

Clear Creek Instream Habitat Restoration Project Closeout Report

Project Title: Clear Creek In-stream Habitat Restoration

Agency: US Forest Service
Gifford Pinchot National Forest
Mount St. Helens Ranger District

Project Manager: Adam Haspiel, (360) 449-7833,
ahaspiel@fs.fed.us

Project Approved By: Aquatic Coordination Committee - 2009

Project Funding:	ACC funding	\$106,000
	FS funding	\$106,000
	Ecotrust funding	\$ 40,000
	RAC Funding	\$ 19,000
	Partner funding	<u>\$ 4,000</u>
	Project Total	\$275,000

Project Description (work completed): The Gifford Pinchot National Forest used PacifiCorp, Ecotrust and Title II (RAC) funding to supply equipment, operators and labor for construction of habitat restoration structures in the mainstem Lower Clear Creek (HUC 170800020204). Work included placing 953 logs to create 36 complex structures to restore fish habitat and stabilize streambanks.

The main objectives of this project were to create rearing pools for juvenile Chinook, coho and steelhead, increase the amount and quality of spawning habitat and spawning opportunities for adult fish, and increase the overall habitat complexity in the lower 1.3 miles of the Lower Clear Creek watershed.

A four acre logging unit was developed as a source of instream wood for USFS restoration activities and provided most of the wood used. Wood was



extracted by logging standing green trees and salvaging blown down trees with rootwads. The unit was thinned using chainsaws, rubber tire skidders and excavators. Trees were transported via log trucks to two staging areas adjacent to Lower Clear Creek floodplain. A rubber tire skidder transported logs from the staging areas to each structure location. A load of tree tops were also transported to be used for experimental seedling enclosures (see photo).

Approximately 25 to 50 pieces of large woody material (LWM) were used at each structure location to form complex habitat. Structures were placed along margins protruding no more than 25 percent into the stream channel to minimize excessive water shear stress and create a meandering thalweg. Key pieces of wood at each location were anchored into the streambanks using an excavator to dig trenches up to 45 feet long, and bury the wood. Other pieces of LWM were interwoven into these key pieces and riparian vegetation.

Structures were built to address specific needs and improve the conditions at each location. They were built to create pools, capture spawning gravels, reduce pressure on eroding banks, and prevent down-cutting of streambed. Structures were also placed in side-channels.

Funding from Ecotrust was used to plant Several species of conifers and hardwoods over a two year period in the riparian zone to help stabilize streambanks and floodplains. Over 500 seedlings were planted covering an area of approximately 10 acres. Experimental seedling enclosures were built to help trees survive elk and deer browsing. Logs were cut into six and eight foot lengths and stacked to enclose seedlings.

Partners

Mount St. Helens Institute (MSHI) Youth Stream Team: consisted of students from diverse backgrounds, some are at risk youth and others are



from urban environments, but are all interested in the aquatic environment. This is part of the overall goal of the USFS “Kids Back in the Woods” program. MSHI Stream Team youth implemented the monitoring with USFS oversight. They used survey equipment including flow meters, gravel-o-meters, and studied macro-invertebrates in Lower Clear Creek. A pre-longitudinal survey was completed with photographs. Post monitoring for 2011 is now complete and will be made available in project monitoring reports.

PacifiCorp
Swift Community Action Team
Ecotrust

Workforce:

Adam Haspiel, USFS Fisheries Biologist
Bryce Michaelis, USFS Fisheries Technician
Mark Ferraiolo, MSHI Fisheries Technician

Contractors:

O’Malley Brothers Corporation.
Gresham, OR

Problems Encountered:

Some equipment used for logging was old and thus broke down more often than desired.





Unloading full lengths trees with rootwads



Stockpiling logs at the staging area



Looking down stream at eroding bank prior to bank stabilization structure ST#2



Looking down stream at bank stabilization structure 50 logs were placed in structure ST#2



Excavator placing logs into banks ST#10



Completion of bank stabilization 87 logs was placed in eroding banks. Gravel bar on river left was shaved back 15-20 feet to help reduce flow on banks. ST#10



Looking down stream at ST#10, the gravel bar on river left has been shaved back 20 ft.



Looking across river prior to construction ST#5



A series of structures were placed to reduce flow on river left ST#5



Start of the toe and anchor structure ST#12



This is a complex toe and anchor structure. 23 logs were used in ST#12. Adult coho have been observed spawning above and below this structure after construction. Structures have created scour pools up to 4 deep.



Four coho hiding in scour pool at ST#12



Looking across at eroding bank at ST#15 prior to construction



Looking across after construction of bank stabilization project 21 logs in ST#15



A series of 4 structures with 31 logs were placed at ST#16. Coho were observed spawning and rearing in and around the structure in fall 2011.



Coho redd directly above ST#16



Logs buried 30-40 feet to increase stability, 7 logs in structure so far, a 5ft deep scour pool was created with this structure. Coho have were observed using this structure.

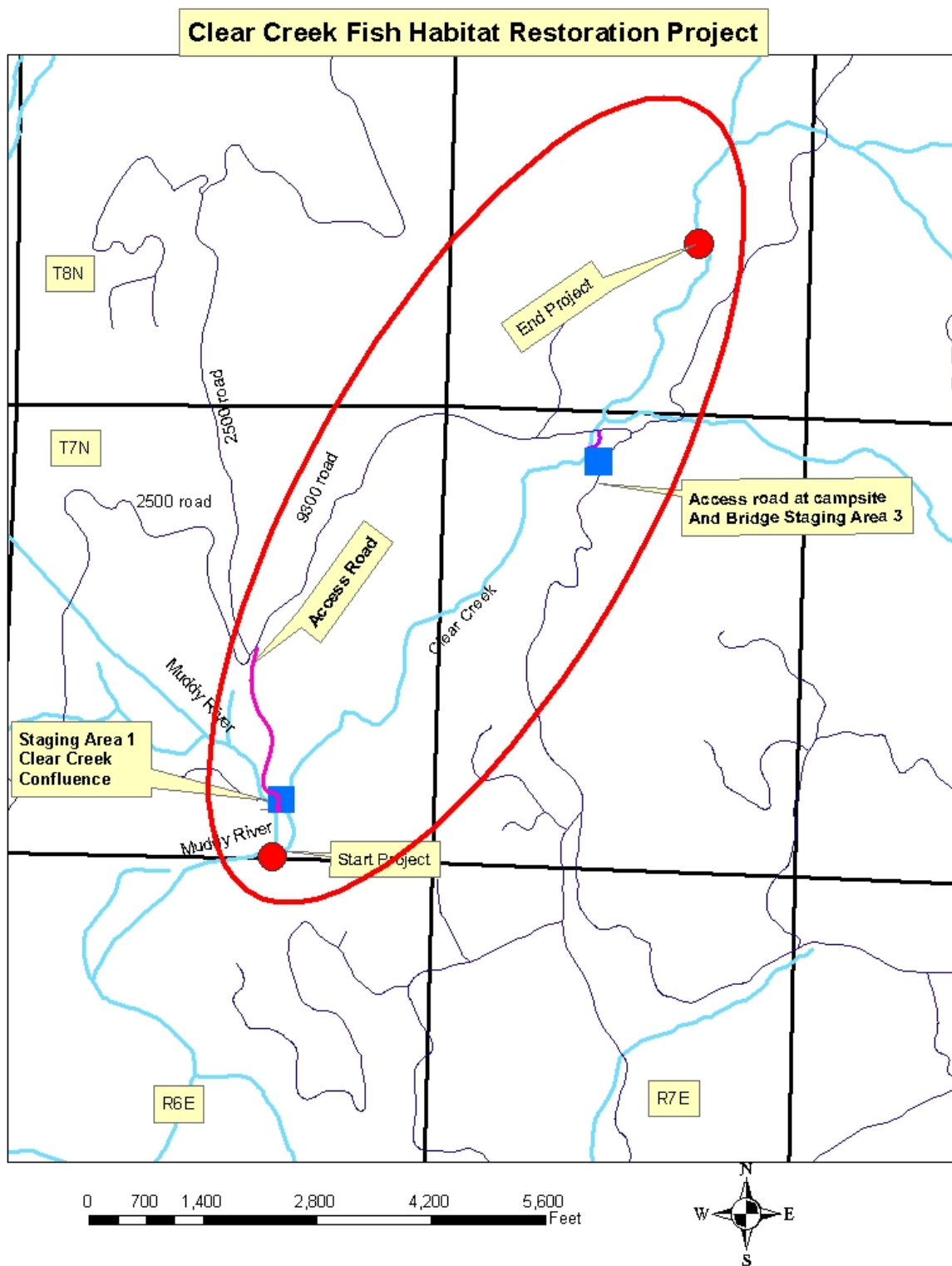


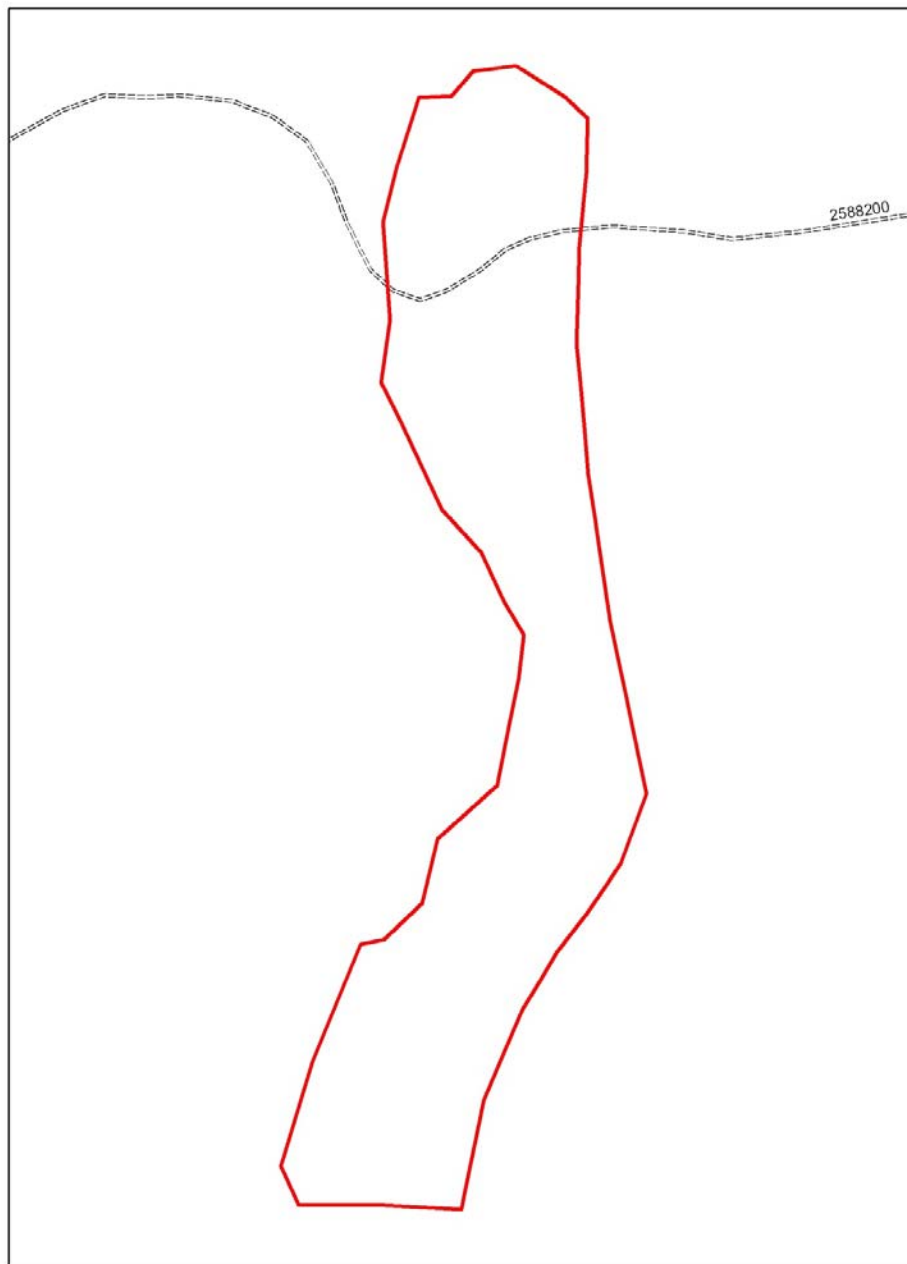
Just out for a drive





Seeding enclosure, a conifer seedling is planted in the middle of log cribbing to discourage elk and deer browsing.





Location and shape 4acre thinning unit.

