Effect of Altered Flow Regime on Channel Morphology in Reach 1A

August 2013

SAN JOAQUIN RIVER
RESTORATION PROGRAM

Monitoring and Analysis Plan Study 26
Effect of Altered Flow Regime on Channel Morphology in Reach 1A

Status

Given the long term nature of channel change the topographic monitoring effort is ongoing.

Data Collection

Channel topography monitoring efforts did not occur during the first half of 2013. Monitoring will continue in Summer 2013 and thereafter until trends in channel change with discharge are distinguished.

Key Findings

Local to Riffle Clusters 38 and 40, RM 260.7 and 261.6, respectively, previous monitoring results indicate localized bank erosion, scour, and deposition occur at sub-1.5 annual return interval flows.

During the 2011 peak flows, more extensive bank erosion occurred at the downstream end of Ledger Island to as much 15m back and along 50m of bank. These banks are providing a sand supply to the river. Previously, this bank was not monitored but aerial photos can be used due to the significant erosion that occurred at this location. Given the significant volume of sediment supplied from this location this bank was recently surveyed and will be monitored in the future to determine sediment supply rate with discharge.

Reports and Schedule

To date, data and results have been presented in the previous Annual Technical Reports. The final report will describe a comparison of monitored bed and bank changes with 2d hydraulic model output. The final deliverable is intended to be a predictive tool for (1) estimating sand supply to specific sites of interest (e.g. spawning gravels), and (2) suggesting how the channel geometry will respond to different flow scenarios. Each of these aspects will be informative to management of the aquatic habitat within the spawning reach.

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