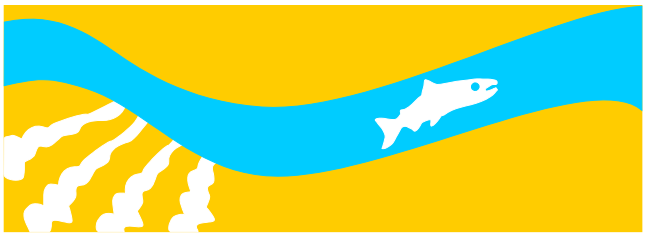
Appendix A

Studies

Public Draft
2014 Monitoring and Analysis Plan

SAN JOAQUIN RIVER
RESTORATION PROGRAM



September 2013

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1.0 Introduction

This appendix provides the studies planned for 2014 to support implementation of the San Joaquin River Restoration Program. Study results and findings are reported at the end of each year in the San Joaquin River Restoration Program Annual Technical Report. Studies planned for 2013 are prioritized to support decisions on program actions, described in the Stipulation of Settlement in *NRDC, et al., v. Kirk Rodgers, et al*, Public Law 111-11, environmental compliance, and general Settlement implementation, as recommended by the Restoration Administrator. Each study defines a process and provides rationale for identifying the types of information needed to support San Joaquin River Restoration Program decisions and actions, including actions such as modeling, monitoring, and analysis activities. Studies are developed with input from the Implementing Agencies (the U.S. Department of the Interior, Bureau of Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Water Resources, and California Department of Fish and Game), Restoration Administrator, stakeholders, and other technical specialists to define appropriate data requirements and study methods including both scope and accuracy of the study plans, to support decisions, and appropriate monitoring and/or analysis required to obtain the data.

The Monitoring and Analysis Plan also presents long- and short-term studies that may be implemented in response to information needs identified in resource-specific Monitoring and Management Plans. The current role of the Monitoring and Management Plans is to identify information needs and describe specific knowledge gaps to be addressed through monitoring and studies. The Monitoring and Management Plans are intended to track long-term implementation approaches. The studies presented in this Monitoring and Analysis Plan are planned for 2014 and will be reported in the annual reporting update. Site-specific project and agency actions will be described further based on their current status in the 2014 annual reporting update in January 2015.

Each study in this appendix is provided as a separate attachment. Table A-1-1 lists the 2014 Monitoring and Analysis Plan studies.

Table A-1-1.
Studies in the 2013 and 2014 Monitoring and Analysis Plans

Study Number	Study	Contact
1	Flow Gage Record Analysis	Katrina Harrison, Reclamation
2	Lateral Gradient of Water Table	Katrina Harrison, Reclamation
3	Changes in Soil Salinity Conditions Resulting from Interim Flows	Katrina Harrison, Reclamation
4	Influence of Paleochannels on Seepage	Katrina Harrison, Reclamation / Matt Burgess, USGS
5	Temperature Monitoring of the Cold Water Pool in Millerton Lake	Tracy Vermeyen, Reclamation
6	Trap and Haul of Adult Fall-Run Chinook	Matt Bigelow, DFW / Don Portz, Reclamation / Zac Jackson, USFWS
7	Juvenile Salmon Holding	Zac Jackson, USFWS / Paul Adelizi, DFW / Matt Bigelow, DFW
8	Egg Survival and Emergence in Reaches 1A and 1B of the San Joaquin River	Michelle Workman, USFWS
9	Fish Assemblage Inventory and Monitoring	Michelle Workman, USFWS / Don Portz, Reclamation
10	Juvenile Survival and Migration	Michelle Workman, USFWS / Paul Adelizi. DFW / Matt Bigelow, DFW
11	Assessment of Predator Abundance and Distribution in Mine Pit Habitat in the San Joaquin River Restoration Area	Michelle Workman, USFWS
12	Fall-Run Captive Rearing Study	Paul Adelizi, DFW
13	Levee Geotechnical Exploration	Greg Farley, DWR
14	Central Valley Steelhead Monitoring Plan	Don Portz, Reclamation
15	San Joaquin River PIT Tag Monitoring and Site-Specific Technology Development	Don Portz, Reclamation / Michelle Workman, USFWS
16	Floodplain Quality	Elaina Gordon, Reclamation
17	Bed Material Data Processing and Evaluation	Elaina Gordon, Reclamation
18	Continuous Surrogate Measurement of Bedload Sediment Transport using Hydrophone Installations on the San Joaquin River	Mathieu Marineau, USGS / J. Toby Minear, USGS / Scott A. Wright, USGS

Table A-1-1.
Studies in the 2013 and 2014 Monitoring and Analysis Plans (contd.)

Study Number	Study	Contact
19	Two-Dimensional Temperature Modeling of Gravel Pits in Reach 1A	Elaina Gordon, Reclamation
20	Adult Passage	Amanda Peisch-Derby, DWR
21	USGS Sediment Monitoring	Al Caldwell, USGS
22	USGS San Joaquin River Tributary Sediment and Geomorphology Study	Scott Wright, USGS / Toby Minear, USGS
23	Vegetation Monitoring	Greg Reed, Reclamation
24	Additional Water Level Recorders	Dave Encinas, DWR
25	Monitoring Cross-Section Resurveys	Dave Encinas, DWR
26	Effect of Altered Flow Regime on Channel Morphology in Reach 1A	Matthew Meyers, DWR
27	Effect of Scour and Deposition on Incubation Habitat in Reach 1A	Matthew Meyers, DWR
28	Reach 1A Spawning Area Bed Mobility	Matthew Meyers, DWR
29	Thermal Conditions in Riverine Pools	Katrina Harrison, Reclamation
New Studies in 2014		
30	San Joaquin River Spawning Habitat Assessment – Incubation Environment	Andy Shriver, Reclamation/ Matthew Meyers, DWR / Erica Meyers, DFW
31	The Effects of a Riparian Forest on Water Temperatures in the Restoration Area	Katrina Harrison, Reclamation / Erica Meyers, DFW / Carl Mesick, USFWS / Michelle Workman, USFWS / Beth Wrege, NMFS
32	Salmon Simulator (SalSim) for the SJRRP	Erica Meyers, Dean Marston, Dale Stanton, CDFW; Carl Mesick USFWS; Beth Wrege, NMFS
33	Reducing Spring Water Temperatures below Sack Dam	Katrina Harrison, Reclamation / Erica Meyers, DFW / Carl Mesick, USFWS / Beth Wrege, NMFS
34	Juvenile Chinook Salmon Migration and Survival in Mendota Pool and Sack Dam	Don Portz, Reclamation / Charles Hueth, Reclamation

Table A-1-1.
Studies in the 2013 and 2014 Monitoring and Analysis Plans (contd.)

Study Number	Study	Contact
35	Floodplain Production Study	Erin Rice, Reclamation
36	Segregation Weir – Placement, Monitoring and Objective	Michelle Workman, USFWS / Matt Bigelow, DFW / Sierra Franks, NMFS
37	SRH Group Facies Mapping	Blair Greimann, Reclamation / Katrina Harrison, Reclamation
38	SRH Group Vegetation Roughness Effects in SJRRP-Affected Reaches	Blair Greimann, Reclamation
39	SRH Group Hydraulic and Sediment Transport Analysis of Juvenile Salmon Rearing Opportunities	Blair Greimann, Reclamation
40	SRH Group Spawning Habitat Framework	Blair Greimann, Reclamation
41	USGS Seepage Management Plan Support	Erin Rice, Reclamation
42	USGS Assessment of Water Quality Data with Respect to Fish	Marissa Wulff, USGS
43	USGS Non-Structural Fish Passage	Erin Rice, Reclamation
44	USGS Fish Passage Design Criteria Technical Memoranda	Erin Rice, Reclamation
45	Rotary Screw Trap Monitoring	Matt Bigelow, DFW / Pat Ferguson, DFW / Michelle Workman, USFWS
46	Donor Stock Monitoring	Zac Jackson, USFWS
47	Spring Run Spawning Habitat Assessment –Sediment Mobility	Matthew Meyers, DWR
48	Remote Sensing Applications to Estimate Changes in Riparian Vegetation	Erin Rice, Reclamation

Key:
2D = two-dimensional
DFW = California Department of Fish and Wildlife
DWR = California Department of Water Resources
MAP = Monitoring and Analysis Plan
MYTR = Mid-Year Technical Report
Reclamation = U.S. Department of the Interior, Bureau of Reclamation
SRH = Sedimentation and River Hydraulics
USFWS = U.S. Fish and Wildlife Service
USGS = U.S. Geological Survey