

1. Project Title

Lewis River Side Channel III Instream Habitat Restoration

2. Project Manager

Adam Haspiel

Mt. St. Helens National Volcanic Monument
42218 NE Yale Bridge Road
Amboy, WA 98604
360-449-7833
360-449-7801 (fax)
ahaspiel@fs.fed.us

3. Identification of problem or opportunity to be addressed

An opportunity to enhance approximately 0.5 miles of quality side channel habitat in the Upper Lewis River with large woody material (LWM) exists.

Approximately 300 pieces of LWM are proposed under this project to be used to create 25 structures at strategic locations in the side channel to maximize natural channel characteristics while providing structure stability. Woody material would come from a nearby timber sale unit which would provide long pieces of wood with attached rootwads.

This side channel is located on US Forest Service (USFS) lands and is approximately 1/8 mile upstream of the Pepper Lewis Side channel, and on the south side of the Lewis River.

Rearing habitat for coho has been identified to be limited in the Upper Lewis River.

4. Background

Reconnaissance surveys conducted for this project occurred during September and October of 2011. Water flows into the side channel from the river year round, the amount is controlled by a large log jam at the head of the channel, and an outlet to the river is always present, providing easy access into and out of the side channel. The side channel varies between 20 and 30 feet in width, and is well protected by a stable island.

The Lower Columbia Salmon Recovery Plan 2009 Six Year Habitat Work Schedule identifies this as a Tier 1 reach. For coho salmon it has an Overall Preservation rank of 2 of 100, and Overall Restoration rank of 31 of 103, this means it is highly valued and should respond very well to restoration efforts. The conclusion of the EDT analyses suggests habitat diversity and side channel habitat is one of the highest concerns in this reach and should respond well to restoration activities. Concern ratings were high for habitat diversity, and moderate for hatchery fish competition, food availability, and sediment. The ACC Synthesis Matrix rated this section of the river as having medium restoration potential and as a Primary coho population area.

5. Project Objective(s)

GOAL:

Enhance the quality of fish habitat in the Lewis River by:

- ◆ Improving habitat complexity and diversity in the side channel using LWM
- ◆ Providing refugia during winter flows for juvenile salmonids.
- ◆ Providing increased spawning opportunities for adult salmonids.

This project addresses the following Aquatic Fund 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.

Lower Columbia ESU coho salmon are listed as a threatened species under the ESA
Lower Columbia ESU steelhead trout are listed as a threatened species under the ESA
Lower Columbia ESU Chinook Salmon are listed as a threatened species under the ESA

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

Juvenile anadromous salmonids will have a quality rearing and refugia area when this project is complete, thus ensuring survival and promotion of the various species during reintroduction efforts.

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 North Fork Lewis River basin. This project 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) Complete NEPA documentation. Field work for this NEPA document would be completed during the summer and fall of 2012. The final document should be crafted and signed by March 2013, and the project would be implemented July 2013.
- 2) Instream restoration activities are covered within the WDFW-MOU, and the Regional Permit with the Army Corps of Engineers.

Task 2: Project Design.

- 1) Finalize project design and project preparation details. Preliminary designs have been planned during reconnaissance visits in 2011. We will use a laser level to run a longitudinal profile and collect cross-sectional information as we finalize designs.
- 2) Secure materials. We have a 35 acre Peppercat timber sale unit set aside to use for fish habitat restoration activities over the next ten years. We will layout an area within this stand to thin and prepare for harvest operations. Additional material may be acquired from PacifiCorp Swift Reservoir Cleaning operations.

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 allow us the flexibility to make changes to the project as implementation is occurring.
- 2) Administer contract. A Fish Biologist or 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. Mount St. Helens Institute (MSHI) will provide two interns, ten 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 and ten volunteers 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.

Approximately 300 pieces of LWM would be harvested during thinning operations from a nearby timber sale unit which would allow us to use long stems (60+ feet) with attached rootwads. Woody material will be trucked down a spur road through private land to a staging area at the confluence of the Muddy River and Lewis River. From there, the wood will be moved to the project site via a skidder and excavator. This project would create and improve rearing opportunities for coho salmon. Wood for this project would primarily come from USFS lands, however any opportunity to acquire large wood from Swift Reservoir cleaning operations will also be pursued.

Approximately 10 to 15 pieces of LWM will be used at each structure location to form complex habitat. Structures will protrude 1/2 to 1/3 of the way into the channel to minimize water shear stress and create a meandering thalweg. Key pieces of wood at each location will be anchored into the streambanks using an excavator to dig trenches up to 30 feet long, and to bury the wood. Other pieces of LWM will be interwoven into these key pieces and riparian vegetation.

8. Specific Work Products

Deliverable 1: Completed project.

Deliverable 2: A report describing the project. Report to include project narrative, financial information, 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 2013 and is expected to take two weeks to complete. 'As built' documents will be completed by December 31st, 2013. An initial report documenting fish response to the structures will be completed by December 31st, 2014. The first monitoring report with pre and post project data will be available December 31, 2014. 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- Field work will be completed during the summer of 2012. NEPA document will be completed Spring 2013.

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 instream restoration provisions within this MOU 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 US Forest Service has a state wide Regional General Permit (RGP) with the Army Corps of Engineers to perform aquatic restoration activities in waterways. Permit CENWS-OD-RG-RGP-8 authorizes the USFS to perform 13 restoration activities including Large Wood, Boulder and Gravel Placement on National Forest Lands.

Land ownership in this section of the Lewis River is comprised of public lands. The project is wholly on public lands, however the access route is through both Forest and private lands. We have received permission from the landowners to use the private spur road to access this project area.

11. Matching Funds and In-kind Contributions

Partner	Contribution	Funds
Forest Service	Project development, Contracting, Permitting, Monitoring	\$8,000 In-kind
Materials from USFS	Trees with rootwads	\$45,000 In-kind
Mt. St. Helens Institute	Monitoring	\$2,000 In-kind
Swift Community Action Team (SCAT)	Machine Time (if equipment is rented from ERS)	\$800
Fish First	Monitoring design and assistance	\$800
Equipment Rental Services	Machine Time (if equipment is rented from ERS)	\$800

12. Professional Review of Proposed Project

This project proposal was reviewed by Gifford Pinchot National Forest (GPNF) Soil and Water program manager, Ruth Tracy and 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 (ACC)				
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)	
Mt St. Helens Institute					\$2,000 (IK)
Mt. St. Helens Institute Community Education					\$2,000 (ACC)
Materials					
Forest Service 300 Pieces of LWM with rootwads				\$45,000 (IK)	
Contract Payables					
Excavator and Skidder Contract				\$20,000 (ACC) \$2,400 Fish First, SCAT, ERS)	
Logging and hauling of trees				\$10,000 (ACC)	
Materials and Supplies			\$ 1,000(ACC)		
Total ACC Funds	\$50,000	\$8,000	\$1,000	\$34,000	\$3,000
<i>Total FS Funds</i>	<i>\$59,000</i>	<i>\$4,000</i>	<i>\$5,000</i>	<i>\$50,000</i>	
<i>Total Partner Funds</i>	<i>\$4,400</i>			<i>\$2,400</i>	<i>\$2,000</i>
Project Total	\$113,400				
FS personnel estimated as \$300/day.					

Lewis Side Channel III expanded budget 2012

Item	Personnel	Estimated Days/units*	Cost Per Unit	Total*
NEPA Environmental Assessment required by Federal Law	Fish Biologist	4	\$350 per day per person	\$8,000 (ACC)
	Wildlife Biologist	2		
	Hydrologist	4		
	Botanist	4		
	Archeologist	4		
	Soil Scientist	1		
	Recreation	0.5		
	Forester	0.5		
	NEPA Coordinator	3		
Final Designs	Fish Biologist	5	\$300 per day per person	\$4,000 (IK) \$1,000 (ACC)
	Hydrologist	3		
	Fish Technician	9		
Project Management	Fish Biologist	12	\$300 per day per person \$0.50	\$4,000 (IK) \$3,000 (ACC) \$1,000 (IK)
	Fish Technician	11		
	Mileage	2000 miles		
Construction	Contract Administration/Prep Transportation	28	\$300 per day per person \$0.50	\$4,500 (IK) \$4,000 (ACC) \$500 (IK) \$10,000 (ACC) \$20,000 (ACC)
		1,000 miles		
	Logging Equipment			
Materials & Supplies	Field Equipment, Notebooks, Misc Supplies			\$1,000 (ACC)
Trees with rootwads		300		\$45,000 (IK)
Monitoring <i>MSHI</i> <i>USFS</i>	Supervisor Assistant Fish Biologist	10	\$300 per day per person \$20 \$0.50	\$1,500 (IK) \$2,500 (ACC)
		25		
	Volunteers			
	Transportation	1,000		\$500 (ACC)
Partner Donations	Technical input and Equipment	3	\$800	\$2,400
Total				\$113,400

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

Lewis Side Channel III Equipment Budget 2012

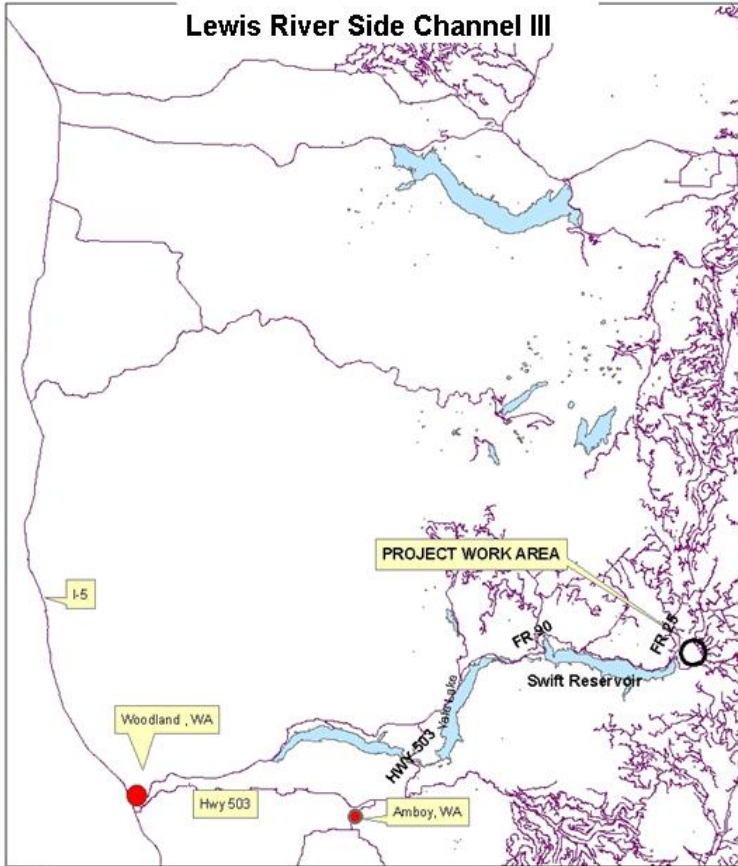
Item	Cost per unit	Number of units	ACC cost	Total Cost
Excavator Operator/Fuel/Supplies, misc	\$125 hour	100	\$12,500	\$12,500
Excavator Move in/out	(\$800)	1		\$800
Skidder	\$125/Hour	60	\$7,500	\$7,500
Skidder Move in/out	\$(800)	1		\$800
Logging and Hauling cost: Based on Previous Contract	\$10,000	1	\$10,000	\$10,000
Total			\$30,000	\$31,600

Questions from ACC members to address in this proposal

1. USFS has done a couple of other side channel projects in the Lewis River. The final proposal should include what has been learned from those projects and how the implementation and results of those projects have been used in developing this proposal. WDFW does believe this proposal will benefit all four listed species. The final proposal will need to include detailed outline of costs, especially those associated with NEPA process. Cost shares and what is provided as part of these cost shares will need to be fully articulated in the proposal. *We have implemented on side channel project in the Lewis River to date. We used what we learned from that project to refine this proposal and the associated contract. Refinements include better estimates on equipment contract prices, logging techniques for trees with rootwads, hauling full length trees down a narrow winding road, and use of multiple locations of oil sorbent booms to access the Lewis River from private property. Many of these items will be incorporated in the actual contract, but the concept level designs include lessons learned like how far to bury structures for stability and how far into the channel we can extend the structures. Detailed costs of NEPA and other items are provided in the expanded budget worksheets. Cost shares by partners are found under section 11 “**Matching Funds and In-kind Contributions heading**”.*

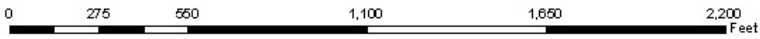
2. The full proposal will benefit from concept level designs and layout. *See attachments for these concerns.*

3. Recommend full proposal that includes clearly identified costs. *The expanded budget has addressed this concern.*

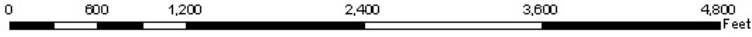


**Lewis River Side Channel
Project Location Map**

Lewis River Side Channel 3



Lewis River Side Channel 3





Lewis River Side Channel 3 at low flow.



Lewis River Side Channel 3 at low flow



Lewis River Side Channel 3 at low flow

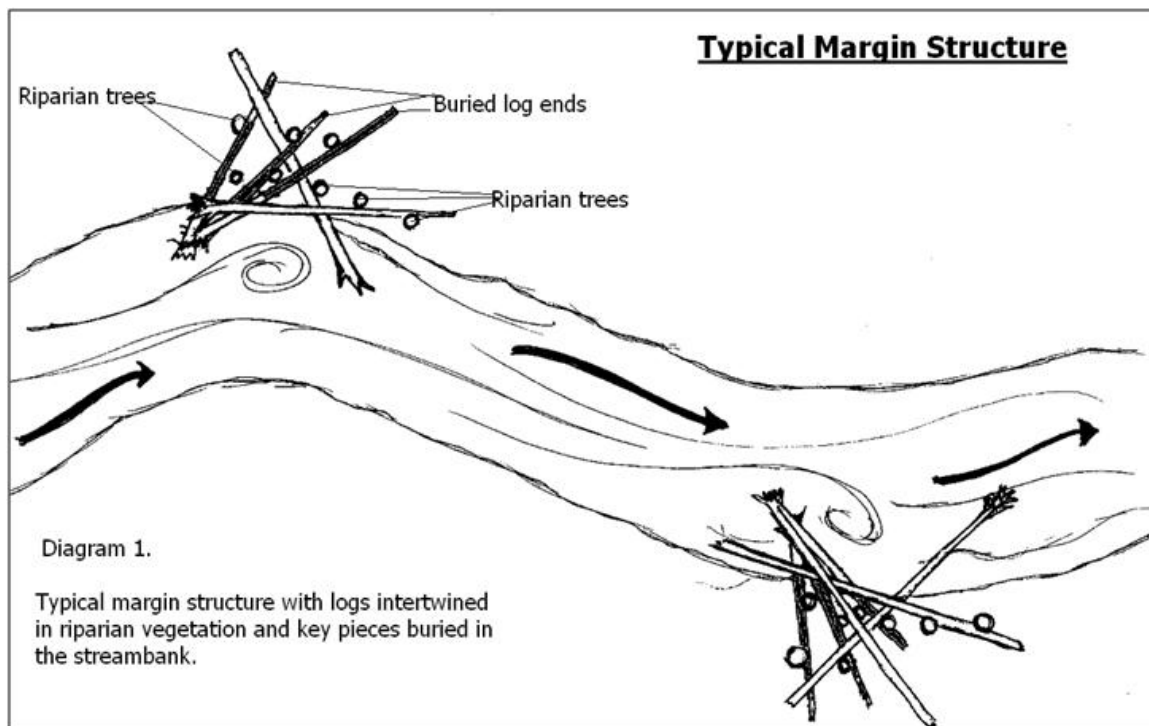


Diagram 1.

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