Bureau of Reclamation
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Sacramento, Calif. 95825-1898

Field Activity Advisory
Rotary Screw Trap Monitoring to Estimate Juvenile Spring-Run Chinook Salmon Production, Survival and Emigration in the San Joaquin River Restoration Area.
October 2025 – June 2026

The Bureau of Reclamation's Fisheries and Wildlife Resources Group and the California Department of Fish and Wildlife, as part of the San Joaquin River Restoration Program (SJRRP), will perform monitoring for juvenile spring-run Chinook salmon (*Oncorhynchus tshawytscha*; Figure 1) in Reaches 1–2 of the Restoration Area from October 2025 through June 2026. This effort will estimate production, distinguish strategies for juvenile salmon emigration, estimate survival rates and spatial distribution of mortality, and determine behavioral responses of juvenile emigrants to flow management strategies (e.g., pulse flows). In addition, tissue samples collected from this effort will be further processed for genetic analyses, permitting identification of juvenile parentage and individual adult spawning success. Data collected for this multi-year study will inform SJRRP fisheries and flow management decisions and habitat rehabilitation efforts that aim to increase Chinook salmon abundance by reducing juvenile mortality/losses in a highly modified river system.

Figure 1. Juvenile Chinook Salmon captured during rotary screw trap monitoring in the San Joaquin River, CA.

Who: Bureau of Reclamation and California Department of Fish and Wildlife

Figure 2. Rotary screw trap used to capture juvenile Chinook Salmon in the San Joaquin River, CA.

What: Rotary screw traps (RST; Figure 2) are a common tool used to passively capture downstream moving fishes and will be used to monitor emigrating juvenile Chinook salmon in the SJRRP Restoration Area. RSTs have a single conical opening that splits into four large chambers funneling contents to a perforated catch box. This permits capture and maintenance of fish without causing injury or excessive stress. Traps will be checked at least once per day. Captured juvenile Chinook salmon will be measured for length and weight, assessed for life-stage and condition, and a tissue sample will be collected for DNA analyses. All other fish species will be enumerated and measured. Captured fishes will be released immediately downstream of capture locations. To derive accurate abundance estimates of salmon at each trap, it will be necessary to estimate RST efficiency at each site. Mark-recapture trials with tagged hatchery juvenile Chinook salmon will be performed to estimate trap efficiency at all sites. Trap efficiency evaluations are used to measure changes associated with variation in fish behavior (e.g., developmental changes) and environmental conditions (e.g., water quality and flow).

Where: Rotary screw traps will be deployed throughout Reach 1 and 2 of the SJRRP Restoration Area, between Mendota Dam and Friant Dam, and will be checked at least once daily. Ample boat passage will be made available, and orange buoys and flashing amber caution lights will alert river-users to in-river equipment.

When: Rotary screw traps will be installed in October and will be operated continuously through June if environmental conditions are adequate.

Considerations: Access to the locations will occur from the public right-of-way or in areas where private landowners have granted access.

Questions about this activity should be directed to the study's agency points-of-contact provided below.

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Questions about the SJRRP or Program field activities on public and private land should be directed to the Landowner Coordinator using the information provided below. Questions about the SJRRP should be directed to the Public Affairs Specialist using the information provided below.

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Contact the SJRRP Hotline, 916-978-4398, or email RestorationFlows@restoresjr.net if you see any problems or have any concerns.

For more information, please visit the SJRRP Web site at www.restoresjr.net. Field Advisories for activities are available at https://restoresjr.net/newsroom/field-advisories/