

## Field Activity Advisory California Central Valley Steelhead Monitoring Plan December 1, 2016 – April 30, 2017

The Bureau of Reclamation (Reclamation), as part of the San Joaquin River Restoration Program (SJRRP), will perform a monitoring effort to identify presence/absence of adult California Central Valley (CCV) steelhead (*Oncorhynchus mykiss*) in the Restoration Area and adjacent sloughs. The CCV steelhead (see Figure 1) is assumed extirpated from the San Joaquin River (SJR) and its sloughs upstream of the Merced River confluence due, in part, to historic management of river flows through construction and operation of Friant Dam. However, the 2016 resumption of Restoration Flows that reconnected the SJR through the Restoration Area could attract adult steelhead into the Restoration Area from December – April. Adult steelhead that access this area could be exposed to loss and would not have access to appropriate spawning habitat due to a number of impassable barriers. As a result, Reclamation developed and implemented a Steelhead Monitoring Plan (SMP) to monitor, capture, document, and transport adult CCV steelhead to suitable habitats. These activities contribute toward the SJRRP's Restoration Goal to restore and maintain fish populations within the Restoration Area. No adult CCV steelhead were discovered during studies held from 2011 to 2014.



Figure 1: Adult California Central Valley steelhead

**Who:** Bureau of Reclamation

**What:** Migrating adult steelhead are difficult to monitor using techniques commonly used for salmon (*e.g.*, carcass surveys, snorkel surveys, redd counts) due to their unique life-history traits. Steelhead, unlike salmon, may not die after spawning. Therefore, carcasses may not be available for surveys. In addition, steelhead migrate and spawn during the late-fall, winter, and spring months when rivers have periods of pulse flows, high flows (*e.g.*, flood releases), and higher water turbidities.

Two sampling methods will be implemented for the SMP:

1. Electrofishing — Electrofishing is a common method used in monitoring steelhead populations. Raft mounted electrofishing vessels will be used to stun and capture fish species in areas potentially inhabited by CCV steelhead. Sampling frequency will be monthly from January – April. Electrofishing will be conducted consistent with National Marine Fisheries Service guidelines for sampling waters with anadromous fish. As resident non-salmonid fishes are often captured multiple times, surveys will be conducted monthly to allow fish to recover from sampling and handling stress between captures.

2. **Fyke Netting** — Fyke nets with wing walls will be deployed upstream of the Merced River confluence (see Figure 2). These nets are funnel-shaped and bounded by net wing walls. They are held open by hoops and specifically constructed for capturing steelhead without inadvertently causing injury. These nets will be checked at least once a day. Ample boat passage will be made available and fluorescent flagging, orange buoys, and flashing amber caution lights will alert river-users to the nets. Fyke nets may be installed until April 30, 2017.



Figure 2: Fyke net with wing walls.

In the event that adult CCV steelhead are captured, the fish will be recorded, measured, sexed (if possible), sampled for scales and tissues, and checked for injuries and presence of tags. Fish will be T-bar tagged with a unique identification number and SJRRP contact information to document any recaptures that may occur. Captured steelhead will be transported downstream of the mouth of the Merced River, acclimated to receiving water conditions, and released.

**Where:** Steelhead monitoring activities are proposed for the area below Mendota Dam, or to the uppermost contiguous wetted section of the SJR, from the confluence with the Merced River, including the adjoining sloughs. As with surveys from 2011–2014, the initial area planned for monitoring will be the area up to the SJR confluence at the Eastside Bypass as this was considered the furthest upstream extent for CCV steelhead migration because of low water conditions and impassable upstream barriers. Additional sampling may occur up to Mendota Dam in the event Restoration Flows are sufficient to allow fish passage above the Eastside Bypass Control Structure and Sack Dam.

**When:** December 1, 2016 – April 30, 2017. Steelhead monitoring activities will occur for two continuous weeks each of the four months in Reaches 4 and 5 of the Restoration Area.

**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 provide below.

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Questions about the SJRRP’s field activities on public and private land should be directed to the SJRRP Landowner Coordinator using the information provided below.

**Craig Moyle, Landowner Coordinator**  
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**Contact the SJRRP Hotline, 916-978-4398, or email [RestorationFlows@restoresjr.net](mailto: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](http://www.restoresjr.net).  
Field Advisories for activities are available at [www.restoresjr.net/activities/field/index.html](http://www.restoresjr.net/activities/field/index.html)**