BUREAU OF RECLAMATION

Assessment for CVP and SWP Delta Operations on ESA and CESA-listed Species

June 23, 2025

CVP and SWP export modifications more positive than -5,000 cfs are unlikely to reduce loss or change the population level effect of exports on Delta smelt.

Executive Summary

Operational Conditions

Section 3.13.3.4.1 of the Proposed Action and Section 8.1.4. of the Incidental Take Permit provide that during Old and Middle River (OMR) Management, the California Department of Water Resources, in coordination with Reclamation, shall provide State Water Project (SWP) and Central Valley Project (CVP) operational outlooks and assessments on a weekly basis to Water Operations Management Team (WOMT).

- The June 9-12 20-mm Survey 7 South Delta Secchi depth average was 1.49 m. Turbidity is low in the Interior Delta and moderate in the Confluence area. Moderate winds early this week may increase turbidity in the interior Delta and lower San Joaquin.
- As of June 22, 7-day average Qwest was -933 cfs. Modeling shows the zone of influence by exports of -5,000 is restricted to the South Delta.

OMR season will offramp on June 30.

Delta Smelt

One juvenile Delta Smelt was detected this week in Suisun Marsh.

Operational and Regulatory Conditions

See current Weekly Fish and Water Operation Outlook document.

Biology, Distribution, and Evaluation of Delta Smelt

- Delta Smelt Life Stages:
    - Larvae, juveniles
- Brood Year 2024 Information:

    - By June 23, historical trends indicate adult Delta Smelt average salvage reaches 100% and juvenile average salvage reaches ~100% (see Delta Smelt queries at: SacPas - Salvage Timing).

- Brood Year 2025 Information:
    - One juvenile Delta Smelt was detected on June 20 in Suisun Marsh. Larvae were first detected by 20-mm survey on April 4. A total of four larval Delta Smelt have been detected this water year (Table 1). The most recent detections occurred on April 14 in the Lower San Joaquin. Larval sampling at the Skinner Fish Facility (SFF) and the Tracy Fish Collection Facility (TFCF) was completed between March 24th and May 30th. One larva was detected at TFCF on April 16. All larval detections are pending final genetic confirmation, though preliminary genetic analyses indicate that the majority of fish have maternal Wakasagi lineage.

Table 1. Summary of total Delta Smelt detections for the current water year. Notes reflect latest information on reported detections or completion of survey for the water year and include both larval and adult detections. Total fish counts do not distinguish between hatchery origin and wild Delta Smelt. Table indicates detections that have undergone preliminary ID, QA/QC, and genetic confirmation. Numbers are updated as QA/QC and genetic confirmation become available.

Survey	Frequency	Total WY 2025	Notes
EDSM	Weekly	66 Adult/1 Juvenile	Resumed 6/2/25
DJFMP Beach Seines	Biweekly	6	Ongoing
SLS	Biweekly	0	Ended on 3/13/25
20-mm	Biweekly	3	Began 3/10/25
Summer Townet	Biweekly	0	Begins: 6/9/25
Bay Study	Monthly	2	Ongoing
FMWT	Monthly	0	Not active
Chipps	Weekly	0	Ongoing
Fish Restoration Program	Periodically	1	Ongoing
FCCL Brood Stock Collections	Weekly	0	Not active
LES	As available	0	Not active
Tracy Fish Facility	Daily	5 Adult/1 Larva	Ongoing
Skinner Fish Facility	Daily	0	Ongoing
Total	N/A	85	Sum of all Delta Smelt observed during the OMR Management Season

Environmental Surrogates

Turbidity in the Delta is used as a surrogate for larval and juvenile entrainment risk in the spring. Real-time measurements of turbidity include specific fish survey station Secchi depth and broader Delta-wide turbidity measurements (FNU/NTU).

Turbidity remains low (2-4 FNU/NTU) in the OMR corridor and South Delta. As of June 22, turbidity is ~3 FNU at Holland Cut, ~3 FNU at Old River at Bacon Island, and ~4 NTU at Old River at Franks Tract. Whole-system turbidity can be visualized at Bay-Delta Live (Figure 1, Bay Delta Live). The most recent average South Delta Secchi depth (20-mm survey 7) was 1.49 m.

QWest is an estimate of net flow at Jersey Point. QWest was 1,345 cfs yesterday, with a predicted range of +900 to +1,800 cfs this week, and the 7-day QWest was -933 cfs yesterday. Rio Vista flows were 9,098 cfs as of yesterday, with a predicted range of 8,500-10,500 cfs this week.

The PA states that OMR management for smelts concludes with three consecutive days of daily mean water temperature equal to or greater than 77°F (25°C) at Clifton Court Forebay, or June 30th, whichever comes first. Temperatures at Clifton Court Forebay have ranged 22.8-24.4°C in the past week (Figure 2).

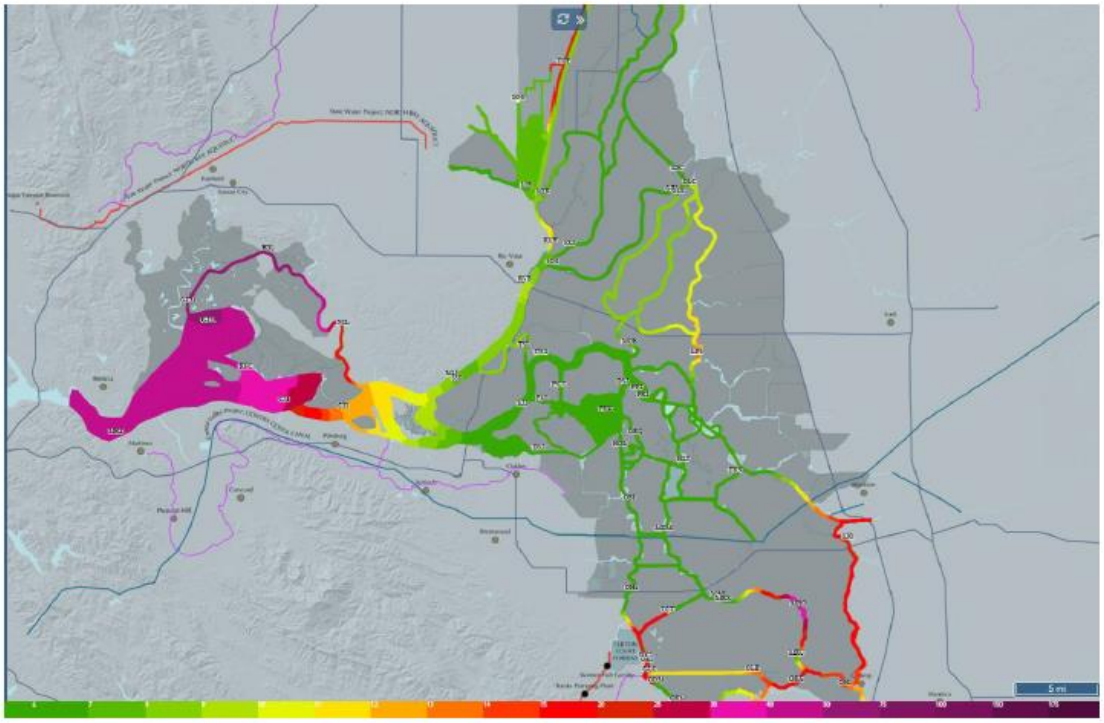

Figure 1. Turbidity conditions in the Central Delta and Confluence

Figure 1 is a color-coded map of the Bay Delta sourced from USGS continuous water monitoring stations indicating moderate turbidity conditions west of the Confluence and low turbidity in the Delta. Colors indicate the 3-day mean turbidity levels (green = lower turbidity, purple = higher turbidity) ending on June 16, 2025. Turbidity tracker can be found on Bay-Delta Live (Website for Bay Delta Live's Current Conditions - Constituent Tracker).

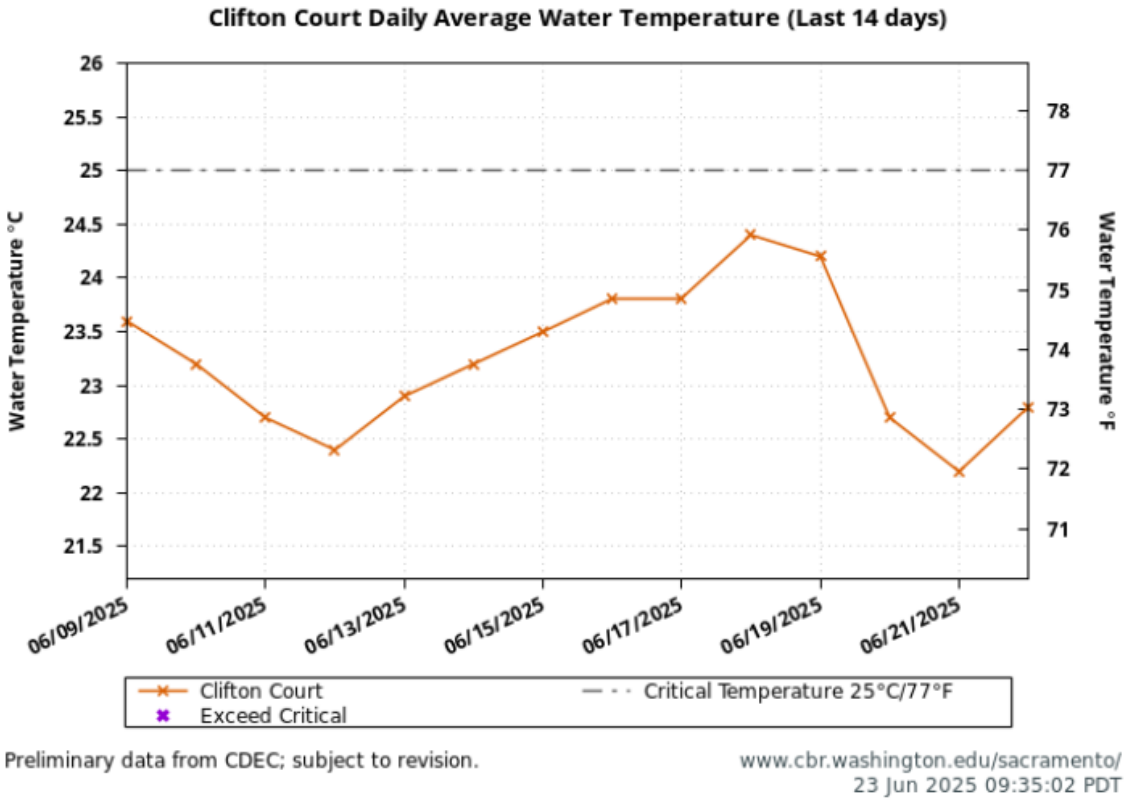

Figure 2. Clifton Court Daily Average Water Temperature (Last 14 Days)

Figure 2 is a line graph depicting the status of OMR temperature offramp criteria for smelt for the previous 14 days. The PA states that OMR management for smelts concluded with three consecutive days of daily mean water temperature equal to or greater than 77 °F (25 °C) at Clifton Court Forebay (dashed horizontal line).

Evaluation

Larvae and juveniles are expected to be present in the Delta. Environmental surrogates of larval and juvenile entrainment risk show low turbidity in the interior Delta and higher turbidity in the Confluence area and west. Moderate winds early this week in Antioch could increase turbidity in the South Delta and lower San Joaquin, but likely not enough to be of concern. QWest may trend more positive this week. The zone of the Delta influenced by exports of -5,000 cfs is restricted to the southern Delta. These conditions suggest a low risk of entrainment for larval and juvenile Delta smelt.

References

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

Attachment A: Relevant Proposed Action and Incidental Take Permit Sections

Incidental Take Permit, 8.4.1 Larval and Juvenile Delta Smelt Protection Action

To minimize entrainment and salvage of larval and juvenile DS, the Larval and Juvenile Delta Smelt Protection Action starts upon the end of the Adult Delta Smelt Entrainment Protection Action (Condition of Approval 8.3.2). Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -5,000 cfs when the average Secchi disk depth in the most recent survey is > 1 meter. The Secchi disk depth shall be calculated as the average measurement from all sampled stations on the San Joaquin River upstream of Jersey Point and stations south of the lower San Joaquin River. If the average Secchi disk depth in the most recent survey is < 1 meter, Permittee shall, in coordination with Reclamation, adjust south Delta exports to achieve a 7-day average of the OMR index no more negative than -3,500 cfs until the average Secchi disk depth has increased to > 1 meter.

Permittee shall, in coordination with Reclamation, operate to the appropriate OMR index given the latest average Secchi disk depth until the end of OMR Management (Condition of Approval 8.6).

When the daily average Sacramento River flows at Rio Vista, 50 are >55,000 cfs, or the daily average San Joaquin River flows at Vernalis are > 8,000 cfs, then the Larval and Juvenile Delta Smelt Protection Action is offramped. While offramped, Permittee shall, in coordination with Reclamation, manage south Delta exports to achieve an OMR index no more negative than -5,000 cfs on a 14-day average. Permittee shall, in coordination with Reclamation, immediately reinstate the Larval and Juvenile Delta Smelt Protection Action when either the daily average Sacramento River flows at Rio Vista is < 40,000 cfs or the daily average San Joaquin River flows at Vernalis is < 5,000 cfs.

Proposed Action 3.7.4.5 Larval and Juvenile Delta Smelt Protection Action

Larval and juvenile Delta smelt protections start upon the end of the Adult Delta Smelt Entrainment Protection Action. Reclamation and DWR will operate south Delta exports to a 7-day average of the OMR index no more negative than -5,000 cfs when the average Secchi disk depth in the most recent survey is greater than one meter. The Secchi disk depth will be calculated as the average measurement from all sampled stations on the San Joaquin River upstream of Jersey Point and stations south of the lower San Joaquin River. If the average Secchi disk depth in the most recent survey is less than 1 meter, then Reclamation and DWR will operate to a 7-day average of the OMR index no more negative than -3,500 cfs until the average Secchi depth has increased to more than 1 meter. The projects will operate to whichever of these OMR thresholds is appropriate given the latest Secchi disk depth data until the End of OMR Management Season.