

PRE- PROPOSAL FORM -

Lewis River Aquatic Fund

1. Applicant organization.

USDA Forest Service
Gifford Pinchot National Forest

2. Organization purpose

Resource management agency

3. Project manager (name, address, telephone, email, fax).

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Fisheries Habitat Restoration Biologist
20+ years of experience with fish habitat restoration projects
NCCP Watershed Rehabilitation certified

4. Project Title

Lewis River 21 Phase I

5. Summary of Project proposal

The Forest Service proposes to restore approximately 1000 feet of Lewis River mainstem habitat on the Lewis River. This mainstem section is unconfined with accessible floodplain but has limited spawning areas that would be preferred by Chinook salmon. This reach is immediately upstream of the confined bedrock area below the Rush Creek confluence and is heavily influenced by the Rush Creek alluvial fan that includes an abundance of large wood and suitable spawning substrate. Restoration actions will increase the retention of the recently recruited large wood and sediment as they move into the North Fork Lewis River mainstem. Benefits to all species of salmonids are expected from these restoration activities and specifically for Chinook salmon, through reduced high flow velocities around the wood structures for high flow refugia, increased pool depth of the high flow side channel located upstream of the Rush Creek confluence, and increased gravel retention for spawning. Focus species that will benefit from restoration actions are Chinook salmon, coho, and bull trout. Chinook and coho salmon will benefit through increased gravel retention for spawning, large wood holding cover for migration and increased juvenile rearing habitat. Bull trout will also benefit from additional migration holding cover and staging area created at the confluence of the Rush Creek alluvial fan.

Bull trout, Chinook and coho salmon will be the main species expected to benefit from this restoration. However, out migrating steelhead trout can also use these structures. This project is in the same vicinity as the 2013 funded Little Creek Side Channel project and will use the same access route (Figure 1 and 2).

Lewis River Reach 21 is a Tier 1 reach. Roni and Timm 2016 reported pools formed by conifers were rated low (0), large wood debris and riparian function rated moderate (2 and M respectively) and a high percentage of fines (21.9%) for Lewis River Reach 21. Low percent pools and large wood debris along with a high sediment yield was the rationale to recommend large woody debris enhancements along with road restoration as initial restoration measures. The Forest Service has completed NEPA to close/stabilize or decommission some roads which drain into Lewis River Reach 21. These road restoration projects will be implemented in the next five years.

Approximately 300 pieces of large woody material, half with rootwads, will be placed along margins in the mainstem to improve rearing habitat. An excavator will anchor woody material into streambanks and a mid-channel gravel bar to create complex rearing habitat for juvenile fish while protecting the mid-channel gravel bar island vegetation (Figure 3 and 4). An increase in gravel retention in the upstream pool tail crest is expected from the mid channel gravel bar and combined margin structures (Figure 5). Woody material will be helicoptered to the Lewis River, due to the sensitive bull trout habitat present at the end of the access route and the cost of a long skidding route. Equipment will use a decommissioned road bed off the Forest Service 90 road which will be closed to public access during project implementation. The decommissioned road will remain in its decommissioned status after project implementation.

In addition, log structures will provide optimal holding and cover areas during all flows and will be designed to maintain flow into high quality off channel habitat and to maintain pool scour thus increasing the residual depth of the existing shallow ground water habitat. Large Woody Material for this project will come from USFS Lands and if available, Swift Reservoir cleaning operations.

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.*

Chinook and coho salmon along with steelhead trout are listed as a threatened species under the ESA. This project will directly benefit recovery of listed species by providing quality rearing habitat for juvenile salmonids.

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

Creating quality spawning, rearing and overwintering habitat in the mainstem Lewis River will support reintroduction of anadromous fish in the Lewis River Watershed.

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, Lewis River Reach 21. It is well documented that coho salmon juveniles prefer slow water habitats with large wood components and Chinook salmon prefer mainstem spawning habitat. This project restores and creates greater spawning area in the main channel and higher quality slow water habitat off of the mainstem North Fork Lewis River.

6. Project location

The project area is located approximately 300 feet upstream of Rush Creek. The project area will be accessed from the decommissioned road (9000410) off Forest Service Road 90 near Rush Creek.

7. Expected products and results

This project will result in a restored section of the mainstem Lewis River approximately 1000 feet in length. The creation of approximately 4 complex structures within the project area will provide quality spawning, summer rearing and overwintering habitat in the North Fork Lewis River mainstem which can be utilized by Chinook and coho salmon, steelhead trout, and offers some benefit to migrating adult bull trout. The woody material would also create high quality hiding cover and increased residual pool depths in the side channel. Structures will facilitate gravel sorting by reducing bed shear stresses and thus increasing spawning opportunities for Chinook salmon in the mainstem reach.

8. Benefits of proposed Project

Increased numbers of juvenile salmonids above background levels from reintroduction activities are expected to occur from this project. The project will benefit anadromous fishes by increasing overwintering and summer rearing habitat for juvenile fish. These structures will act as refugia from high flows in the mainstem Lewis River. The quality of spawning habitat in the mainstem will increase because the large woody material will provide gravel sorting for spawning and adult hiding during spawning.

9. Project partners and roles.

Mount St. Helens Institute (MSHI). MSHI will provide monitoring of structures.

10. Community involvement (to date and planned).

The Forest Service maintains active community involvement by scheduling regular events with legislators, scientists, members, and key individuals for continual program and project development along with cultivating strong ties with agencies, academia, and local citizen groups. Monitoring activities will include partnering with the Mt. St. Helens institute and their urban youth outreach programs.

11. Procedure for monitoring and reporting on results.

- 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, urban youth and a supervisor to perform monitoring work. They will perform most aspects of the monitoring with supervision and training from the Forest Service. The Forest Service will perform Snorkel Surveys.

- 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.

12. Project schedule (anticipated start date, major milestones, completion date).

NEPA – Complete in 2017
Project Implementation July 2018
Post project monitoring 2019 and beyond

13. Funding requested (estimated cost for project design, permitting (including necessary resource surveys), construction, and monitoring).

Total ACC Funds-\$135,000

14. Type and source of other contributions (Identify cash (C) and/or in-kind (IK), and status, pending (P) or confirmed (Co)).

Gifford Pinchot National Forest- **\$12,000** (IK) (Co)
Materials from USFS- **\$67,000** (IK) (Co)
Mt. St. Helens Institute- **\$3,000** (IK) (Co)

15. If you have technical assistance needs for this project, please briefly describe such needs.

None Needed

Lewis River 21 Phase 1 Overview

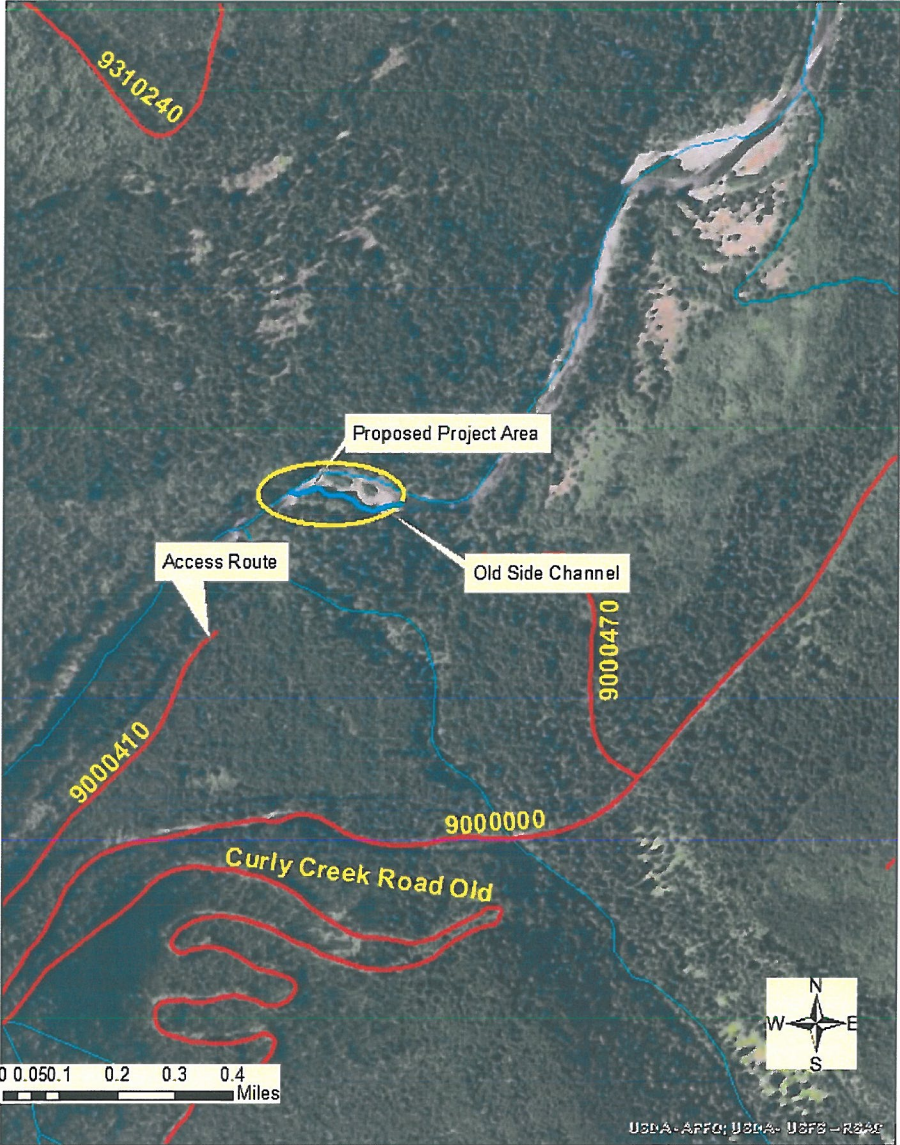


Figure 1. Map of proposed project area and the 9000410 spur access road.

Lewis River 21 Phase 1 Enlarged View

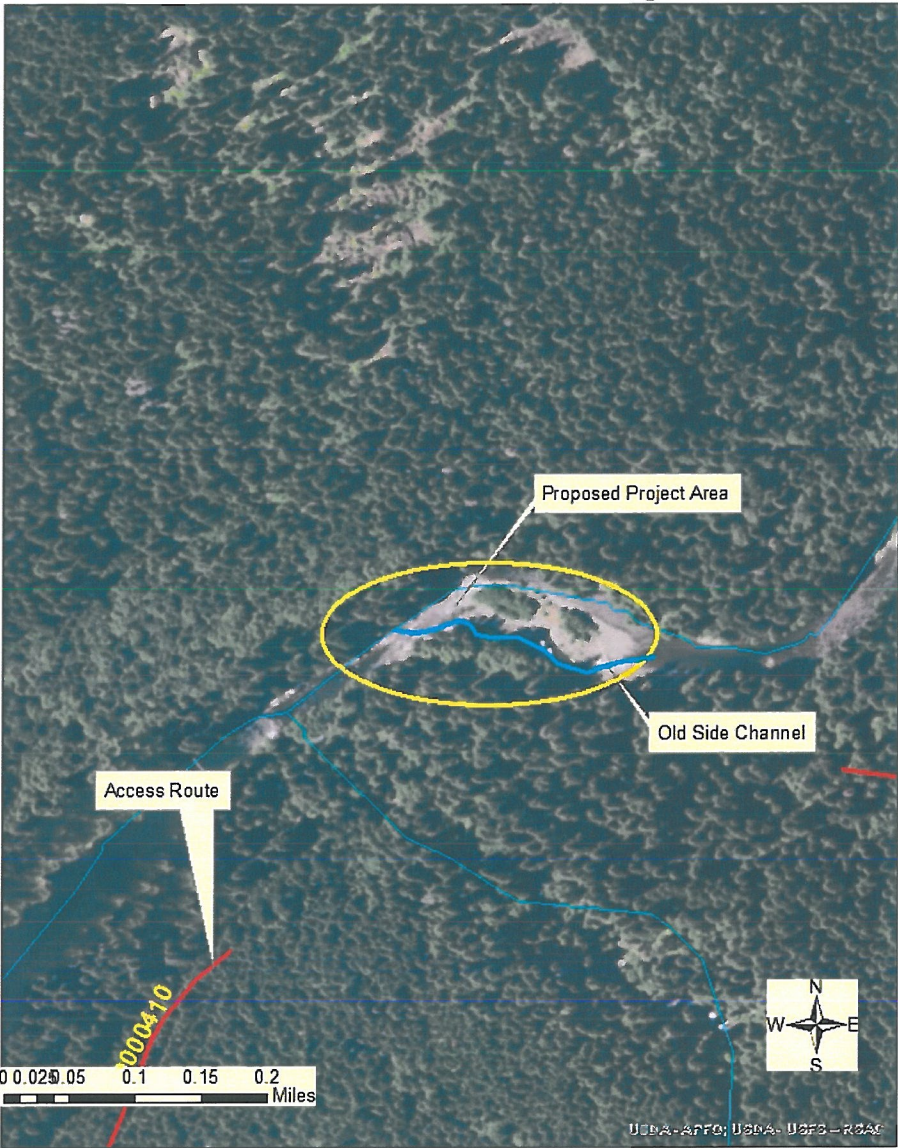


Figure 2. Enlarged view of the proposed project area.



Figure 3. Gravel bar island and shallow ground water channel.



Figure 4. Side Channel to add large wood and to deepen residual pool depth.



Figure 5. Spawning habitat and pool margin habitat to enhance.