

Monitoring Steelhead Populations in the San Joaquin Basin - Workshop Objectives and Regulatory Background

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Delta Science Program Public and Independent Science Workshops

The Delta Science Program provides scientific workshops as one of the ways of achieving its mission¹ to provide the best possible unbiased scientific information to inform resource decision-making in the Delta. The Delta Science Program also provides scientific workshops on topics relevant to water and resource management that may be immediately relevant to the Delta's upper watershed and downstream regions where the issue also affects the Delta or its management. The purpose of public and independent science workshops is to help guide management and inform policymaking in the Central Valley in a transparent venue. Policies and procedures for Delta Science Program workshops are described in Appendix J of the [Delta Science Plan](#). A key goal of Delta Science Program workshops is to help develop a shared understanding of the science around a given topic, based on a gathering of available information from articles, reports, and expert experience. Workshops are an opportunity for agency scientists and managers, stakeholders, and the public to discuss complex management issues and identify areas that continue to need science support.

¹ "The mission of the Delta Science Program shall be to provide the best possible unbiased scientific information to inform water and environmental decision-making in the Delta. That mission shall be carried out through funding research, synthesizing and communicating scientific information to policymakers and decision-makers, promoting independent scientific peer review, and coordinating with Delta agencies to promote science-based adaptive management." – Delta Reform Act, 2009.

Workshop Objectives

The goals for this workshop are to learn about regional steelhead monitoring programs and methodologies, assess the current status of steelhead monitoring in the California Central Valley, and to identify interagency and stakeholder partnerships needed to support a steelhead monitoring plan for the San Joaquin Basin (Plan). The workshop will help identify key gaps in science and monitoring that need to be addressed to develop a steelhead juvenile production estimate.

The workshop will provide a substantial opportunity for public participation and collaborative discussion to inform design of the Plan. This foundation will help scope the necessary research, tool development, and monitoring that must be considered in development of the Plan. To achieve these objectives, the workshop is organized around three major themes:

- Partnerships and collaborative approaches for successful steelhead monitoring
- Regional steelhead monitoring
- Methods and tools for measuring populations necessary for a juvenile production estimate

Why develop a San Joaquin Basin Steelhead Monitoring Plan?

Commitment to Advancing Steelhead Science

During the recent Federal Endangered Species Action (ESA) [consultation for the Long term Operations of the Central Valley Project and State Water Project \(LTO\)](#), it was broadly recognized by participating Federal and State agencies that there remains significant uncertainty regarding California Central Valley steelhead (steelhead) abundance, distribution, productivity and life history diversity. Federal and State agencies recognized the need to resolve these uncertainties as part of the science support for the LTO action. This workshop is a first step in identifying the science actions needed to resolve uncertainties, and to develop partnerships to support enhanced monitoring. For example, data gaps regarding juvenile production from both the San Joaquin and Sacramento basins must be addressed to fully understand the effects of water operations on steelhead and to evaluate population-level responses to restoration actions. Addressing the data gaps will also inform incidental take limits that are based on yearly population trends.

To address these data gaps and management challenges, the Bureau of Reclamation (Reclamation), the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) committed to advance the state of steelhead

science and the monitoring network for the species as part of the LTO action. This commitment requires working together and with other agencies and stakeholders to support the expansion of steelhead research and monitoring on key tributaries.

Regulatory Requirement

California Central Valley steelhead are listed as threatened under the Federal ESA. In February 2020, Reclamation signed the Record of Decision (ROD) that selected Alternative 1 (Proposed Action) to implement as the LTO action. The Proposed Action was consulted upon and analyzed in the Biological Opinions (BiOps) issued in October 2019 by the USFWS and NMFS. The BiOps authorize take of Central Valley steelhead and other ESA-listed fish species as a result of long-term operations of the Central Valley Project (CVP) and the State Water Project (SWP). The NMFS BiOp requires that Reclamation and the California Department of Water Resources (DWR) implement a program to accelerate steelhead research and monitoring to develop a juvenile production estimate and consider using these estimates to develop revised incidental take levels to scale juvenile steelhead salvage and loss to a population abundance estimate. A juvenile production estimate is the calculation of the approximate number of juvenile steelhead outmigrating from tributaries upstream of the Delta to enter the ocean. The NMFS BiOp also requires Reclamation and DWR to develop a juvenile production estimate for CVP and SWP tributaries and to coordinate with others, as necessary, to develop juvenile production estimates for tributaries to the Delta that are not part of the CVP or SWP.

Reclamation's conservation measures in the LTO Action includes an activity to coordinate with agencies participating in the Collaborate Science and Adaptive Management Program (CSAMP) to sponsor a workshop for developing a plan to monitor steelhead populations within the San Joaquin Basin and/or the San Joaquin River downstream of the confluence of the Stanislaus River, including steelhead and rainbow trout on non-project San Joaquin Basin tributaries. The Plan will identify the necessary biological and environmental data to estimate the juvenile and adult population abundance in the San Joaquin Basin and how they are affected by management actions related to stream flow enhancement, habitat restoration, and/or water export restrictions.

Reclamation's LTO Action includes a requirement for Independent Panels every four years. The monitoring program design and its utility to develop an annual steelhead juvenile production estimate and revised incidental take limits will be evaluated by the Panel. The development of a monitoring and science program for

Central Valley steelhead, along with regular independent scientific review, will support adaptive management of the CVP to support species recovery.

Target Schedule

Target Timing	Anticipated Milestone
July 2020 to February 2021	Delta Science Program-led interagency workshop planning and execution
February to August 2021	Development of workshop summary notes
August 2021	Collaborative completion of the Plan and delivery to interagency partnership.
October 2021 to September 2024	<p>Implementation of steelhead lifecycle monitoring program on Stanislaus River and a Sacramento Basin tributary that is part of the Central Valley Project (Proposed Action).</p> <p>Develop a juvenile production estimate for steelhead-producing tributaries of the CVP and SWP (NMFS BiOp).</p> <p>Coordinate with NMFS, CDFW, FWS, CSAMP and others to develop juvenile production estimates for non-CVP/SWP tributaries to the Delta (NMFS BiOp).</p> <p>Develop report for consideration of the four-year panel review (Proposed Action and NMFS BiOp).</p>
2024	Independent Review Panel evaluation on steelhead monitoring and juvenile production estimation methodology.
2025+	<p>Continuation of the Plan and use of juvenile production estimate methodology.</p> <p>Consider revising incidental take limits based on juvenile production estimates.</p> <p>Implement steelhead research and monitoring for adaptive management of the Central Valley Projects operations to protect steelhead.</p>

Linkages to Other Science and Management Objectives

Monitoring as part of the Plan will be part of California Central Valley-wide steelhead monitoring and science efforts to information juvenile production estimate calculation tools. Information from the Plan will be integrated into steelhead structured decision-making efforts to improve planning and prioritize further monitoring and science activities. The Plan will describe a science partnership necessary for understanding and achieving management objectives for steelhead that are also essential to other mandates, such as the Central Valley Project Improvement Act.