# 2021 Channel Profile Report: Salt River Ecosystem Restoration Project

Phase Two- Year 2021

January 2022

Humboldt County Resource Conservation

## INTRODUCTION

Restoration of Phase 2 of the Salt River Ecosystem Restoration Project (SRERP) began in 2014 and is currently being implemented in stages. The phase two project area includes the Salt River corridor upstream of Riverside Ranch, as well as three tributaries that drain from the Wildcat Range into the main stem of the Salt River (Williams Creek, Francis Creek, and Reas Creek). One of the primary objectives of the larger SRERP is to re-establish a defined channel and riparian corridor to restore historic processes and functions in the Salt River watershed (GEC 2011). Over 750,000 cubic yards of sediment will ultimately be removed from the basin and a new anabranching river system is being engineered along the original channel to increase sediment conveyance and facilitate fluvial interactions with the floodplain (Harvey & Associates 2012). In compliance with the SRERP Adaptive Management Plan, cross-sectional surveys and a longitudinal profile survey are annually conducted in the phase two project area to describe areas of erosion or deposition, deviations from restorations designs, and changes in channel planform over time. However, in 2021, no elevational surveys were performed. Instead, observational surveys were completed for the entirety of the Phase 2 channel corridor.

## METHODS

In the previous four years, channel monitoring consisted of performing elevational surveys at four established cross-sections and within the entire 3.5 mile length of the Phase 2 channel by an experienced surveyor or engineer. However, in 2021, due to funding constraints and limited

availability and interest by surveyors and engineers, elevational surveys were not performed. As a substitute for these surveys, three Humboldt County Resource Conservation District staff members and landowners walked the entire length of the Phase 2 channel to observe and determine geomorphic conditions in the channel corridor.

These channel walks took place in April and June of 2021. On April 28, 2021, the observational team started at the uppermost end of the 2019 constructed Salt River footprint (near the HWY 211 overpass) and ended near the Sediment Management Area at the confluence of Francis Creek and Salt River. The channel was dry or contained very little water. On June 14, 2021, the observation team began observations at the Sediment Management Area and ended at the confluence of Reas Creek and Salt River. The channel in this reach had minimal water above the tidal influenced area, while tidal waters were shallow in the channel below Dillon Road Bridge. Observers looked for evidence of bank erosion and significant channel deposition. Downed wood from fallen trees and significant branches growing into the channel were noted. Herbaceous and woody vegetation were also noted in the channel and across the channel's associated floodplains. Photos were taken at locations where potential management and maintenance may be needed.

## RESULTS

Established reaches of the Salt River channel (below the confluence of Francis Creek) were seen to have a channel bottom with a naturally formed thalweg, some undercut banks, and vegetated banks. The Salt River channel above the Francis Creek confluence is retaining its constructed channel trapezoidal geometry. Further observations gathered during the entire channel walk did not indicate substantial changes in the channel geometry from previous surveys. No new bank slumping, erosion, scour, or deposition were observed in or along the channel.

Some beds of cattail (*Typha sp.*) were noted in the channel between the Sediment Management Area and Dillon Road Bridge (Figure 1). This area could slow down water flow, causing deposition within the river channel. It was noted that sections of the channel that had a closed riparian canopy and/or tidal influence did not contain in-channel vegetation. Further vegetation concerns regard large arroyo willow branches growing down and across the channel. Multiple areas within 100 to 400 meters upstream of the Sediment Management Area showed accumulated wood debris amongst the willow branches (Figure 2). However, no apparent channel erosion was observed in the immediate area.


Figure 1. Cattails growing in Salt River channel approximately 100 meters upstream of Dillon Road Bridge.


Figure 2. Accumulated wood debris in Salt River channel approximately 400 meters above the confluence with Francis Creek-Sediment Management Area.

Some deposition immediately upstream and downstream in the Salt River channel at the confluence of the Salt River and the Sediment Management Area was observed. Deposition in this area is usual when the Sediment Management Area is nearing capacity.

## DISCUSSION

In-channel vegetation, such as the cattails, should be observed following the 2021/22 winter to determine if the beds persisted after higher winter flows. Maintenance of the in-channel vegetation may need to be addressed by removal if the vegetation persists and/or spreads.

Accumulated wood debris due to willow branches growing into the channel merit removal or close observation after the winter period to determine if excessive scour or river flanking is occurring.

Deposition of sediments at the confluence of the Salt River and the Sediment Management Area needs to be addressed in the coming year. It is the intention that the Sediment Management Area will be excavated in the summer and fall of 2022, where excavation will also address the sediment deposition in the Salt River channel immediately surrounding the Sediment Management Area.

Otherwise, the observational survey did not find apparent geomorphic anomalies or concerns. Previous surveys indicate the lower, tidally influenced, reaches of the channel tend to be experiencing channel bed lowering (scour and erosion) with some lateral movement of the

banks while the upper reaches appear to be more stable and is remaining consistent with construction designs. This is consistent with the 2021 observational survey.

LITERATURE CITED

GEC (Grassetti Environmental Consulting). 2011. “Final environmental impact report: Salt River ecosystem restoration project.” SCH# SD2007-05-6 Accessed November 2017 http://humboldtrcd.org/index_files/salt_river_ecosystem_restoration_project.htm

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