

# Restoring Stream Flow and Fish Passage on the Eel River Delta

## HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT (RCD)



### COMPLETION DATE

February 28, 2018

### STATEMENT OF THE PROBLEM

Francis Creek is a second order stream that historically supported steelhead and coastal cutthroat trout as well as coho salmon. Currently its lower reach, including its confluence with Salt River, is severely restricted by clogged culverts, sediment build-up, invasive vegetation, and debris. This creates a barrier to fish passage and backs rain and storm waters onto productive agricultural land, and floods roads, residences, and city, county and private infrastructure. Habitat conditions are currently highly degraded, farmland surrounding the project area is negatively impacted by repeated flooding and long periods of standing water, and flooding and silt annually closes a section of County road necessary for ingress and egress.

### PROJECT GOALS

- Alleviation of flood events
- Habitat restoration to improve fish passage and water quality for salmonid habitat
- Water quality improvement through sediment removal
- Agricultural sustainability

### THE SOLUTION

The project purpose is to restore habitat, hydrologic function and connectivity between Francis Creek, Salt River, and the Eel River Estuary as part of a multi-phase, watershed-scale restoration, known as the Salt River Ecosystem Restoration Project.

### PROJECT IMPLEMENTATION

Project implementation has been ongoing since June 2016. Initial and long term monitoring of the Francis Creek Project is outlined in the Salt River Ecosystem Restoration Project Adaptive Management Plan. Annual spot water quality parameter measurements will be taken at one site within the Francis Creek reach using a multi-parameter hand held meter. One Cross-sectional survey sites will be established on Francis Creek channel and annual surveys will determine whether channel erosion or siltation stays within a +/-10% threshold. The sediment management area will be observationally inspected after each 1-Year storm event and formally inspected annually to determine when capacity reaches 25% reduction.

### PROJECT BUDGET

|                  |                   |
|------------------|-------------------|
| IRWM funds:      | \$ 187,869        |
| Leveraged funds: | \$ 146,179        |
| <b>TOTAL</b>     | <b>\$ 334,048</b> |

### BENEFITS

#### Economic benefits

- Approximately \$2,607,840 annually in increased instream flow for environmental beneficial uses
- At least \$15,000 per year (the costs of Port Kenyon Road cleanup after flooding) for avoided costs of flooding; other costs to the County or private individuals have not been included
- Approximately \$84,000 per year in avoided costs associated with sedimentation

#### Water Quality

- Improved water quality through prevention of 14,000 tons of sediment deposition per year

#### Habitat and Ecosystem function benefits

- Increased instream flow of about 21,732 acre-feet per year to benefit aquatic habitat
- Species protection of five listed species: Chinook (*Oncorhynchus tshawytscha*), coho (*Oncorhynchus kisutch*), steelhead (*Oncorhynchus mykiss*), tidewater goby (*Eucyclogobius newberryi*) and longfin smelt (*Spirinchus thaleichthys*) through habitat and fish passage improvement

#### Cultural benefits

- Improved community resiliency to flooding events associated with climate change

#### Jobs and Local Economic Benefits

- Over \$330,000 spent locally on local supplies and labor when possible
- Approximately 5-6 jobs created/maintained during the duration of the project

### NEXT STEPS

Work is continuing upstream each year and, when complete, the Salt River Ecosystem Restoration Project (of which this project is one component) will have 1) restored approximately 7 miles of river channel and riparian floodplain, 2) re-connected 3 main tributaries, 3) implemented numerous projects on private land to control erosion, reduce sediment, enhance riparian habitat and improve water quality; 4) restored and enhanced approximately 600 acres of fish and wildlife habitat, including tidal marsh, aquatic areas, mudflats, freshwater wetlands, riparian forest, and grassland; and 5) improved drainage and reduced flood damage; thereby enhancing agricultural productivity on more than 800 acres in the project vicinity and reducing economic losses.

#### CONTACT

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