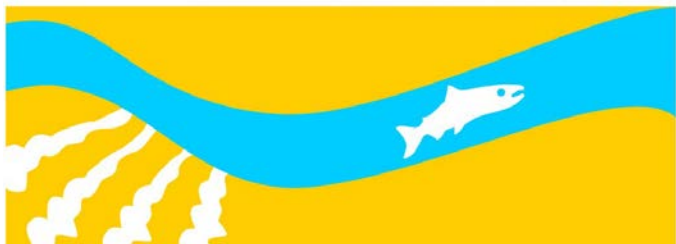


Monitoring Cross Section Resurveys

August 2013

SAN JOAQUIN RIVER
RESTORATION PROGRAM



Monitoring Cross Section Surveys (2013 MAP Study #25) 2013 Mid-year ATR Summary

1.1 Introduction / Background

This is a summary of the Channel Capacity Management study, Monitoring Cross Sections Re-surveys (See 2013 MAP) 2013 data collections and analysis. These collections expand on the monitoring plan from Mussetter Engineering (2008) by establishing topographic patches to better describe the channel and determine the needs for additional monitoring based on channel stability as a function of sediment storage. The current phase of this study involves using the survey data to estimate volume changes that have occurred. We also are attempting to use this data along with flow records to estimate sediment rates to help to define which flows are significant enough to trigger future surveys of these sites. We collected one set of survey data in March 2013 during low flows after early analysis indicated more information about changes under that flow regime would be useful.

1.2 Methods

We are processing the survey data by mapping the data points in Autodesk Civil 3D (C3D) and using the points to create topographic surfaces. The surfaces compared in C3D will create difference maps and calculate change volumes. A Technical Memo later this year will report on the analysis of the data collected between July 2009 and March 2013.

We are currently working on developing a method to estimate rates of sediment volume changes by applying both the C3D volume output and the hydrograph data for the periods between surveys to a calibrated sediment function. This will help us identify discharge magnitudes and durations that correspond to channel changes we consider significant enough to warrant future resurveys.

1.3 Results

Results are not available at this time due to incomplete processing and analysis. The Final 2013 ATR will contain data from the March 2013 surveys and a technical memo planned for later in 2013 will detail the results of further analysis of the data.

Bed Sampling (2013 MAP Study #25) 2013 Draft ATR Summary

Introduction

Data discussed in this report were collected as a part of the Channel Capacity Management study Monitoring Cross Sections Re-surveys. This monitoring task includes collecting and analyzing river bed samples in the sand-bed reach of the San Joaquin River in order to improve understanding of the sediment transport behavior of the river.

Methods

The riverbed sampling sites are located between River Mile 212 and River Mile 235. The sampling locations selected within the selected topographic monitoring sections are shown in **Figure 1**. Sampling and analysis methodologies were described in 2010 and 2011 ATRs in detail.

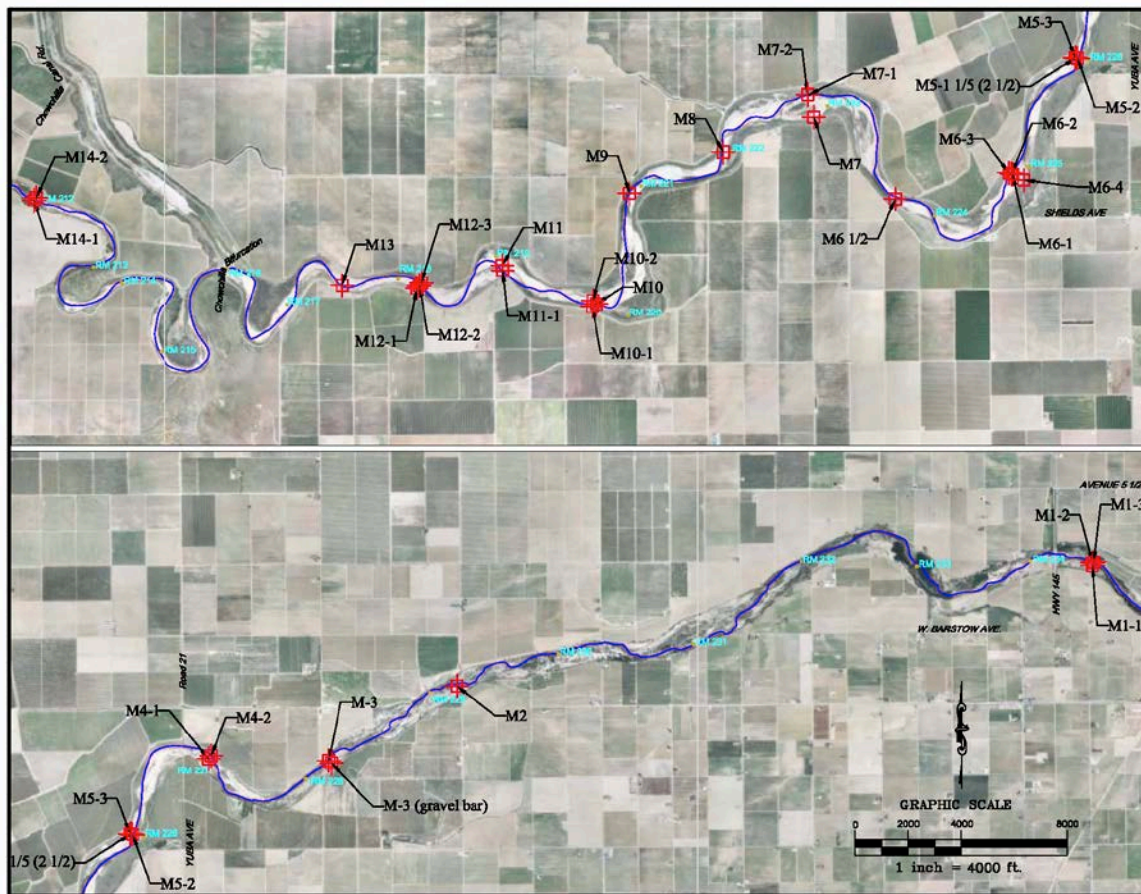


Figure 1. Sampling Location Map

Results

Channel bed samples from the topographic survey sites in Reaches 1B, 2A, and 2B were collected again in March 2013 during the cross-section surveys to evaluate the changes in the substrate characteristics after the 2012 winter flow release from Friant Dam. Bed samples were not collected in a few locations due to high water level. Samples are in the process of being analyzed and results will be reported in the final 2013 ATR.