



# MONITORING STEELHEAD POPULATIONS IN THE SAN JOAQUIN BASIN

Delta Science Program | February 17-19, 2021 | 9:00 AM to 12:30 PM

**Day 1 and day 2** of the workshop will review the management challenges and monitoring framework for *Oncorhynchus mykiss* and give participants the opportunity to discuss historic and ongoing *O. mykiss* monitoring programs.

On **day 3**, participants will explore analytical approaches to measuring the impact of management actions on San Joaquin Basin steelhead, identifying what information is necessary, how to gather that information, and the spatial and temporal extent required.

*We hope that this workshop will identify collaborations and partnerships that could contribute to the future development of comprehensive monitoring of Central Valley *O. mykiss*.*

This workshop supports the [Biological Opinion on Long-Term Operation of the CVP and SWP](#) – 3.6.2, which aims to develop 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 tributaries.

## Workshop Agenda Overview

### Day 1

Management Challenges and Monitoring Framework for *O. mykiss*

- Welcome
- Presentations
- Breakout Discussions #1

### Day 2

Historic and Ongoing Steelhead Monitoring Programs in the Central Valley

- Report Out from Day 1 Breakouts
- Presentations
- Breakout Discussions #2

### Day 3

Exploring Analytical Approaches for Measuring the Impact of Management Actions

- Report Out from Day 2 Breakouts
- Presentations
- Breakout Discussion #3

# Day 1

## Management Challenges and Monitoring Framework for *O. Mykiss*

- 9:00 Welcoming Remarks** – Bruce DiGennaro, *The Essex Partnership*
- 9:05 Opening Remarks 1:** "Partnerships to enhance monitoring and science for the Central Valley's most complex salmonid" – Louise Conrad, *Delta Stewardship Council*
- 9:10 Opening Remarks 2:** "San Joaquin Basin steelhead collaborative planning and monitoring goals" – Josh Israel, *U.S. Bureau of Reclamation*
- 9:15 Opening Remarks 3:** "NMFS perspectives on the management and regulatory connection to the workshop" – Howard Brown, *National Oceanic and Atmospheric Administration*
- 9:20 Presentation 1:** "Overview of steelhead monitoring in the Columbia River Basin" – Greg Sieglitz, *National Oceanic and Atmospheric Administration*
- 9:40 Presentation 2:** "Seventy years of diminishing biocomplexity and portfolio effect strength of Central Valley hatchery *O. mykiss*" – Eric Huber, *Independent Contractor*
- 10:00 Presentation 3:** "Steelhead monitoring in the Russian River watershed: Implementation of the California Coastal Monitoring Program" – Mariska Obedzinski, *California Sea Grant* with Gregg Horton, *Sonoma Water*
- 10:20 Presentation 4:** "The genetic basis of life history variation in *O. mykiss*" – Devon Pearse, *National Oceanic and Atmospheric Administration*
- 10:40 Presentation 5:** "Life history models and key demographic parameters in steelhead" – Will Satterthwaite, *National Oceanic and Atmospheric Administration*
- 11:00 Break**
- 11:30 Breakout Discussion**
- Discussion Questions*
1. What challenges faced by out-of-basin monitoring programs are relevant to the Central Valley?
  2. How did the examples address or demonstrate challenges associated with informing management decisions and building partnerships?
  3. Who are the stakeholders for monitoring steelhead in the Central Valley?
- 12:30 Adjourn**

## Day 2

### Historic and Ongoing Steelhead Monitoring Programs in the California Central Valley

- 9:00 Welcoming Remarks** – Bruce DiGennaro, *The Essex Partnership*
- 9:05 Report out from breakout sessions** – Bruce DiGennaro, *The Essex Partnership*
- 9:20 Presentation 1:** "Upper Sacramento River tributary Central Valley steelhead monitoring" – Ryan Revnak, *California Department of Fish and Wildlife*
- 9:40 Presentation 2:** "Mark-recapture of adult steelhead populations in the lower Sacramento River" – Daniel Martinez with Jonathan Nelson and Ryon Kurth, *California Department of Fish and Wildlife*
- 10:00 Presentation 3:** "Assessing contemporary *O. mykiss* monitoring can bolster strengths and forestall gaps in future efforts" – Michael Beakes, *U.S. Bureau of Reclamation* with Robyn Bilski, *California Department of Fish and Wildlife*; Pascale Goertler, *Delta Stewardship Council*; Bryan Matthias, *U.S. Fish and Wildlife Service*; Barbara Byrne and Page Vick, *National Oceanic and Atmospheric Administration*
- 10:20 Presentation 4:** "Monitoring multiple life history pathways in Stanislaus River *O. mykiss*" – Steve Zeug, *Cramer Fish Sciences*
- 10:40 Presentation 5:** "Enumeration and sampling of steelhead in the Stanislaus River: Expected approach and anticipated challenges" – Michael Hellmair, *FishBio*
- 11:00 Break**
- 11:30 Breakout Discussion**
- Discussion Questions*
1. What are the top priorities for monitoring steelhead in the Central Valley?
  2. What information is needed given these priorities?
  3. Of the information needed, what is currently being monitored?
  4. Are there existing monitoring programs that could be modified to meet these data needs?
- 12:30 Adjourn**

# Day 3

## Exploring Analytical Approaches for Measuring the Impact of Management Actions

- 9:00 Welcoming Remarks** – Bruce DiGennaro, *The Essex Partnership*
- 9:05 Report out from breakout session** – Bruce DiGennaro, *The Essex Partnership*
- 9:20 Presentation 1:** "Adaptive Management and Structured Decision Making in the CVPIA Science Integration Team" – Megan Cook, *U.S. Fish and Wildlife Service*
- 9:40 Presentation 2:** "Estimation, modeling, and management of steelhead in California's Central Valley" – James T. Peterson, *Oregon State University* and Adam Duarte, *U.S. Forest Service*
- 10:00 Presentation 3:** "No time to lose: planning (relatively) rapid development of a JPE for spring-run Chinook Salmon" – Pete Nelson with Ted Sommer and Brett Harvey, *California Department of Water Resources*
- 10:20 Presentation 4:** "Outcomes and challenges in acoustic-telemetry monitoring of steelhead in the South Delta" – Rebecca Buchanan, *University of Washington*
- 10:40 Presentation 5:** "Otolith tools for steelhead monitoring – Age, growth, and anadromy" – Malte Willmes, *UC Santa Cruz/National Oceanic and Atmospheric Administration*
- 11:00 Break**
- 11:30 Breakout Discussion (concludes at 12:30)**
- Discussion Questions*
1. What does a balanced sampling framework for San Joaquin Basin steelhead look like given the spatial and temporal variability of *O. mykiss*?
  2. What tools are needed to make a regional monitoring plan successful?
- 12:30 Adjourn**