



Interagency Ecological Program 2023 Work Plan Element Middle Sacramento River Juvenile Salmon and Steelhead Monitoring Project at Knights Landing

Project Manager and Affiliation

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Costs (thousands) and Funding Sources

\$301 (DWR) and \$301 (USBR)



Figure 1. Rotary screw traps on the Sacramento River at Knights Landing.

Description

The Middle Sacramento River Juvenile Salmon and Steelhead Monitoring Project at Knights Landing operates a monitoring site near the town of Knights Landing (rkm 144), consisting of paired, 8-foot rotary screw traps leashed together and anchored in river. Salmonid emigration data collected at this site provides an early warning of fish emigrating toward the Delta and allows for real-time adaptive management of CVP/SWP water operations. Monitoring begins when water temperatures decrease in the fall allowing for the safe handling of trap captured fish, usually occurring mid to late August, and will continue until the end of June, or until water temperatures increase and safe handling of trap captured fish becomes a concern. Trap catch is counted, identified to species, measured, and weighed. For salmonids specifically, data collection includes enumeration by run, life stage designation, fork length measurement and wet weight for assessing condition of individual fish.

Daily catch and environmental conditions are summarized and made publicly available on the [CalFish website](#).

Need

Recent updates to the operating criteria of the Central Valley Project, detailed in the 2019 Bureau of Reclamation Biological Assessment (BA) of the Coordinated Long-term Operation of the Central Valley Project (CVP) and State Water Project (SWP), rely on juvenile salmonid monitoring data at Knights Landing to provide an early warning of increased emigration rates of listed salmonids out of the upper Sacramento River. The real-time data provided by the program allow for data related triggers in the operation of the Delta Cross Channel gates. Daily catch data are reported to the Salmon Monitoring Team (SaMT) and are posted on the publicly accessible [CalFish website](#) for interested parties. SaMT uses catch data to advise NMFS, through the Water Operations Management Team (WOMT), of entrainment risk in CVP/SWP export facilities, the estimated proportion of juvenile salmonid populations that have entered the Sacramento-San Joaquin Delta and the data driven management triggers detailed in section 4.10.5.3 of the BA; from Oct 1 to Nov 30, if the Knights Landing Catch Index (KLCI) is greater than 3 fish.

Objectives

- Monitor and report the outmigration of juvenile salmonids from the Sacramento River as they move toward the Sacramento-San Joaquin Delta on a real-time basis
- Monitor, record and compare movements of emigrating salmonids during specific environmental conditions
- Estimate emigrating salmonid numbers and composition in the lower Sacramento River above the Delta
- Examine the influences of Sacramento River flood relief structures on emigrating juvenile salmonids

Schedule of Milestones

Daily – Catch updates are posted to the [CalFish website](#).

Monitoring will cease for the season when daily average water temperature is $\geq 70^{\circ}\text{F}$.

Traps will be removed from the water, cleaned, inspected, and repaired, if needed.

Summer 2022 – Data entry, QAQC, data analysis, and annual report writing will continue.

September/October 2022 – Traps will be returned to the river and monitoring will commence when daily average water temperatures are $\leq 70^{\circ}\text{F}$.

Summer 2023 – Data entry, QAQC, data analysis, and annual report writing.