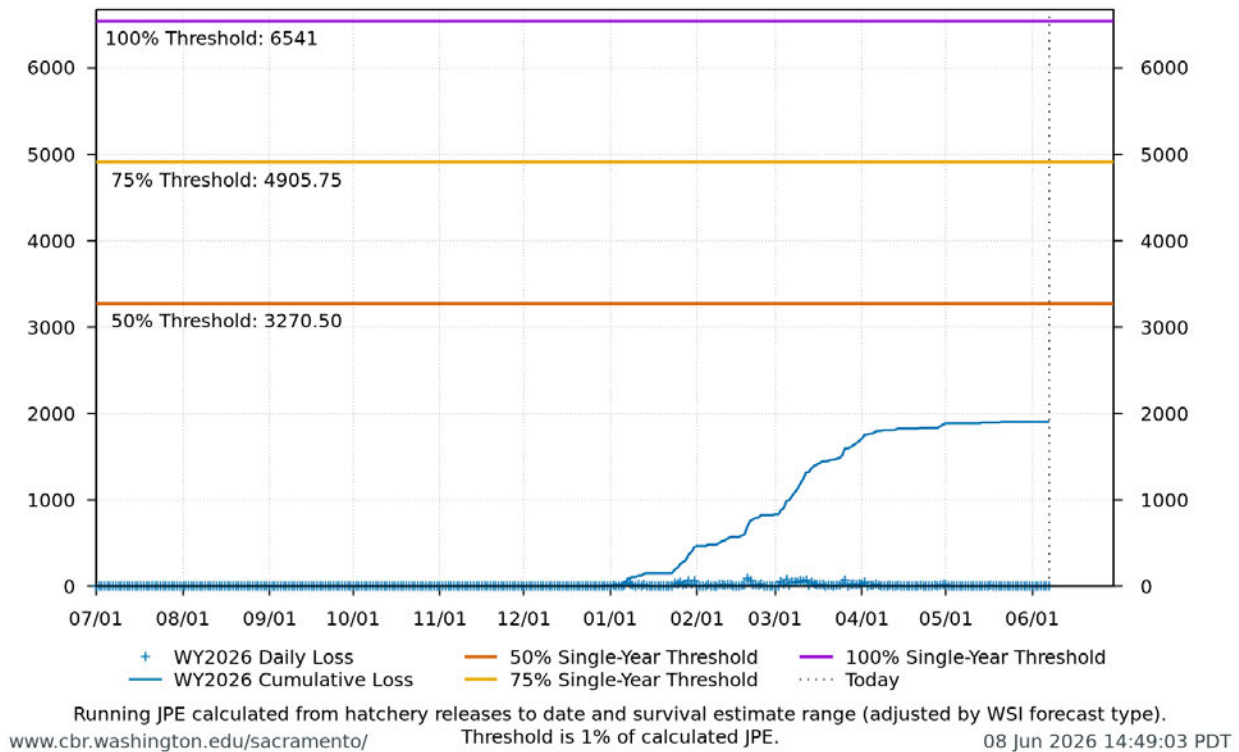


Figure 8: Cumulative loss of hatchery steelhead for WY 2026

Figure 8 depicts cumulative loss of hatchery-origin steelhead during Water Year 2026. The graph shows daily and cumulative loss estimates relative to the annual hatchery steelhead threshold, with reference lines marking 50%, 75%, and 100% of the threshold value. The x-axis spans July through June, and the y-axis represents cumulative hatchery steelhead loss. A vertical dashed line indicates the current date.

## Spring-run Chinook

### **Current Status**

*Delta Entry Timing* - Historically, as of Jun 07, 100% of LAD spring-run have entered the Delta based on Knights Landing RST catch, 100% have exited the Delta based on Chipps Island Trawl Catch, and 99% 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	100%	100%	100%	100%	100%	99%

Red Bluff Diversion Dam Passage Estimate - As of Jun 03 estimated passage to date of LAD spring-run at Red Bluff Diversion is approximately 0.96 million fish. Note that outmigration timing overlaps with winter-run and fall-run outmigration, and true spring-run abundance likely differs from these estimates.

*Delta Monitoring* - No catch has been reported at Delta Entry RSTs (Tisdale, Knights Landing, Lower Sacramento River) in the past two weeks. Total catch at Sacramento Trawl and Beach Seines in the delta between May 26 and Jun 04 is 0 individuals. Total catch at Delta Exit at Chipps Island between May 27 and Jun 03 is 0 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 June 07, 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 June 07, 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.

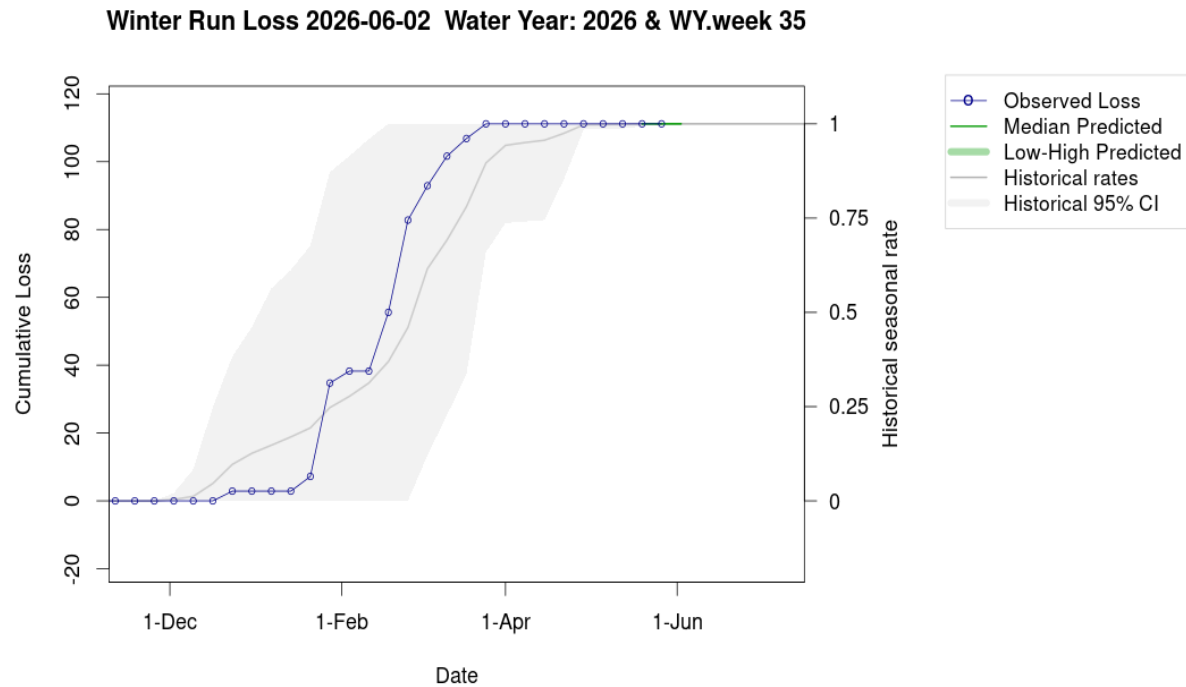


Figure 9: Estimates of winter-run Chinook loss generated by Loss and Salvage Predictor tool

Figure 9 depicts observed and predicted cumulative winter-run Chinook salmon loss estimates generated by the Loss and Salvage Predictor tool for Water Year 2026. The graph compares observed cumulative loss with median and range-based predicted loss trajectories, historical seasonal loss rates, and the historical 95% confidence interval. The x-axis spans December through June, the left y-axis represents cumulative loss, and the right y-axis represents historical seasonal rate.

### Steelhead Loss 2026-06-02 Water Year: 2026 & WY.week 35

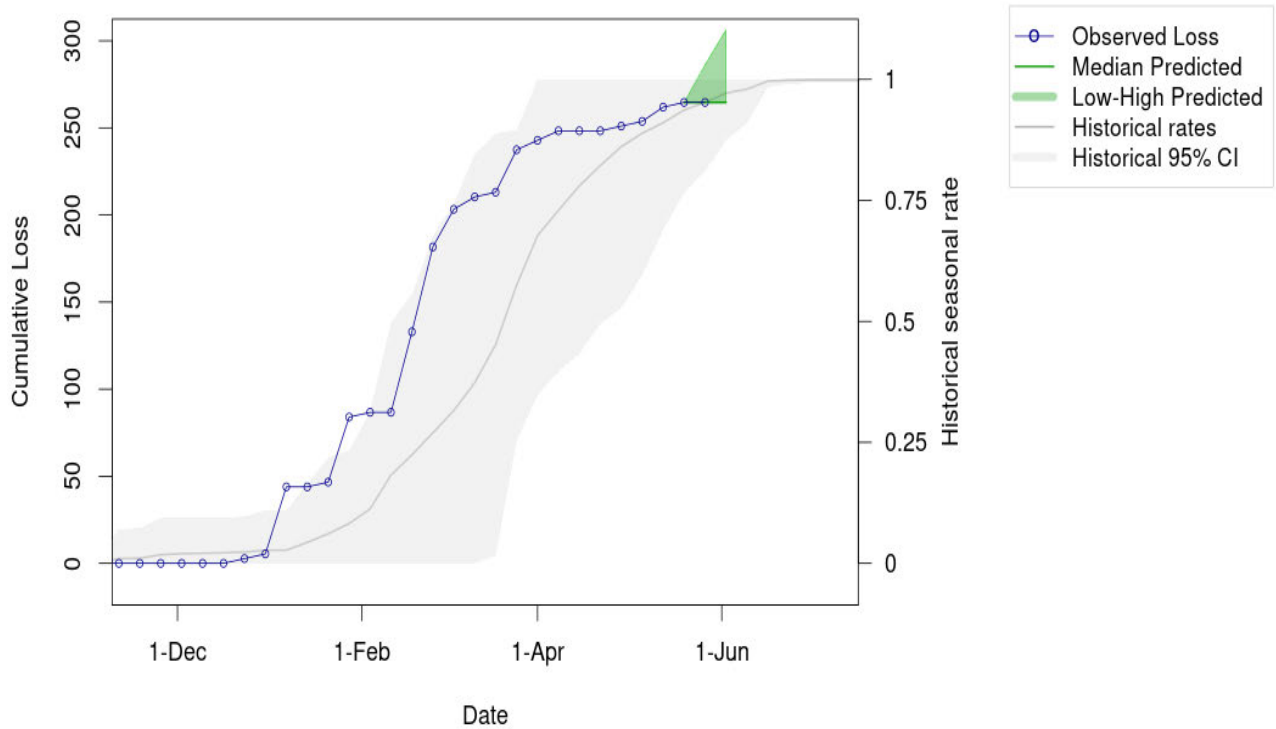


Figure 10: Estimates of steelhead loss generated by Loss and Salvage Predictor tool.

Figure 10 is a line graph showing observed and predicted cumulative steelhead loss for Water Year 2026 through June 2, 2026. The blue line represents observed cumulative loss, while the green shaded area shows the predicted range of future losses. Historical seasonal loss rates and the associated 95% confidence interval are shown in gray. Observed cumulative steelhead loss increased rapidly between February and April before stabilizing near 265 fish by early June.

## End of Entrainment Management for Salmonids

The end of entrainment management for salmonids occurs on June 30, or after 7 days of daily mean water temperature in June  $\geq 72^\circ\text{F}$  ( $22^\circ\text{C}$ ) at Mossdale and at Prisoner's Point (does not have to be consecutive), whichever occurs first.

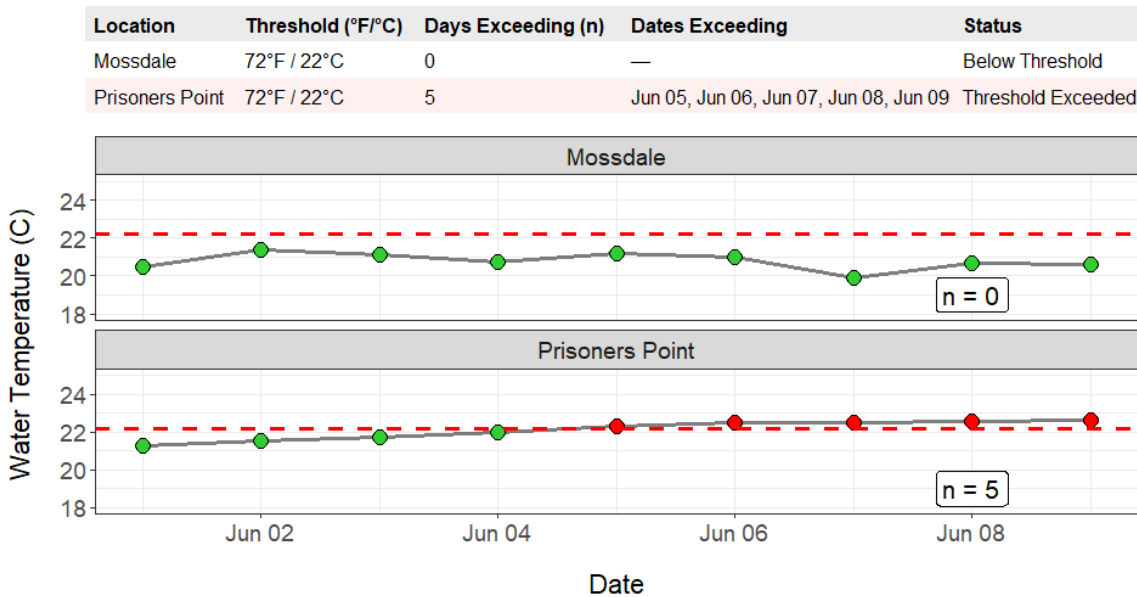


Figure 11: Daily average temperature at Mossdale and Prisoner's Point. Horizontal dashed line indicates temperature threshold for entrainment management for salmonids. Number of days exceeding the threshold at each location are shown (n=5).

Figure 11 depicts daily average water temperatures at Mossdale and Prisoners Point during the reporting period. The graphs show observed temperatures relative to the  $22^\circ\text{C}$  ( $72^\circ\text{F}$ ) salmonid entrainment management threshold, indicated by a horizontal dashed line. Days exceeding the threshold are highlighted, and the total number of exceedance days at each location is reported (n = 0 at Mossdale; n = 5 at Prisoners Point). The x-axis represents date and the y-axis represents average water temperature ( $^\circ\text{C}$ ).

## 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.
  - b. **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 5.00% of the threshold.
  - b. **LOW RISK:** Hatchery steelhead cumulative loss is currently 29.02% 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.

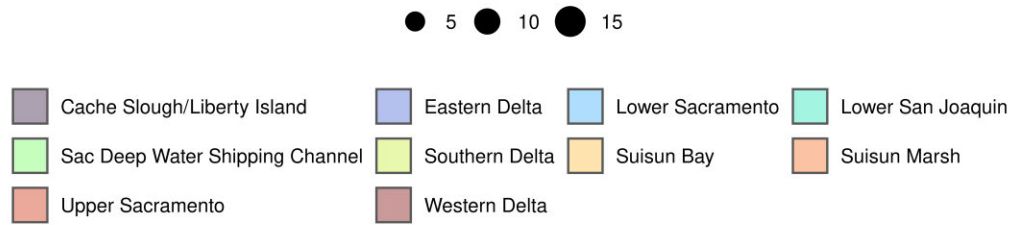
- Non-production release: On June 2, USFWS released ~4,000 juvenile Delta smelt (120 dph; average fork length of 31 mm) at Sherman Island.
- **Delta smelt count:** 44 adult Delta smelt and 30 juvenile Delta smelt have been detected this water year. See Table 10 for recent detections, Figure 12 for spatial distribution, and Figure 13 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



○ DJFMP ■ EDSM ▲ salvage

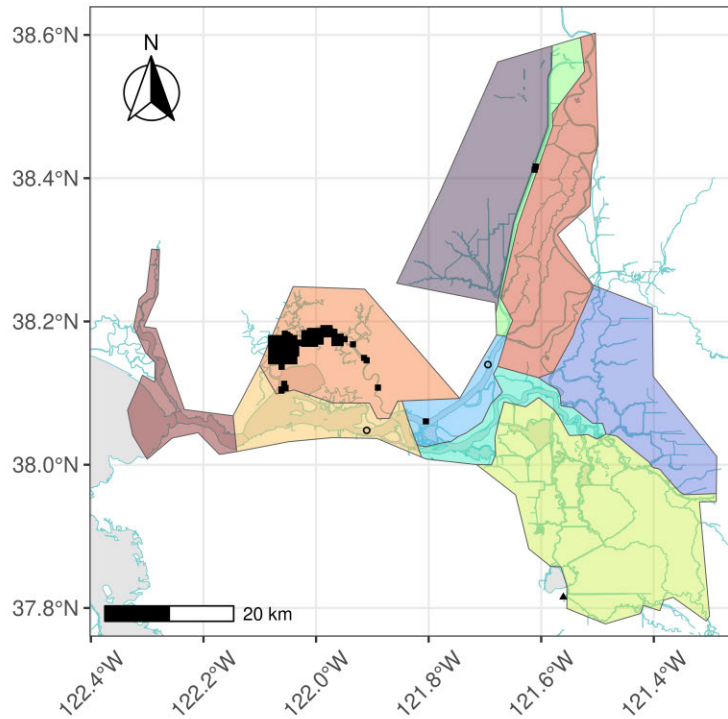


Figure 12: Delta smelt distribution for WY 2026

Figure 12 depicts the distribution of Delta smelt observations in the Sacramento–San Joaquin Delta during Water Year 2026. Colored polygons represent Delta smelt monitoring regions, while symbols indicate detections from the Delta Juvenile Fish Monitoring Program (DJFMP), Enhanced Delta Smelt Monitoring (EDSM), and salvage monitoring. Symbol size reflects the relative number of fish observed at each location. The map displays the spatial distribution of Delta smelt detections across the Delta.

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

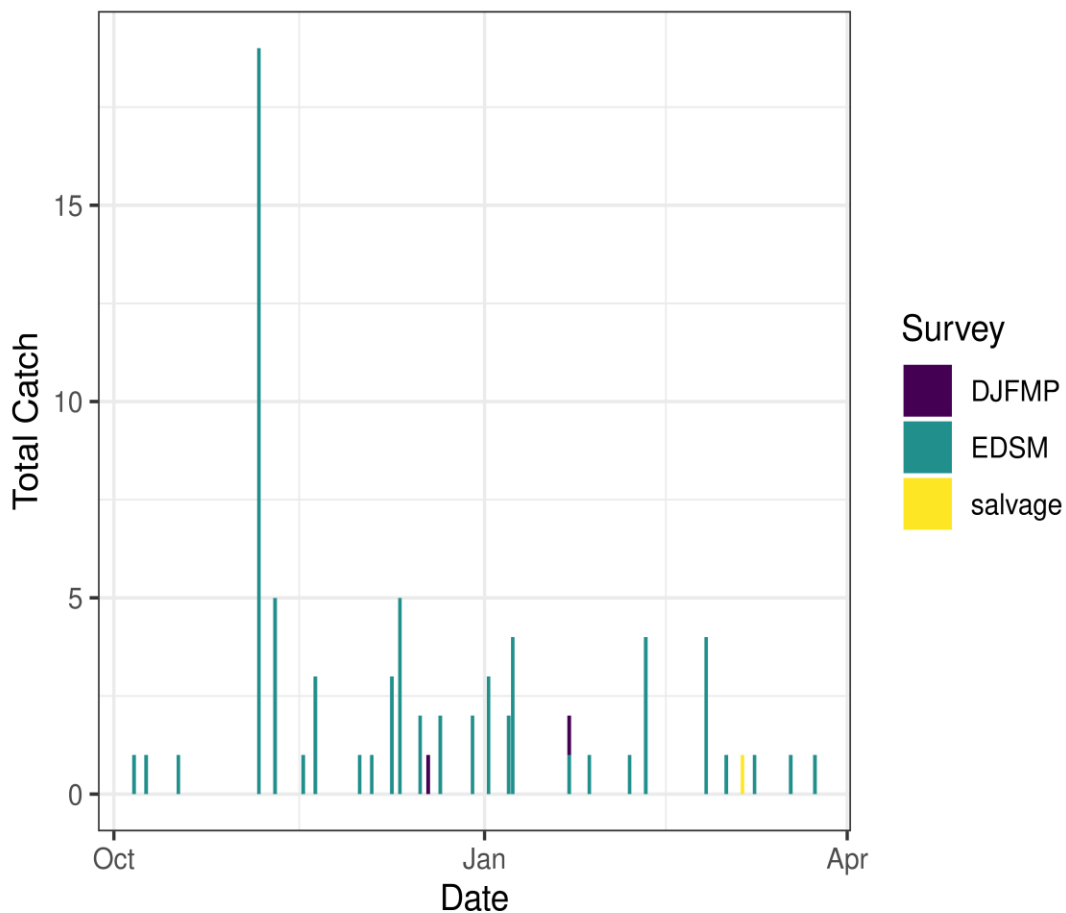


Figure 13: Time series of Delta smelt catch, WY 2026

Figure 13 depicts a time series of Delta smelt catch observations during Water Year 2026. Vertical bars represent the total number of Delta smelt captured by the Delta Juvenile Fish Monitoring Program (DJFMP), Enhanced Delta Smelt Monitoring (EDSM), and salvage monitoring programs. The x-axis represents date and the y-axis represents total catch.

## ***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  $\geq$  12 FNU in the south Delta AND PTM modeling indicates the action would avoid  $\geq$  5% entrainment of Delta smelt population after 30 days

- **12-station South Delta Turbidity:** The most recent average turbidity was 2.7 FNU as of May 28, 2026

### ***Evaluation***

Delta smelt:

1. After the start of entrainment management, is JPF < 0, is daily average turbidity  $\geq$  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  $\geq 12$  FNU in the south Delta, and PTM modeling indicates the action would avoid  $\geq 5\%$  entrainment of the Delta smelt population at facilities after 30 days?
  - a. The most recent 11-station average turbidity in the South Delta was 2.7 FNU on May 28, 2026 (station 918 could not be sampled due to bridge clearance issues). JPF may decrease to below 0 cfs for some of this week. 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. Results for neutrally buoyant particles injected at Jersey Point (a conservative estimate for 120dph released last week) show 0-0.1% entrainment at -2,000 cfs, 0.3-0.5% entrainment at -3,500 cfs, and 0.2-1.4% entrainment at -5,000 cfs. These results indicate that, if Delta smelt larvae were present, the risk of entrainment would be low. 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  $\geq 12$  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: Juvenile
- **Longfin smelt count:** 475 adult, 1,383 juvenile, and 9,554 larval longfin smelt have been detected this water year. See Table 12 for recent detections, Figure 14 for spatial distribution, and Figure 15 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
EDSM 20-mm	2026-05-26	West	Suisun Marsh	Juvenile	3
EDSM 20-mm	2026-05-27	West	Suisun Bay	Juvenile	2
EDSM 20-mm	2026-06-04	West	Suisun Marsh	Juvenile	1

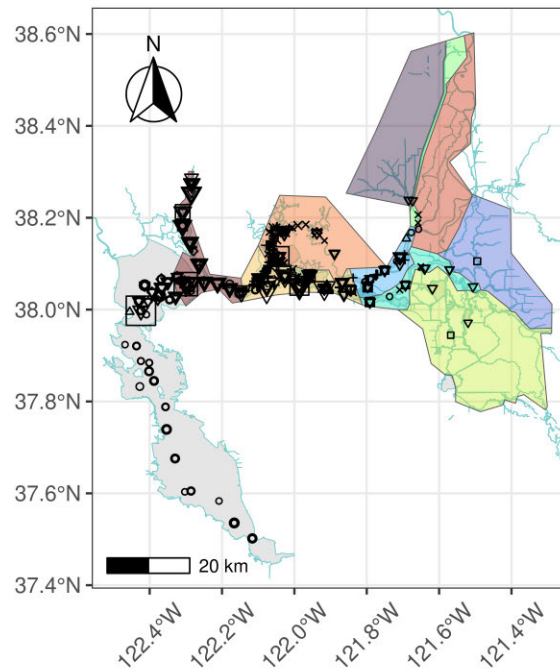
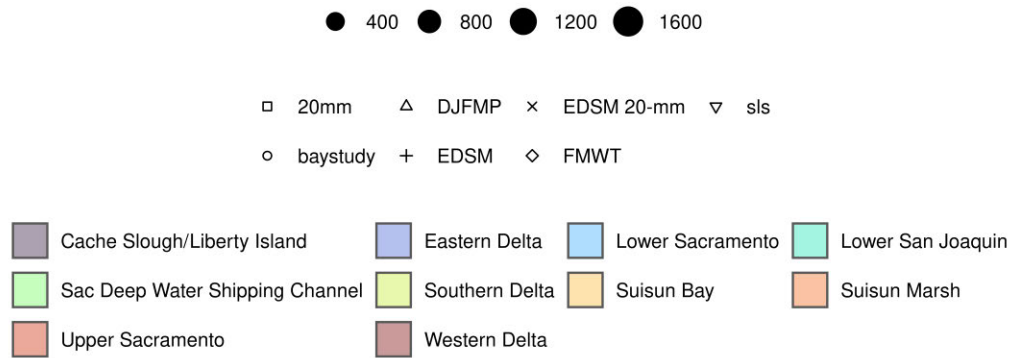


Figure 14: Longfin Smelt Distribution for WY 2026

Figure 14 depicts the distribution of longfin smelt observations in the Sacramento–San Joaquin Delta and Suisun Bay during Water Year 2026. Colored polygons represent longfin smelt monitoring regions, while symbols indicate detections from multiple monitoring programs, including DJFMP, EDSM, FMWT, Bay Study, 20-mm Survey, Spring Kodiak Trawl Survey, and salvage monitoring. Symbol size reflects the relative number of fish observed at each location. The map displays the spatial distribution of longfin smelt detections across the study area.

Table 13: Longfin smelt water year totals by life stage

Survey	Region	Life Stage	Total
20mm	Far West	Larva	272
20mm	North	Larva	13
20mm	South	Larva	17
20mm	West	Larva	710
DJFMP	Bay	Juvenile	1
DJFMP	N/A	Adult	267
DJFMP	N/A	Juvenile	31
DJFMP	NA	Adult	1
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	5
EDSM 20-mm	Far West	Larva	7
EDSM 20-mm	North	Larva	4
EDSM 20-mm	South	Larva	2
EDSM 20-mm	West	Juvenile	204
EDSM 20-mm	West	Larva	740
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

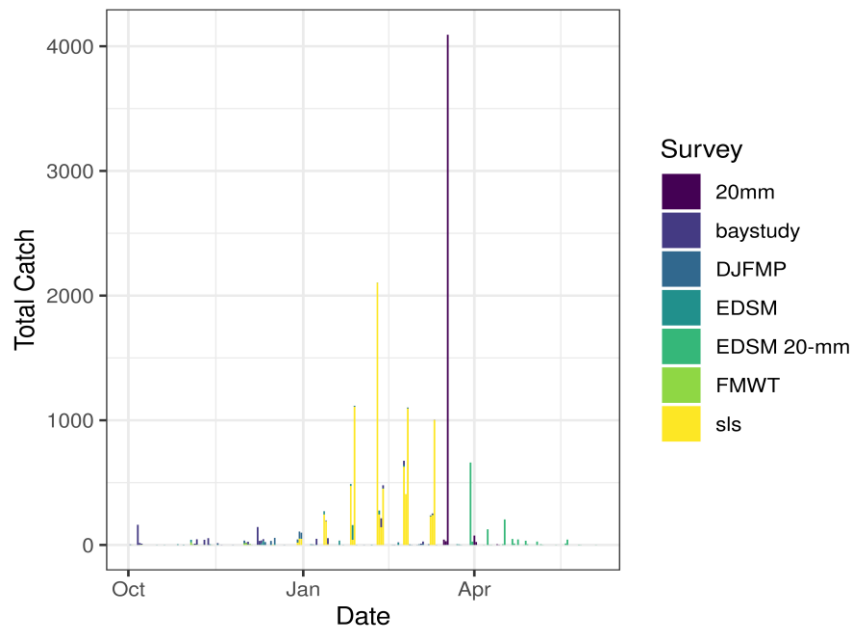


Figure 15: Time series of longfin smelt catch, WY 2026

Figure 15 depicts a time series of longfin smelt catch observations during Water Year 2026. Vertical bars represent the total number of longfin smelt captured by multiple monitoring programs, including the 20-mm Survey, Bay Study, DJFMP, EDSM, EDSM 20-mm, FMWT, and Spring Kodiak Trawl Survey (sls). The x-axis represents date and the y-axis represents total catch.

### ***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: 1,188 cfs as of Jun 07, 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: 1,188 cfs as of Jun 07, 2026

## ***Evaluation***

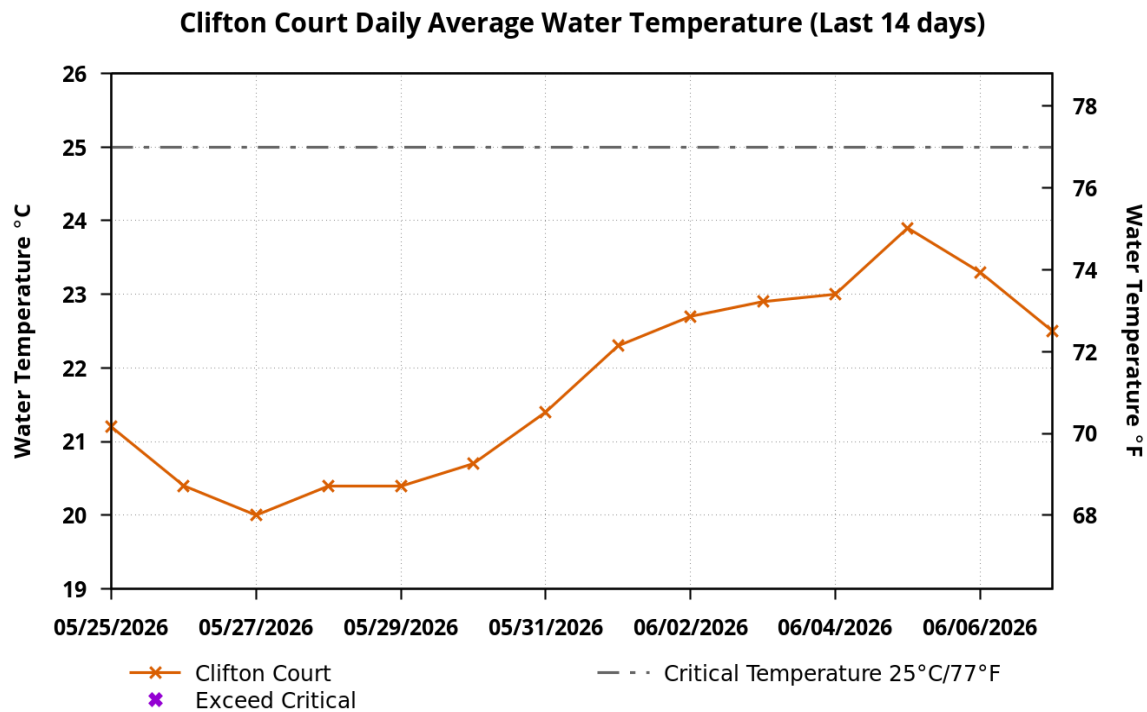
Longfin smelt:

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?
  - a. JPF may decrease to < 0 cfs 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 below 0 cfs this week. PTM and Zone of Influence modeling indicate a low risk of entrainment for the larval and juvenile Longfin smelt population. PTM results for surface-oriented particles injected at Chipps Island show 0% entrainment for OMRI of -2,000, -3,500, and -5,000 cfs. PTM results from particles injected at Jersey Point show 0.1% entrainment at the projects for this week for OMRI of -2,000, 0.2-0.9% for OMRI of -3,500, and 0.2-1.3% entrainment at OMRI of -5,000 cfs.
  - b. Zone of Influence modeling indicates high differences in the hydrodynamic footprint across OMRI scenarios for current and forecasted conditions; 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  $\geq$  25° C (77° F) for 3 consecutive days OR June 30

- Clifton Court Temperature: 23.9, 23.3, 22.5° C as of Jun 07, 2026



Preliminary data from CDEC; subject to revision.

[www.cbr.washington.edu/sacramento/](http://www.cbr.washington.edu/sacramento/)  
08 Jun 2026 12:55:49 PDT

Figure 16: Clifton Court Daily Average Water Temperature (Last 14 Days)

Figure 16 depicts daily average water temperature at Clifton Court Forebay over the previous 14 days. The line graph shows observed water temperature in degrees Celsius and Fahrenheit relative to the critical temperature threshold of 25°C (77°F), indicated by a horizontal dashed line. The x-axis represents date and the y-axes represent water temperature in °C and °F. No temperatures exceeded the critical threshold during the reporting period.

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# Appendix A. Delta Real-Time Forecast Summary

**Date Published:** 06/08/2026

**Forecast Period:** 06/02/2026 – 06/22/2026

**Forecast Week 1:** 06/02/2026 – 06/08/2026

**Forecast Week 2:** 06/09/2026 – 06/15/2026

**Forecast Week 3:** 06/16/2026 – 06/22/2026

## Index

- Common Assumptions
- Reclamation Forecast Flow and Export Data
- Delta Export Zone of Influence
- PTM (Particle Tracking Model) Results
  - Neutrally Buoyant Particles (NP)
  - Surface Oriented Particles (PP)
- ECO-PTM (Ecological Particle Tracking Model)
- Longfin Smelt Larval Population and PTM Analysis

## Common Assumptions

The model run results cover the period June 2, 2026 through June 22, 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 have been closed on weekdays and open on weekends since May 22. They will remain open after June 13.
3. Suisun Marsh Salinity Control flashboards are in. All three gates are in the open position.
4. San Joaquin River flow at Vernalis is at 1,893 cfs at the beginning of the forecast period and is estimated to decrease to 1,450 cfs by the end of the forecast period.
5. San Joaquin River EC at Vernalis is at 278 umhos/cm at the beginning of the forecast period and is estimated to increase to 347 umhos/cm at the end of the forecast period.

6. Sacramento River flow at Freeport is at 14,742 cfs at the beginning of the forecast period and is expected to decrease to 10,700 cfs by the end of the forecast period.
7. CCFB inflow is at 2,995 cfs at the beginning of the forecast period and is expected to decrease to 1,000 cfs by the end of the forecast period.
8. Export at Jones Pumping Plant is at 1,860 cfs at the beginning of the forecast period and is expected to increase to 2,900 cfs to the end the forecast period.
9. The Middle River barrier gates are in intermediate tidal operation starting June 2, and will move to full operation starting June 15.
10. The Old River near Tracy barrier gates are in intermediate tidal operation starting June 1, and will move to full operation starting June 15.
11. The Grant Line Canal barrier gates will be in intermediate tidal operation starting June 8, and will move to full operation starting June 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: 06/02/2026 - 06/08/2026	14,900	med	1,771	lo	medlo
Week 2: 06/09/2026 - 06/15/2026	15,052	med	1,700	lo	medlo
Week 3: 06/16/2026 - 06/22/2026	15,078	med	1,500	lo	medlo

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: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	2,754	2,003	4,757	58%	42%
Week 1: 06/02/2026 - 06/08/2026	-3,500	1,900	2,000	3,900	49%	51%
Week 1: 06/02/2026 - 06/08/2026	-2,000	900	1,371	2,271	40%	60%
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	2,905	1,803	4,708	62%	38%
Week 2: 06/09/2026 - 06/15/2026	-3,500	1,900	2,000	3,900	49%	51%
Week 2: 06/09/2026 - 06/15/2026	-2,000	900	1,300	2,200	41%	59%

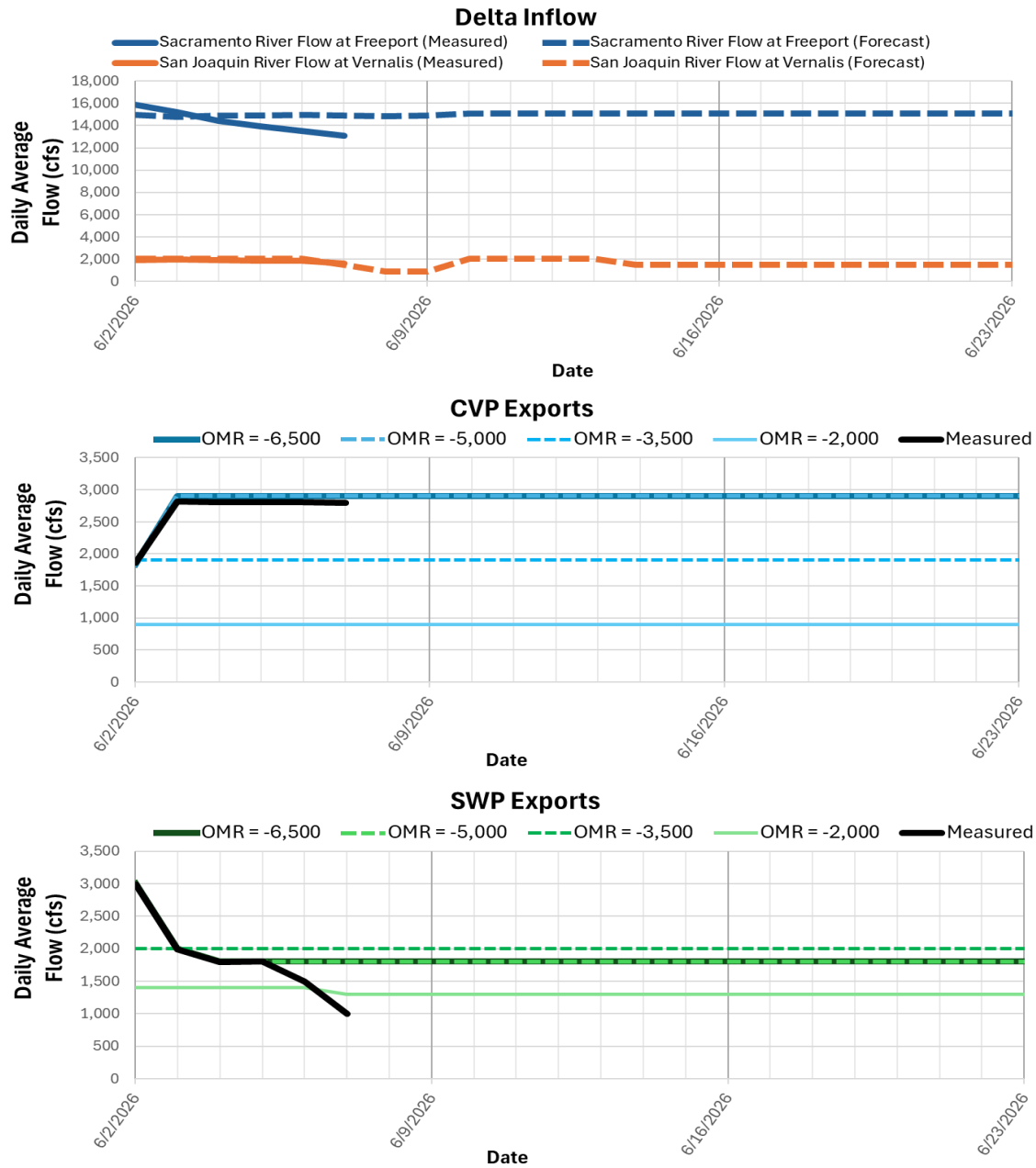
Week	OMR Bin (cfs)	CVP Exports (cfs)	SWP Exports (cfs)	Total Exports (cfs)	CVP Exports (% of total)	SWP Exports (% of total)
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	2,905	1,803	4,708	62%	38%
Week 3: 06/16/2026 - 06/22/2026	-3,500	1,900	2,000	3,900	49%	51%
Week 3: 06/16/2026 - 06/22/2026	-2,000	900	1,300	2,200	41%	59%

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.
- There is still a low probability an OMR of -6,500 cfs would be realized, so that scenario is omitted from this assessment.

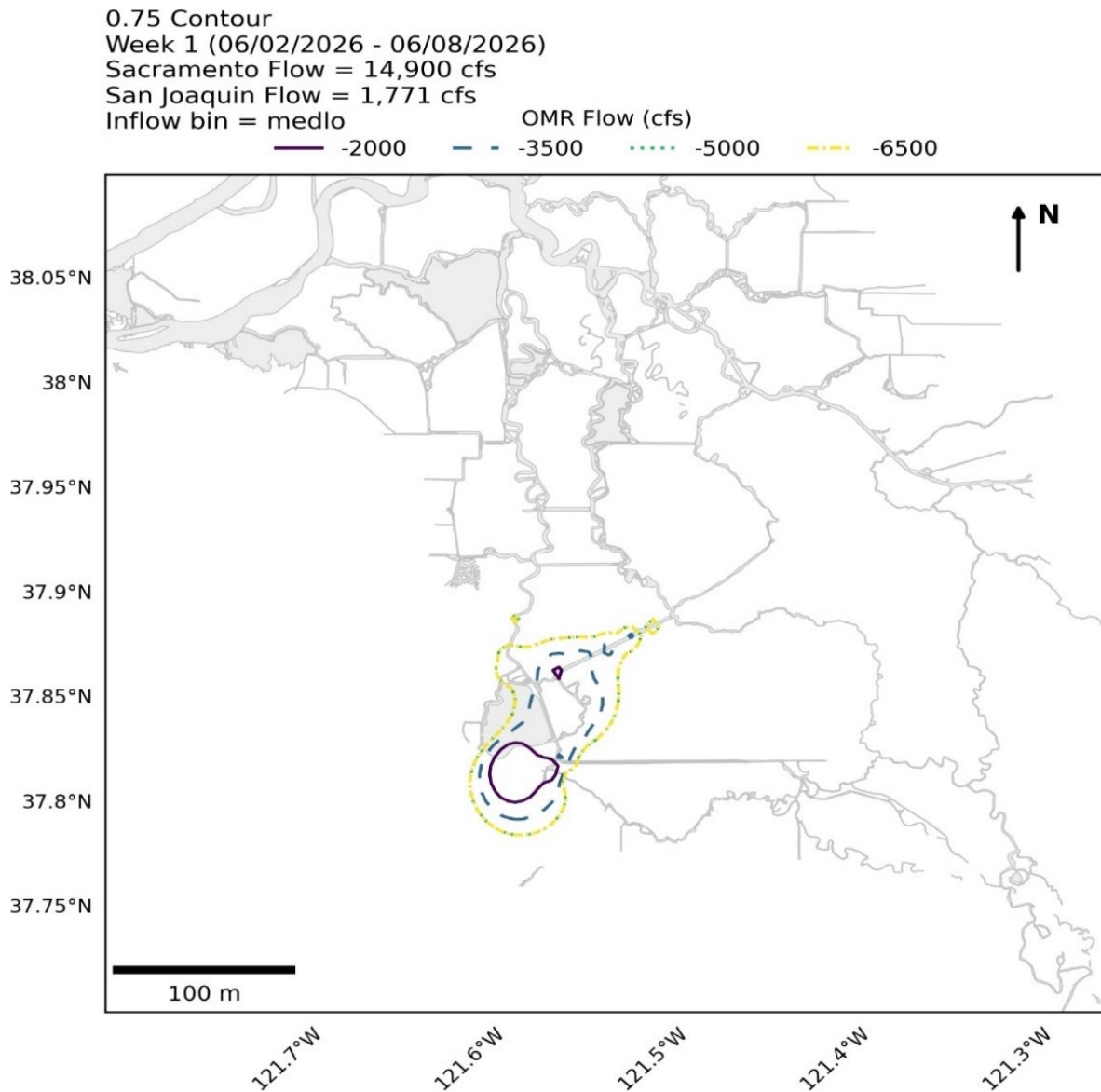


Key: CVP = Central Valley Project, OMR = Old and Middle River, SWP = State Water Project

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

Figure 1 depicts three stacked line graphs showing measured and forecasted Delta inflow, Central Valley Project (CVP) exports, and State Water Project (SWP) exports. The top graph shows daily average Sacramento River flow at Freeport and San Joaquin River flow at Vernalis. The middle and bottom graphs compare measured export rates with export levels associated with OMR scenarios ranging from -2,000 to -6,500 cfs for the CVP and SWP, respectively. The x-axis represents date and the y-axis represents daily average flow (cfs).

## Delta Export Zone of Influence



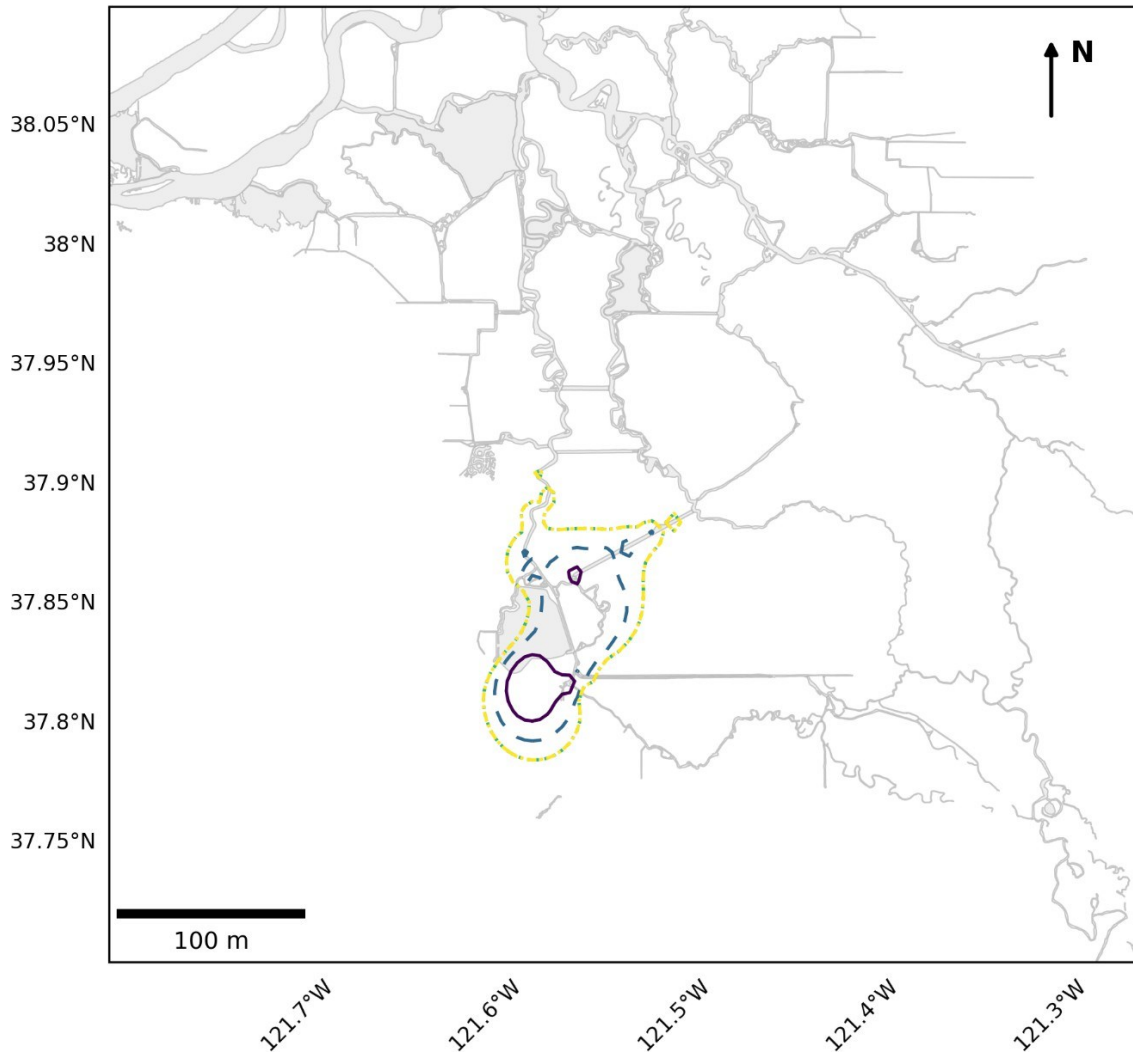
Note: Contours indicate the proportional overlap of hourly average velocity Gaussian KDEs for a 1-week period from DSM2 hydro simulations with and without Delta exports active. DSM2 nodes that were sufficiently different from neighboring nodes to create isolated contours at several OMR flows were removed (nodes 146, 147, 148, 206, 242, 246, 432, 433, 434).  
Key: cfs = cubic feet per second, OMR = Old and Middle River

Figure 2. Delta Zone of Influence for Week 1

Figure 2 depicts the modeled Delta export zone of influence for Week 1 (June 2–June 8, 2026) under OMR flow scenarios ranging from -2,000 to -6,500 cfs. Colored contour lines represent the spatial extent of the 0.75 probability contour associated with each OMR scenario. The map also displays the corresponding Sacramento River and San Joaquin River inflows used to define the hydrologic conditions for the simulation. A north arrow and scale bar provide geographic reference.

0.75 Contour  
 Week 2 (06/09/2026 - 06/15/2026)  
 Sacramento Flow = 15,052 cfs  
 San Joaquin Flow = 1,700 cfs  
 Inflow bin = medlo

	OMR Flow (cfs)			
—	-2000	- -	- - - -	- - - - -



Note: Contours indicate the proportional overlap of hourly average velocity Gaussian KDEs for a 1-week period from DSM2 hydro simulations with and without Delta exports active. DSM2 nodes that were sufficiently different from neighboring nodes to create isolated contours at several OMR flows were removed (nodes 146, 147, 148, 206, 242, 246, 432, 433, 434).  
 Key: cfs = cubic feet per second, OMR = Old and Middle River

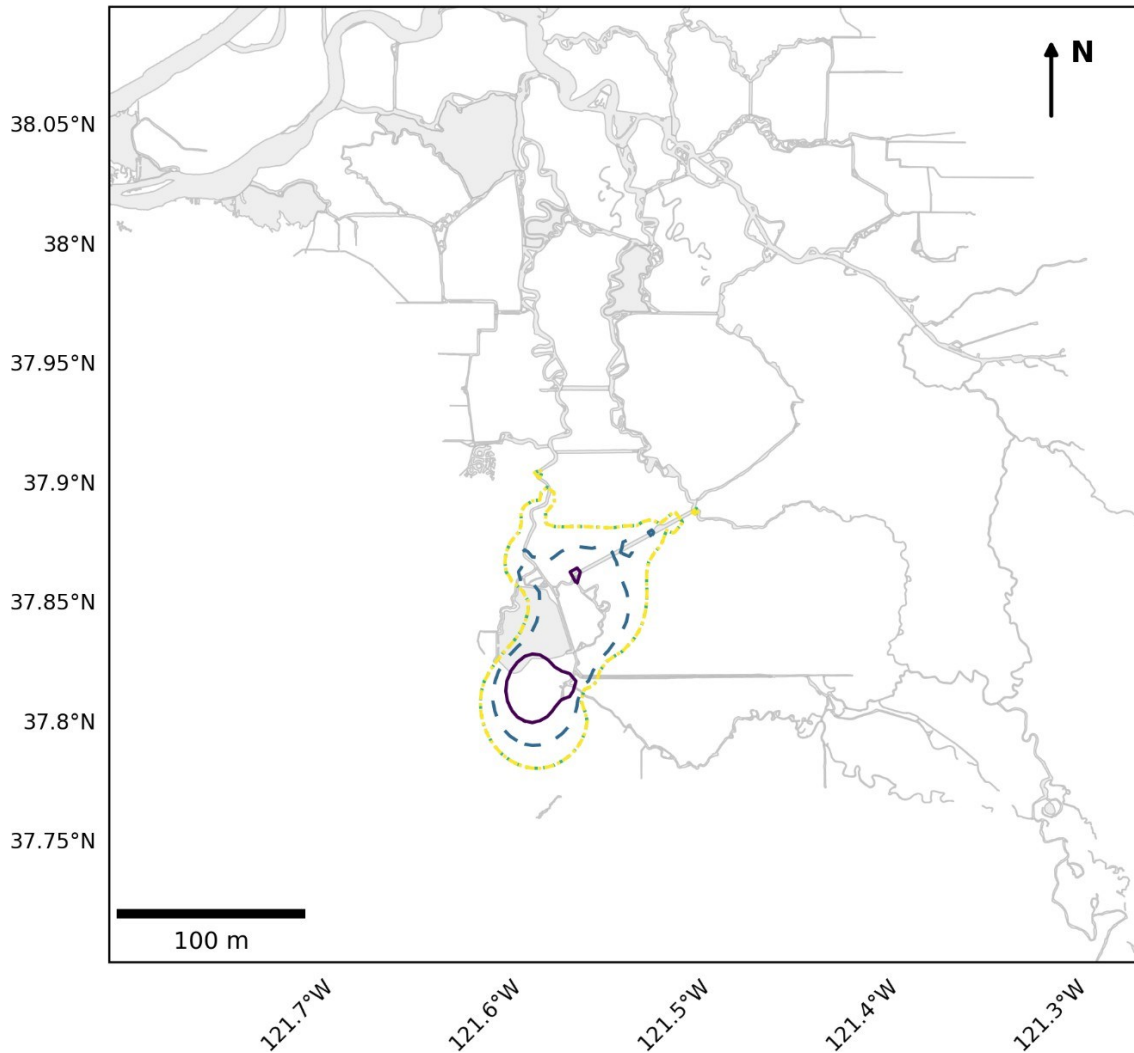
Figure 3. Delta Zone of Influence for Week 2

Figure 3 depicts the modeled Delta export zone of influence for Week 2 (June 9–June 15, 2026) under OMR flow scenarios ranging from -2,000 to -6,500 cfs. Colored contour lines represent the spatial extent of the 0.75 probability contour associated with each OMR scenario. The map also displays the corresponding Sacramento River and San Joaquin River inflows used to define the hydrologic conditions for the simulation. A north arrow and scale bar provide geographic reference.

0.75 Contour  
 Week 3 (06/16/2026 - 06/22/2026)  
 Sacramento Flow = 15,078 cfs  
 San Joaquin Flow = 1,500 cfs  
 Inflow bin = medlo

OMR Flow (cfs)

—	-2000	- -	-3500	.....	-5000	- - - -	-6500
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Note: Contours indicate the proportional overlap of hourly average velocity Gaussian KDEs for a 1-week period from DSM2 hydro simulations with and without Delta exports active. DSM2 nodes that were sufficiently different from neighboring nodes to create isolated contours at several OMR flows were removed (nodes 146, 147, 148, 206, 242, 246, 432, 433, 434).  
 Key: cfs = cubic feet per second, OMR = Old and Middle River

Figure 4. Delta Zone of Influence for Week 3

Figure 4 depicts the modeled Delta export zone of influence for Week 3 (June 16–June 22, 2026) under OMR flow scenarios ranging from -2,000 to -6,500 cfs. Colored contour lines represent the spatial extent of the 0.75 probability contour associated with each OMR scenario. The map also displays the corresponding Sacramento River and San Joaquin River inflows used to define the hydrologic conditions for the simulation. A north arrow and scale bar provide geographic reference.

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

Weekly Model Run	OMR Bin (cfs)	Sum Channel Length (miles) Low	Channel Length (%) Low	Sum Channel Length (miles) Medium	Channel Length (%) Medium	Sum Channel Length (miles) High	Channel Length (%) High
Week 1: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	655.25	97.2%	17.56	2.6%	1.58	0.2%
Week 1: 06/02/2026 - 06/08/2026	-3,500	662.15	98.2%	11.39	1.7%	0.85	0.1%
Week 1: 06/02/2026 - 06/08/2026	-2,000	672.00	99.6%	1.55	0.2%	0.85	0.1%
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	654.08	97.0%	18.73	2.8%	1.58	0.2%
Week 2: 06/09/2026 - 06/15/2026	-3,500	659.44	97.8%	14.10	2.1%	0.85	0.1%
Week 2: 06/09/2026 - 06/15/2026	-2,000	672.00	99.6%	1.55	0.2%	0.85	0.1%
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	652.97	96.8%	19.84	2.9%	1.58	0.2%
Week 3: 06/16/2026 - 06/22/2026	-3,500	658.95	97.7%	14.60	2.2%	0.85	0.1%
Week 3: 06/16/2026 - 06/22/2026	-2,000	671.19	99.5%	2.35	0.3%	0.85	0.1%

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

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

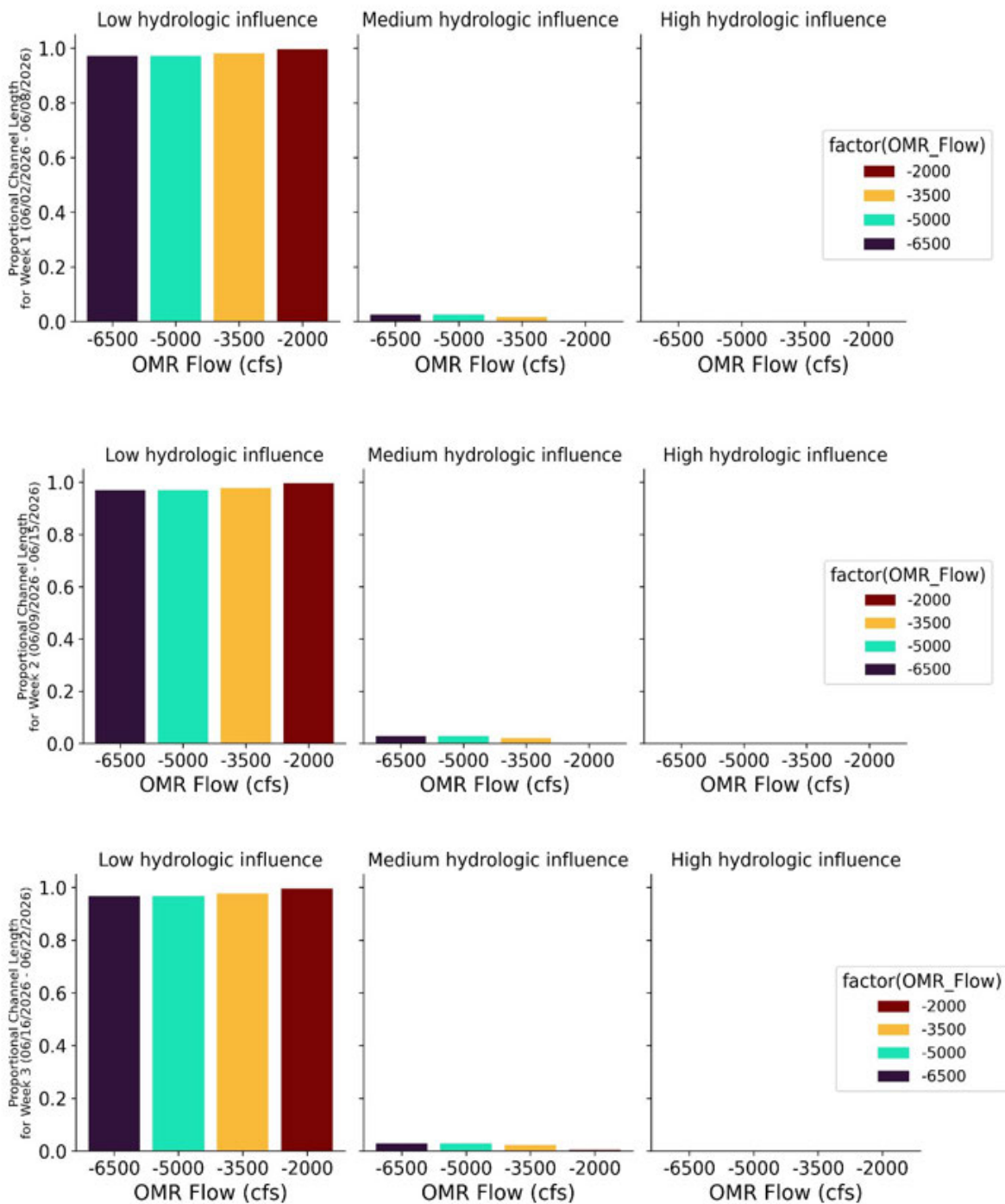


Figure 5. Proportional Channel Length for Weeks 1 to 3

Figure 5 depicts the proportion of channel length classified as low, medium, and high hydrologic influence within the modeled Delta export zone of influence for Weeks 1 through 3. Bar charts compare the proportional channel length across OMR flow scenarios ranging from -2,000 to -6,500 cfs. Rows correspond to weekly simulation periods, while columns represent hydrologic influence categories. The x-axis represents OMR flow (cfs) and the y-axis represents proportional channel length.

# PTM (Particle Tracking Model) Results

PTM Flux Evaluation Period: 06/02/2026 – 06/22/2026

Particles Injected: 06/02/2026

PTM Injection and Flux Locations

- = Injection Point (DSM2 node)
- ▬ = Flux Location
- ← = Reference Flux Direction

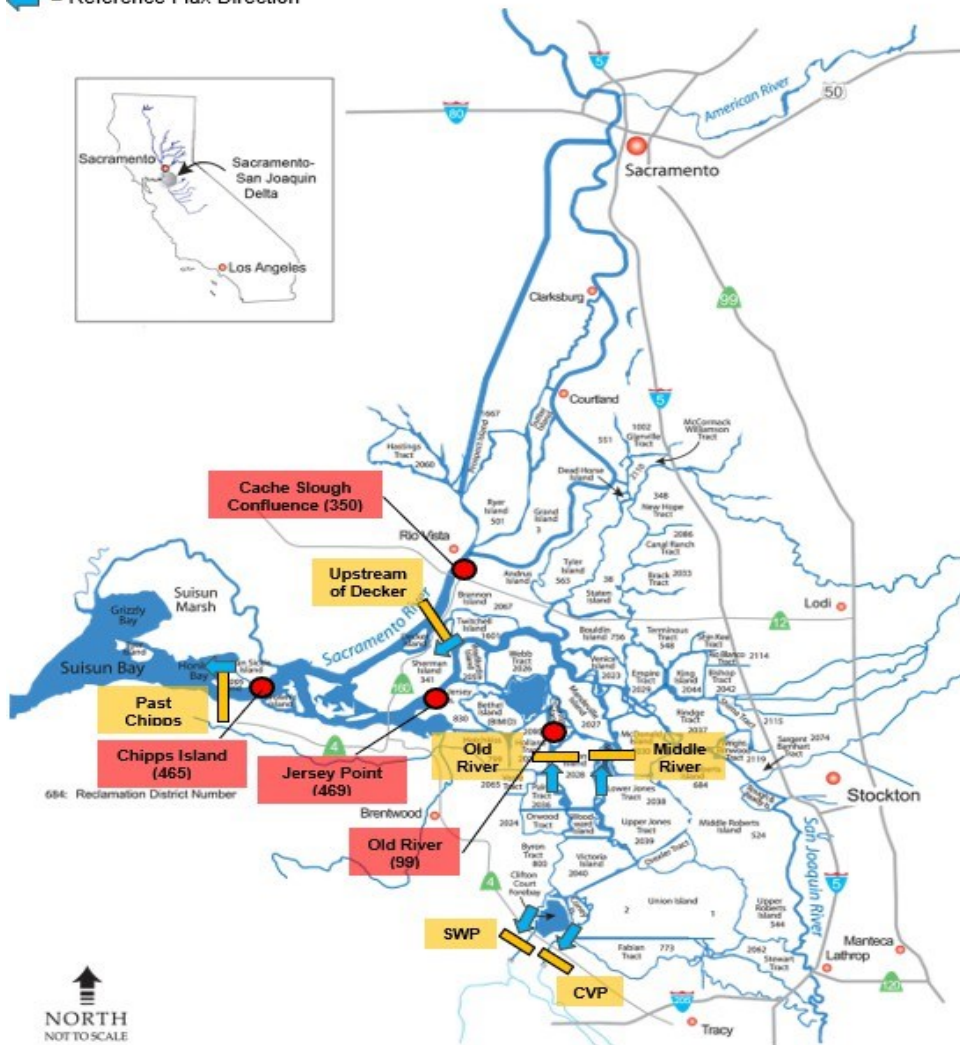


Figure 6. Map of PTM Injection and Flux Locations

Figure 6 depicts the locations of PTM particle injection nodes and flux monitoring locations used in the particle tracking analysis within the Sacramento–San Joaquin Delta. Red circles indicate particle injection points at DSM2 nodes, yellow bars indicate flux locations, and blue arrows show the reference direction used for flux calculations. Key locations include Cache Slough Confluence, Upstream of Decker, Past Chipps Island, Jersey Point, Old River, Middle River, and the CVP and SWP export facilities.

## 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: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	73.0	0.0	27.0	0.0	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-3,500	74.8	0.0	25.3	0.0	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-2,000	79.5	0.0	20.5	0.0	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	77.1	-0.1	22.9	0.0	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-3,500	79.5	0.3	20.5	0.0	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-2,000	85.0	0.0	15.0	0.0	0.0	0.0
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	86.4	0.1	13.6	0.0	0.0	0.0
Week 3: 06/16/2026 - 06/22/2026	-3,500	88.3	1.0	11.8	0.1	0.0	0.0
Week 3: 06/16/2026 - 06/22/2026	-2,000	90.9	0.1	9.1	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: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	1.2	64.0	99.0	0.2	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-3,500	1.6	64.4	98.6	0.2	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-2,000	2.1	67.0	97.9	0.0	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	22.4	74.1	78.9	0.8	0.4	0.1
Week 2: 06/09/2026 - 06/15/2026	-3,500	24.9	73.3	76.2	0.8	0.1	0.2
Week 2: 06/09/2026 - 06/15/2026	-2,000	31.9	74.1	68.3	0.2	0.0	0.0
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	47.9	79.5	55.6	2.2	1.1	0.2
Week 3: 06/16/2026 - 06/22/2026	-3,500	49.0	78.5	53.0	0.8	0.6	0.6
Week 3: 06/16/2026 - 06/22/2026	-2,000	58.9	78.8	41.9	0.6	0.2	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 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: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	1.7	13.0	99.3	0.9	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-3,500	2.4	13.1	98.1	0.5	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-2,000	3.0	11.0	97.3	0.3	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	12.3	22.8	91.7	2.4	1.4	0.2
Week 2: 06/09/2026 - 06/15/2026	-3,500	16.8	24.1	85.4	1.4	0.5	0.3
Week 2: 06/09/2026 - 06/15/2026	-2,000	24.6	19.9	76.1	0.6	0.1	0.0
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	33.4	28.9	74.3	3.6	3.2	0.9
Week 3: 06/16/2026 - 06/22/2026	-3,500	40.3	28.4	63.7	1.9	1.5	0.6
Week 3: 06/16/2026 - 06/22/2026	-2,000	53.3	23.0	48.5	1.4	0.2	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 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: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	0.0	0.1	18.4	52.9	24.4	4.2
Week 1: 06/02/2026 - 06/08/2026	-3,500	0.0	0.2	22.7	62.7	11.8	2.8
Week 1: 06/02/2026 - 06/08/2026	-2,000	0.0	0.6	40.9	59.0	0.0	0.1
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	0.2	1.8	14.3	30.2	38.3	17.0
Week 2: 06/09/2026 - 06/15/2026	-3,500	0.5	2.4	17.2	34.9	28.6	18.9
Week 2: 06/09/2026 - 06/15/2026	-2,000	0.8	3.7	31.1	49.7	13.0	5.5
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	1.7	3.0	11.4	19.4	42.2	25.3
Week 3: 06/16/2026 - 06/22/2026	-3,500	2.6	3.8	12.6	23.7	32.1	29.0
Week 3: 06/16/2026 - 06/22/2026	-2,000	4.9	6.5	23.5	38.9	17.3	15.4

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

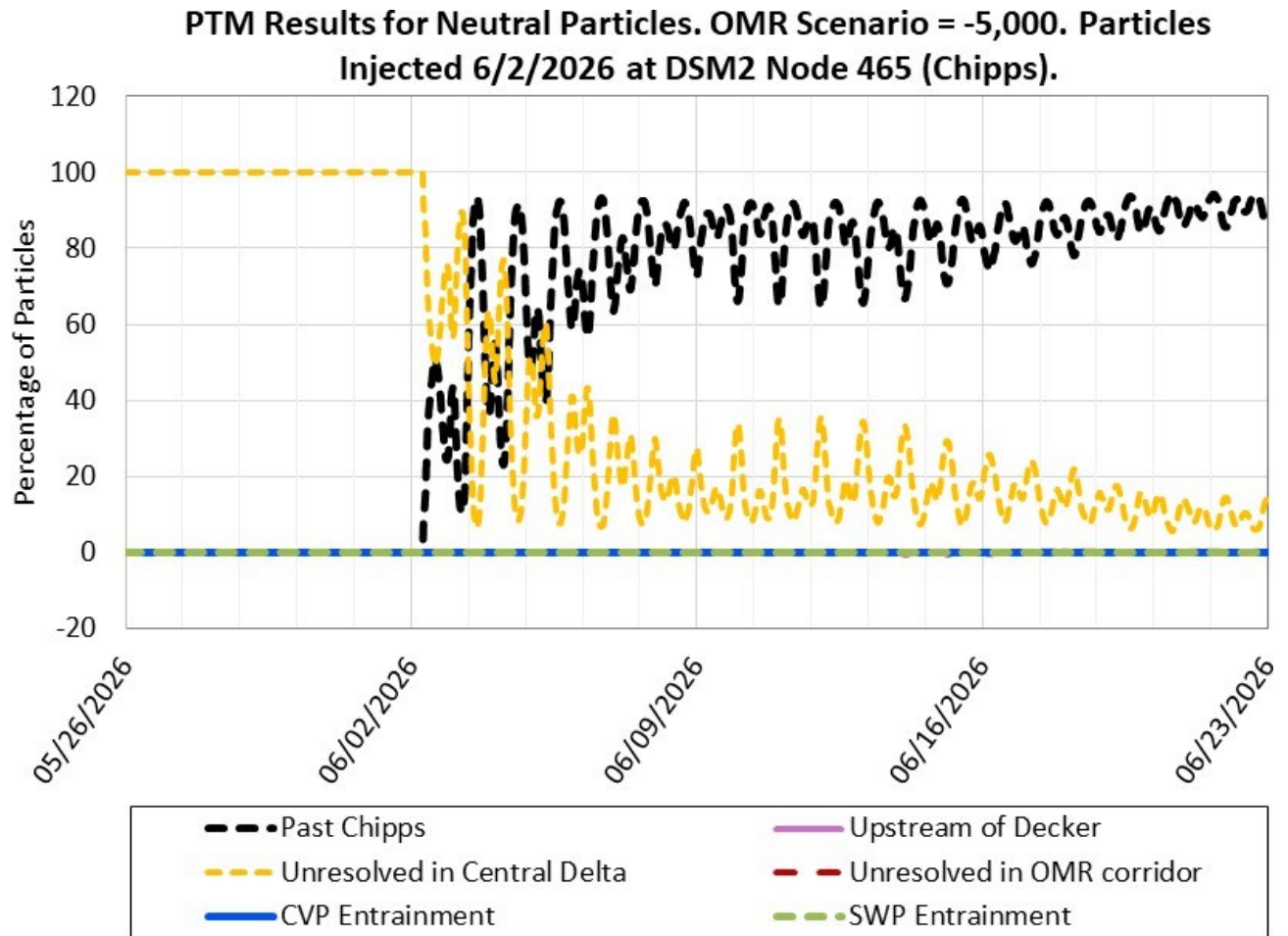


Figure 7. PTM Results for Neutral Particles. OMR Scenario -5,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 465 (Chippis)

Figure 7 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 465 (Chippis). Six flux locations are represented by different colored lines, with Past Chippis (black) and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period, while CVP entrainment, SWP entrainment, the OMR corridor, and Upstream of Decker remain near zero.

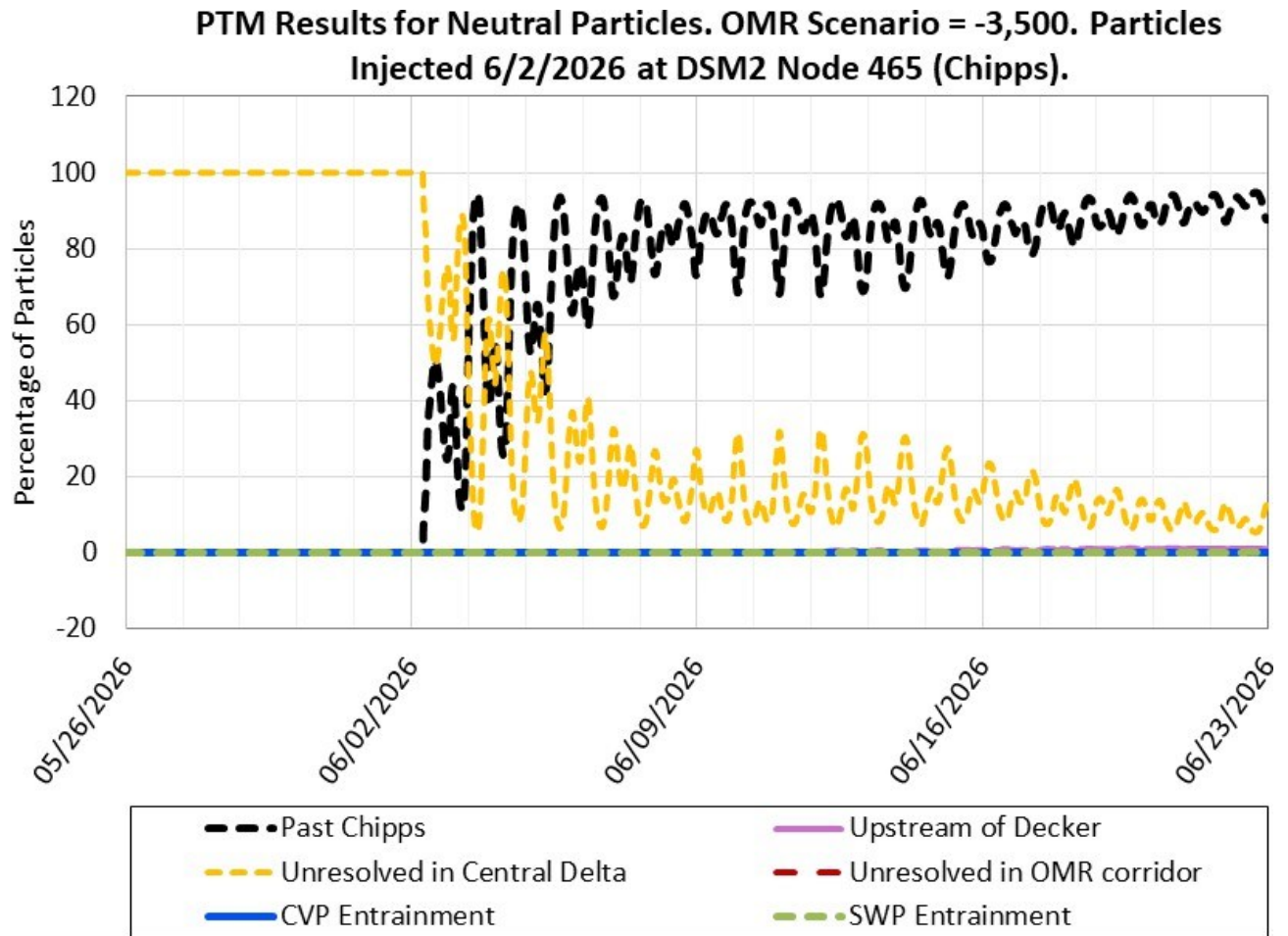


Figure 8. PTM Results for Neutral Particles. OMR Scenario -3,500 cfs. Particles Injected 06/02/2026 at DSM2 Node 465 (Chippis)

Figure 8 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 465 (Chippis). Six flux locations are represented by different colored lines, with Past Chippis (black) and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period, while CVP entrainment, SWP entrainment, the OMR corridor, and Upstream of Decker remain near zero.

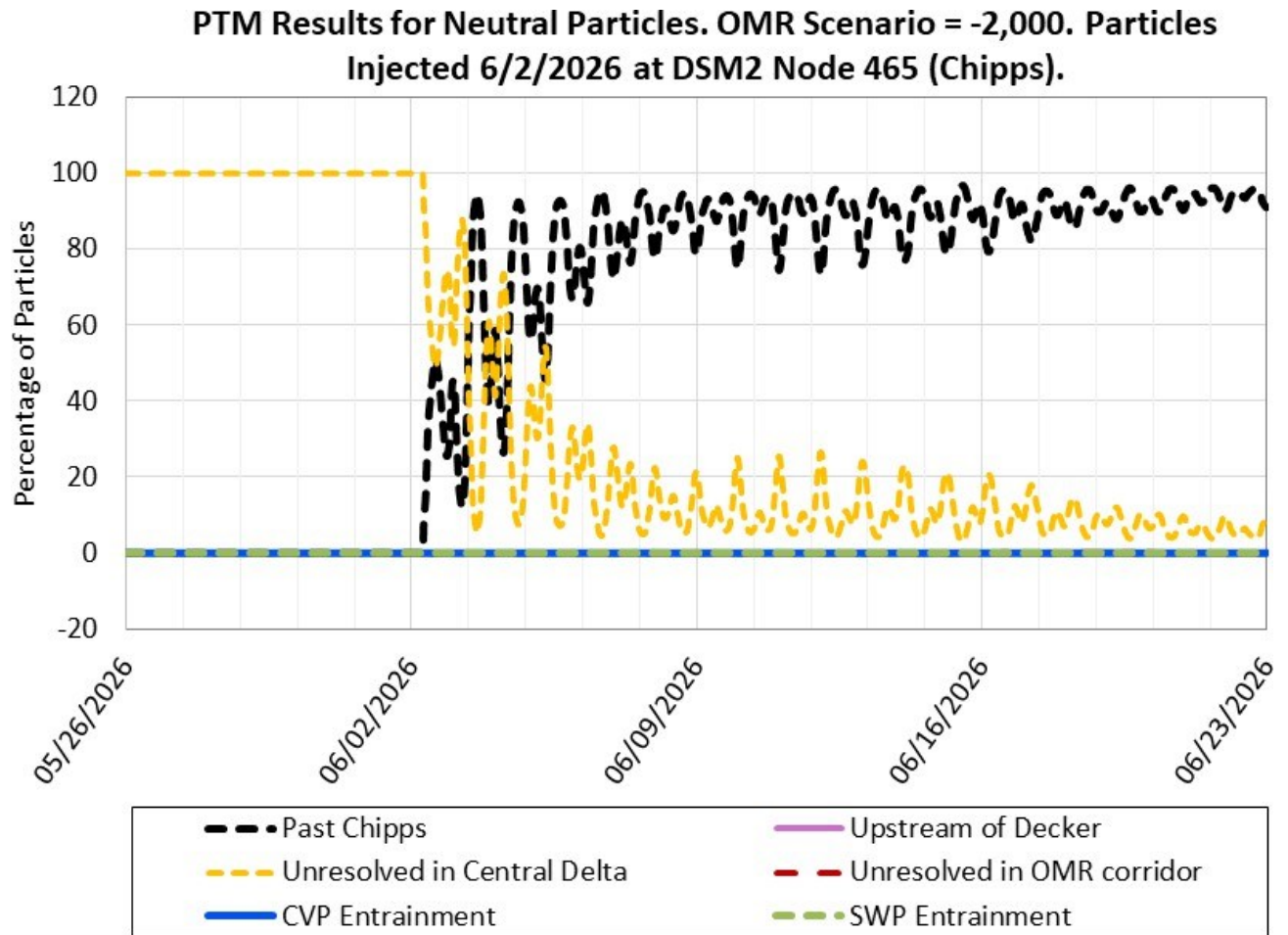


Figure 9. PTM Results for Neutral Particles. OMR Scenario -2,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 465 (Chippis)

Figure 9 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 465 (Chippis). Six flux locations are represented by different colored lines, with Past Chippis (black) and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period, while CVP entrainment, SWP entrainment, the OMR corridor, and Upstream of Decker remain near zero.

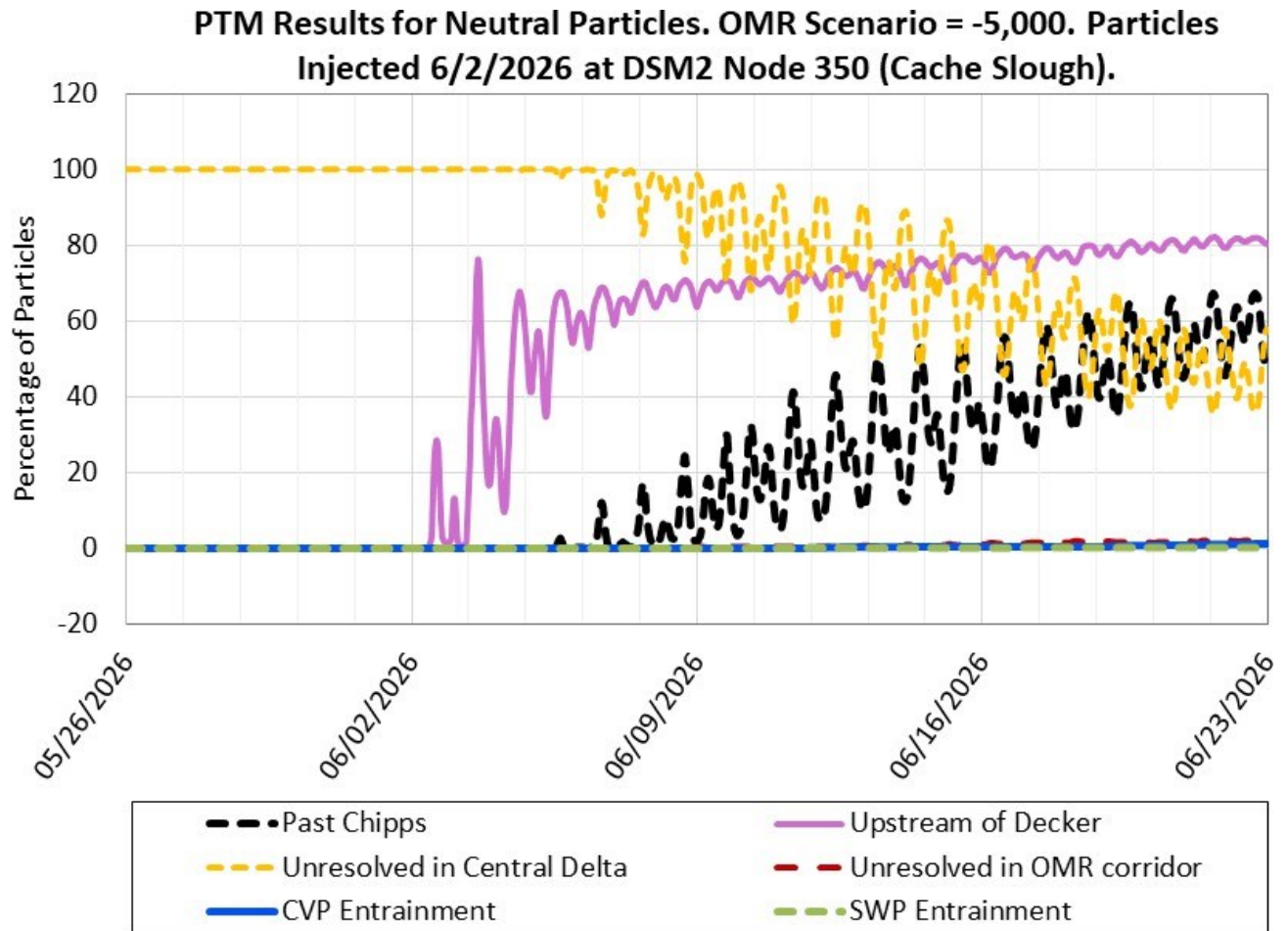


Figure 10. PTM Results for Neutral Particles. OMR Scenario -5,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 350 (Cache Slough)

Figure 10 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored lines, with Upstream of Decker (purple), Unresolved in Central Delta (yellow), and Past Chipps (black) showing the highest particle percentages throughout the evaluation period, while CVP entrainment, SWP entrainment, and the OMR corridor remain near zero.

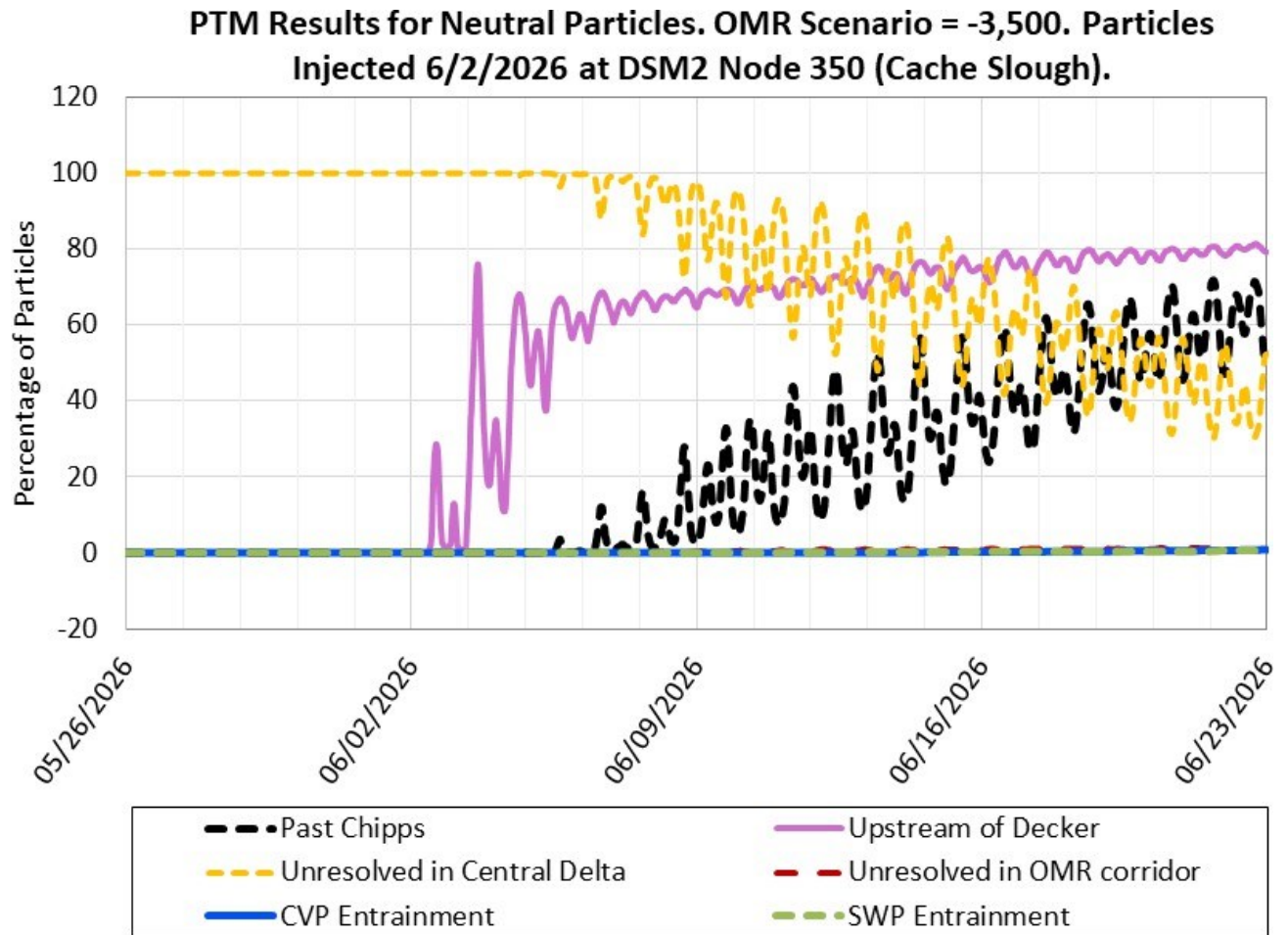


Figure 11. PTM Results for Neutral Particles. OMR Scenario -3,500 cfs. Particles Injected 06/02/2026 at DSM2 Node 350 (Cache Slough)

Figure 11 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored lines, with Upstream of Decker (purple), Unresolved in Central Delta (yellow), and Past Chipps (black) showing the highest particle percentages throughout the evaluation period, while CVP entrainment, SWP entrainment, and the OMR corridor remain near zero.

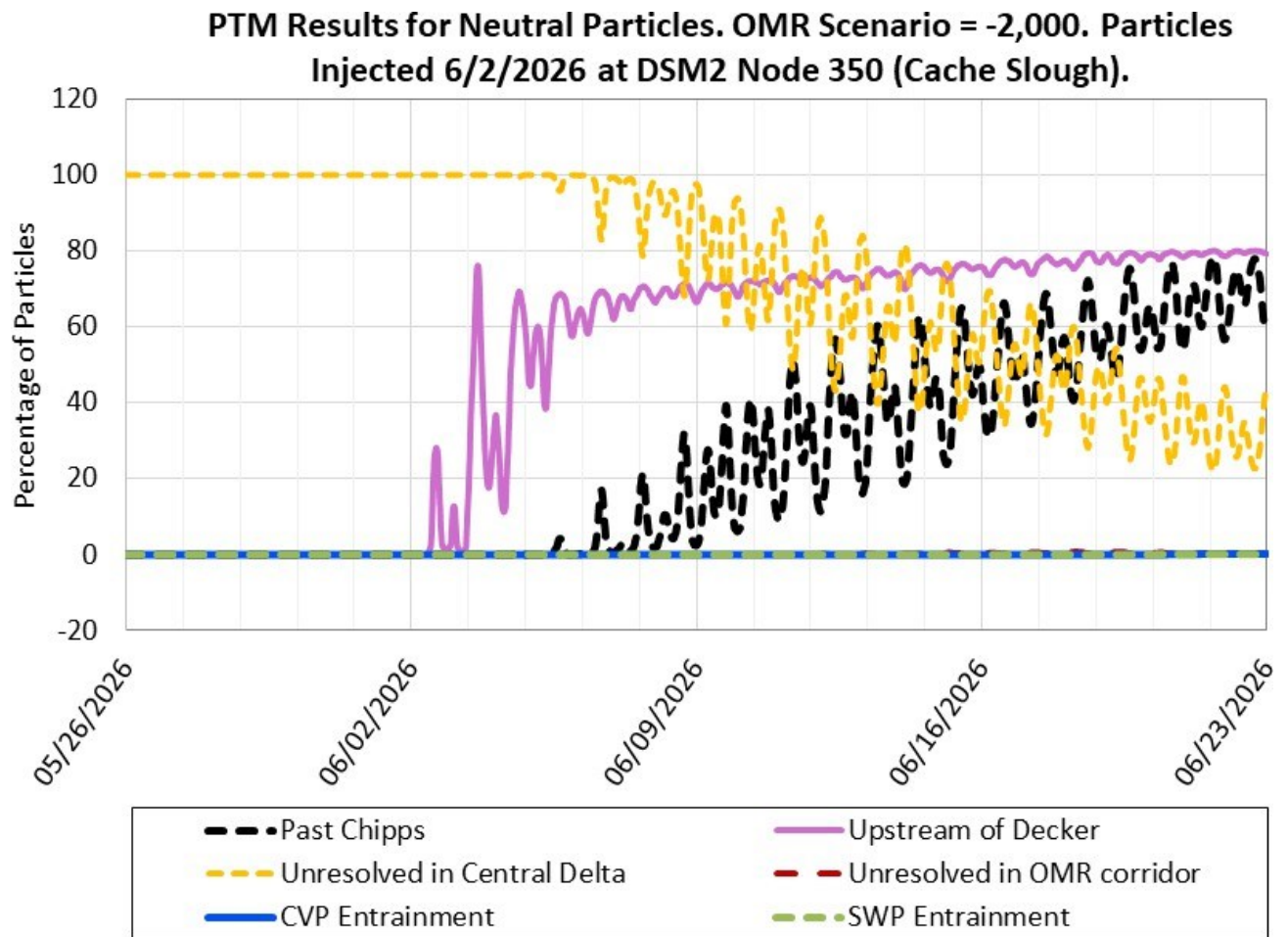


Figure 12. PTM Results for Neutral Particles. OMR Scenario -2,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 350 (Cache Slough)

Figure 12 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored lines, with Upstream of Decker (purple), Unresolved in Central Delta (yellow), and Past Chipps (black) showing the highest particle percentages throughout the evaluation period, while CVP entrainment, SWP entrainment, and the OMR corridor remain near zero.

**PTM Results for Neutral Particles. OMR Scenario = -5,000. Particles Injected 6/2/2026 at DSM2 Node 469 (Jersey Point).**

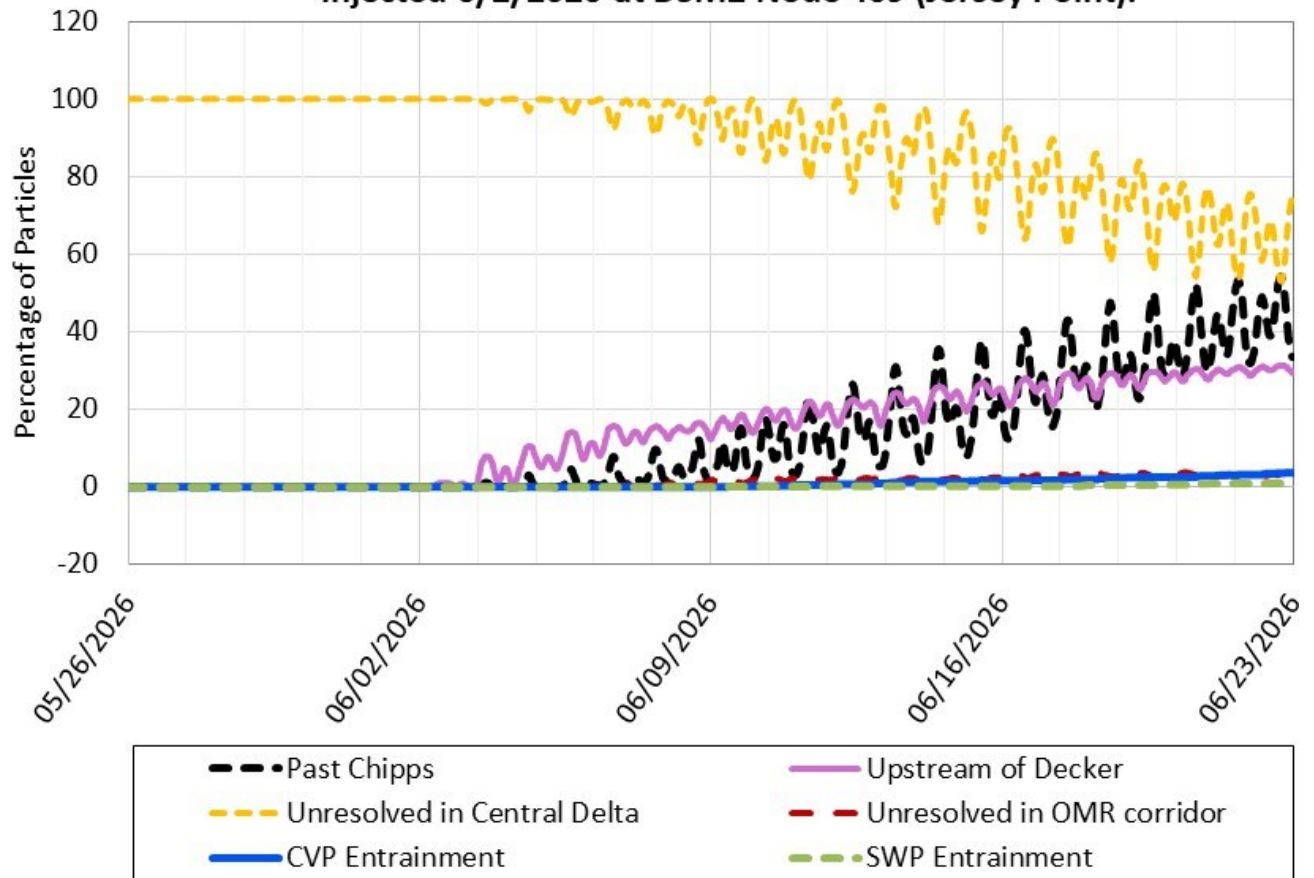


Figure 13. PTM Results for Neutral Particles. OMR Scenario -5,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 469 (Jersey Point)

Figure 13 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored lines, with Unresolved in Central Delta (yellow), Past Chipps (black), and Upstream of Decker (purple) showing the highest particle percentages throughout the evaluation period, while CVP entrainment, SWP entrainment, and particles entering the OMR corridor remain low.

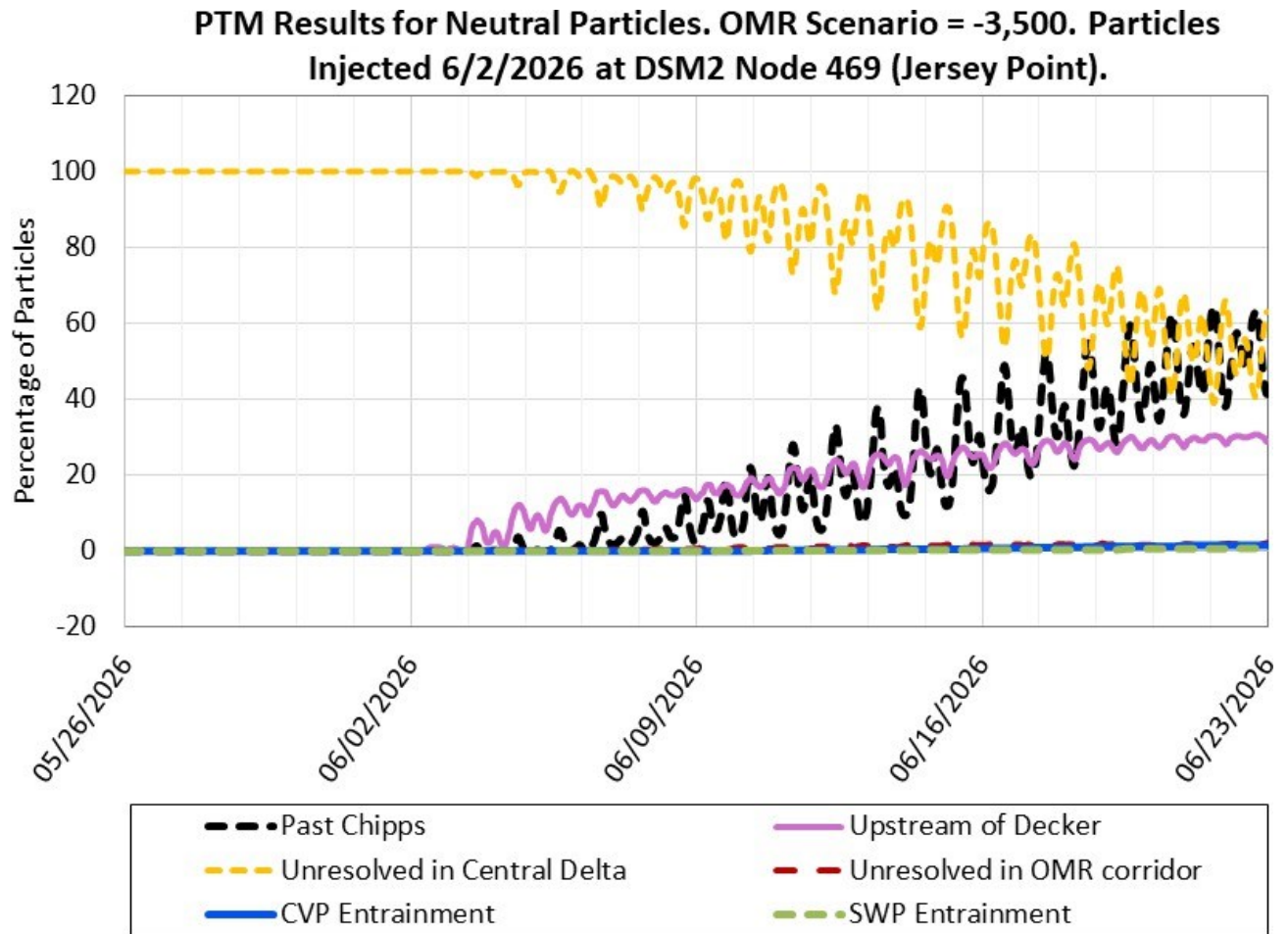


Figure 14. PTM Results for Neutral Particles. OMR Scenario -3,500 cfs. Particles Injected 06/02/2026 at DSM2 Node 469 (Jersey Point)

Figure 14 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored lines, with Unresolved in Central Delta (yellow), Past Chipps (black), and Upstream of Decker (purple) showing the highest particle percentages throughout the evaluation period, while CVP entrainment, SWP entrainment, and particles entering the OMR corridor remain low.

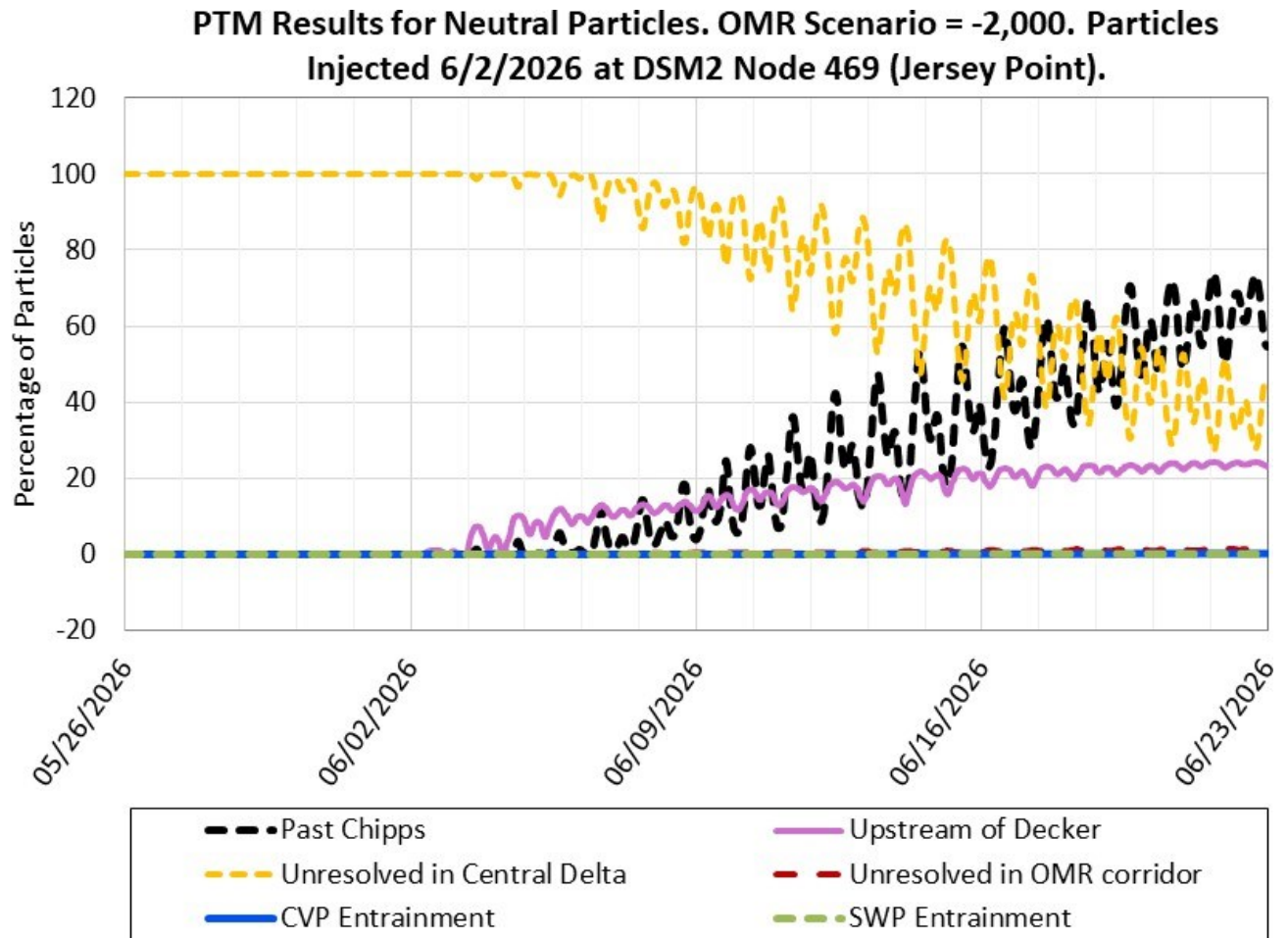


Figure 15. PTM Results for Neutral Particles. OMR Scenario -2,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 469 (Jersey Point)

Figure 15 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored lines, with Unresolved in Central Delta (yellow), Past Chipps (black), and Upstream of Decker (purple) showing the highest particle percentages throughout the evaluation period. Under the -2,000 cfs OMR scenario, a greater proportion of particles pass Chipps and fewer remain unresolved in the Central Delta compared to the more negative OMR scenarios, while CVP entrainment, SWP entrainment, and particles entering the OMR corridor remain low.

**PTM Results for Neutral Particles. OMR Scenario = -5,000. Particles Injected 6/2/2026 at DSM2 Node 99 (Old River).**

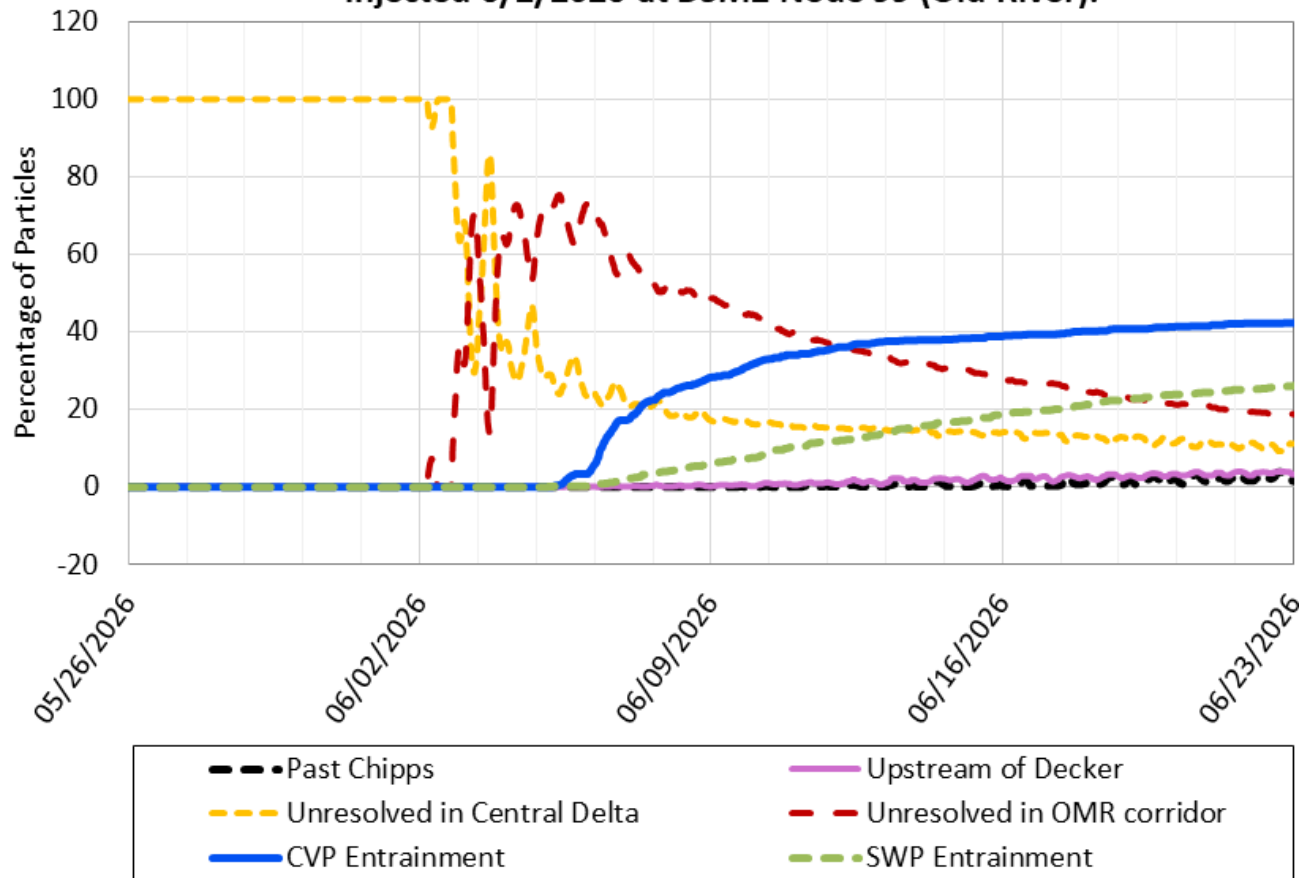


Figure 16. PTM Results for Neutral Particles. OMR Scenario -5,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 99 (Old River)

Figure 16 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 99 (Old River). Six flux locations are represented by different colored lines, with particles entering the OMR corridor (red), CVP entrainment (blue), SWP entrainment (green), and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period. Under the -5,000 cfs OMR scenario, substantial particle movement occurs into the OMR corridor and export facilities, with CVP entrainment becoming the dominant particle fate by the end of the simulation period.

**PTM Results for Neutral Particles. OMR Scenario = -3,500. Particles Injected 6/2/2026 at DSM2 Node 99 (Old River).**

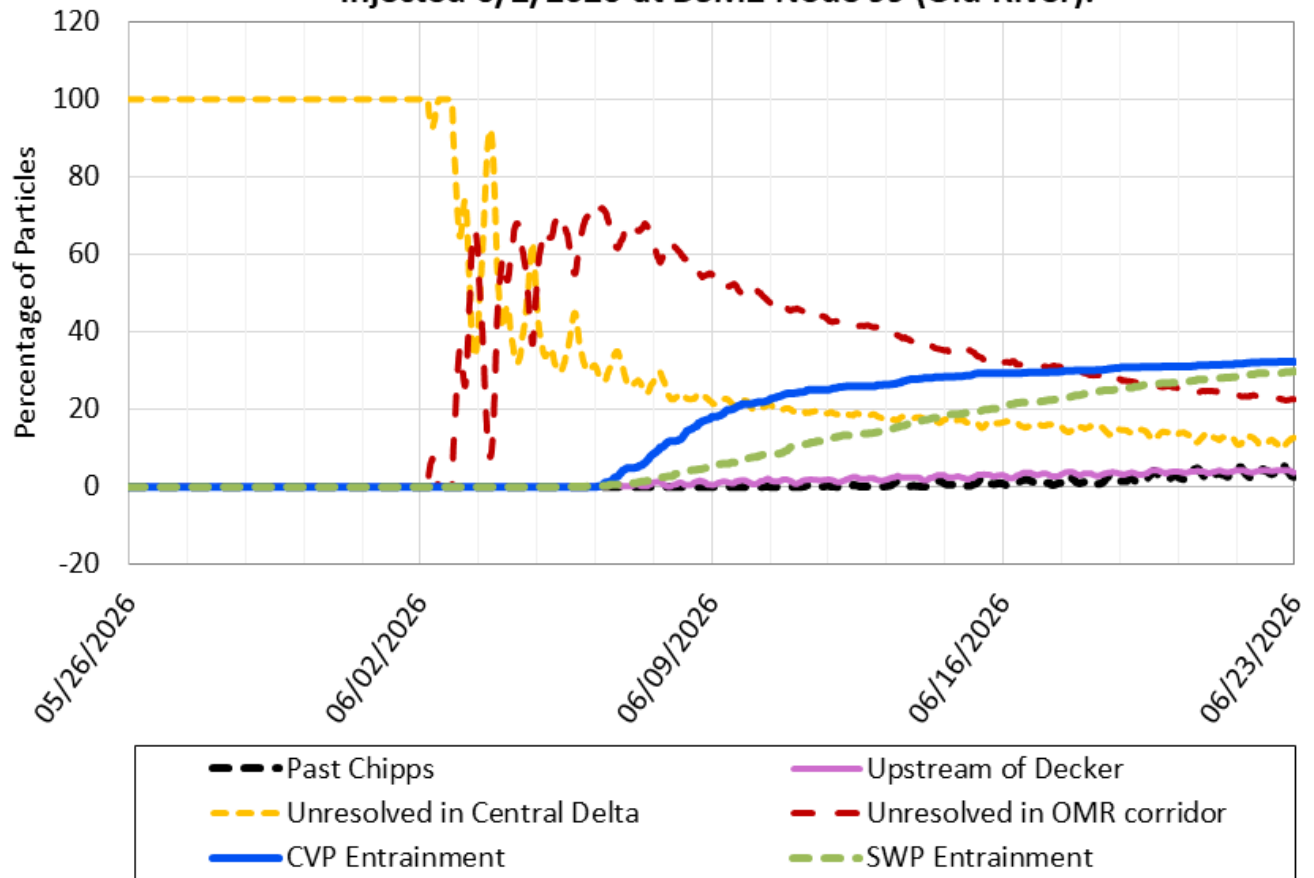


Figure 17. PTM Results for Neutral Particles. OMR Scenario -3,500 cfs. Particles Injected 06/02/2026 at DSM2 Node 99 (Old River)

Figure 17 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 99 (Old River). Six flux locations are represented by different colored lines, with particles entering the OMR corridor (red), CVP entrainment (blue), SWP entrainment (green), and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period. Under the -3,500 cfs OMR scenario, substantial particle movement occurs into the OMR corridor and export facilities, with CVP entrainment becoming the dominant particle fate by the end of the simulation period, while SWP entrainment also increases steadily over time.

**PTM Results for Neutral Particles. OMR Scenario = -2,000. Particles Injected 6/2/2026 at DSM2 Node 99 (Old River).**

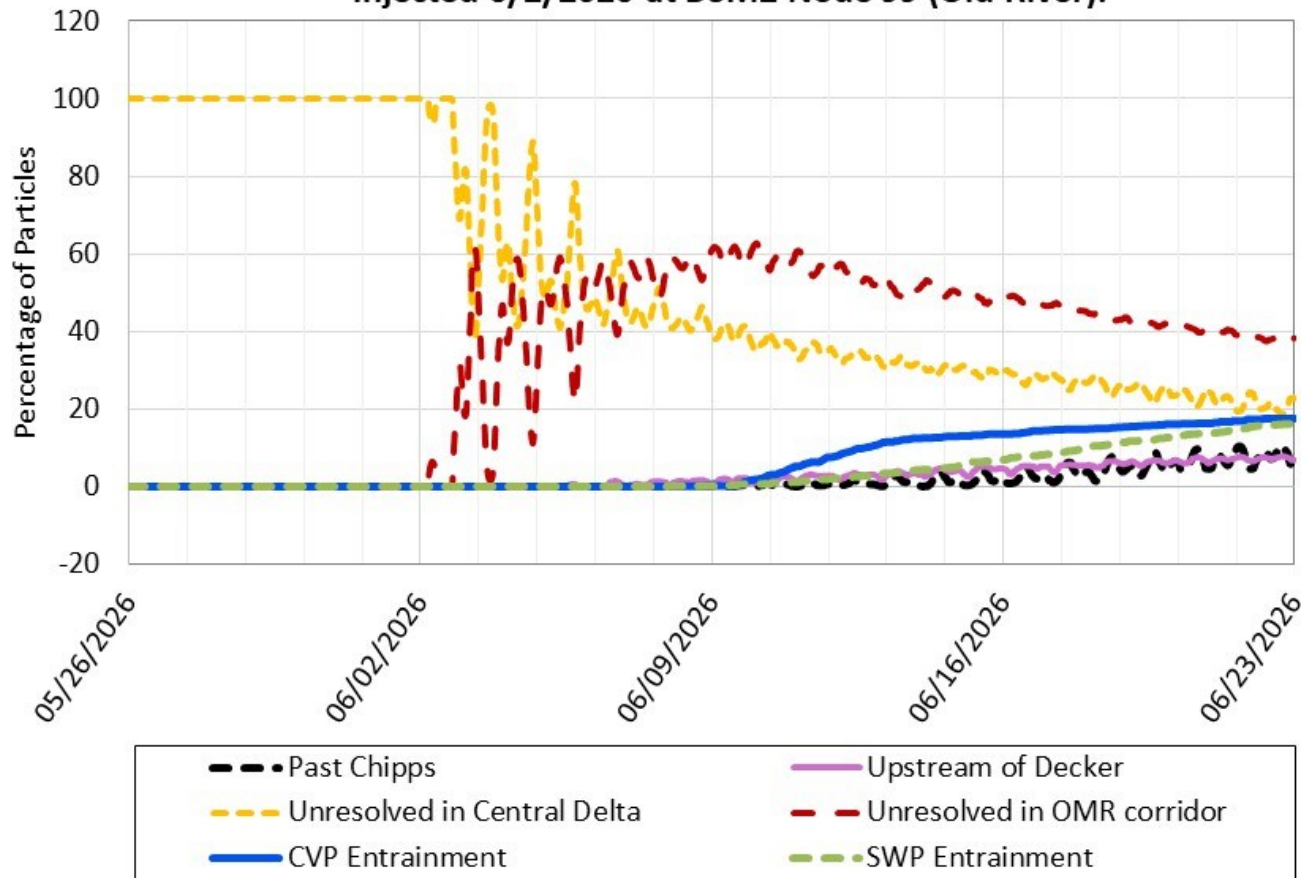


Figure 18. PTM Results for Neutral Particles. OMR Scenario -2,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 99 (Old River)

Figure 18 is a line graph showing the percentage of neutral particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 99 (Old River). Six flux locations are represented by different colored lines, with particles entering the OMR corridor (red), Unresolved in Central Delta (yellow), CVP entrainment (blue), and SWP entrainment (green) showing the highest particle percentages throughout the evaluation period. Under the -2,000 cfs OMR scenario, fewer particles are entrained at the export facilities and more remain within the OMR corridor and Central Delta compared to the more negative OMR scenarios.

## 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: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	86.0	0.0	14.0	0.0	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-3,500	87.5	0.0	12.5	0.0	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-2,000	91.5	0.0	8.5	0.0	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	90.3	0.0	9.7	0.0	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-3,500	90.7	0.0	9.3	0.0	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-2,000	94.0	0.1	6.0	0.0	0.0	0.0
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	94.9	0.1	5.2	0.0	0.0	0.1
Week 3: 06/16/2026 - 06/22/2026	-3,500	94.6	-0.1	5.5	0.1	0.0	0.0
Week 3: 06/16/2026 - 06/22/2026	-2,000	98.1	0.1	1.9	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: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	10.1	64.3	90.2	0.3	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-3,500	12.1	64.8	87.9	0.0	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-2,000	12.7	66.3	87.3	0.0	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	37.5	73.5	64.1	0.8	0.6	0.2
Week 2: 06/09/2026 - 06/15/2026	-3,500	42.6	72.4	58.0	0.4	0.1	0.1
Week 2: 06/09/2026 - 06/15/2026	-2,000	49.9	73.7	50.2	0.1	0.0	0.0
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	64.2	78.1	38.9	0.9	1.8	0.5
Week 3: 06/16/2026 - 06/22/2026	-3,500	67.0	77.3	35.3	1.5	0.6	0.2
Week 3: 06/16/2026 - 06/22/2026	-2,000	75.2	77.9	25.4	0.5	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: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	9.2	13.2	92.5	1.7	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-3,500	11.3	13.2	89.6	0.9	0.0	0.0
Week 1: 06/02/2026 - 06/08/2026	-2,000	13.7	11.9	86.6	0.3	0.0	0.0
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	30.3	21.1	74.2	3.0	1.3	0.2
Week 2: 06/09/2026 - 06/15/2026	-3,500	36.9	19.4	65.9	1.7	0.9	0.2
Week 2: 06/09/2026 - 06/15/2026	-2,000	46.5	17.6	54.6	0.9	0.1	0.1
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	57.1	24.8	51.1	4.0	3.0	1.2
Week 3: 06/16/2026 - 06/22/2026	-3,500	64.5	22.3	39.2	1.5	1.6	0.6
Week 3: 06/16/2026 - 06/22/2026	-2,000	74.2	20.2	27.9	1.4	0.4	0.3

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: 06/02/2026 - 06/08/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 1: 06/02/2026 - 06/08/2026	-5,000	0.0	0.5	20.3	44.6	30.4	4.8
Week 1: 06/02/2026 - 06/08/2026	-3,500	0.1	0.8	25.5	55.5	14.5	4.4
Week 1: 06/02/2026 - 06/08/2026	-2,000	0.1	0.9	43.7	55.8	0.3	0.1
Week 2: 06/09/2026 - 06/15/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 2: 06/09/2026 - 06/15/2026	-5,000	0.4	2.3	16.2	26.4	40.4	16.6
Week 2: 06/09/2026 - 06/15/2026	-3,500	0.9	2.9	20.1	32.2	25.2	21.6
Week 2: 06/09/2026 - 06/15/2026	-2,000	1.9	4.5	35.5	41.3	13.2	8.0
Week 3: 06/16/2026 - 06/22/2026	-6,500	N/A	N/A	N/A	N/A	N/A	N/A
Week 3: 06/16/2026 - 06/22/2026	-5,000	3.1	3.3	11.1	17.4	44.3	24.0
Week 3: 06/16/2026 - 06/22/2026	-3,500	5.7	4.6	13.2	20.6	28.9	31.6
Week 3: 06/16/2026 - 06/22/2026	-2,000	12.3	7.5	21.9	33.2	15.7	17.0

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

**PTM Results for Surface Oriented Particles. OMR Scenario = -5,000.  
 Particles Injected 6/2/2026 at DSM2 Node 465 (Chipps).**

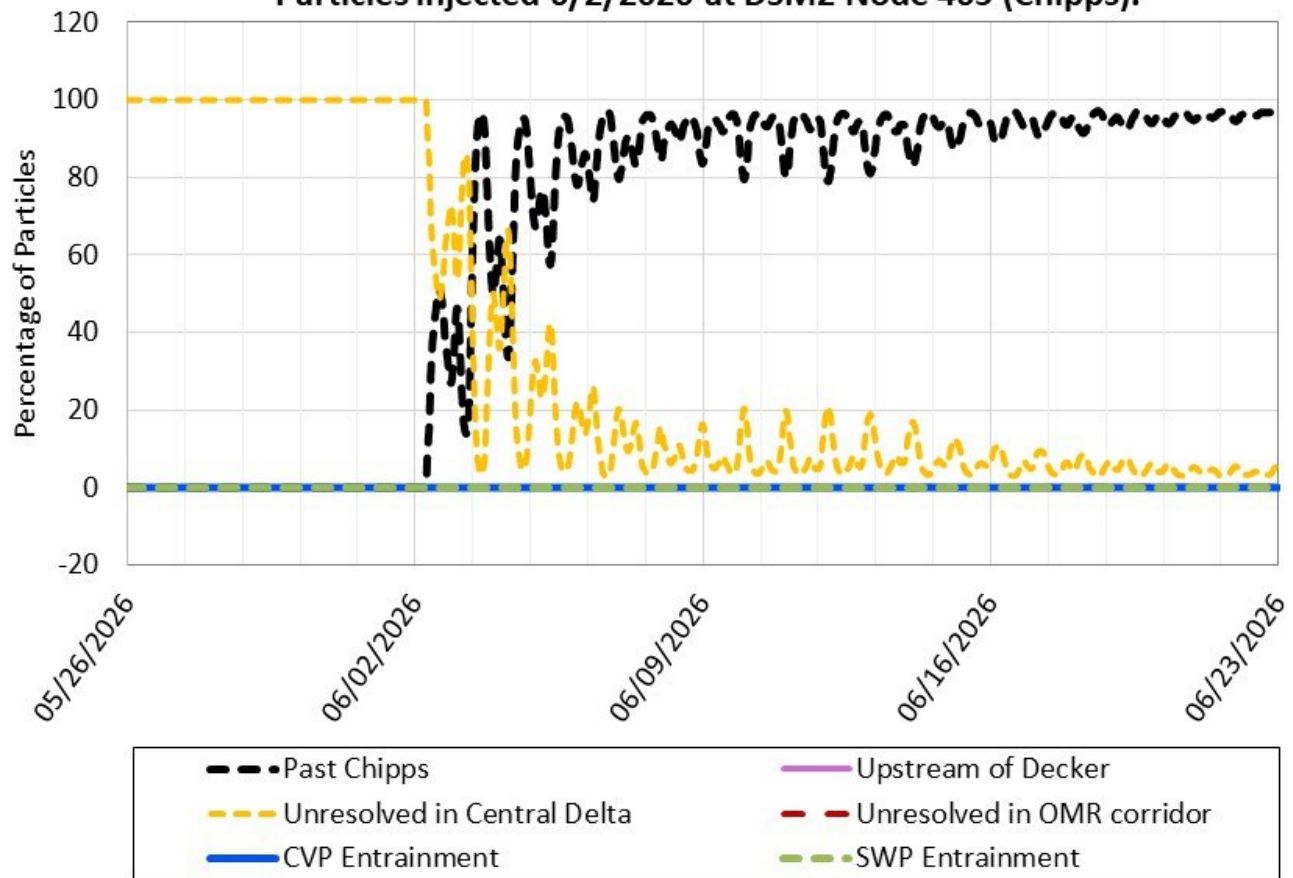


Figure 19. PTM Results for Surface Oriented Particles. OMR Scenario -5,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 465 (Chipps)

Figure 19 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 465 (Chipps). Six flux locations are represented by different colored lines, with Past Chipps (black) and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period. Most particles pass Chipps shortly after release, while the proportion of unresolved particles in the Central Delta declines over time. CVP entrainment, SWP entrainment, particles entering the OMR corridor, and particles moving upstream of Decker remain negligible.

**PTM Results for Surface Oriented Particles. OMR Scenario = -3,500.  
 Particles Injected 6/2/2026 at DSM2 Node 465 (Chipps).**

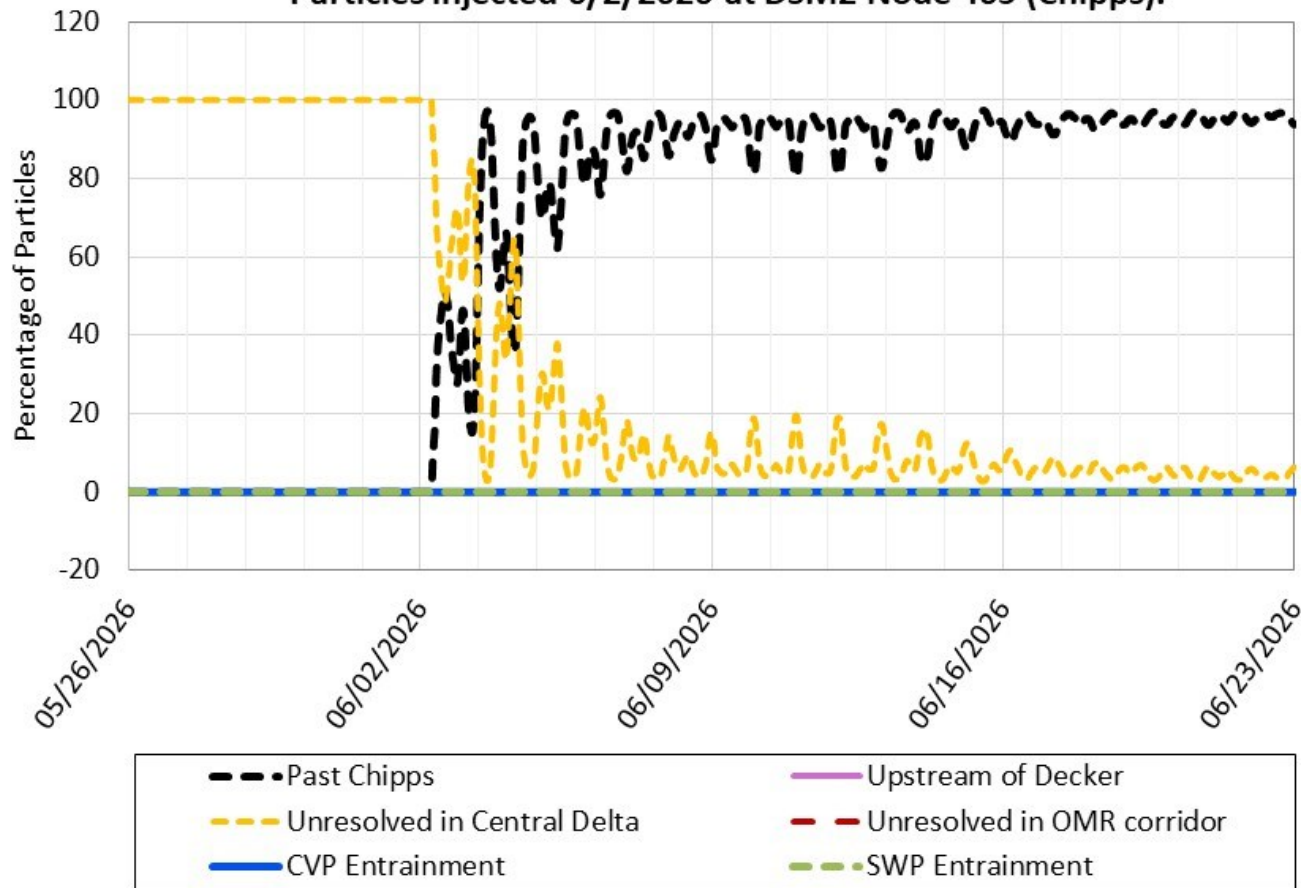


Figure 20. PTM Results for Surface Oriented Particles. OMR Scenario -3,500 cfs. Particles Injected 06/02/2026 at DSM2 Node 465 (Chipps)

Figure 20 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 465 (Chipps). Six flux locations are represented by different colored lines, with Past Chipps (black) and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period. Similar to the -5,000 cfs scenario, most particles pass Chipps shortly after release, while the proportion of unresolved particles in the Central Delta decreases over time. CVP entrainment, SWP entrainment, particles entering the OMR corridor, and particles moving upstream of Decker remain negligible.

**PTM Results for Surface Oriented Particles. OMR Scenario = -2,000.  
 Particles Injected 6/2/2026 at DSM2 Node 465 (Chippis).**

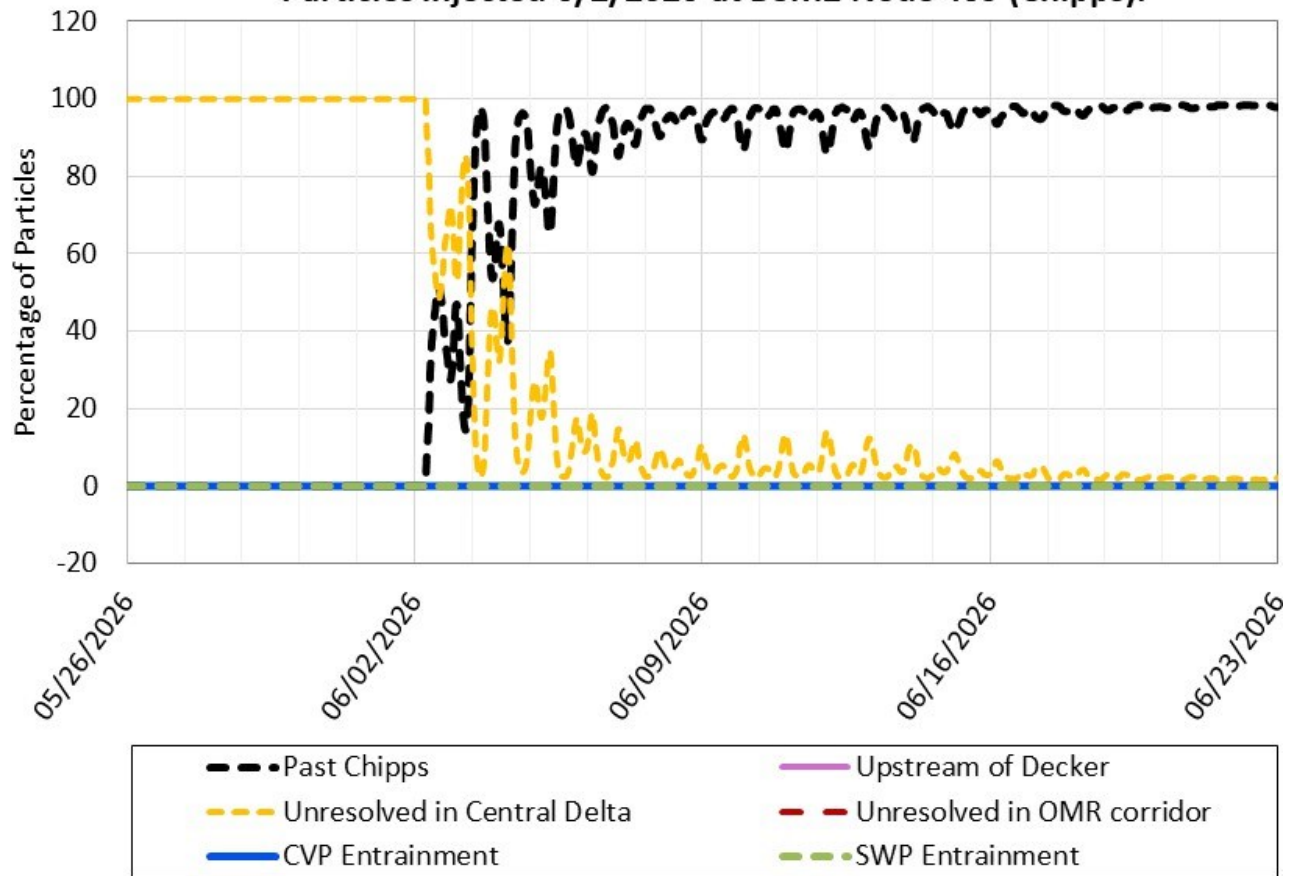


Figure 21. PTM Results for Surface Oriented Particles. OMR Scenario -2,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 465 (Chippis)

Figure 21 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 465 (Chippis). Six flux locations are represented by different colored lines, with Past Chippis (black) and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period. Under the -2,000 cfs OMR scenario, nearly all particles pass Chippis by the end of the simulation period, while the proportion of unresolved particles in the Central Delta declines to near zero. CVP entrainment, SWP entrainment, particles entering the OMR corridor, and particles moving upstream of Decker remain negligible.

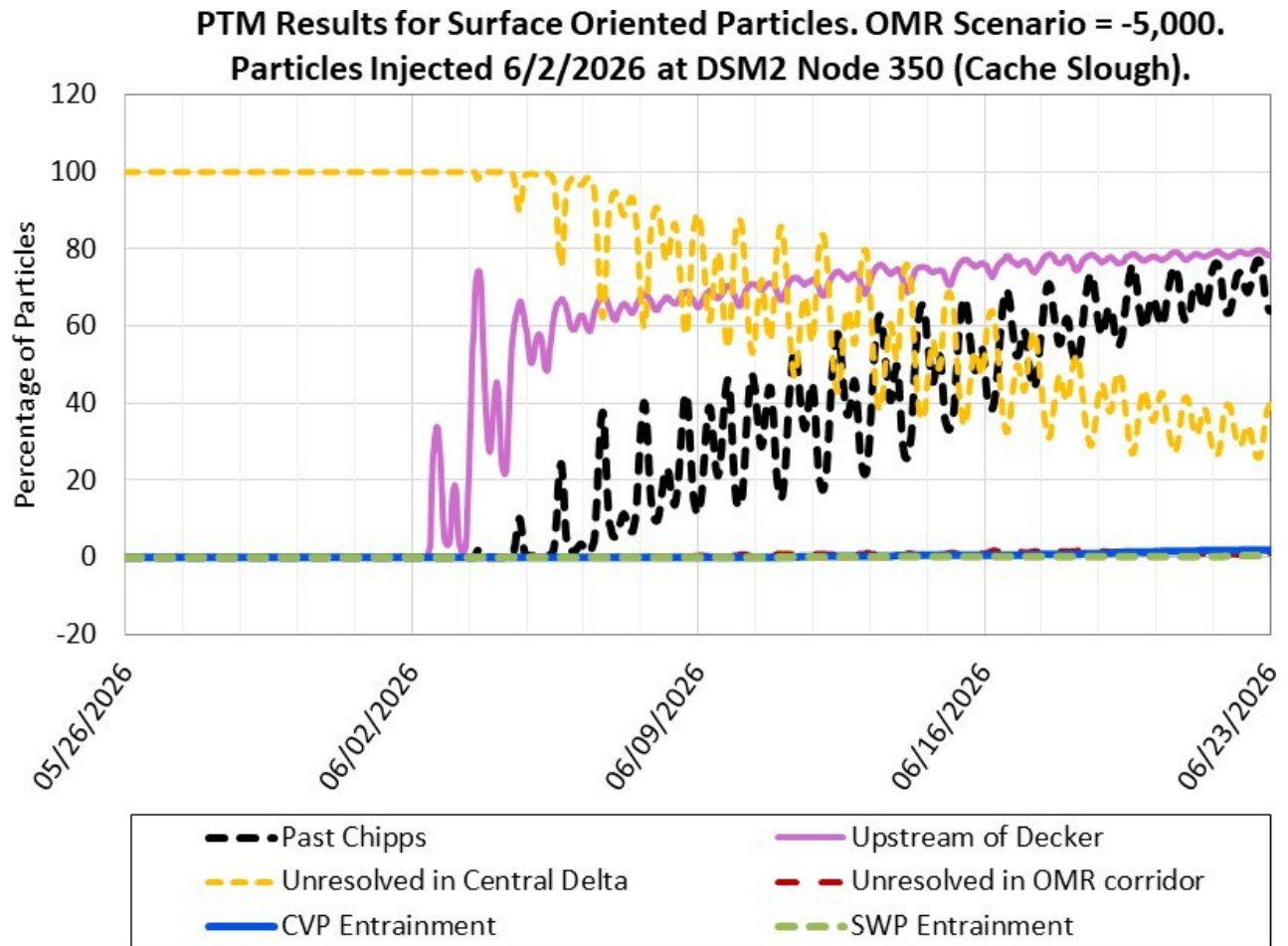


Figure 22. PTM Results for Surface Oriented Particles. OMR Scenario -5,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 350 (Cache Slough)

Figure 22 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored lines, with Upstream of Decker (purple), Past Chipps (black), and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period. Particles rapidly move upstream of Decker shortly after release, while the proportion of particles passing Chipps increases steadily over time and the proportion remaining unresolved in the Central Delta declines. CVP entrainment, SWP entrainment, particles entering the OMR corridor, and export facility entrainment remain low throughout the simulation period.

**PTM Results for Surface Oriented Particles. OMR Scenario = -3,500.  
 Particles Injected 6/2/2026 at DSM2 Node 350 (Cache Slough).**

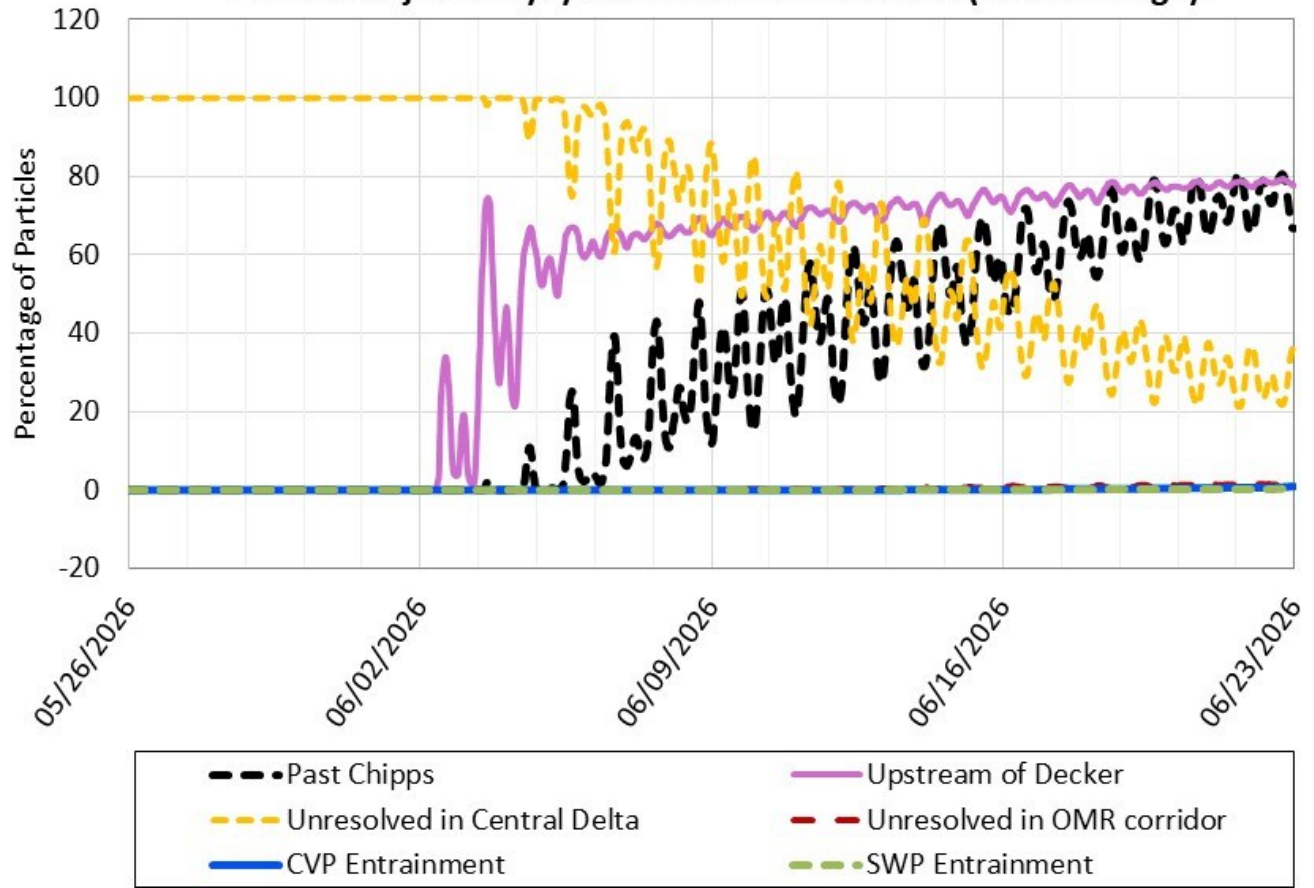


Figure 23. PTM Results for Surface Oriented Particles. OMR Scenario -3,500 cfs. Particles Injected 06/02/2026 at DSM2 Node 350 (Cache Slough)

Figure 23 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored lines, with Upstream of Decker (purple), Past Chipps (black), and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period. Similar to the -5,000 cfs scenario, particles rapidly move upstream of Decker shortly after release, while the proportion of particles passing Chipps increases steadily over time and the proportion remaining unresolved in the Central Delta declines. CVP entrainment, SWP entrainment, particles entering the OMR corridor, and export facility entrainment remain low throughout the simulation period.

**PTM Results for Surface Oriented Particles. OMR Scenario = -2,000.  
 Particles Injected 6/2/2026 at DSM2 Node 350 (Cache Slough).**

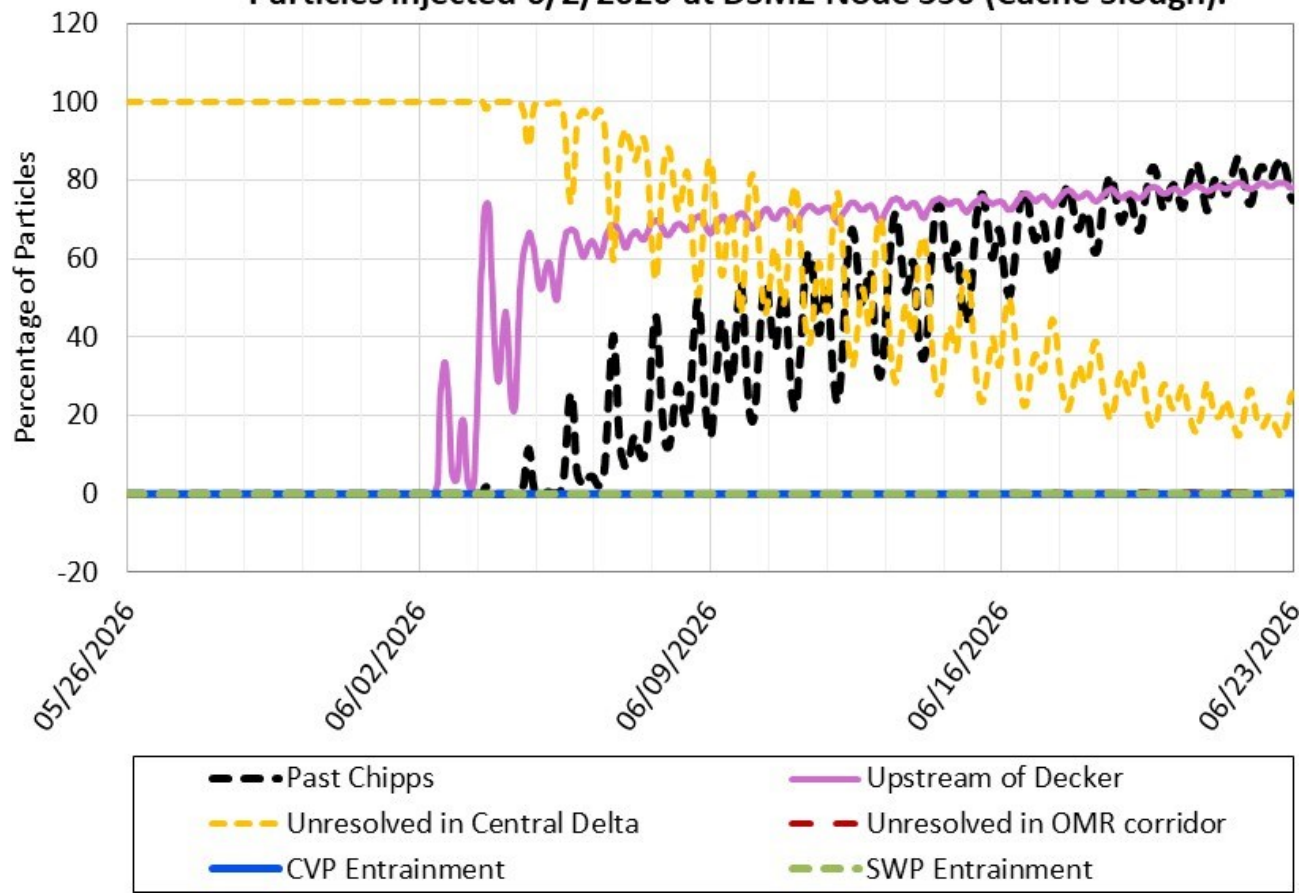


Figure 24. PTM Results for Surface Oriented Particles. OMR Scenario -2,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 350 (Cache Slough)

Figure 24 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 350 (Cache Slough). Six flux locations are represented by different colored lines, with Upstream of Decker (purple), Past Chipps (black), and Unresolved in Central Delta (yellow) showing the highest particle percentages throughout the evaluation period. Under the -2,000 cfs OMR scenario, a greater proportion of particles pass Chipps and fewer remain unresolved in the Central Delta compared to the more negative OMR scenarios, while particles moving upstream of Decker remain a substantial component of particle distribution. CVP entrainment, SWP entrainment, and particles entering the OMR corridor remain negligible throughout the simulation period.

**PTM Results for Surface Oriented Particles. OMR Scenario = -5,000.  
 Particles Injected 6/2/2026 at DSM2 Node 469 (Jersey Point).**

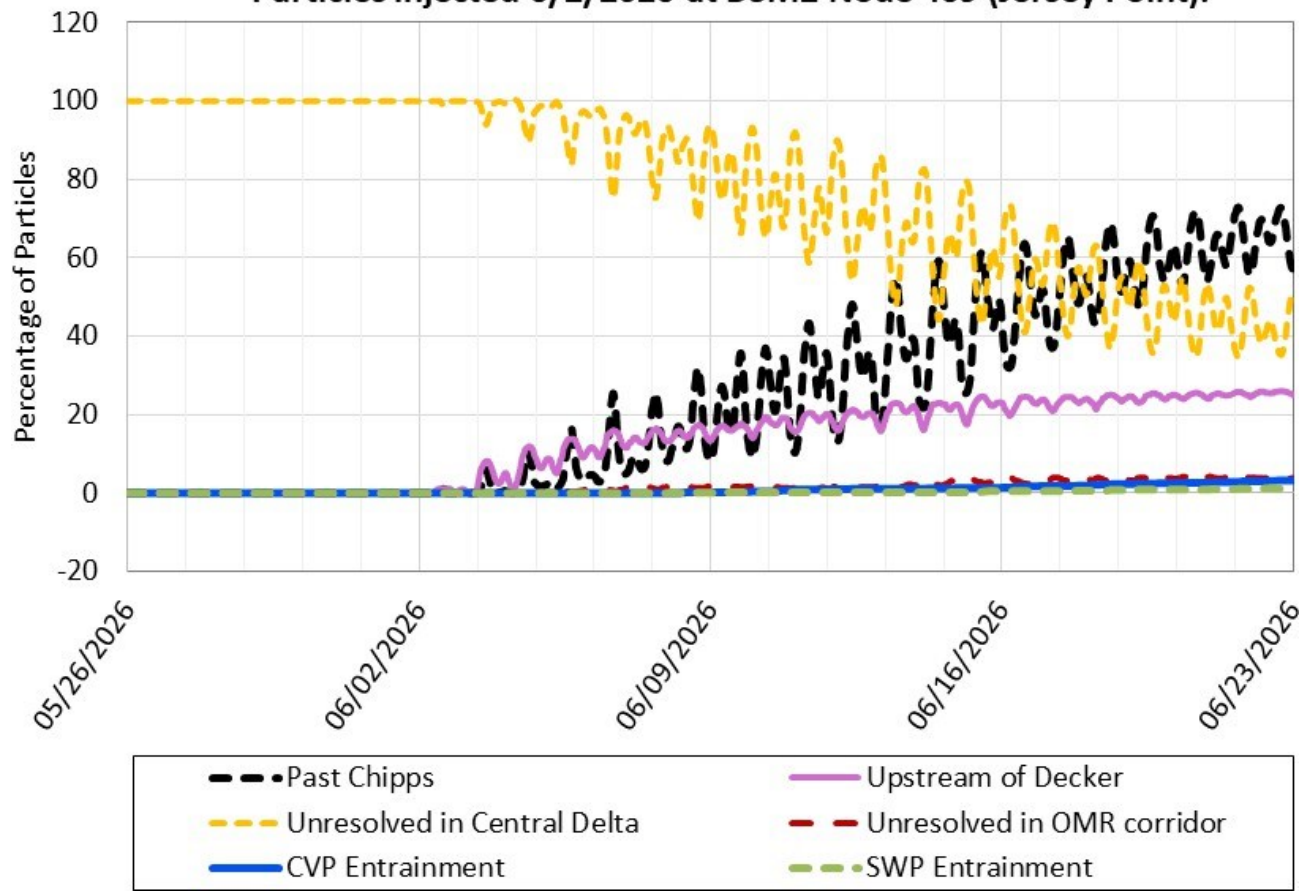


Figure 25. PTM Results for Surface Oriented Particles. OMR Scenario -5,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 469 (Jersey Point)

Figure 25 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored lines, with Unresolved in Central Delta (yellow), Past Chipps (black), and Upstream of Decker (purple) showing the highest particle percentages throughout the evaluation period. The proportion of particles passing Chipps increases steadily over time, while the proportion remaining unresolved in the Central Delta declines. Particles moving upstream of Decker also increase gradually, whereas CVP entrainment, SWP entrainment, and particles entering the OMR corridor remain low throughout the simulation period.

**PTM Results for Surface Oriented Particles. OMR Scenario = -3,500.  
 Particles Injected 6/2/2026 at DSM2 Node 469 (Jersey Point).**

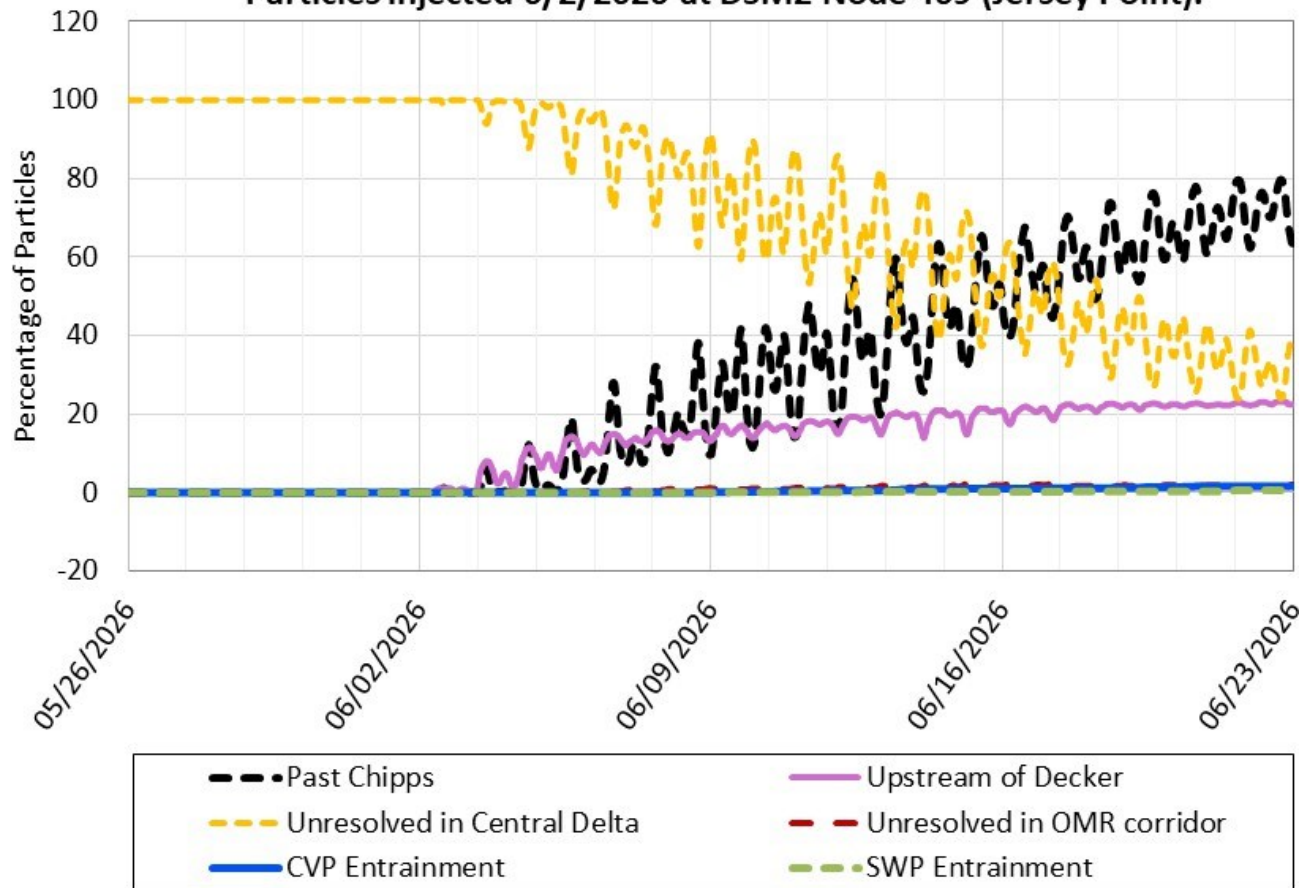


Figure 26. PTM Results for Surface Oriented Particles. OMR Scenario -3,500 cfs. Particles Injected 06/02/2026 at DSM2 Node 469 (Jersey Point)

Figure 26 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored lines, with Unresolved in Central Delta (yellow), Past Chipps (black), and Upstream of Decker (purple) showing the highest particle percentages throughout the evaluation period. The proportion of particles passing Chipps increases steadily over time, while the proportion remaining unresolved in the Central Delta declines. Particles moving upstream of Decker also increase gradually, whereas CVP entrainment, SWP entrainment, and particles entering the OMR corridor remain low throughout the simulation period.

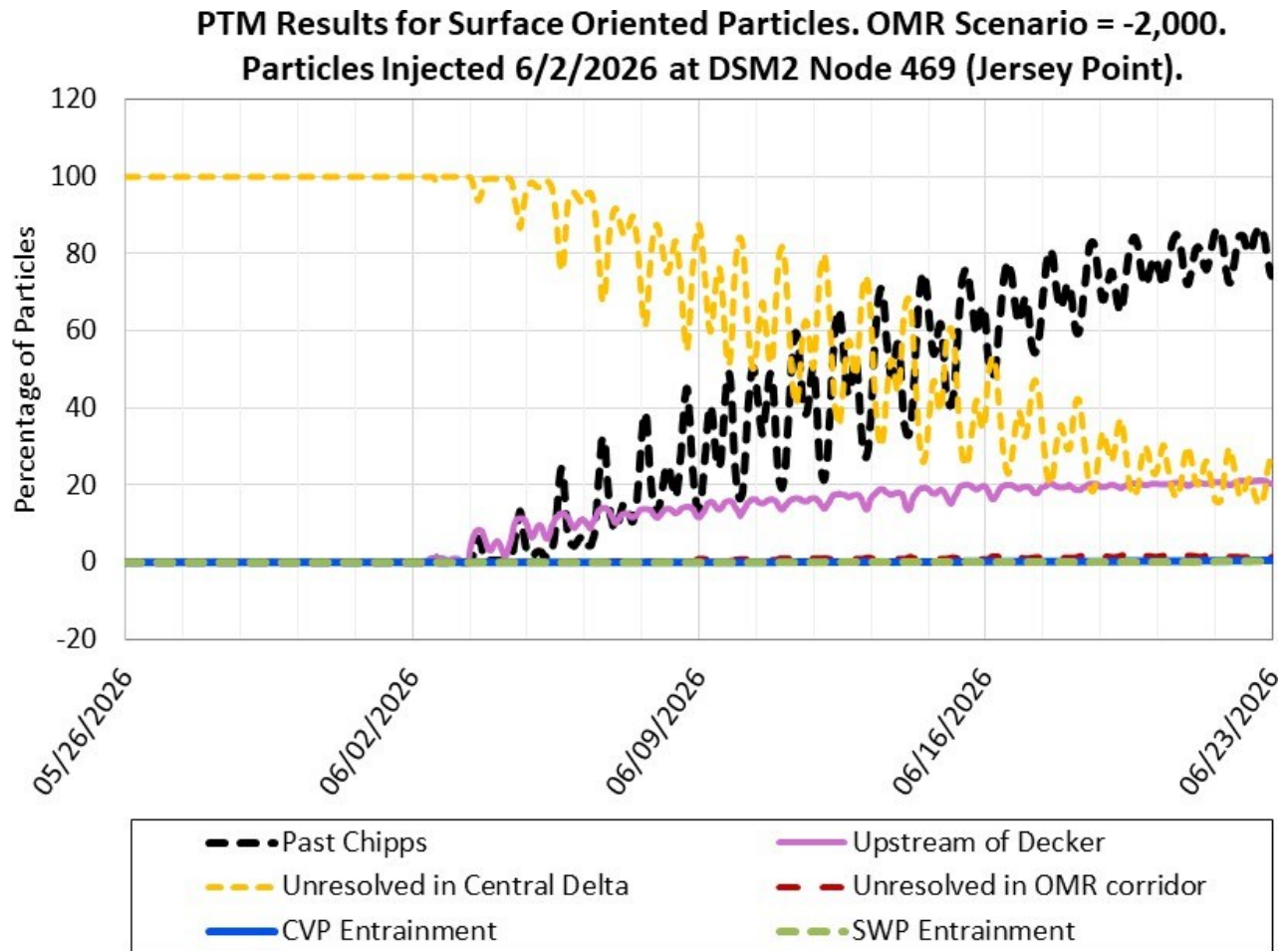


Figure 27. PTM Results for Surface Oriented Particles. OMR Scenario -2,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 469 (Jersey Point)

Figure 27 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 469 (Jersey Point). Six flux locations are represented by different colored lines, with Past Chipps (black), Unresolved in Central Delta (yellow), and Upstream of Decker (purple) showing the highest particle percentages throughout the evaluation period. The proportion of particles passing Chipps increases steadily over time and becomes the dominant pathway by the end of the simulation, while the proportion remaining unresolved in the Central Delta declines. Particles moving upstream of Decker increase gradually, whereas CVP entrainment, SWP entrainment, and particles entering the OMR corridor remain low throughout the simulation period.

**PTM Results for Surface Oriented Particles. OMR Scenario = -5,000.  
 Particles Injected 6/2/2026 at DSM2 Node 99 (Old River).**

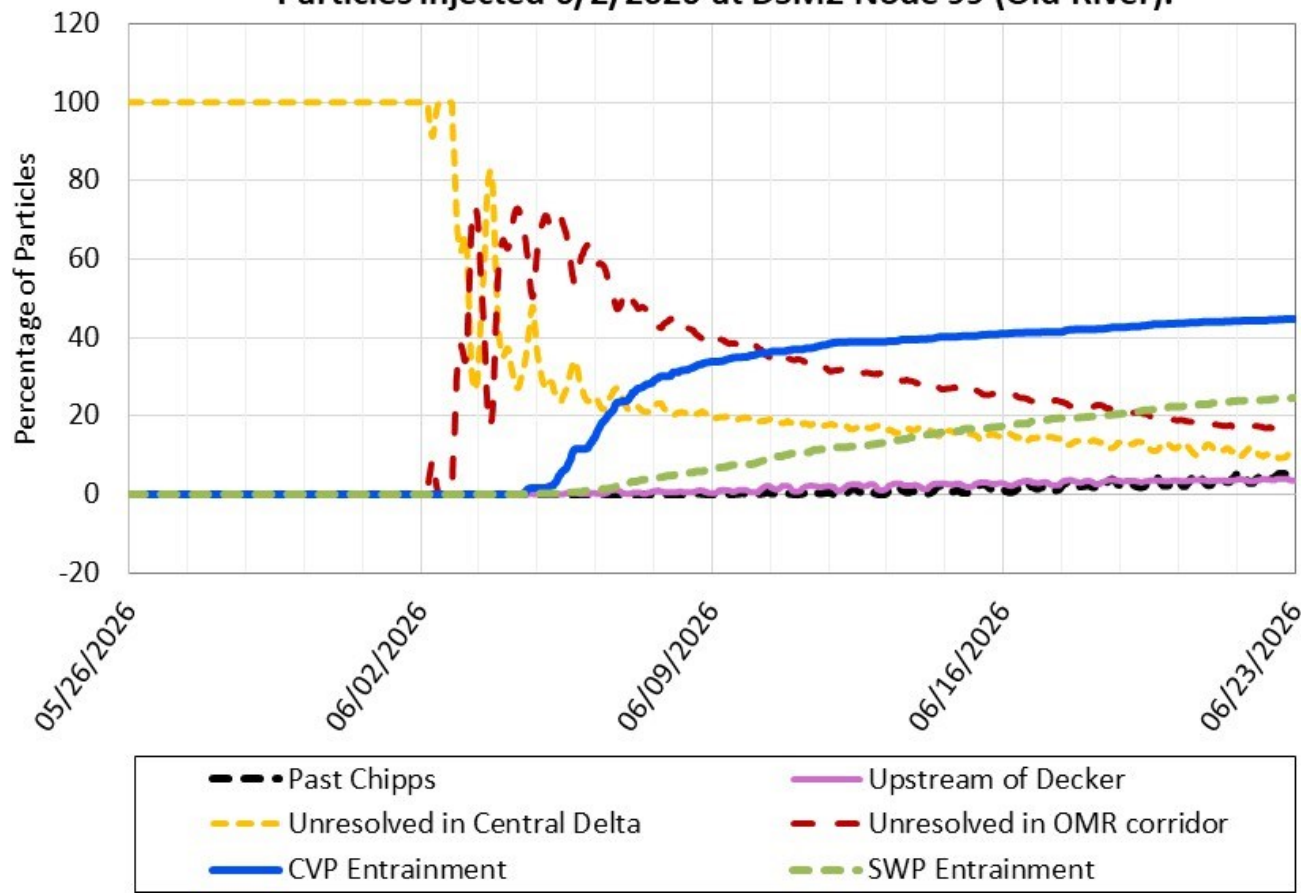


Figure 28. PTM Results for Surface Oriented Particles. OMR Scenario -5,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 99 (Old River)

Figure 28 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 99 (Old River). Six flux locations are represented by different colored lines, with CVP Entrainment (blue), Unresolved in OMR Corridor (red), Unresolved in Central Delta (yellow), and SWP Entrainment (green) showing the highest particle percentages throughout the evaluation period. CVP entrainment increases rapidly and becomes the dominant particle fate by the end of the simulation, while particles unresolved in the OMR corridor and Central Delta decline over time. SWP entrainment increases steadily, whereas relatively few particles pass Chipps (black) or move upstream of Decker (purple) during the evaluation period.

**PTM Results for Surface Oriented Particles. OMR Scenario = -3,500.  
 Particles Injected 6/2/2026 at DSM2 Node 99 (Old River).**

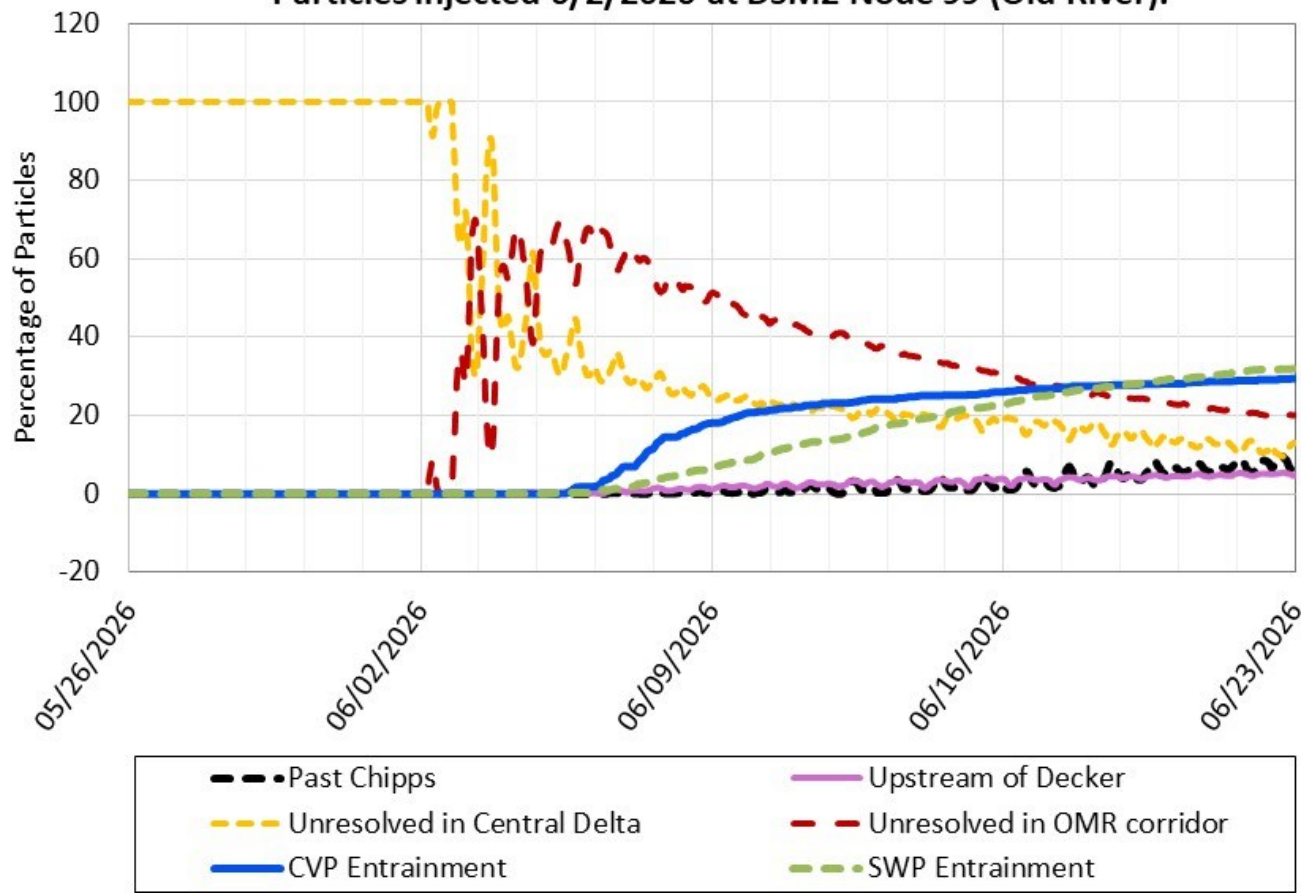


Figure 29. PTM Results for Surface Oriented Particles. OMR Scenario -3,500 cfs. Particles Injected 06/02/2026 at DSM2 Node 99 (Old River)

Figure 29 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 99 (Old River). Six flux locations are represented by different colored lines, with Unresolved in OMR Corridor (red), CVP Entrainment (blue), SWP Entrainment (green), and Unresolved in Central Delta (yellow) showing the most notable particle percentages throughout the evaluation period. Particles unresolved in the OMR corridor initially comprise the largest proportion but decline over time, while CVP and SWP entrainment increase steadily. The proportion of particles remaining unresolved in the Central Delta also decreases throughout the simulation, whereas relatively few particles pass Chipps (black) or move upstream of Decker (purple).

**PTM Results for Surface Oriented Particles. OMR Scenario = -2,000.  
 Particles Injected 6/2/2026 at DSM2 Node 99 (Old River).**

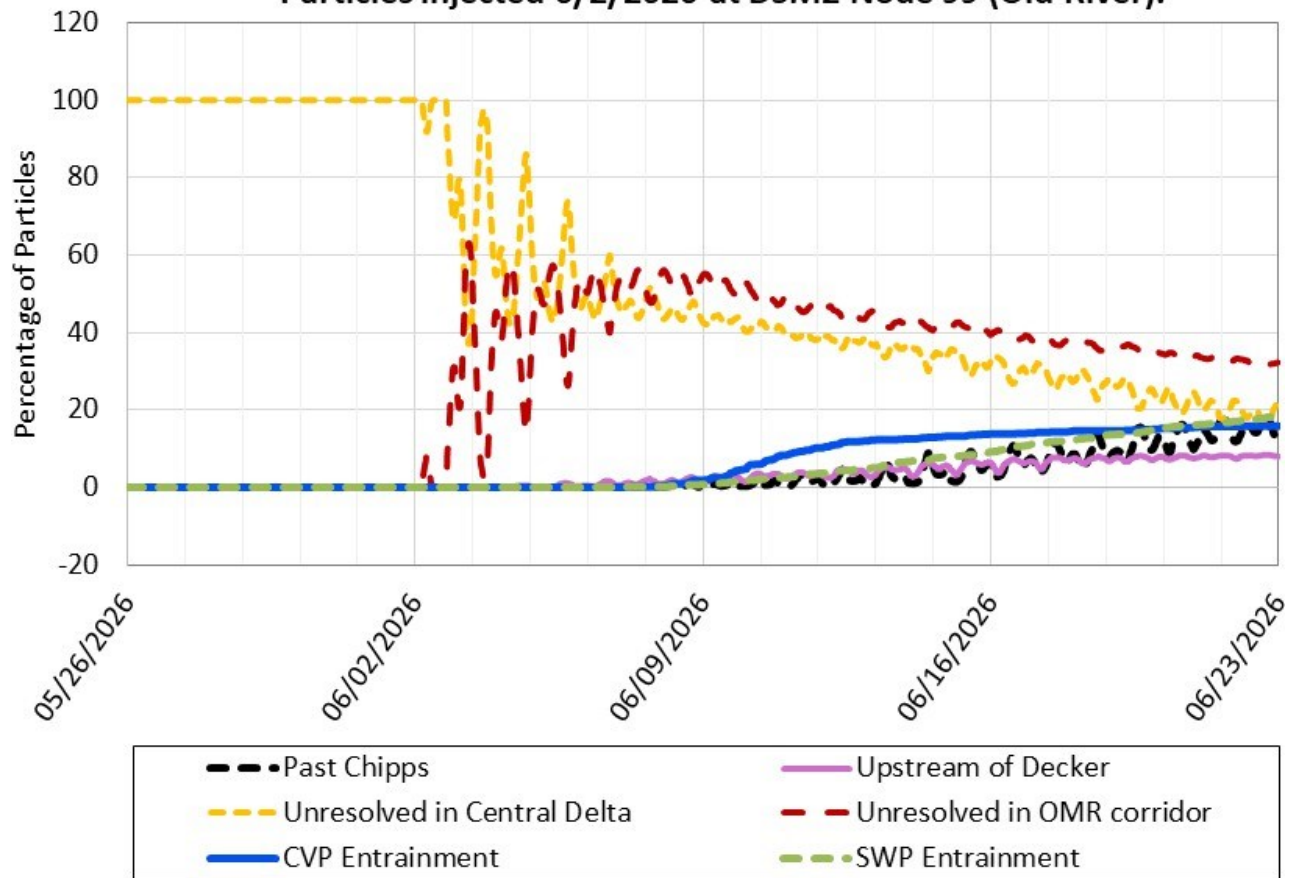


Figure 30. PTM Results for Surface Oriented Particles. OMR Scenario -2,000 cfs. Particles Injected 06/02/2026 at DSM2 Node 99 (Old River)

Figure 30 is a line graph showing the percentage of surface-oriented particles over time from May 26 to June 23, 2026, injected on June 2, 2026, at DSM2 Node 99 (Old River). Six flux locations are represented by different colored lines, with Unresolved in OMR Corridor (red), Unresolved in Central Delta (yellow), CVP Entrainment (blue), and SWP Entrainment (green) showing the most notable particle percentages throughout the evaluation period. Particles unresolved in the OMR corridor and Central Delta comprise the largest proportions initially and decline over time, while CVP and SWP entrainment increase gradually throughout the simulation. The proportions of particles passing Chipps (black) and moving upstream of Decker (purple) also increase over time but remain lower than the unresolved and entrainment pathways.

## ECO-PTM (Ecological Particle Tracking Model)

**ECO-PTM Results Evaluation Period:** 06/02/2026 – 06/22/2026

**Particles Injected:** 06/02/2026

**Injection Location:** Sacramento River at Freeport

Table 12. Salmon Particle Route Ratio After 3 Weeks Ending 06/22/2026

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	0.08	0.82	0.69	0.25
-3,500	0.10	0.08	0.83	0.69	0.25
-2,000	0.10	0.08	0.83	0.69	0.24

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

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).

Table 13. Salmon Particle Route-Specific Survival After 3 Weeks Ending 06/22/2026

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	40%	50%	44%	24%	38%
-3,500	37%	52%	45%	24%	38%
-2,000	38%	50%	43%	28%	38%

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

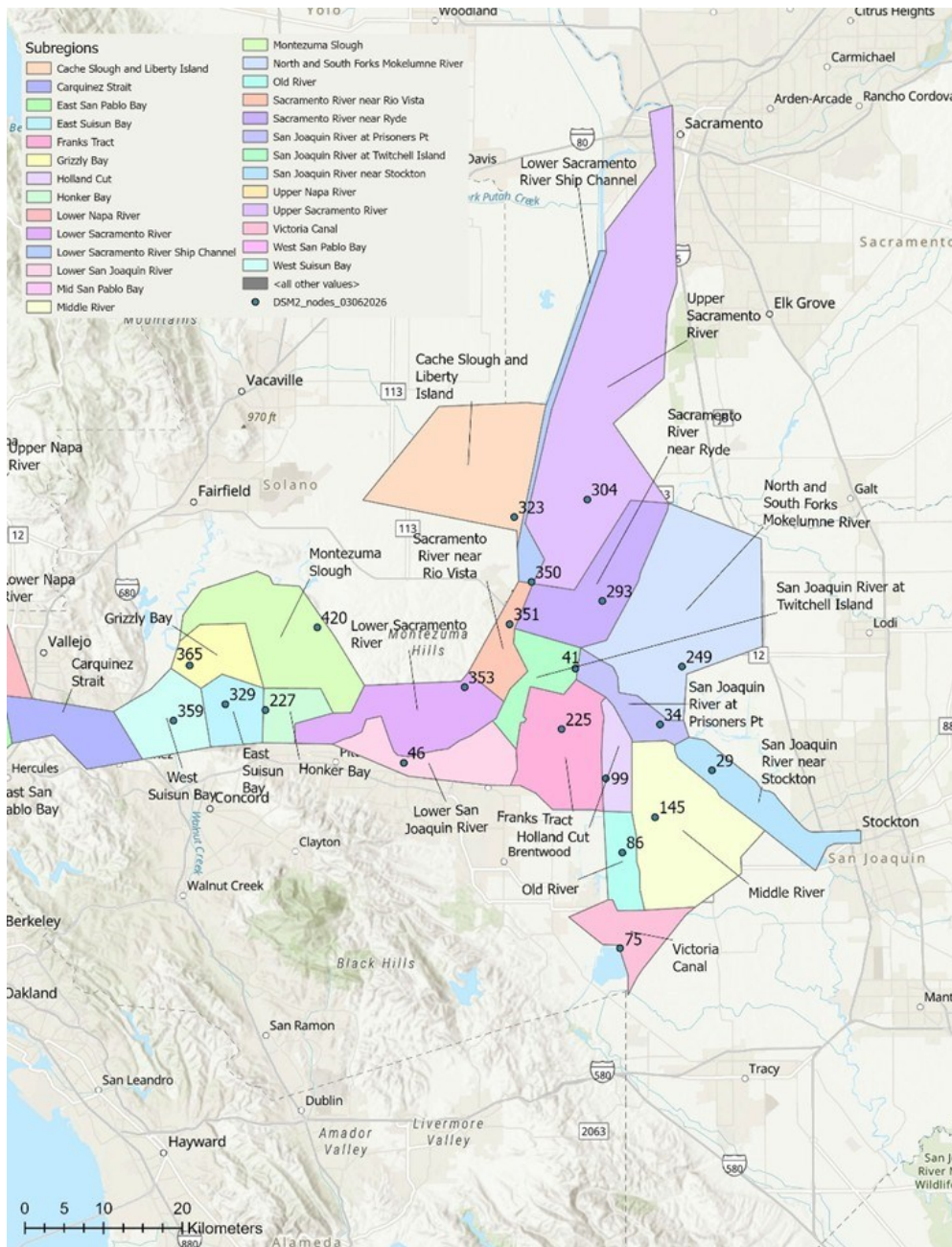
## Longfin Smelt Larval Population and PTM Analysis

**PTM Results Evaluation Period:** 06/02/2026 – 06/22/2026

**Particles Injected:** 06/02/2026

**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 33). 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 34).



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 monitoring subregions and associated DSM2 nodes used in particle tracking analyses. Colored polygons delineate the subregions, including Cache Slough and Liberty Island, Lower Sacramento River, Suisun Bay, Lower San Joaquin River, Old River, Middle River, and other Delta habitats. Numbered points identify DSM2 nodes located within each subregion that serve as particle injection locations for PTM simulations.

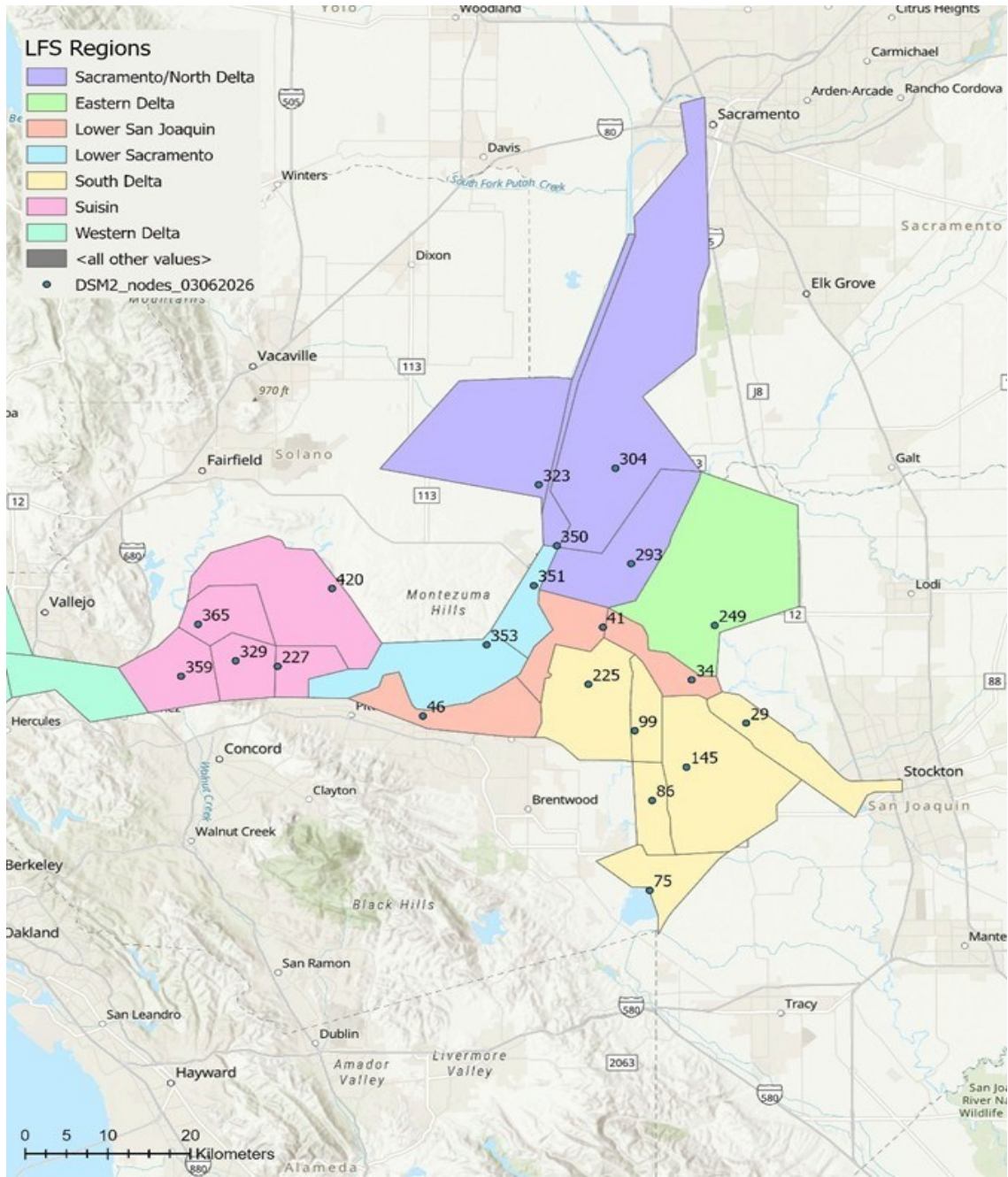


Figure 32. Map of Delta Showing Longfin Smelt Regions and DSM2 Nodes

Figure 32 is a map of the Sacramento–San Joaquin Delta showing the longfin smelt regions and associated DSM2 nodes used in particle tracking analyses. Colored polygons delineate the major longfin smelt regions, including Sacramento/North Delta, Eastern Delta, Lower Sacramento, Lower San Joaquin, South Delta, Suisun, and Western Delta. Numbered points identify DSM2 nodes located within each region that serve as particle injection locations for PTM simulations.

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 05/12/2026, processing of the 20mm Survey 1 data is at 51% complete, heavily biased to the eastern and southern Delta. 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 04/21/2026

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

<b>DSM2 Injection Node</b>	<b>EDSM Subregion</b>	<b>LFS Region</b>
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

OMR (cfs)	Combined Exports (cfs)	Region Metric	West	Suisun	Sacramento/ North Delta	Lower San Joaquin	Lower Sacramento	South Delta	East	Total (#)	Total (%)
N/A	N/A	LFS Larva Abundance (Survey 5: 2/23/2026)	117,633,687	145,677,478	304,865	4,078,739	3,695,676	0	0	271,390,445	N/A
-6,500	N/A	PTM Entrained (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	4,757	PTM Entrained (%)	0	0	0	<0.1	0	0	0	N/A	N/A
-3,500	3,900	PTM Entrained (%)	0	0	0	<0.1	0	0	0	N/A	N/A
-2,000	2,271	PTM Entrained (%)	0	0	0	0	0	0	0	N/A	N/A
-6,500	N/A	LFS Larva Entrained (#)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	4,757	LFS Larva Entrained (#)	0	0	0	1,730	0	0	0	1,730	<0.1%
-3,500	3,900	LFS Larva Entrained (#)	0	0	0	430	0	0	0	430	<0.1%
-2,000	2,271	LFS Larva Entrained (#)	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

OMR (cfs)	Combined Exports (cfs)	Region Metric	West	Suisun	Sacramento/ North Delta	Lower San Joaquin	Lower Sacramento	South Delta	East	Total (#)	Total (%)
N/A	N/A	LFS Larva Abundance (Survey 5: 2/23/2026)	117,633,687	145,677,478	304,865	4,078,739	3,695,676	0	0	271,390,445	N/A
-6,500	N/A	PTM Entrained (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	4,708	PTM Entrained (%)	0	0	0.3	4.2	0.1	0	0	N/A	N/A
-3,500	3,900	PTM Entrained (%)	0	0	0.3	2.4	<0.1	0	0	N/A	N/A
-2,000	2,200	PTM Entrained (%)	0	0	0	0.3	0	0	0	N/A	N/A
-6,500	N/A	LFS Larva Entrained (#)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	4,708	LFS Larva Entrained (#)	0	0	915	171,137	4,907	0	0	176,959	<0.1%
-3,500	3,900	LFS Larva Entrained (#)	0	0	915	96,262	1,211	0	0	98,388	<0.1%
-2,000	2,200	LFS Larva Entrained (#)	0	0	0	13,424	0	0	0	13,424	<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

OMR (cfs)	Combined Exports (cfs)	Region Metric	West	Suisun	Sacramento/ North Delta	Lower San Joaquin	Lower Sacramento	South Delta	East	Total (#)	Total (%)
N/A	N/A	LFS Larva Abundance (Survey 5: 2/23/2026)	117,633,687	145,677,478	304,865	4,078,739	3,695,676	0	0	271,390,445	N/A
-6,500	N/A	PTM Entrained (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	4,708	PTM Entrained (%)	0	0	1.2	9.4	0.6	0	0	N/A	N/A
-3,500	3,900	PTM Entrained (%)	0	0	0.5	6.4	0.2	0	0	N/A	N/A
-2,000	2,200	PTM Entrained (%)	0	0	0.1	1.8	<0.1	0	0	N/A	N/A
-6,500	N/A	LFS Larva Entrained (#)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-5,000	4,708	LFS Larva Entrained (#)	0	0	3,658	384,972	21,709	0	0	410,339	0.2%
-3,500	3,900	LFS Larva Entrained (#)	0	0	1,524	260,873	9,006	0	0	271,403	0.1%
-2,000	2,200	LFS Larva Entrained (#)	0	0	305	72,751	404	0	0	73,459	<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

**Average PTM Results by Injection Region for Position Oriented  
Particles Entrained at CVP and SWP. OMR Scenario = -5,000.  
Particles Injected 6/2/2026.**

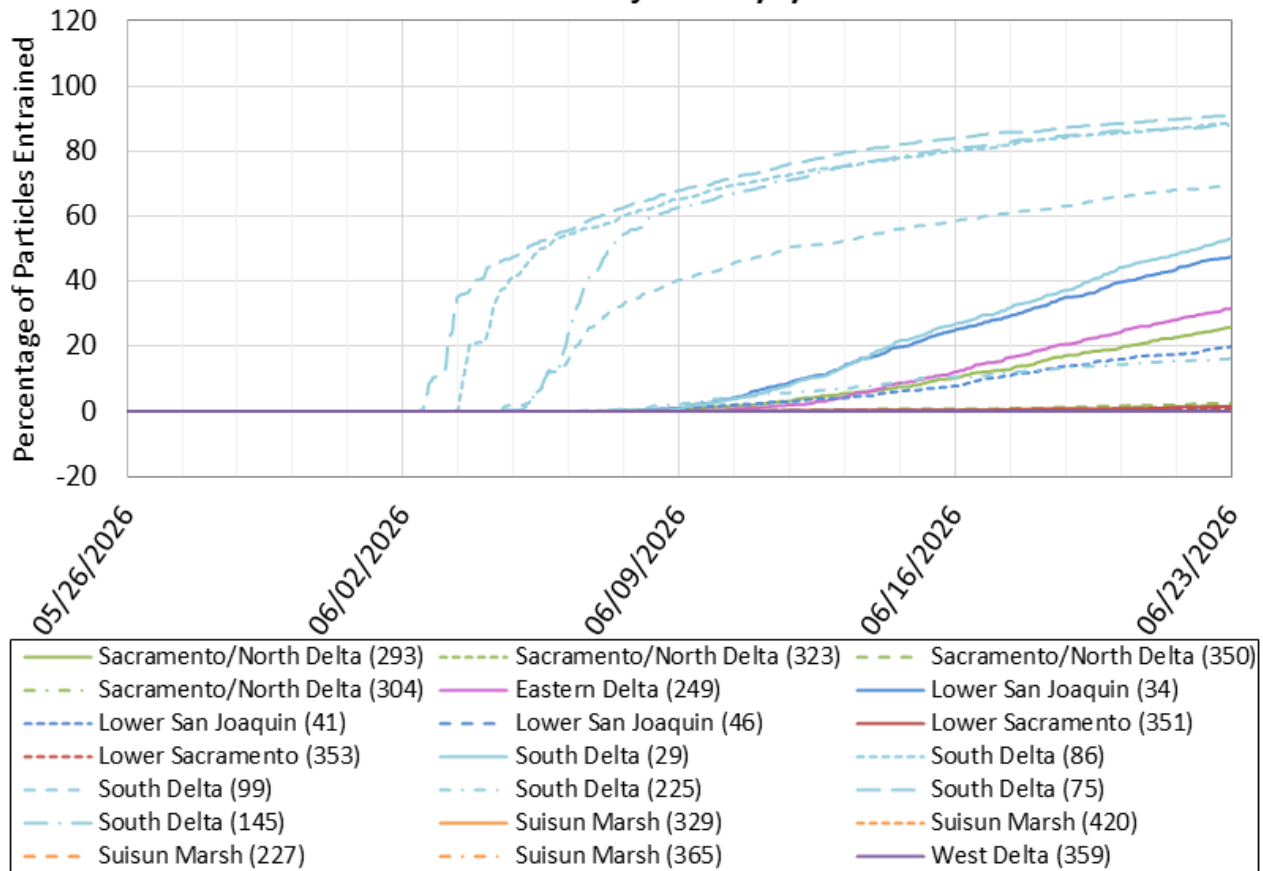


Figure 33. Average PTM Results by Injection Region for Position Oriented Particles Entrained at CVP and SWP. OMR Scenario -5,000 cfs. Particles Injected 06/02/2026

Figure 33 is a line graph showing the average percentage of position-oriented particles entrained at the CVP and SWP over time from May 26 to June 23, 2026, for multiple injection regions and DSM2 nodes under the OMR -5,000 cfs scenario. Particle entrainment varies by region, with South Delta injection locations exhibiting the highest entrainment percentages throughout the evaluation period. Lower San Joaquin, Eastern Delta, and Sacramento/North Delta locations show moderate entrainment levels, while Lower Sacramento, Suisun Marsh, and Western Delta locations exhibit comparatively low entrainment percentages.

**Average PTM Results by Injection Region for Position Oriented  
Particles Entrained at CVP and SWP. OMR Scenario = -3,500.  
Particles Injected 6/2/2026.**

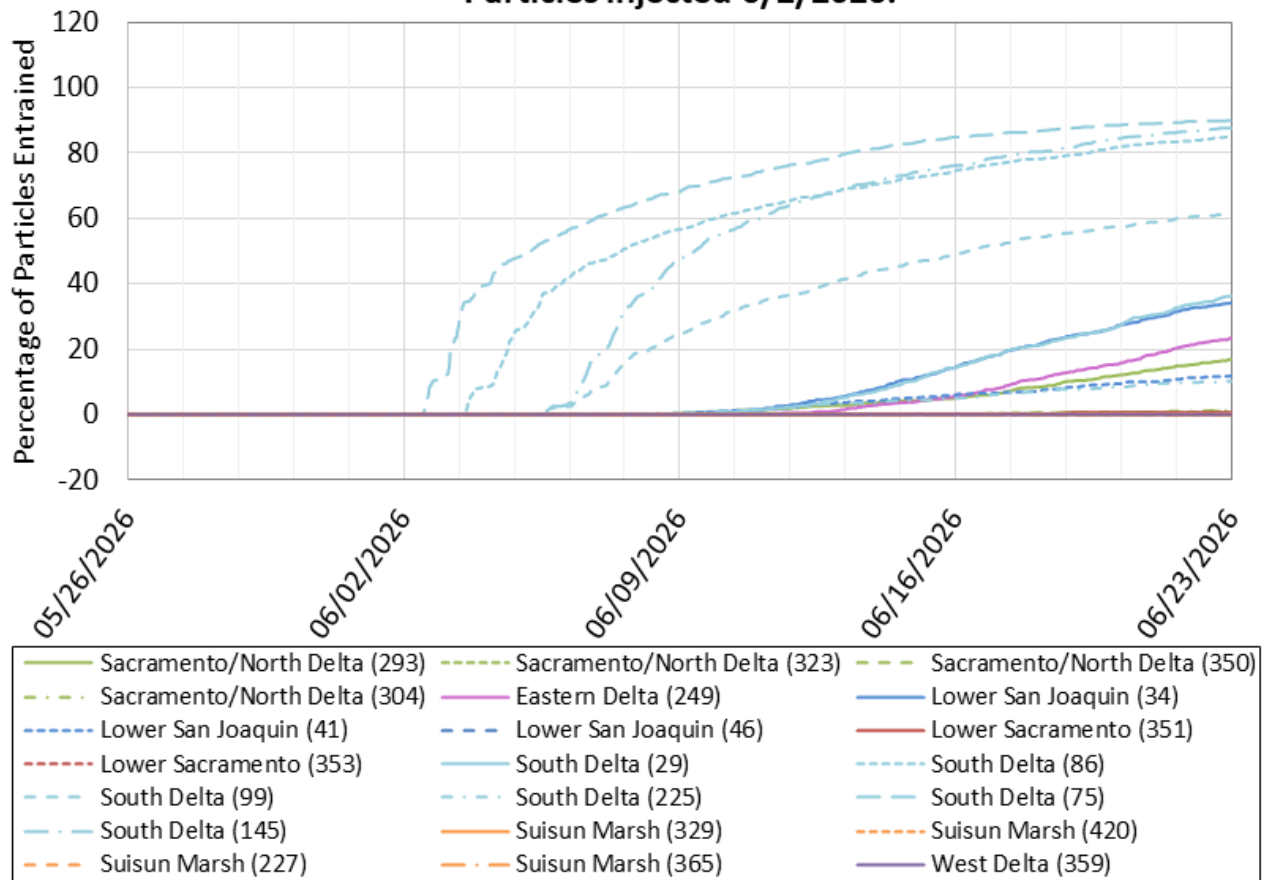


Figure 34. Average PTM Results by Injection Region for Position Oriented Particles Entrained at CVP and SWP. OMR Scenario -3,500 cfs. Particles Injected 06/02/2026

Figure 34 is a line graph showing the average percentage of position-oriented particles entrained at the CVP and SWP over time from May 26 to June 23, 2026, for multiple injection regions and DSM2 nodes under the OMR -3,500 cfs scenario. Particle entrainment varies by region, with South Delta injection locations exhibiting the highest entrainment percentages throughout the evaluation period. Lower San Joaquin, Eastern Delta, and Sacramento/North Delta locations show moderate entrainment levels, while Lower Sacramento, Suisun Marsh, and Western Delta locations exhibit comparatively low entrainment percentages.

**Average PTM Results by Injection Region for Position Oriented  
Particles Entrained at CVP and SWP. OMR Scenario = -2,000.  
Particles Injected 6/2/2026.**

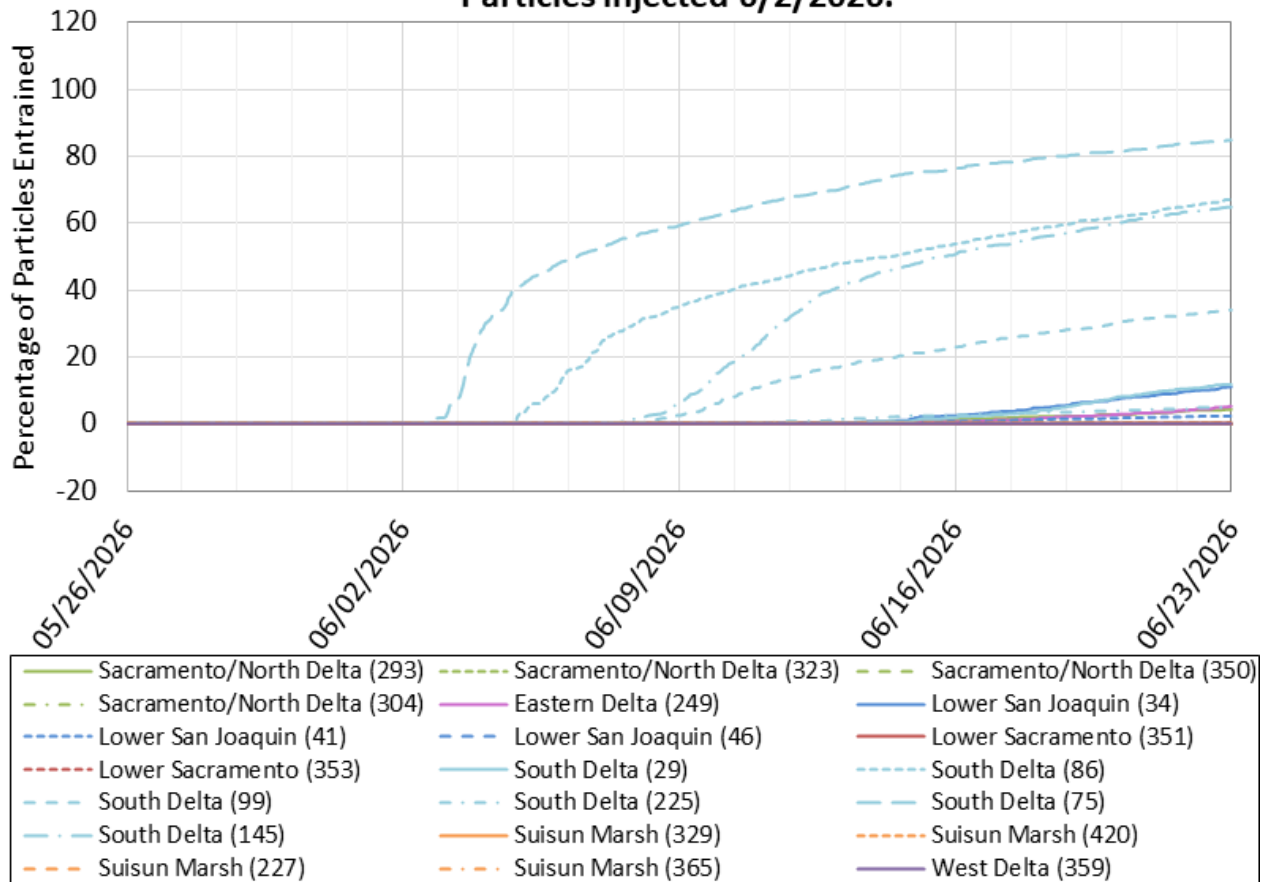


Figure 35. Average PTM Results by Injection Region for Position Oriented Particles Entrained at CVP and SWP. OMR Scenario -2,000 cfs. Particles Injected 06/02/2026

Figure 35 is a line graph showing the average percentage of position-oriented particles entrained at the CVP and SWP over time from May 26 to June 23, 2026, for multiple injection regions and DSM2 nodes under the OMR -2,000 cfs scenario. Particle entrainment varies by region, with South Delta injection locations exhibiting the highest entrainment percentages throughout the evaluation period. Lower San Joaquin locations show moderate entrainment levels, while Sacramento/North Delta, Eastern Delta, Lower Sacramento, Suisun Marsh, and Western Delta locations exhibit comparatively low entrainment percentages. Overall entrainment percentages are lower across most regions compared to the more negative OMR scenarios.