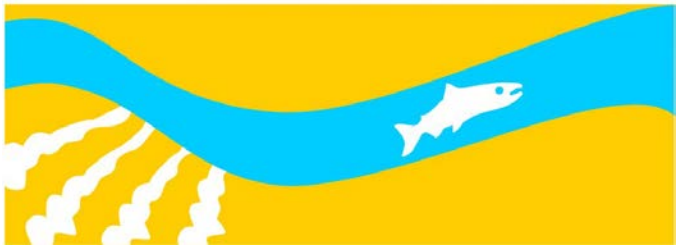
Study 25

Monitoring Cross-Section Resurveys

Public Draft
2014 Monitoring and Analysis Plan

SAN JOAQUIN RIVER
RESTORATION PROGRAM



September 2013

25.0 Monitoring Cross-Section Resurveys

25.1 Statement of Need

This study specifically addresses needs related to the San Joaquin River Channel Capacity Management Problem Statement by providing data that can be used to assess mid- and long-term changes in channel geometry and substrate characteristics in the sand-bed portions of the reach in response to the Restoration releases. The information gained from this study will be used to determine whether Restoration releases are causing systematic changes in channel geometry that could lead to a reduction in channel capacity and stability.

25.2 Background

Under both Interim Flow and full Restoration Flow conditions, the duration and magnitude of intermediate to high flows will increase substantially, compared to historical, post-Friant Dam conditions. In the sand-bed portions of a reach (particularly Reaches 2, 3, and 4), the channel may respond to these higher flows by aggrading, degrading, or showing an increase in bank erosion. Detailed data on the resulting changes in channel geometry and substrate characteristics will help identify potential channel capacity and stability problems, and will be useful in calibrating sediment transport modeling being done to predict long-term channel response.

25.3 Anticipated Outcomes

Understanding will be improved of mid- and long-term channel response in Reach 2 to Restoration releases, which will help inform future management decisions.

25.4 Methods

Methods used by DWR to conduct cross-section surveys and collect bed samples are presented in the ATR for spring 2010. Multiple samples are collected in some cross sections due to lateral variations in bed material size. Analysis of the data will involve processing the topography data into Computer-aided design (CAD) surfaces and comparing them to surfaces from previous surveys to identify significant changes and trends.

25.5 Schedule

Surveys will only be conducted in 2013 if accumulative or peak flows reach a range expected to result in significant changes in bed topography. Analytical methods, parameters for significant change, and corresponding flows will be identified from analysis of the data collected since 2009.

25.6 Deliverables

Any data collected during 2012 will be presented in the 2013 ATR which will include figures showing new topography and observed changes. Text will include a discussion of results.

25.7 Point of Contact/Agency

Dave Encinas/DWR

25.8 References

Spring 2010 SJRRP Annual Technical Report