

## Final Report: South Fork Bear Creek Culvert Removal for Fish Passage

**Grant Number:** P0710522

**Project Name:** South Fork Bear Creek Culvert Removal for Fish Passage

**Geographic Area:** Mattole River watershed

**Location of Work:**

This project is located in the headwaters of the Mattole River Watershed within the South Fork Bear Creek sub-shed. It is within the King Range National Conservation Area owned by the Bureau of Land Management. The road crossing is on a county road maintained by the Humboldt County Department of Public Works. It is located approximately 0.4 miles south-east from the Chemise Mountain Road intersection with the Shelter Cove Road.

Please see the attached topographic map for further details.

**Geospatial Reference/Location:**

See enclosed table.

**Project start and end dates and the number of person hours expended:**

This contract was active since June 1, 2008 and was completed by October 24, 2008. 80\* person hours were expended to complete this project. The following breaks down project costs by funding sources.

	DFG	Matching Funds**	TOTAL
<b>PERSONNEL SERVICES</b>			
Project Manager	\$320	\$1,354	\$1,674
Supervisor/Coordinator	\$960	\$1,840	\$2,800
Laborers	\$1,040	\$2,688	\$3,728
Benefits @ 40%	\$928		\$928
<b>Total Personnel Services</b>	<b>\$3,248</b>	<b>\$5,882</b>	<b>\$9,130</b>
<b>OPERATING EXPENSES</b>			
Subcontracting	\$14,459	\$42,750	\$57,209
Rip Rap Rock	\$600	\$1,400	\$2,000
Road Rock	\$200	\$12,940	\$13,140
Stream Crossing Structure	\$20,000.00	\$35,598.40	\$55,598.40
Bypass Bridge Rent/Installation		\$12,500	\$12,500
<b>Total Operating</b>	<b>\$35,259</b>	<b>\$105,188.40</b>	<b>\$140,447.40</b>
Subtotal	\$38,507	\$111,070.40	\$149,577.40
Administrative Overhead	\$3,851		\$3,851
<b>Total Project Costs</b>	<b>\$42,358</b>	<b>\$111,070.40</b>	<b>\$153,428.40</b>

\*Matching Hours = 153 \*\*Matching Funds were provided by: Humboldt County Department of Public Works, SWRCB and USFWS

**Expected benefits to anadromous salmonids from the project:** The goal of the project was to open approximately 1.9 miles of spawning and rearing habitat for salmonid species through fish passage barrier removal. By completing these goals the geomorphology and

riparian health of the watershed will be improved, directly benefiting aquatic species throughout the headwaters of the Mattole River Watershed. The main beneficiaries are Coho salmon, Chinook salmon, and Steelhead. Treatments will decrease sediment delivery to spawning and rearing grounds and reduce summertime water temperatures, also allowing access to existing high quality habitat through barrier removal. The South Fork of Bear Creek has some of the best habitat in the Mattole and actually has higher flows in the summer than the Mattole River does.

In addition to salmonids, Pacific Lamprey, Green Sturgeon, Foothill Yellow-Legged Frog, Northern Red-Legged Frog, Tailed Frog, and Southern Torrent Salamander will all benefit from improved hydrologic and riparian conditions from headwaters to estuary.

By reducing upslope sediment production generated from roads and stream crossings, sediment yield into Van Auken, Ravasoni, Harris, Stanley and Ancestor Creek sub-basins as well as the Mattole River will be reduced overtime. This will result in long term benefits to anadromous salmonids by reducing the sediment that fills in pools and embeds into the spawning substrate.

**Label before and after photographs of any restoration activities and techniques:**

Enclosed on CD and printed.

**Specific project access using public and private roads and trails, with landowner name and address:**

Bureau of Land Management  
1695 Heindon Road  
Arcata, CA 95521  
(707) 825-2315  
APN: 108-084-007

**Complete as build project description:**

The Mattole Restoration Council installed a bypass bridge upstream of the current crossing due to the high volumes of traffic at this location. California Department of Fish and Game personnel removed all of the aquatic species from the work site and set up temporary dams upstream and downstream of the work site. An excavator operator removed the failing double culverts which were 48" and 36" in diameter as well as the associated fill and tires. A Contec aluminum box culvert was bolted together right next to the crossing. This culvert is 21'2" wide, rising 8'10" high and stretching 48' long. The channel was excavated to the appropriate depth and then backing rock was placed in the channel. The culvert was set into place within the channel. Native gravels were backfilled inside the culvert and compacted. The gravel is 3' high so that the bottom of the structure will never be exposed. An excavator operator backfilled the streambanks in 1' lifts and used a vibratory compactor on each lift for optimal compaction. We placed rip rap along the streambanks upstream and downstream of the structure as well as surrounding the culvert inlet and outlet. A bay tree was placed in the channel downstream of the crossing in hopes of creating a pool and shade for salmon. The road was shaped so that it will drain properly and paved. Any disturbed soil was seeded and mulched with sterile rice straw.

**Report measurable metric for the project by responding to the restoration project metrics listed below**

**Habitat Project: (all)**

**Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority:** Bear Creek Sediment Assessment Report

**Name the priority habitat limiting factors identified in that plan that are addressed by the project:** Excessive sediment yield and salmonid migration impedance

**Type of monitoring included in the project:** California Department of Fish and Game are filling out the Qualitative Restoration Effectiveness Monitoring Checklists at this site to determine if the site was implemented as planned and then to monitor the effectiveness of the treatment for the next ten years. They will be especially checking the site closely during the first major rain event and periodic checks will be made throughout the season following winter storms. Pre and post project photos are taken as well as effectiveness photos after one or two winters. These photos are compared with post-project photos to determine if the site is functioning as planned and healing properly.

In addition, Mattole Salmon Group will be performing spawning surveys in the headwaters, particularly upstream from migration barrier removal projects.

**Number of stream miles treated/affected by the project within the project boundaries:** 1.9 stream miles affected.

**Upland Habitat Projects (HU)**

**Number of actions (road decommission/upgrade):** 1 site treated.

**Number of acres treated:** 0.25 acres

**Number of miles road decommissioned or upgraded:** 0

**Number of cubic yards of sediment saved from entering the stream:** 500 cubic yards

**Fish Passage Improvement Projects (FL, HB)**

**Number of blockages removed or made passable:** 1

**Number of miles made accessible to salmonids:** 1.9 miles

**Water Quality Projects:** The Mattole River watershed is listed as a 303(d)-listed impaired watershed. The project directly benefited sediment and water temperatures reduction goals as described in the Mattole River TMDL Technical Support Document.