

## Field Activity Advisory California Central Valley Steelhead Monitoring Plan December 1, 2017 – April 30, 2018

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*; Figure 1) in the upper San Joaquin River (SJR) and its adjacent sloughs. CCV steelhead are believed to be extirpated from all waters upstream of the Merced-SJR confluence. However, Restoration Flows have reconnected historically desiccated river sections, and these flows could attract adult steelhead into the Restoration Area from December 2017 through April 2018. Adult steelhead accessing the SJR upstream of the Merced River confluence could be exposed to loss into sloughs and would not have access to appropriate spawning habitat due to a number of impassable barriers. As a result, Reclamation has implemented a steelhead monitoring and detection plan (SMP) for the SJR upstream of the Merced River confluence that would, in the event of a capture, document and transport the fish to suitable habitats downstream of the mouth of the Merced River.



Figure 1. Adult California Central Valley Steelhead.

**Who:** Bureau of Reclamation

**What:** CCV Steelhead Monitoring Plan is an important SJRRP study to ensure its commitment to restore and maintain fish populations within the Restoration Area. No CCV steelhead were detected or captured during past sampling periods.

However, Restoration Flows could attract adult steelhead into the Restoration Area, particularly if the flows are higher than those in the other SJR tributaries. While steelhead abundance and distribution in the SJR Basin have substantially decreased, and steelhead were extirpated from the Restoration Area following construction of Friant Dam, more favorable winter and spring water conditions may attract steelhead strays from other tributaries. Reclamation has proposed the SMP to facilitate detection of steelhead on the SJR upstream of the Merced River confluence and subsequent trapping and transport to suitable habitats downstream of the Merced River confluence.

Migrating adult steelhead are difficult to monitor using techniques commonly used (e.g., carcass surveys, snorkel surveys, redd counts) to assess salmon populations 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 which may make conditions unsuitable for monitoring using these methods.

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 December 2017 through April 2018. Capture of resident non-salmonid fishes multiple times is possible and therefore, monthly sampling is important to ensure fish recovery from



sampling and handling stress between events. Electrofishing methods will follow National Marine Fisheries Service guidelines for sampling waters with anadromous fish.

2. **Fyke traps**— Fyke nets with wing walls, or steel fyke traps, will be used to sample upstream migrating CCV steelhead. These traps are funnel-shaped and are held open by hoops and specifically constructed for capturing steelhead without inadvertently injuring fish. Traps 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 sample gear.

In the event that CCV steelhead are captured during monitoring activities, fish will be recorded, measured, sexed (if possible), sampled for scales and tissues, and checked for injuries and presence of tags. Fish will be Floy tagged with a unique identification number to document any recaptures that may occur in the study area. Captured steelhead will be transported downstream from the mouth of the Merced River in a 150-gallon fish transport tank. Transported steelhead will be acclimated in the transport tank to receiving water temperature and water quality at the predetermined release location before release.

Figure 2. Fyke nets used to capture adult California Central Valley Steelhead.

**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 adjoining sloughs. During 2011–2014 surveys, the confluence of the Eastside Bypass with the SJR was considered the furthest upstream extent for CCV steelhead migration because of low water conditions and impassable upstream barriers. Additional sampling may occur upstream of this area in the event conditions allow for fish passage past the Eastside Bypass Control Structure and Sack Dam upstream to Mendota Dam.

**When:** December 1, 2017 – April 30, 2018. Steelhead monitoring activities will occur for two continuous weeks each of the four months in 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.

**Donald Portz**  
Lead Fisheries Biologist  
SJRRP–Reclamation  
Phone: (916) 978-5461  
Email: dportz@usbr.gov

**Zak Sutphin**  
Fisheries Biologist  
Reclamation  
Phone: (303) 445-2141  
Email: zsutphin@usbr.gov

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

**Josh Newcom, Public Affairs Specialist**  
Office: 916-978-5508  
Mobile: 916-208-6862  
Email: snewcom@usbr.gov

**Craig Moyle, Landowner Coordinator**  
Office (direct line): 916-418-8248  
Mobile: 916-642-6383  
Email: craig.moyle@stantec.com

**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) or contact Josh Newcom, Public Affairs Specialist, at 916-978-5508. Field Advisories for activities are available at <http://52.53.144.83/get-involved/field-advisories/>**