

## PARTICIPANTS

- CDFW
- DWR
- NMFS
- SWRCB
- USBR
- USFWS
- Kearns & West

## ACTION ITEMS

- CDFW to share information from two remaining SLS 1 stations.
- CDFW to share update on status of Bay Study.
- USFWS to share updates on status of EDSM sampling.
- SMT members to convene an additional meeting if ITP Condition of Approval 8.4.2 is triggered by pending data.

## MEETING SUMMARY

### PART 1: Updates on Water Operations and Biological Updates

#### Relevant Actions & Triggers

USBR shared triggers that lead to the First Flush conditions and subsequent onset of OMR management for Delta Smelt:

- Running three-day average of daily flows at Freeport >25,000 cfs; and
- Running three-day average of daily turbidity at Freeport  $\geq 50$  NTU<sup>1</sup>; or
- Real-time monitoring indicates a high risk of migration and dispersal into areas at high risk of future entrainment or a spent delta smelt has been collected in monitoring surveys.

NMFS reminded SMT members that OMR management for salmon was initiated on January 1<sup>st</sup>. CDFW confirmed that ITP Condition of Approval 8.3.2 (Salmonid Presence) is in effect.

CDFW also noted that Conditions of Approval 8.3.1 (Integrated Early Winter Pulse Protection) and 8.3.3 (Adult Longfin Smelt Entrainment Protection) are in effect as of December 1<sup>st</sup>, but none of the triggers have been met. The salvage threshold for Condition 8.3.3 is three Longfin Smelt.

Condition of Approval 8.1.5.2 remains in effect and requires weekly risk assessments be conducted for Delta Smelt and Longfin Smelt.

Condition of Approval 8.4.1 was terminated by the detection of Longfin Smelt larvae on December 28<sup>th</sup>.

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<sup>1</sup> The current instrumentation measures turbidity in FNU's.

Condition of Approval 8.4.2 came into effect January 1<sup>st</sup> and will be active through June 30<sup>th</sup> or until the temperature off-ramp occurs. It will be triggered if:

- Longfin Smelt larvae or juveniles are found in four or more of the 12 SLS or 20 mm stations in the central or south Delta,
- Or Longfin Smelt catch per tow exceeds five larvae or juveniles in two or more of the 12 stations in the central or south Delta.

If triggered, it will restrict south Delta exports for seven consecutive days in order to maintain a seven-day average OMR index no more negative than -5,000 cfs. None of the triggers have been met as of this week's SMT meeting.

Condition of Approval 8.5.2 (Larval and Juvenile Delta Smelt Protection) is triggered when the five-day salvage of juvenile Delta Smelt is greater than or equal to one plus the average prior three years' FMWT index (rounded down). The threshold for this year is one. If triggered, this Condition of Approval will restrict south Delta exports for seven consecutive days in order to maintain a seven-day average OMR index no more negative than -5,000 cfs and SMT members will meet to assess the risk of entrainment. The SMT may provide further advice to restrict exports in order to maintain an OMR index more positive than -5,000 cfs. In their assessment, SMT members will determine if risk of entrainment is low, medium, or high; subsequent OMR restrictions will be based on level of risk. Furthermore, if salvage of Delta Smelt exceeds 11 in three days, this Condition of Approval will restrict south Delta exports for seven consecutive days in order to maintain a seven-day average OMR index no more negative than -3,500 cfs.

Condition of Approval 8.12 (Barker Slough Pumping Plant Longfin and Delta Smelt Protection) will go into effect on Friday (January 15<sup>th</sup>) for Longfin Smelt and will be active through March 31<sup>st</sup>. If larval Longfin Smelt are detected at SLS Station 716, Barker Slough Pumping Plant will reduce exports so the maximum 7-day average is <60 cfs. CDFW is seeking clarification from their management regarding which water year type to apply to this Condition of Approval. The previous (2009) ITP for Longfin Smelt used the January index until the February index became available. In this case, the outcome is the same, but CDFW will confirm guidance to clarify the process for identifying water year type going forward.

## Current Operations & Outlook

USBR and DWR shared operations updates from the Outlook. Their observations included:

- USBR CVO stated that releases on the Sacramento River from Keswick Dam are currently at minimum flows of 3,250 cfs; they do not anticipate changes.
- American River releases from Nimbus Dam are at 1,185 cfs, and CVO does not anticipate changes.
- Releases from Goodwin Dam on the Stanislaus River are currently at 200 cfs. No modifications are anticipated in the coming week.
- CVO reported that Freeport flows will range from 7,500 to 9,500 cfs this week.
- Jones Pumping Plant exports remain at 800 cfs, though USBR is looking for opportunities for modifications.
- Delta water quality currently controls export operations.
- The Delta Cross-channel Gates are currently closed and are not expected to open for any water quality requirements this week; construction activities on the gates remain ongoing. DCC gates will remain closed until mid-May per the PA and D-1641 criteria.
- Feather River releases are at 1,250 cfs with no anticipated changes.
- Clifton Court inflows are 1,500 cfs today, down from 3,500 cfs several days ago.
- Salinity levels are anticipated to increase with incoming spring tides.

- DWR reported that Delta outflows are currently 5,000 cfs and will increase over the next few days to 6,000 cfs.
- Flows at Rio Vista are currently 6,500 cfs.
- The OMR index was -3,100 cfs as of yesterday (January 11<sup>th</sup>), and the 14-day average was -2,600 cfs. With SWP exports at 1,500 cfs, the OMR Index will increase to more positive than -2,000 cfs later this week.
- QWEST was -1,200 cfs yesterday, after ranging from -2,000 to -1,500 cfs when exports were greater. QWEST will be around 0 cfs while SWP exports are at 1,500 cfs.

USFWS asked how long DWR anticipates maintaining exports at 1,500 cfs.

- DWR noted that spring tides will peak over the next two days and then recede through next week on Tuesday or Wednesday with the onset of neap tides. The Delta is unlikely to significantly freshen without additional precipitation, and DWR does not anticipate any large export increases (perhaps 500 to 1,000 cfs).
- USFWS asked if DWR is still targeting an average Delta outflow of 5,000 to 4,500 cfs for January.
- DWR explained that the lower limit is currently 4,500 cfs because December was dry. Exports will likely continue to be guided by water quality, which requires outflows of 5,000 to 6,500 cfs, but outflows will depend on the tidal cycle.

## Review of Environmental Conditions and Survey Updates

CDFW shared survey updates.

- The first Spring Kodiak Trawl (SKT) of 2021 sampled last week (January 5<sup>th</sup> to 8<sup>th</sup>). No Delta Smelt were detected. 57 Longfin Smelt were detected, ranging from 51 to 115 mm. (Note: this catch total was updated after the meeting via email due to partial misidentification. A revised total of 11 Longfin Smelt for SKT 1 were caught at stations in Suisun Bay/Marsh and the Sacramento Deep Water Shipping Channel). This is the first double-digit Longfin Smelt catch for the SKT since 2010. Most fish were detected downstream of the confluence, though five were detected in the Sacramento Deep Water Ship Channel. CDFW distributed detailed information on the survey results to SMT members via email yesterday (January 11<sup>th</sup>).
- Smelt Larva Survey (SLS) 1 began yesterday (January 11<sup>th</sup>) and will continue sampling through tomorrow (January 13<sup>th</sup>). Ten out of the 12 stations that inform ITP Condition of Approval 8.4.2 have been processed as of today (January 12<sup>th</sup>). Longfin Smelt larvae were detected at two stations listed in 8.4.2 (six larvae at Station 809, including four with yolk sacs; two larvae at Station 812). The full survey data should be available by next Wednesday (January 20<sup>th</sup>).

DWR asked about the length of the detected larvae. CDFW will follow up on this information; typically, they do not detect fish longer than 11 mm. USFWS asked if staging information was available for the SKT Longfin Smelt. CDFW explained they do not stage Longfin Smelt in the field, as they will be doing fecundity work on those fish. CDFW can share staging information data at that time. CDFW will share information from the two remaining SLS stations relevant to 8.4.2 (901 and 906) with SMT members by the end of the day. USBR asked when SLS Survey 2 would begin and CDFW confirmed crews would start sampling on January 25<sup>th</sup>.

USFWS reported on Enhanced Delta Smelt Monitoring (EDSM) Program.

- One Delta Smelt was detected last week (January 6<sup>th</sup>) in the Sacramento Deep Water Ship Channel (fork length of 51 mm, no expression). The abundance estimate generated for last week was 1,057.
- Six Longfin Smelt were detected last week in Suisun Marsh (fork length of 59 to 82 mm, no expression).

- The Chipps Island survey crew detected two Longfin Smelt (107 and 111 mm) last week.
- EDSM crews have not yet sampled this week. Some EDSM crews may be shifted to support FCCL broodstock collection. USFWS will provide an update to SMT members on the status of EDSM sampling once a decision has been made.

CDFW provided a salvage update (January 4<sup>th</sup> to January 8<sup>th</sup>).

- No salvage of Delta Smelt, Longfin Smelt, or any listed species.
- There were no power outages or stoppage in pumping or salvage counts during this period.

USBR shared water quality data (three-station average daily water temperature as of January 11<sup>th</sup> was 9.90°C; three-day average flow at Freeport was 8,567 cfs; turbidity was 5.86 FNU) and the seven-day weather forecast for Antioch (mostly cloudy to mostly sunny, light variable W and WSW winds below 13 mph). QWEST was -1,191 cfs as of January 10<sup>th</sup>. X2 is >82 km, with estimated X2 for the Sacramento River at 92.6 km and the San Joaquin River at 94.9 km.

## PART 2: Open Discussion on Species Status (Structured-Unstructured Time)

SMT members discussed the results of the particle tracking mode (PTM) run (Appendix A).<sup>2</sup>

- CDFW observed that the base case scenario is reasonably close to current operations and will be used to inform the risk assessment. The base case scenario was an OMR Index of -2,500 to -2,700 cfs with water quality controlling operations; this is slightly more negative than anticipated OMR index values for the upcoming week.
- DWR noted that an OMR index of -5,000 cfs is not currently plausible.
- CDFW suggested using the results of the PTM to add more geological specificity to the risk assessment language. Previously, the ITP risk assessment stated that an OMR index of -5,000 cfs was sufficiently protective for fish in the lower San Joaquin River. CDFW recommended a) removing the -5,000 cfs bin this week since the Delta is not expected to freshen up enough for the OMR index to become so negative, and b) adding additional detail (i.e., landmarks, station numbers) rather than referring to the lower San Joaquin River in general. CDFW also noted that an OMR index of -5,000 cfs may be not sufficiently protective for particles injected at Station 815 (Prisoners Point). Overall, the PTM run does not suggest a high risk of entrainment for Longfin Smelt larvae at currently observed locations (809 and 812).
- CDFW asked how DWR simulated the -5,000 cfs OMR index scenario, given that the current hydrology does not allow for an OMR index of -5,000 cfs.
  - DWR explained that a PTM run could simulate an unrealistic hydrology upstream or conditions that violate D-1641. Rather than look at different hydrological conditions, DWR produces runs in which the only difference between scenarios is the OMR index.
- SMT members agreed to append the results from this and future PTM runs to the relevant assessment(s).

SMT members offered perspectives on a series of questions provided for consideration.

- *What life stages are present?*
  - USBR shared that, per USFWS, the EDSM survey classifies Delta Smelt >58 mm as adults. Therefore, the Delta Smelt detected last week would be considered a juvenile.

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<sup>2</sup>Larvae have been detected at SLS station 809 (Jersey Point) and 812, the inclusion of additional insertion points does not imply the presence of larvae.

- SMT members discussed how to classify this fish in the assessment.
  - The group agreed to document that the Delta Smelt would be categorized as a juvenile based on the EDSM size criteria, but was likely a pre-spawn adult based on the time of year.
- For Longfin Smelt, three age classes are present: adults in the spawning size range (i.e., >85 mm), subadults (<85 mm), and larvae.
- *What distribution data is available? If no data is available, what abiotic factors can predict distribution? What abiotic factors are relevant? Are conditions in Central/South Delta conducive to DS or LFS presence? Have changes in abiotic factors increased or decreased risk of entrainment?*
  - DWR suggested that a 51 mm Delta Smelt may be relatively small in comparison to previous SKT and EDSM detections and wondered if the fish might be undersized. DWR cautioned against making assumptions based on a single fish, but indicated there could be ramifications for spawning success and undersized fish might reflect poor conditions during the summer and fall.
    - CDFW agreed the Delta Smelt was relatively small, and pointed out that a single fish does not provide significant insights regarding overall distribution of Delta Smelt.
    - CDFW shared that the average size of Delta Smelt caught by the SKT in January is 65 mm, and the minimum size is between 50 and 55 mm.
  - USBR asked if the group thought this Delta Smelt, found relatively far upstream in the Sacramento Deep Water Ship Channel, might indicate movement of Delta Smelt overall.
    - DWR and CDFW suggested this fish may be a freshwater resident.
    - CDFW noted that turbidity is still low in the south Delta, first flush has not yet occurred, and water temperatures are still declining. Those three pieces of environmental information indicate conditions are not yet optimal for Delta Smelt migration.
    - DWR pointed out that only two locations in the estuary have turbidities >10 NTU: the upstream-most part of the Sacramento Deep Water Ship Channel (where the Delta Smelt was detected) and downstream of Chipps Island. Turbidity is below 5 NTU everywhere else.
    - DWR reminded SMT members that salvage of Delta Smelt still occurred last year despite no triggers being reached.
  - USBR asked the group if the Sommer et al. 2011 paper was still the most appropriate reference for historical distribution patterns at this point in the season.
    - USFWS replied that the SKT would be the best way to evaluate the historical distribution of Delta Smelt at this time of year. An unpublished analysis comparing the average upstream location of Delta Smelt detected in the SKT with the position of X2 shows a nearly flat slope line around 90 km. Additional analysis of this data for individual months could be helpful.
  - CDFW observed that the Fall Mid-Water Trawl (FMWT) typically sees a large increase in Longfin Smelt detections in December, and the SKT typically sees fewer Longfin Smelt. This year, there was no significant increase in the number of Longfin Smelt caught in December, but SKT detections thus far in January have been unusually high. CDFW proposed two scenarios that could explain this pattern: a) Longfin Smelt are staging and remaining in low salinity water or b) surveys are detecting a late migration. CDFW suggested both scenarios are likely contributing to the observed Longfin Smelt distributions, i.e., their migration may be delayed slightly, and the distribution has shifted upstream because dry conditions have increased salinity. CDFW anticipates Longfin Smelt will continue to spawn this season.

- USFWS noted that when comparing the average upstream location of Longfin Smelt detected in the SKT with the position of X2, there is a positive relationship.
- CDFW remarked that this is consistent with their understanding of Longfin Smelt distribution (i.e., the fish will track salinity except when making spawning runs to freshwater).
- CDFW also noted that a landlocked population of Longfin Smelt in Lake Washington have been observed to make spawning runs at night. Given that sampling in the Delta occurs only during the day, it is possible current surveys do not observe nighttime spawning runs.

## PART 3: Live-edit Assessments

### Proposed Action Weekly Evaluation of Delta Smelt, including Distribution, Abiotic Conditions, Risk Assessment Questions, and Executive Summary

SMT members agreed to add language to the Brood Year 2020 Biological conditions description reflecting the groups' previous discussion about the Delta Smelt detected last week: *"While categorized as a juvenile based on size, given the time of year and location, there is a high probability this individual is a freshwater resident and pre-spawn adult."*

SMT members agreed to add an additional bullet point to the Historical Trends section reflecting the earlier discussion of X2: *"The recent Delta Smelt detection in the Sacramento Deep Water Ship Channel is upstream of the confluence, but may be a freshwater resident and not representative of the migratory life history patterns in Delta Smelt (Hobbs et al. 2019)."*

The group reviewed the two relevant assessment questions: (1) Between December 1 and January 31, has any first flush condition been exceeded? And (2) Do Delta Smelt have a high risk of migration and dispersal into areas at high risk of future entrainment?

- There were no significant changes to the proposed language in the first question.
- SMT members agreed to acknowledge that the fish detected last week may be a freshwater resident and not representative of the migratory life history of Delta Smelt.

SMT members discussed the Executive Summary:

- The group agreed to remove language regarding an elevated likelihood of entrainment relative to the previous seven days due to the range of potential OMR values being more negative.
- The group agreed to retain language regarding the risk associated with seasonal timing, as risk is slightly elevated each successive week in the season.
- The group agreed to add language noting the detected Delta Smelt may be a freshwater resident.
- The group agreed to add language noting historical SKT data supports the average distribution of most Delta Smelt upstream of the confluence.

No non-consensus issues were identified. SMT members agreed to bring the potential disruption in EDSM sampling to the attention of WOMT members.

## ITP Longfin Smelt Risk Assessment

CDFW reviewed the ITP Risk Assessment, including updated language, which was largely restricted to the environmental updates, survey data, and relevant actions and triggers discussed above.

For Longfin Smelt in the central Delta, CDFW recommended removing the -5,000 cfs scenario and using only a single bin at -2,500 cfs with low risk for Delta Smelt and Longfin Smelt.

- SMT members agreed, and suggested adding language to note the anticipated OMR Index levels are sufficiently protective for Longfin Smelt.
- The group agreed that advice was not warranted.

For adult Longfin Smelt outside the central Delta (i.e., in the Sacramento River and confluence), the group agreed to the following:

- Clarify that exposure risk is based on hydrology, while routing risk is based on behavior and life history.
- Given current hydrologic conditions, exposure risk is low for both Delta Smelt and Longfin Smelt.
- Routing risk is low for Delta Smelt and moderate for Longfin Smelt. Adult Longfin Smelt may move from the confluence into the central Delta of their own volition.

CDFW reviewed updates to the Conditions of Approval descriptions and discussion.

- USFWS asked if another PTM run would be needed this week if additional Longfin Smelt larvae are detected in the south Delta.
  - CDFW suggested that if detections occurred further upstream, an additional PTM run might be beneficial. However, the current evidence indicates spawning is occurring closer to the confluence, with some larvae being transported somewhat deeper into the central Delta.
- CDFW recommended revising the discussion of Condition of Approval 8.4.2 to note that the criteria have not been met to trigger this Condition, but the SMT will reconvene if pending data triggers this Condition of Approval.
- The 5-day and 14-day OMR averages were not reported by SacPAS due to a USGS gauge outage.

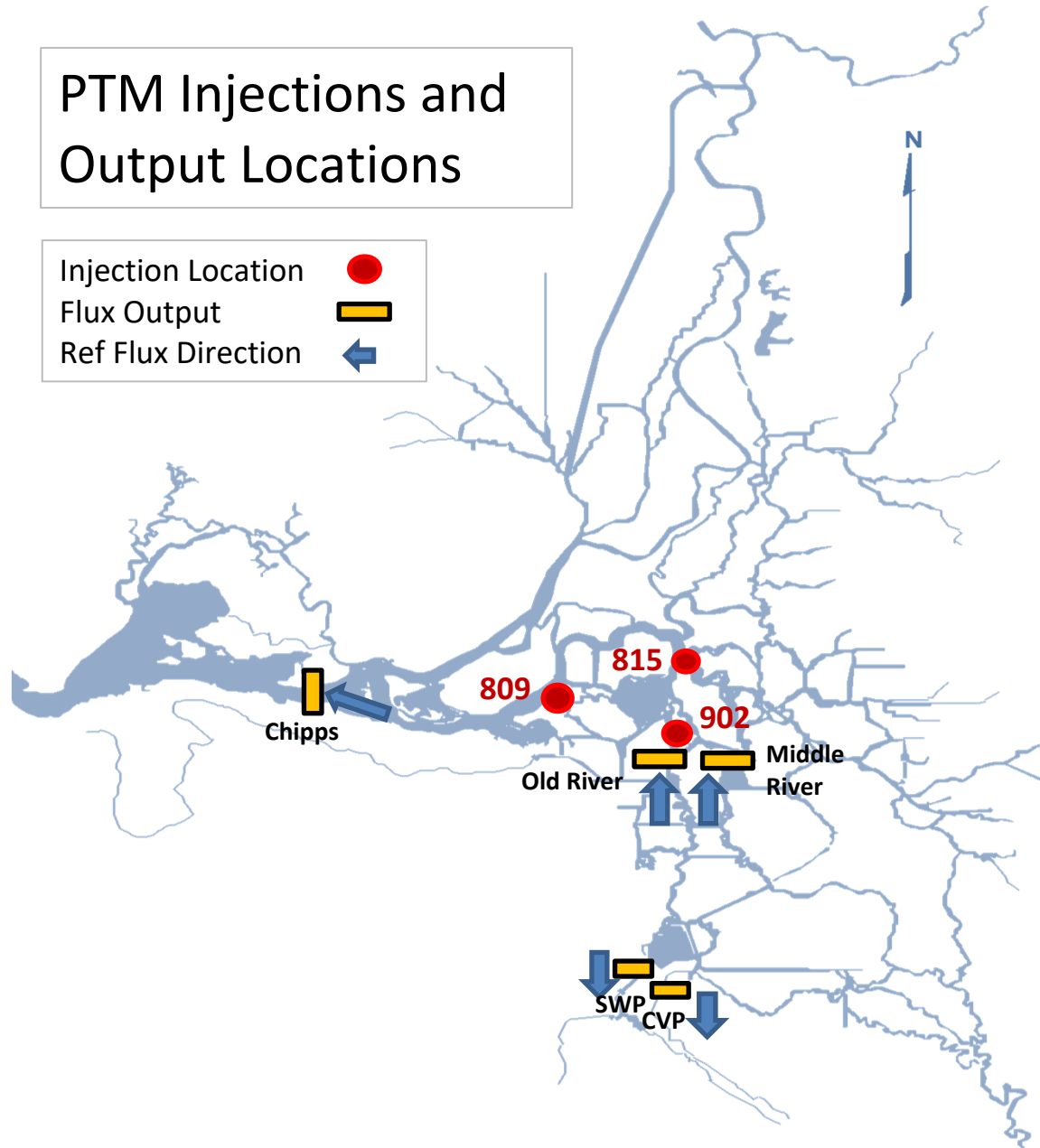
There were no items to elevate to WOMT with regards to Longfin Smelt.

## Additional Considerations/Discussion

There were no additional items for consideration.

Agencies will raise the status of EDSM sampling to WOMT members, but reported no other items for elevation.

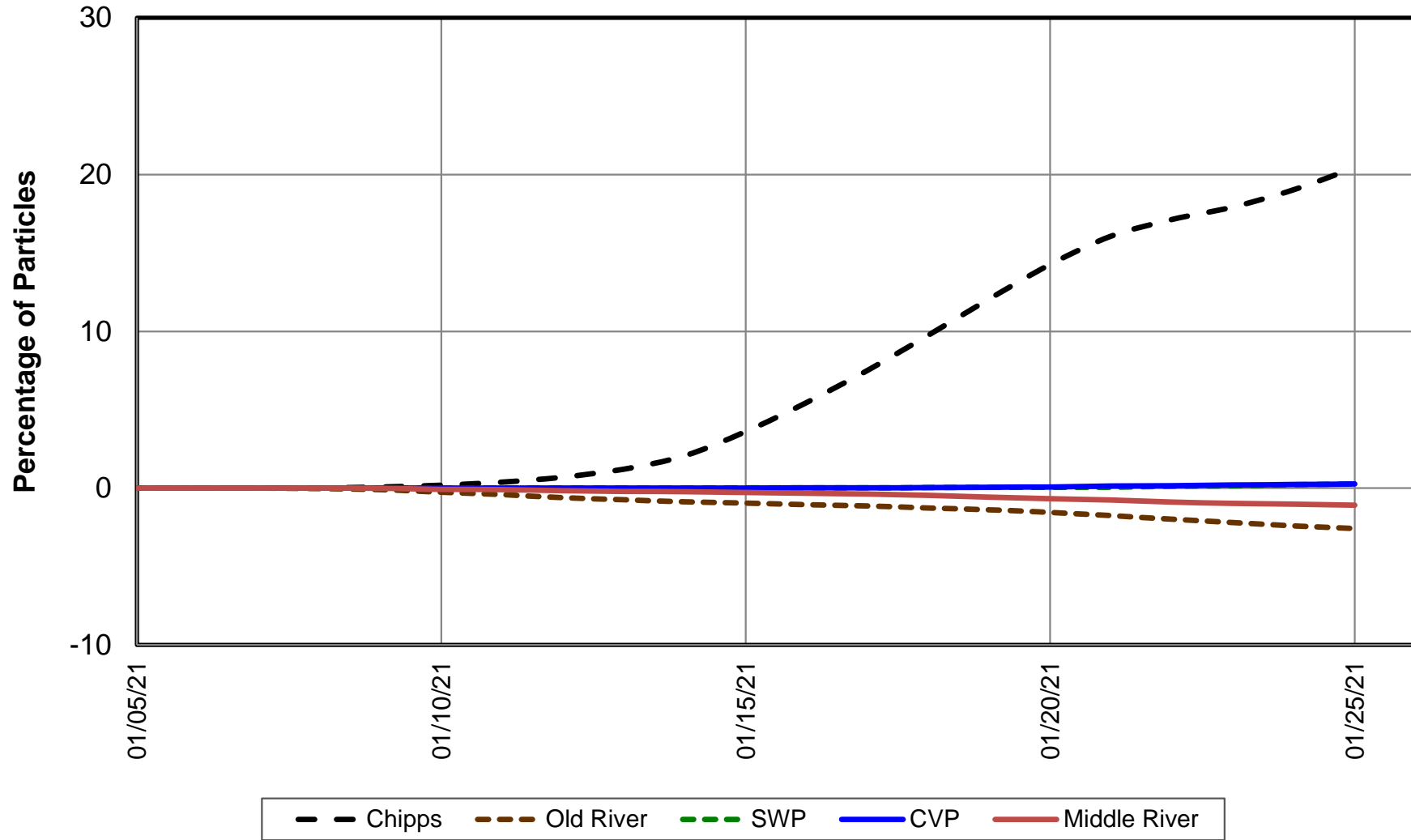
## APPENDIX A



Note: Larvae have been detected at SLS station 809 (Jersey Point) and 812, the inclusion of additional insertion points does not imply the presence of larvae.

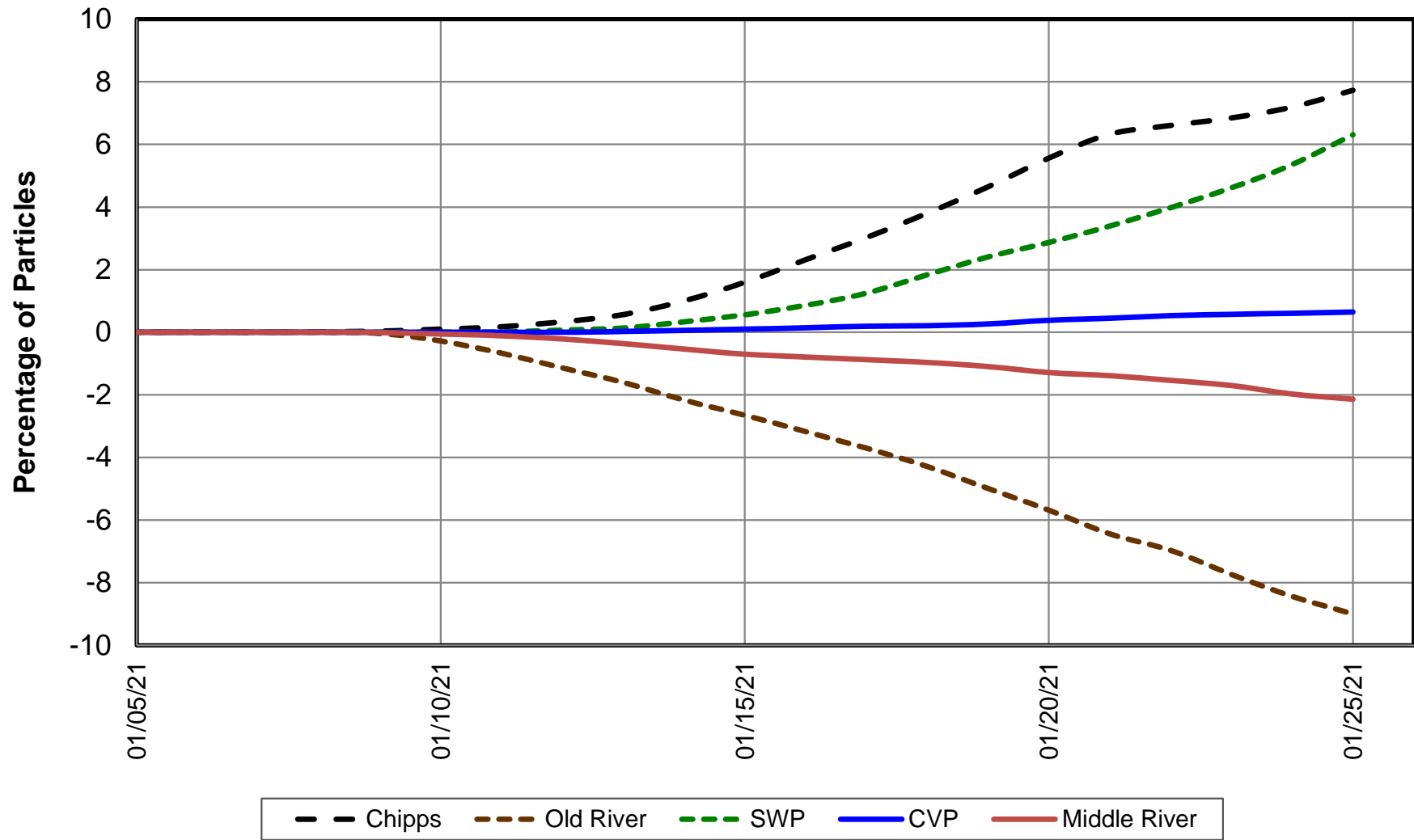


## Base Case, Particles inserted at Sampling Site 809 on 01-05-2021



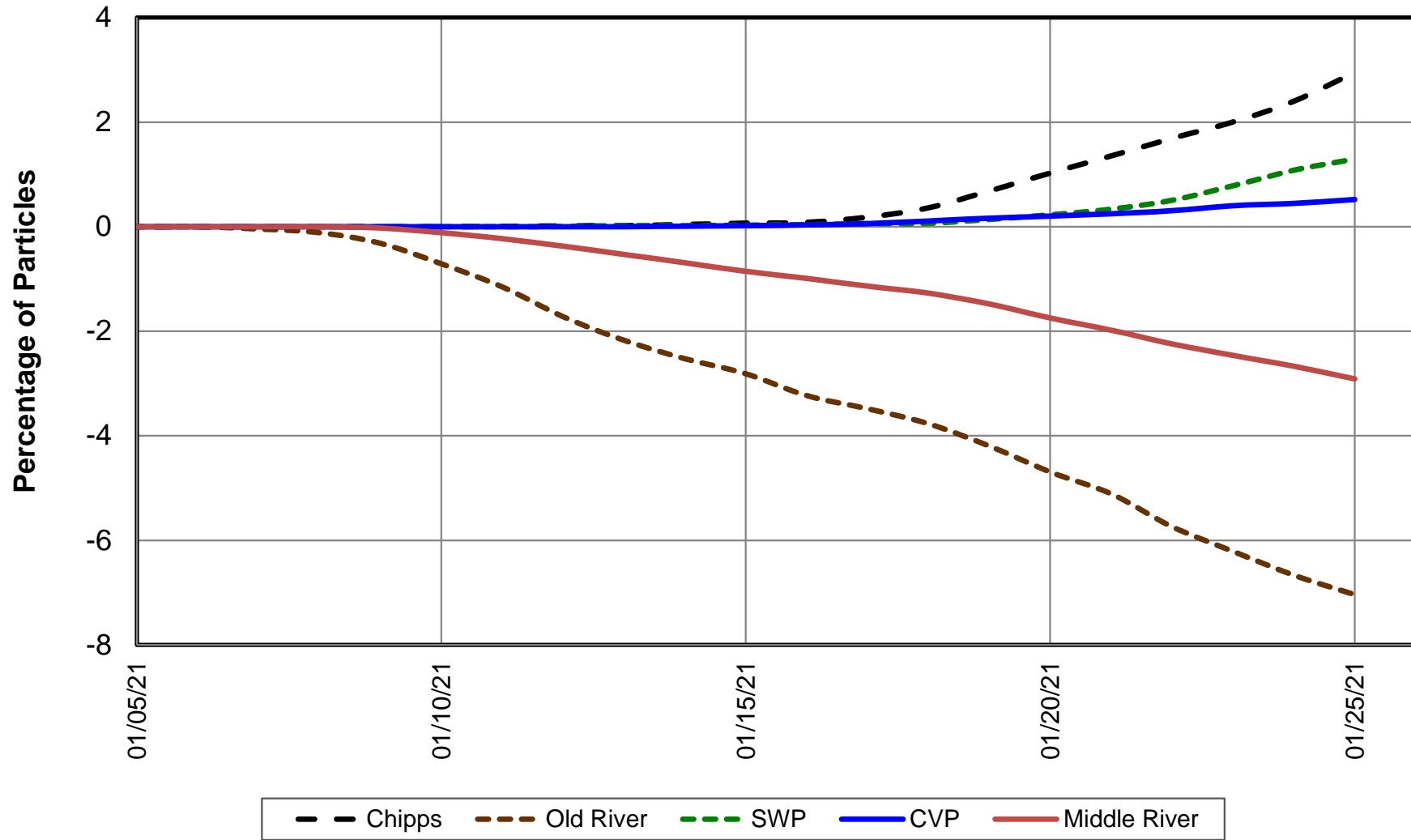
Note: Larvae have been detected at SLS station 809 (Jersey Point) and 812, the inclusion of additional insertion points does not imply the presence of larvae.

## -5000 cfs OMR Case, Particles inserted at Sampling Site 809 on 01-05-2021



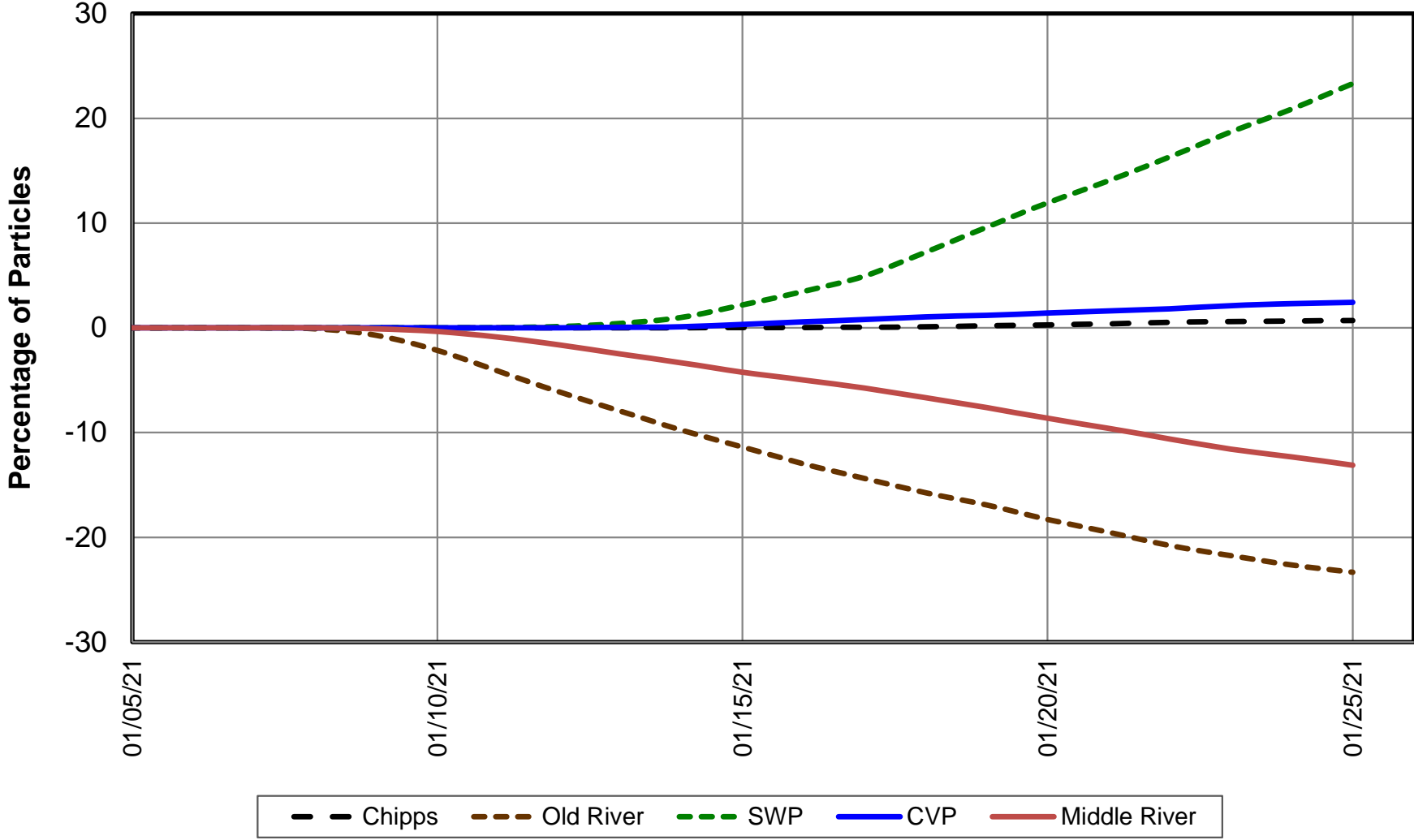
Note: Larvae have been detected at SLS station 809 (Jersey Point) and 812, the inclusion of additional insertion points does not imply the presence of larvae.

## Base Case, Particles inserted at Sampling Site 815 on 01-05-2021



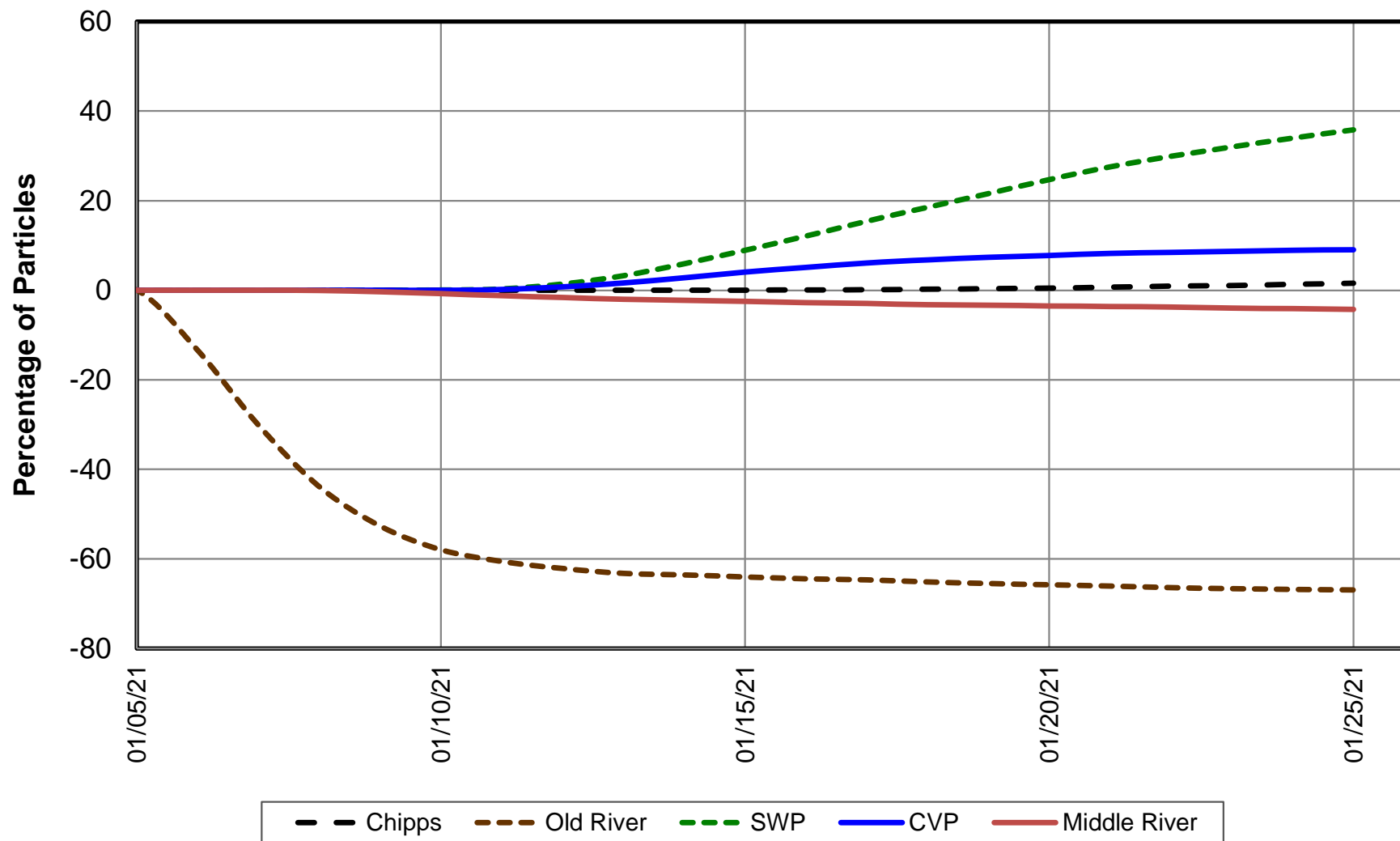
Note: Larvae have been detected at SLS station 809 (Jersey Point) and 812, the inclusion of additional insertion points does not imply the presence of larvae.

# -5000 cfs OMR Case, Particles inserted at Sampling Site 815 on 01-05-2021



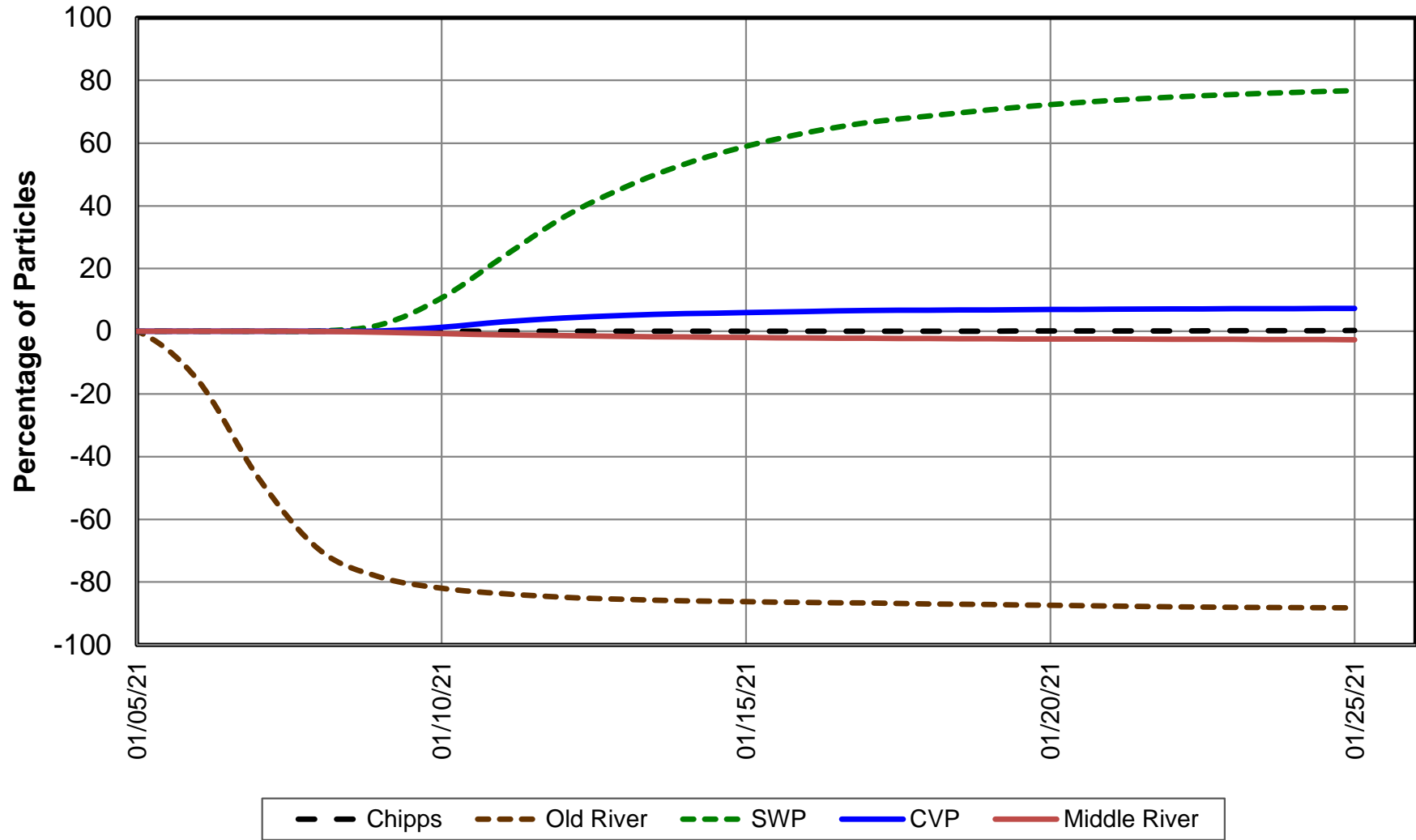
Note: Larvae have been detected at SLS station 809 (Jersey Point) and 812, the inclusion of additional insertion points does not imply the presence of larvae.

## Base Case, Particles inserted at Sampling Site 902 on 01-05-2021



Note: Larvae have been detected at SLS station 809 (Jersey Point) and 812, the inclusion of additional insertion points does not imply the presence of larvae.

## -5000 cfs OMR Case, Particles inserted at Sampling Site 902 on 01-05-2021



Note: Larvae have been detected at SLS station 809 (Jersey Point) and 812, the inclusion of additional insertion points does not imply the presence of larvae.