

1. Project Title

Muddy River Side Channel Restoration

2. Project Manager

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3. Identification of problem or opportunity to be addressed

Two side channels on the Muddy River will have large woody material placed in them to enhance and restore juvenile salmonid rearing habitat. Coho salmon will be the main species to benefit from these actions, however steelhead may also use these side channels to escape high winter flows in the mainstem of Muddy River. Approximately 80 pieces of large woody material will be placed in side channel 1 to create approximately 12 log complexes, and 120 pieces will be placed in side channel 2 to create approximately 18 log complexes using a small 16,000lb- 28,000 lb excavator.

The Muddy River was one of the top coho producing stream in the Upper North Fork Lewis River sub-basin prior to dam construction.

4. Background

The Muddy River was probably the top coho producing stream in the Upper North Fork Lewis River sub-basin prior to construction of Merwin, Yale and Swift Dams. In 1957 during the period when the dams were being constructed, Chambers documented the Muddy River as the best coho spawning tributary in the Upper Lewis. Ongoing restoration efforts support the reintroduction of anadromous fish to the basin.

During preliminary design surveys of Side Channel 2 in fall 2010, small landlocked adult coho (12-14 inches) and HPP full size adult coho were found spawning in this side channel.

The Gifford Pinchot National Forest Stream Restoration Plan identifies these as priority projects in the Muddy River Watershed (specific section for the Muddy River is attached as an appendix). The Muddy River Action Plan places high priority on these projects to help salmonid reintroduction efforts. The Lower Columbia Fish Recovery Boards Salmon Recovery Plan specifically cites side channel habitat and stream channel habitat structure as high priority restoration needs. It is rated in the top five stream reaches for restoration work. The top three critical life stages identified in the plan are egg incubation and 0-age active rearing, and, 0-age inactive rearing (overwintering). The ACC Synthesis Matrix rated this section of the river as having medium/high restoration potential and as a Primary coho population area.

5. Project Objective(s)

Goal: Restore and enhance side channel and tributary habitat complexity for reintroduced salmon and steelhead.

Objective . Create 30 rearing/overwintering pools and spawning beds by placing Large Woody Material complexes in side channels.

This project addresses the following ACC priorities:

Priority 1: *Benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species.*

Coho and steelhead trout are listed as a threatened species under the ESA. This project will contribute to the recovery of these species by increasing the amount and quality of rearing pools in side channels. In addition, spawning areas will be associated with the log complexes.

Priority 2: *Support the reintroduction of anadromous fish throughout the basin.*

By creating rearing and overwintering pools, and spawning gravel in these side channels, this project will provide coho salmon and steelhead trout with keys areas to flourish during reintroduction.

Priority 3: *Enhance fish habitat in the Lewis River Basin-, with priority given to the North Fork Lewis River.*

This project is located in the Muddy River watershed, which is located within the North Fork Lewis River basin. This project is consists of large woody material placed instream in side channels, designed specifically to enhance and restore fish habitat. This project will increase instream habitat diversity, and in turn it is expected that this project will contribute to increasing fish production in this area.

6. Tasks:

Task 1: NEPA and required permits.

- 1) NEPA for this project was completed in March of 2010.
- 2) These instream and floodplain restoration activities are covered within the provisions of the WDFW and USFS Memorandum of Understanding .

Task 2: Project Design.

- 1) Finalize project design and project preparation details. Preliminary designs have been planned during reconnaissance visits in 2010. We will use a laser level to run a longitudinal profile and collect cross-sectional information as we finalize designs.
- 2) Secure materials. We will layout a timber sale unit for thinning operations and prepare for harvest operations. In addition, material from PacifiCorp Swift Reservoir Cleaning operations has been secured and is stored at the USFS Pine Creek work center.

Task 3: Project Implementation

- 1) Develop contract. A standard RFQ contract will be developed specifying the scope of the project and project requirements. We will use an equipment rental contract to perform the actual work which will allows us the flexibility to make changes to the project as implementation is occurring.

- 2) Administer contract. A Fish Biologist and Fisheries Technician will administer the contract to ensure contract compliance and project specifications are met.

Task 4: Monitoring

- 1) Perform baseline monitoring. This monitoring will occur prior to project implementation and include a longitudinal profile, cross-sections, pebble counts, photo-documentation and snorkel surveys. MSHI will provide two interns, five volunteer youth from the youth stream team and a supervisor to perform monitoring work. They will perform all aspects of the monitoring with supervision and training from the Forest Service.
- 2) Perform after project monitoring. This monitoring will occur following project implementation and will continue on an annual basis for several years following project completion. MSHI will provide two interns for this portion of the work supervised by the Forest Service.
- 3) Monitoring Report. A monitoring report will be written each year following project implementation. MSHI will provide raw data in excel format, the Forest Service will provide analysis of data and report.

7. Methods:

The Mt. St. Helens Fisheries department will oversee all phases of this project including project design, implementation and monitoring.

8. Specific Work Products

Deliverable 1: Completed project.

Deliverable 2: A report describing the project. Report to include project narrative, financial information, -staff time to implement the project, and photographs of completed projects.

Deliverable 3: Monitoring Report.

9. Project Duration

Monitoring for this project would begin during the summer of 2012, project implementation would occur July 15th 2012 and is expected to take two weeks to complete. As built documents will be completed by December 31st, 2012. An initial report documenting fish response to the structures will be completed by December 31st, 2013. The first monitoring report with pre and post project data will be available December 31st 2013. If funding or LWM supply becomes an issue, project dates would be delayed by one year from above.

A project closeout meeting would occur at an ACC meeting following project completion.

10. Permits

NEPA for this project was completed March 2010.

The Gifford Pinchot National Forest has a Memorandum of Agreement with the Washington State Department of Ecology (DOE). The agreement recognizes the Forest Service will ensure that 1) all waters on National Forest lands meet or exceed water quality laws and regulations (Sections 301, 302, 303, 306 and 307) of the Clean Water Act and 2) activities on those lands are consistent with the level of protection of the

Washington Administrative Code relevant to state and federal water quality requirements. This agreement is neither a fiscal nor a funds obligation document.

The Gifford Pinchot National Forest has a Memorandum of Understanding (MOU) with the Washington State Department of Fish and Wildlife Regarding Hydraulic Projects conducted by USDA Forest Service Northwest Region (2005). Compliance with the MOU provisions for instream restoration replaces the need for an individual hydraulic project approval (HPA). This fish habitat enhancement project will be conducted within the provisions set forth in this MOU.

The Clean Water Act (as amended by the Water Quality Act of 1987, Public Law 100-4) authorizes the states to regulate the “fill and removal” activities of Federal agencies. In Washington, the Forest Service has authorization for its fill and removal projects through the MOU with WDFW when the projects comply with the provisions of the MOU.

The project is in compliance with all pertinent sections.

11. Matching Funds and In-kind Contributions.

Partner	Contribution	Funds
Forest Service	Project development, Contracting, Permitting, Monitoring	\$22,000 In-kind
Materials from USFS	Trees	\$10,000 In-kind
Mt. St. Helens Institute	Monitoring	\$2,000 In-kind

12. Professional Review of Proposed Project

This project proposal was reviewed by Gifford Pinchot National Forest (GPNF) Hydrology program manager, Ruth Tracy, and the GPNF Fisheries program manager, Dave Hu.

13. Budget

	NEPA	Final designs	Project Mgmt	Construction	Monitoring/Labor /Reporting/Coord.
Personnel Costs					
FS - Zone Team or Contract	\$8,000 (IK)				
FS –Fish Bio and Hydrologist		\$4,000 (IK) \$1,000 (ACC)			
FS - Fish Bio and Hydrologist			\$5,000 (IK) \$3,000 (ACC)		\$1,000 (ACC)
FS - Contract administrator -				\$3,000 (IK) \$4,000 (ACC)	
FS - Contract Specialist				\$2,000 (IK)	
DNR Specialist					
Mt St. Helens Institute					\$2,000 (IK)
Mt. St. Helens Institute Community Education					\$3,000 (ACC)
Materials					
Forest Service 200 Pieces of LWM				\$10,000 (IK)	
Contract Payables					
Excavator and Skidder Contract				\$15,000 (ACC)	
Logging and hauling of trees				\$11,000 (ACC)	
Materials and Supplies			\$ 1,000(ACC)		
Administrative Overhead					
Total ACC Funds	\$39,000		\$1,000	\$4,000	\$30,000
<i>Total FS Funds</i>	<i>\$32,000</i>	<i>\$8,000</i>	<i>\$4,000</i>	<i>\$5,000</i>	<i>\$15,000</i>
<i>Total Partner Funds</i>	<i>\$2,000</i>				<i>\$2,000</i>
Project Total	\$73,000				

Muddy River Side Channel Expanded Budget 2011

Item	Personnel	Estimated Days/units*	Cost Per Unit	Total*
NEPA		27 days	\$300 per day per person	\$8,000 (IK)
Final Designs	Fish Biologist Hydrologist Fish Technician	5 days 3 days 9 days	\$300 per day per person	\$4,000 (IK) \$1,000 (ACC)
Project Management	Fish Biologist Fish Technician Mileage	12 days 11 days 2000 miles	\$300 per day per person \$0.50	\$4,000 (IK) \$3,000 (ACC) \$1,000 (IK)
Construction	Contract Administration/Prep Logging Excavator	30 days	\$300 per day per person	\$5,000(IK) \$4,000 (ACC) \$11,000 (ACC) \$15,000 (ACC)
Materials & Supplies	Field Equipment, Notebooks, Misc Supplies			\$1,000 (ACC)
Trees		200 each	\$50/tree	\$10,000 (IK)
Monitoring	Supervisor Assistant Volunteers	20 10	\$300 per day per person	\$2,000 (IK) \$4,000 (ACC)
Total				\$73,000

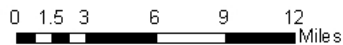
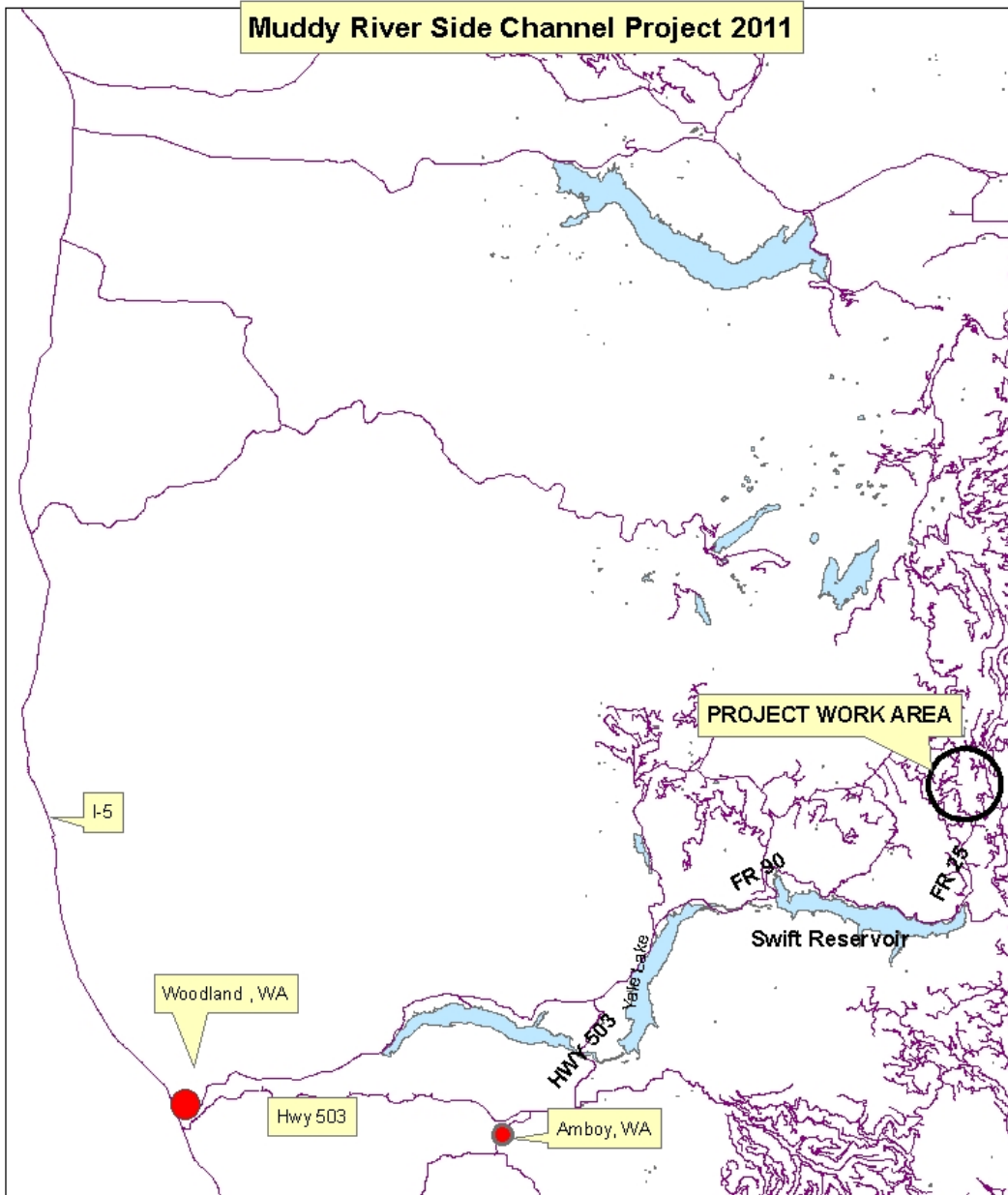
*Values are rounded up or down as need to display whole number and days

Muddy River Side Channel Equipment Budget 2011

Item	Cost per unit	Number of units	Total Cost
Excavator and Skidder Contract	\$150/hour	90	\$13,500
Excavator / Skidder Move in/out	\$1,500 Lump Sum	1	\$1,500
Logging and Hauling cost: Estimate from Logging Contractor*	\$11,000	1	\$11,000
Total			\$26,000

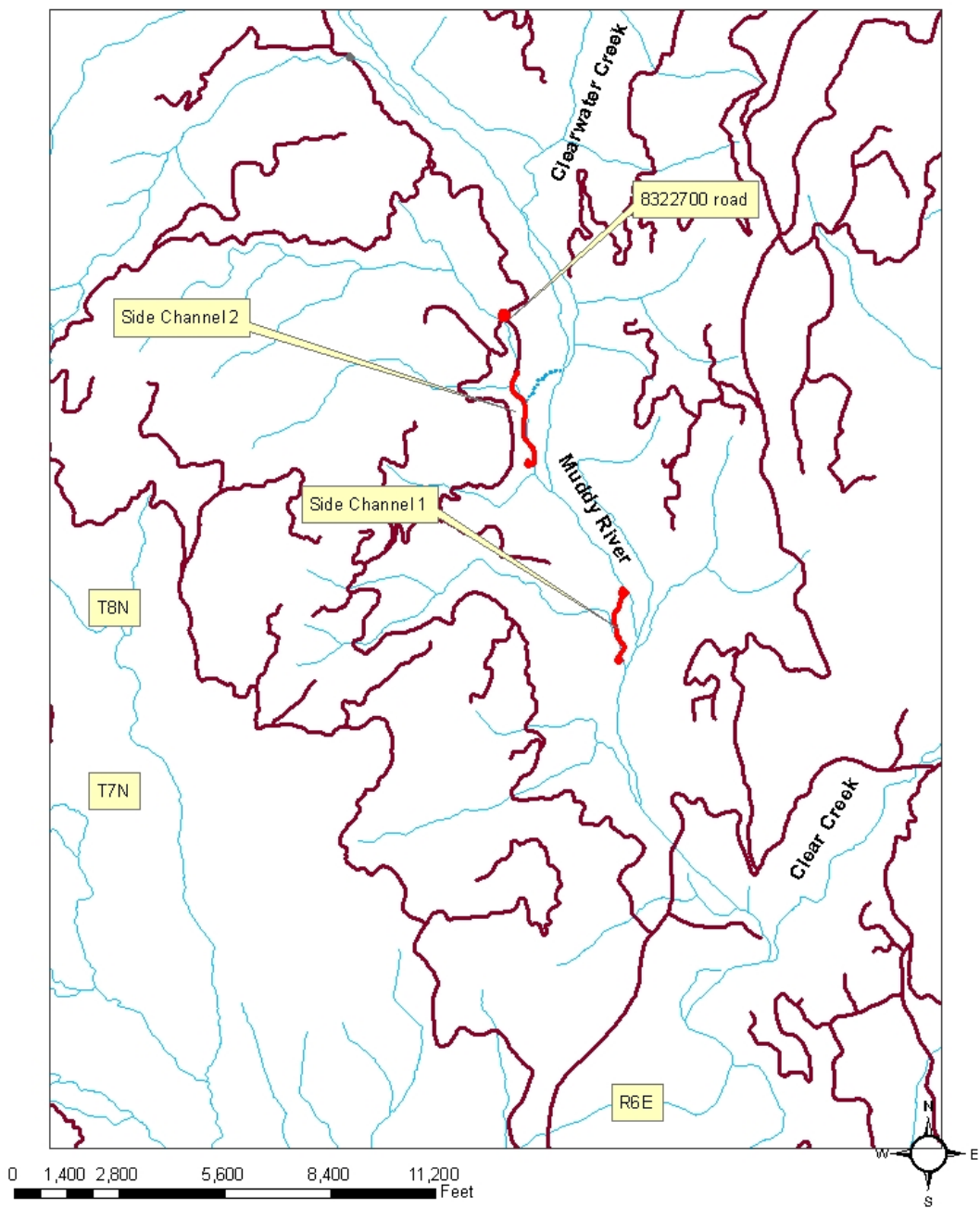
*From Logging Contractor
Ball Park Estimate Received on January 12, 2011

Muddy River Side Channel Project 2011

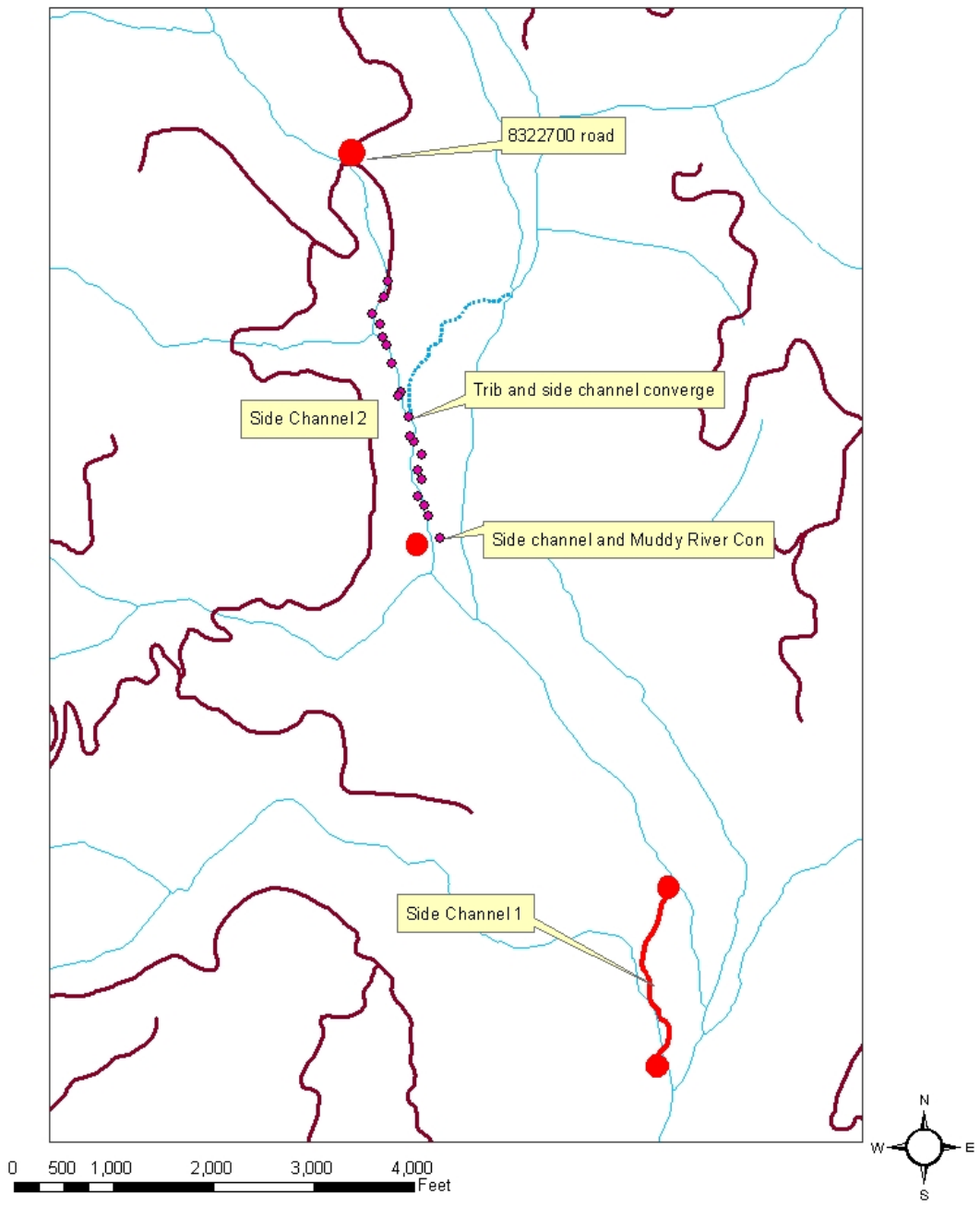


**Muddy River Side Channel
Project Location Map**

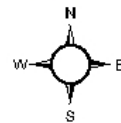
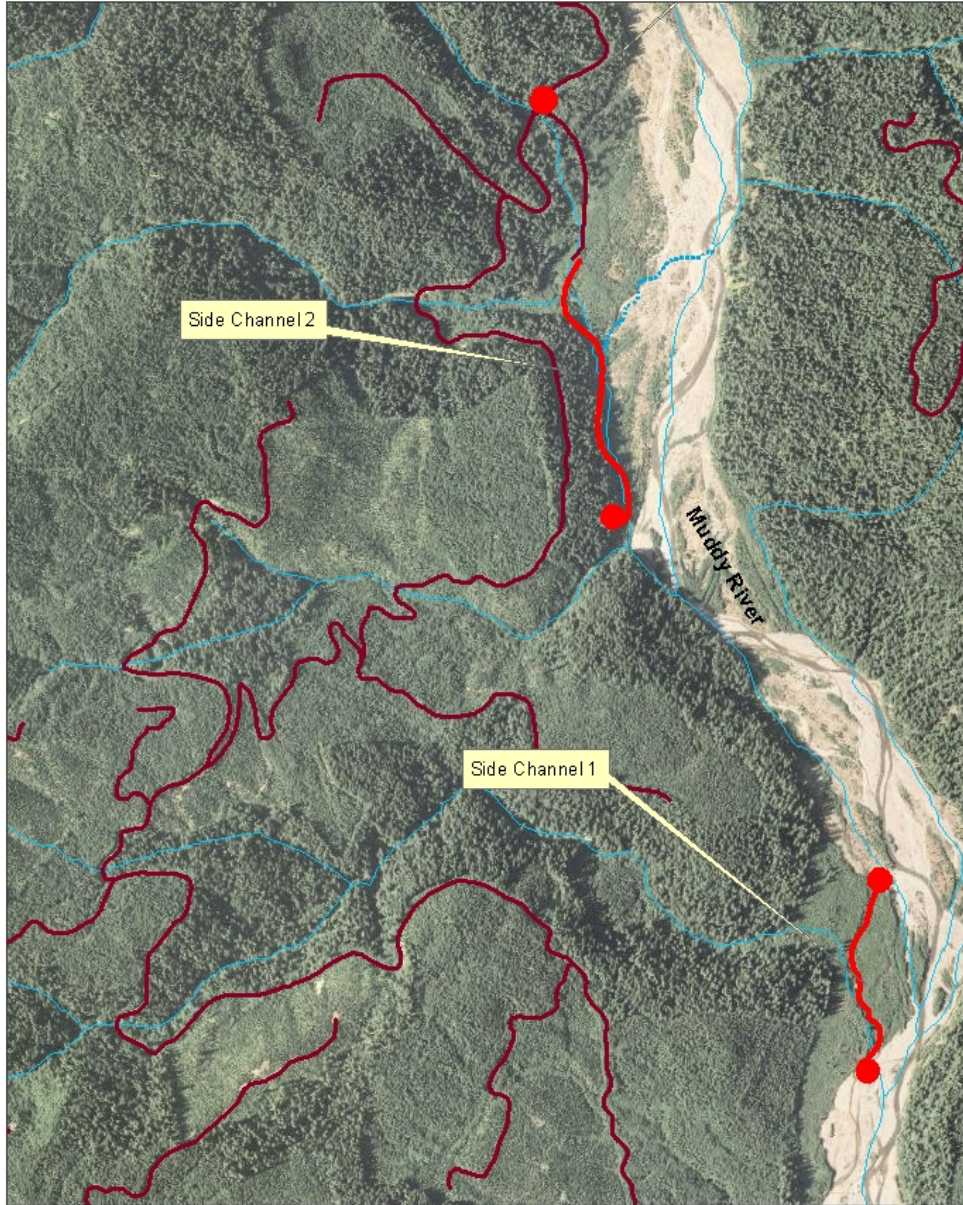
2011 Muddy River Side Channel Project Proposal



2011 Muddy River Side Channel Project Proposal



2011 Muddy River Side Channel Project Proposal





Typical Side Channel 2 picture

Typical Margin Structure

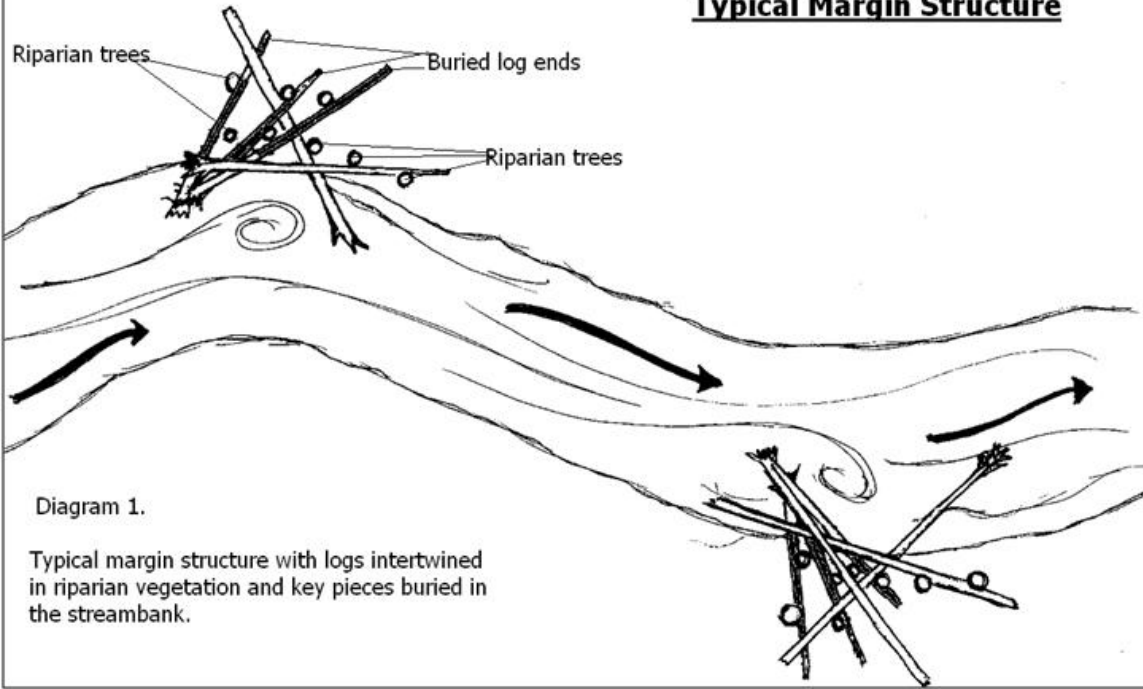


Diagram 1.

Typical margin structure with logs intertwined in riparian vegetation and key pieces buried in the streambank.