

# Lewis River Hydroelectric Projects

*FERC Project Nos. 935, 2071, 2111, 2213*



Photo courtesy of Joel Sartore – National Geographic photographer

## 2013 Annual Report

*Lewis River Aquatic Fund Projects*



April 2013

## Introduction

This 2013 Annual Report prepared by PacifiCorp Energy and the Public Utility District No. 1 of Cowlitz County, Washington (“Cowlitz PUD”) (collectively the “Utilities”) is provided to the Lewis River Settlement Agreement Parties to fulfill the reporting requirement in Article 7.5.3.2 (5) of the Settlement Agreement (SA). This report identifies the actions and selection of Aquatic Resource Projects (Resource Projects) to be funded from the Lewis River Aquatic Fund established under terms of the SA (Article 7.5, see **Appendix A**). Although the funding process was managed by the Utilities, the Aquatic Coordination Committee (ACC) provided final approval of funded projects. This report includes only Resource Projects selected from the 2012/2013 funding process, additional projects are expected to be selected and funded annually following the process established by the ACC.

This 2013 report is available to the Public on PacifiCorp Energy’s website at [http://www.pacificorp.com/content/dam/pacificorp/doc/Energy\\_Sources/Hydro/Hydro\\_Licensing/Lewis\\_River/Document1.pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/Document1.pdf)

Copies of this report are available from PacifiCorp Energy upon request.

## Background

PacifiCorp Energy owns the Merwin, Yale, and Swift No. 1 hydroelectric projects on the Lewis River in southwest Washington. Cowlitz PUD owns the Swift No. 2 hydroelectric project, also located on the Lewis River. These projects are operated as a coordinated system by PacifiCorp Energy. On November 30, 2004, the Lewis River Settlement Agreement established the Lewis River Aquatics Fund (Fund). The purpose of the Fund is to support resource protection measures through funding aquatic related projects in the Lewis River basin.

As identified in the SA:

*“Resource Projects may include, without limitation, projects that enhance and improve wetlands, riparian, and riverine habitats; projects that enhance and improve riparian and aquatic species connectivity that may be affected by the continued operation of the hydroelectric projects; and projects that increase the probability for a successful reintroduction program upstream of Merwin Dam. Species that are targeted to benefit from Resource Projects include Chinook, steelhead, coho, bull trout, chum, and sea-run cutthroat.”*

Under the direction of the SA, the Utilities in Consultation with the ACC developed the “Aquatics Fund -- Strategic Plan and Administrative Procedures” (September 2005 – Revised January 2009). This strategic plan provides: (a) a guide to Resource Project development, solicitation, and review; and (b) provides administrative procedures to guide implementation of the Aquatics Fund.

The strategic plan is available to the Public on PacifiCorp Energy's website at: [http://www.pacificorp.com/content/dam/pacificorp/doc/Energy\\_Sources/Hydro/Hydro\\_Licensing/Lewis\\_River/Aquatics\\_Fund\\_Strategic\\_Plan\\_and\\_Administrative\\_Procedures\\_Sept\\_2005\\_Revised\\_January\\_2009.pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/Aquatics_Fund_Strategic_Plan_and_Administrative_Procedures_Sept_2005_Revised_January_2009.pdf)

On September 5, 2012, PacifiCorp Energy announced the availability of calendar year (CY) 2012/2013 funds for aquatic related projects in the Lewis River Basin (Letter to interested parties from T. Olson, PacifiCorp Energy, see **Appendix B**). The letter requested that individuals or parties interested in obtaining project funding submit a Pre-Proposal to PacifiCorp Energy. Pre-Proposals were due by October 5, 2012.

In response to the announcement letter, two entities provided six different project Pre-Proposals. They include:

<b>Applicant</b>	<b>Project Title</b>
USDA Forest Service	Lewis River Side Channel near Little Creek
USDA Forest Service	Muddy River Tributary near Hoo Hoo Bridge
USDA Forest Service	Little Creek Fish Habitat Restoration
USDA Forest Service	Survey of Bull Trout Stream habitat features to develop future habitat restoration projects
Lower Columbia Regional Fisheries Enhancement Group	Eagle Island North Channel Restoration
Lower Columbia Regional Fisheries Enhancement Group	Cedar Creek Reach 1A Restoration

Following the Aquatics Fund – Strategic Plan and Administrative Procedures, PacifiCorp Energy and Cowlitz PUD reviewed and evaluated the Pre-Proposals and, on October 25, 2012, provided the ACC with a list of projects recommended for further consideration (Email to ACC from McCune – PacifiCorp Energy, see **Appendix C**). In general the Utilities' evaluation suggested that, while additional information is needed before a commitment of funds should be given, the following projects be solicited to provide complete Proposals:

- USDA FS – Lewis River Side Channel near Little Creek
- USDA FS – Muddy River Tributary near Hoo Hoo Bridge
- USDA FS – Little Creek Fish Habitat Restoration
- Lower Columbia Regional Fisheries Enhancement Group - Eagle Island North Channel Restoration
- Lower Columbia Regional Fisheries Enhancement Group Cedar Creek Reach 1A Restoration

On December 13, 2012, the ACC concurred with the Utilities evaluations, however, the ACC also determined that the one project not selected by the Utilities had merit so all six

were selected for full proposal to include the project titled, Survey of Bull Trout Stream habitat features to develop future habitat restoration projects.

To accommodate those ACC participants not in attendance, the Utilities provided an additional 7-day comment period until December 21, 2012. Shortly thereafter, PacifiCorp Energy notified the project sponsors and requested full Proposals by January 31, 2013.

Upon the due date, five full proposals were submitted.

Following receipt of the proposals the Utilities' Subject Matter Experts evaluated and scored the above proposals. Evaluations were conducted as outlined in the *Aquatic Fund – Strategic Plan and Administrative Procedures* document.

Consultation with the ACC began on February 14, 2013 with presentations of project proposals to include an opportunity for ACC questions and comments. On February 1, 2013, the ACC was provided an email (Subject: Lewis River 2012/2013 Aquatic Fund Full Proposals, 30-day Review and Comment Period see **Appendix D**) containing a link that includes a description of the proposed Resource Projects. On February 1<sup>st</sup> and 14<sup>th</sup>, 2013, the Utilities requested review and ACC comment by March 1, 2013.

The ACC met on March 14, 2013 for an Aquatic Project Proposal Decision Meeting. To accommodate those ACC participants not in attendance, the Utilities provided an additional 7-day comment period until March 26, 2013.





Consensus was reached on a final Resource Project list as follows:

<b>Applicant</b>	<b>Project Title</b>	<b>Approved Funding</b>	<b>Decision</b>
USDA Forest Service	Lewis River Side Channel near Little Creek	\$60,000	YES
USDA Forest Service	Little Creek Fish Habitat	\$69,000	YES
USDA Forest Service	Survey of Bull Trout Stream habitat features to develop future habitat restoration projects	\$59,226	YES
LCFEG	Cedar Creek Reach 1A	\$53,000	YES

On March 27, 2013 the Utilities notified all ACC Participants of the selected 2012/2013 Aquatic Funding projects approved for full funding (email dated March 27, 2013, 2012/2013 Lewis River Aquatic Fund Project Final Selection, see **Appendix E**).

Consensus was reached to not select for funding:

<b>Applicant</b>	<b>Project Title</b>	<b>Funding Requested</b>	<b>Decision</b>
USDA Forest Service	Muddy River Tributary near Hoo Hoo Bridge	\$39,000	No

## Projects Selected for Funding

The following is a summary description of the individual Resource Projects selected to be funded by the Aquatics Fund. All of these projects are expected to promote the recovery of anadromous fish post re-introduction upstream of the Lewis River dams, and the federally listed bull trout which spend a portion of their life history in the Lewis River hydroelectric project reservoirs. Included for each project is an overview of the original proposal, any ACC modifications to the project, and identification of Resource Project nexus to the hydroelectric projects. Final Resource Project Plans are provided as appendices to this document.

### 1) Lewis River Side Channel near Little Creek

This USDA Forest Service proposed project is intended to restore instream fish habitat in two side channels of the Lewis River to its full potential prioritizing opportunities for ESA listed fish species. It will maximize summer and winter rearing habitat for coho and spring Chinook salmon, winter steelhead and bull trout.

ACC representatives agreed to fund this project as proposed and granted funding of \$60,000.

The final Resource Project Plan is provided in **Appendix F** and would be completed in accordance with the schedule below pending acquiring additional funding through other resources:

Final Design and permitting	Summer 2013 to Spring 2014
Monitoring	Summer/2013
Project Implementation	July 15, 2014

2) Little Creek Fish Habitat Restoration

The USDA Forest Service sponsored project is intended to enhance 2,700' of Little Creek with instream structures composed of large woody material with rootwads.

Approximately 8 to 10 pieces of large woody material 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 large woody material will be interwoven into these key pieces and riparian vegetation.

ACC representatives agreed to fund this project as proposed and granted funding of \$87,000\*.

\*Total ACC funds would be \$69,000 if the Lewis River Side Channel near Little Creek project is funded and equipment move-in and NEPA costs are shared between the projects.

The final Resource Project Plan is provided in **Appendix G** and would be completed in accordance with the schedule below:

Monitoring	Summer 2013
Project Implementation	July 15, 2014
As-built documents	December 31, 2014
Pre & Post Project Data	December 31, 2015

3) Survey of Bull Trout Stream habitat features to develop future habitat restoration projects

This USDA Forest Service sponsored project proposes to fill the project scoping and prioritization void by initially using results of past or ongoing data collection efforts to characterize bull trout spawning and rearing habitat in Pine, P8, Rush, and Cougar Creeks. Subsequent portions of this project would conduct additional spawning and habitat surveys to collect habitat parameter data that would be used to site and scope specific restoration projects for future bull trout funding rounds.

The ultimate goal of this project is to develop concept scoping design of habitat restoration projects in areas outside of existing spawning and rearing locations to expand the range of

available bull trout spawning and rearing habitat. The expected outcome of this project is improved long term stability of the bull trout population in the upper Lewis Basin.

ACC representatives agreed to fund this project as proposed and granted funding of \$59,226.

The final Resource Project Plan is provided in **Appendix H** and would be completed in accordance with the schedule below:

Collect and synthesize existing bull trout data	Summer/Fall 2013
Collect temperature data and collected habitat parameter data in selected streams in the upper Lewis Basin	Summer/Fall 2013
Conduct spawning surveys	Fall, 2013
Finalize field data collection study design	Fall 2013 – Winter 2014
Conduct habitat parameter surveys	Summer/Fall 2014
Data summarization and analyses	Fall 2014 – Winter 2015
Develop conceptual project scoping designs	Winter 2014 – Spring 2015
Project Implementation	Summer 2013 – Summer 2015
Project Completion	Summer 2015

4) Cedar Creek Reach 1A Restoration

The Lower Columbia Fisheries Enhancement Group sponsored project is intended to increase stream habitat function in a manner that leads to increased reproductive success of anadromous and freshwater salmonids in EDT Reach 1A of Cedar Creek, tributary to the North Fork Lewis River.

Place approximately 15 pieces of large woody material and small multi-log structures along channel margins and within the active channel to create the desired habitat conditions to benefit both rearing and spawning salmonids. The project proposes to increase the frequency of pool: riffle habitat, increase channel margin cover, and increase connectivity with adjacent floodplain features.

ACC representatives agreed to fund this project as proposed and granted funding of \$53,000.

The final Resource Project Plan is provided in **Appendix I** and would be completed in accordance with the schedule below (to include but not limited to):

Project Design/Permitting	January 2013 – July 2014
Lamprey Monitoring	August – September 2014
Install of riparian plantings	November 2014 – June 2015
As-built survey/photo doc	July 2015 – August 2015
Complete final reports	October 2015 – December 2015

## **Conclusion**

This report provides the final CY2012/2013 Resource Project descriptions and plans for aquatic projects to be funded from the Lewis River Aquatics Fund. Distribution of funds to these projects will reduce the current Aquatic Fund by \$241,226. One of the projects selected by the ACC can be attributed to bull trout enhancement.

According to SA article 7.5.3.2 (5), any ACC member may initiate the Alternative Dispute Resolution Procedures to resolve disputes relating to Resource Projects 30 days after receiving this final report. If no disputes are identified, PacifiCorp Energy and Cowlitz PUD will provide funds to the identified project owners to implement Resource Projects per SA article 7.8.



**APPENDIX A**  
**LEWIS RIVER SETTLEMENT AGREEMENT ARTICLE 7.5**

7.5 Aquatics Fund. PacifiCorp Energy and Cowlitz PUD shall establish the Lewis River Aquatics Fund (“Aquatics Fund”) to support resource protection measures (“Resource Projects”). Resource Projects may include, without limitation, projects that enhance and improve wetlands, riparian, and riverine habitats; projects that enhance and improve riparian and aquatic species connectivity that may be affected by the continued operation of the Projects; and projects that increase the probability for a successful reintroduction program. The Aquatics Fund shall be a Tracking Account maintained by the Licensees with all accrued interest being credited to the Aquatics Fund. PacifiCorp Energy shall provide \$5.2 million, in addition to those funds set forth in Section 7.1.1, to enhance, protect, and restore aquatic habitat in the Lewis River Basin as provided below. Cowlitz PUD shall provide or cause to be provided \$520,000 to enhance, protect, and restore aquatic habitat in the Lewis River Basin as provided below; provided that Cowlitz PUD’s funds may only be used for Resource Projects upstream of Swift No. 2, including without limitation the Bypass Reach. The Licensees shall provide such funds according to the schedules set forth below.

7.5.1 PacifiCorp’s Contributions.

- a. PacifiCorp shall make funds available as follows: on each April 30 commencing in 2005, \$300,000 per year until 2009 (a total of \$1.5 million).
- b. For each of the Merwin, Yale, and Swift No. 1 Projects, PacifiCorp shall make one-third of the following funds available as follows after the Issuance of the New License for that Project: on each April 30 commencing in 2010, \$300,000 per year through 2014 (a total of \$1.5 million); on each April 30 commencing in 2015, \$100,000 per year through 2018 (a total of \$400,000); and on each April 30 commencing in 2019, \$200,000 per year through 2027 (a total of \$1.8 million); provided that, for any New License that has not been Issued by April 30, 2009, the funding obligation for that Project shall be contributed annually in the same amounts but commencing on April 30 following the first anniversary of Issuance of the New License for that Project.
- c. PacifiCorp shall contribute \$10,000 annually to the Aquatics Fund as set forth in Section 7.1.1.

7.5.2 Cowlitz PUD’s Contributions. Cowlitz PUD shall make or cause to be made funds available as follows: \$25,000 per year on each April 30 following the first anniversary of the Issuance of the New License for the Swift No. 2 Project through the April 30 following the 20<sup>th</sup> anniversary of the Issuance of the New License for the Swift No. 2 Project (a total of \$500,000); and a single amount of \$20,000 on the April 30 following the 21<sup>st</sup> anniversary of the Issuance of the New License for the Swift No. 2 Project.

7.5.3 Use of Funds. Decisions on how to spend the Aquatics Fund, including any accrued interest, shall be made as provided in Section 7.5.3.2 below; provided that (1) at least \$600,000 of such monies shall be designated for projects designed to benefit bull trout according to the following schedule: as of April 30, 2005, \$150,000; as of April 30,

2006, \$100,000; as of April 30, 2007, \$150,000; as of April 30, 2008, \$100,000; and on or before the April 30 following the fifth anniversary of the Issuance of all New Licenses, \$100,000; and such projects shall be consistent with bull trout recovery objectives as determined by USFWS; (2) fund expenditures for the maintenance of the Constructed Channel (Section 4.1.3) shall not exceed \$20,000 per year on average; (3) if studies indicate that inadequate “Reservoir Survival,” defined as the percentage of actively migrating juvenile anadromous fish of each of the species designated in Section 4.1.7 that survive in the reservoir (from reservoir entry points, including tributary mouths to collection points) and are available to be collected, is hindering attainment of the Overall Downstream Survival standard as set forth in Section 3, then at least \$400,000 of such monies shall be used for Resource Projects specifically designed to address reservoir mortality; and (4) \$10,000 annually shall be used for lower river projects as set forth in Section 7.1.1. Projects shall be designed to further the objectives and according to the priorities set forth below in Section 7.5.3.1.

**7.5.3.1 Guidance for Resource Project Approval and Aquatics Fund Expenditures.**

- a. Resource Projects must be consistent with applicable Federal, State, and local laws and, to the extent feasible, shall be consistent with policies and comprehensive plans in effect at the time the project is proposed. These may include, but are not limited to, Washington’s Wild Salmonid Policy, the Lower Columbia River Bull Trout Recovery Plan, and the Lower Columbia River Anadromous Fish Recovery Plan.
- b. The Aquatics Fund shall not be used to fund Resource Projects that any entity is otherwise required by law to perform (not including obligations under this Agreement or the New Licenses for use of the Aquatics Fund), unless by agreement of the ACC.
- c. The Licensees shall evaluate Resource Projects using the following objectives:
  - (1) benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species;
  - (2) support the reintroduction of anadromous fish throughout the Basin; and
  - (3) enhance fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River.

For the purposes of this Section 7.5, the North Fork Lewis River refers to the portion of the Lewis River from its confluence with the Columbia River upstream to the headwaters, including tributaries except the East Fork of the Lewis River.

The Licensees shall also consider the following factors to reflect the feasibility of projects and give priority to Resource Projects that are more practical to

implement:

- (i) Whether the activity may be planned and initiated within one year,
- (ii) Whether the activity will provide long-term benefits,
- (iii) Whether the activity will be cost-shared with other funding sources,
- (iv) Probability of success, and
- (v) Anticipated benefits relative to cost.

#### 7.5.3.2 Resource Project Proposal, Review, and Selection.

(1) By the first anniversary of the Effective Date, the Licensees shall develop, in Consultation with the ACC, (a) a strategic plan consistent with the guidance in Section 7.5.3.1 above to guide Resource Project development, solicitation, and review; and (b) administrative procedures to guide implementation of the Aquatics Fund. Both may be modified periodically with the approval of the ACC.

(2) Any person or entity, including the Licensees, may propose a Resource Project. In addition, the Licensees may solicit Resource Projects proposals from any person or entity.

(3) The Licensees shall review all Resource Project proposals, applying the guidance set forth in Section 7.5.3.1. The Licensees shall provide an annual report describing proposed Resource Project recommendations to the ACC. The date for submitting such report shall be determined in the strategic plan defined in subsection 7.5.3.2(1) above. The report will include a description of all proposed Resource Projects, an evaluation of each Resource Project, and the basis for recommending or not recommending a project for funding.

(4) The Licensees shall convene a meeting of the ACC on an annual basis, no sooner than 30 days and no later than 60 days after distribution of the report set forth in Section 7.5.3.2(2), for Consultation regarding Resource Projects described in the report.

(5) Licensees shall modify the report on proposed Resource Projects, based on the above Consultation, and submit the final report to the ACC within 45 days after the above Consultation. Any ACC member may, within 30 days after receiving the final report, initiate the ADR Procedures to resolve disputes relating to Resource Projects. If the ADR Procedures are commenced, the Licensees shall defer submission of the



final report on Resource Projects to the Commission, if necessary, until after the ADR Procedures are completed. If the ADR Procedures fail to resolve all disputes, the Licensees shall provide the comments of the ACC to the Commission. If no ACC member initiates the ADR Procedures, the Licensees shall submit the final report to the Commission, if necessary, within 45 days after submission of the final report to the ACC.

**APPENDIX B**

MEMORANDUM DATED SEPTEMBER 5, 2012  
LETTER TO INTERESTED PARTIES FROM T. OLSON, PACIFICORP ENERGY  
AVAILABILITY OF FUNDS FOR AQUATIC RELATED PROJECTS

September 5, 2012

**Subject: Availability of Funds for Aquatic Related Projects in the Lewis River Basin**

Dear Interested Party,

PacifiCorp owns the Merwin, Yale, and Swift No. 1 hydroelectric projects on the Lewis River in southwest Washington. Public Utility District No. 1 of Cowlitz County, Washington (Cowlitz PUD) owns the Swift No. 2 hydroelectric project, also located on the Lewis River. These projects are operated as a coordinated system. On November 30, 2004, the Lewis River Settlement Agreement established the Lewis River Aquatics Fund (Fund). On June 26, 2008, the Federal Energy Regulatory Commission acknowledged this fund as a stipulation of project operating licenses. The purpose of the Fund is to support resource protection measures via aquatic related projects (Resource Projects) in the Lewis River basin. The projects are evaluated for funding according to their:

- (1) Benefit to fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species;
- (2) Support of the reintroduction of anadromous fish throughout the Basin; and
- (3) Enhancement to fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River.

Species that are targeted to benefit from Resource Projects include Chinook, steelhead, coho, bull trout, chum, and sea-run cutthroat.

This letter is to provide you the opportunity to submit proposals for Resource Project funding. The total Fund amount available this year is limited to \$1,153,809.54 for Resource Projects and \$534,154.84 for Bull Trout Projects. If you know of other entities that may have an interest in seeking funding, please forward this opportunity to them.

The selection of Resource Projects will be conducted in two phases. To be considered, applicants must submit a completed Pre-Proposal Form (see attachment A for Form) by **close of business October 5, 2012**. Pre-Proposals will be evaluated with some projects appropriately selected for further consideration (see attachment B for evaluation criteria). If selected, applicants will be notified in early December, and be requested to submit a formal proposal by mid-January. The Utilities and representatives of the Lewis River Aquatic Coordination Committee will finalize the list of successful projects in early April 2013. Shortly thereafter the Utilities will submit the final list to the Federal Energy Regulatory Commission to meet the submittal deadline of April 15, 2013.

Please give attention to this excellent opportunity. If you should have any questions feel free to contact Mr. Frank Shrier, PacifiCorp, (503) 813-6622. We look forward to your response in October.

Sincerely,

A handwritten signature in blue ink, appearing to read "Todd Olson", with a long horizontal flourish extending to the left.

Todd Olson  
Director, Compliance Hydro Resources

Encl:	Cover Letter
	Attachment A
	Attachment B



## Lewis River 2012/2013 Aquatic Fund Announcement Notification List

September 5, 2012

<b>eMail:</b>	Diana M. Gritten-MacDonald PUD #1 of Cowlitz County, WA PO Box 3007 Longview, WA 98632-0307 <a href="mailto:dmacdonald@cowlitzpud.org">dmacdonald@cowlitzpud.org</a>	<b>eMail:</b>	Bill M. Bakke The Native Fish Society 7830 SW 40 <sup>th</sup> , Suite 6 Portland, OR 97219 <a href="mailto:bmbakke@nativefishsociety.org">bmbakke@nativefishsociety.org</a>
<b>eMail:</b>	Bob Nelson Rocky Mountain Elk Foundation, Inc. 45 Overmeyer Rd Raymond, WA 98577 <a href="mailto:nelson338@aol.com">nelson338@aol.com</a>	<b>Hc:</b>	Salley Sovey United States Bureau of Land Mgmt. 915 Walla Walla Ave Wenatchee, WA 98801
<b>eMail:</b>	Adam Haspiel USDA Forest Service 42218 NE Yale Bridge Road Amboy, WA 98601 <a href="mailto:ahaspiel@fs.fed.us">ahaspiel@fs.fed.us</a>	<b>eMail:</b>	Kathryn Miller Trout Unlimited 227 SW Pine Street, Suite 200 Portland, OR 97204 <a href="mailto:kmiller@tu.org">kmiller@tu.org</a>
<b>eMail:</b>	Michelle Day NMFS 1201 NE Lloyd Blvd., Suite 1100 Portland, OR 97232-2778 <a href="mailto:michelle.day@noaa.gov">michelle.day@noaa.gov</a>	<b>Hc:</b>	Brett Swift American Rivers 320 SW Stark St Ste 412 Portland, OR 97204-2634
<b>Hc:</b>	Ken S. Berg United States Fish and Wildlife Service 510 Desmond Drive SE, Ste. 102 Lacey, WA 98503-1263	<b>eMail:</b>	John Clapp Lewis River Citizens at-Large 9315 NE Etna Road Woodland, WA 98674 <a href="mailto:jmcmapple@gmail.com">jmcmapple@gmail.com</a>
<b>eMail:</b>	Bart Stepp City of Woodland 100 Davidson, Box 9 Woodland, WA 98674 <a href="mailto:steppb@ci.woodland.wa.us">steppb@ci.woodland.wa.us</a>	<b>eMail:</b>	Emily Platt Gifford Pinchot Task Force 917 SW Oak St., Suite 407 Portland, OR 97205 <a href="mailto:Emily@gptaskforce.org">Emily@gptaskforce.org</a>
<b>Hc:</b>	Cowlitz County Department of Public Works 207 4th Ave North Kelso, WA 98626	<b>Hc:</b>	Jody Lando, Senior Quantitative Ecologist Stillwater Sciences 404 SE 6th Avenue Portland, OR 97214
<b>Hc:</b>	Ilene L. Black North County Emergency Medical Svc. 227 Frasier Rd. Amboy, WA 98601	<b>Hc:</b>	Darlene G. Johnson Woodland Chamber of Commerce P.O. Box 1808 Woodland, WA 98674
<b>eMail:</b>	Mariah Stoll-Smith Reese Lewis River Community Council 14900 Lewis River Rd. Ariel, WA 98603 <a href="mailto:m.reese@tds.net">m.reese@tds.net</a>	<b>Hc:</b>	Washington Recreation & Conservation Office P.O. Box 40917 Olympia, WA 98504-0917
<b>Hc:</b>	Susan Rosebrough National Park Service 909 First Avenue Seattle, WA 98104-1060	<b>eMail:</b>	Peggy Miller Washington Dept. Fish & Wildlife 600 Capitol Way North Olympia, WA 98504-0001

			<a href="mailto:peggy.miller@dfw.wa.gov">peggy.miller@dfw.wa.gov</a>
<b>eMail:</b>	James Malinowski Fish First PO Box 127 Amboy, WA 98601 <a href="mailto:jmalinowski@clark.edu">jmalinowski@clark.edu</a>	<b>eMail:</b>	Melody Tereski Lower Columbia Fish Recovery Board 2127 8th Ave Longview, WA 98632 <a href="mailto:Melodyt@lcfrb.gen.wa.us">Melodyt@lcfrb.gen.wa.us</a>
<b>eMail:</b>	Noel Johnson Lewis River Citizens at-Large 6412 NW Amidon Road Woodland, WA 98674 <a href="mailto:noel@lewisriver.com">noel@lewisriver.com</a>	<b>eMail:</b>	Pat Frazier WDFW 2108 Grand Blvd Vancouver, WA 98661 <a href="mailto:frazipaf@dfw.wa.gov">frazipaf@dfw.wa.gov</a>
<b>Hc:</b>	Don Stuart Cowlitz-Skamania Fire Dist. No. 7 11670 Lewis River Road Ariel, WA 98603	<b>Hc:</b>	Pat Spurgin Yakama Nation P.O. Box 151 Toppenish, WA 98948
<b>Hc:</b>	Betty Sue Morris, Chair Clark County, 1013 Franklin Street PO Box 5000 Vancouver, WA 98666-5000	<b>eMail:</b>	Eric Kinne WDFW 2108 Grand Blvd Vancouver, WA 98661 <a href="mailto:kinneebk@dfw.wa.gov">kinneebk@dfw.wa.gov</a>
<b>eMail:</b>	Jeff Breckel Lower Columbia River Fish Recovery 2127 8 <sup>th</sup> Avenue Longview, WA 98632 <a href="mailto:jbreckel@lcfrb.gen.wa.us">jbreckel@lcfrb.gen.wa.us</a>	<b>Hc:</b>	Gary Stuart Cowlitz-Skamania Fire District No. 7 11310 Lewis River Road Ariel, WA 98603
<b>eMail:</b>	Bob Rose Yakama Nation P.O. Box 151 Toppenish, WA 98948 <a href="mailto:rosb@yakamafish-nsn.gov">rosb@yakamafish-nsn.gov</a>	<b>eMail:</b>	Kemper M. McMaster Wildlands of Washington 2713 NW 140th St Vancouver, WA 98685 <a href="mailto:kmcmaster@wildlandsinc.com">kmcmaster@wildlandsinc.com</a>
<b>eMail:</b>	David Hu USFS, Gifford Pinchot National Forest 10600 NE 51st Circle Vancouver, WA 98682 <a href="mailto:dhu@fs.fed.us">dhu@fs.fed.us</a>	<b>Hc:</b>	Ken Hogan Federal Energy Regulatory Commission 888 First Street, NE Washington, DC 20426
<b>Hc:</b>	Steve Vigg Washington Dept. Fish & Wildlife 600 Capitol Way North Olympia, WA 98501	<b>Hc:</b>	Joel Rupley Clark County PO Box 5000 Vancouver, WA 98666
<b>eMail:</b>	Shannon Wills Cowlitz Indian Tribe PO Box 2547 Longview, WA 98632 <a href="mailto:biologist@cowlitz.org">biologist@cowlitz.org</a>	<b>eMail:</b>	LouEllyn Jones US Fish & Wildlife Services 510 Desmond Drive SE, Suite 102 Lacey, WA 98503-1263 <a href="mailto:louellyn_jones@fws.gov">louellyn_jones@fws.gov</a>
<b>eMail:</b>	Paul J. Pearce Skamania County PO Box 790 Stevenson, WA 98648 <a href="mailto:pearce@co.skamania.wa.us">pearce@co.skamania.wa.us</a>	<b>eMail:</b>	Dave Burlingame Cowlitz Indian Tribe PO Box 2547 Longview, WA 98632 <a href="mailto:culture@cowlitz.org">culture@cowlitz.org</a>
<b>eMail:</b>	Eric Holman Washington Dept. Fish & Wildlife 2108 Grand Blvd. Vancouver, WA 98661 <a href="mailto:eric.holman@dfw.wa.gov">eric.holman@dfw.wa.gov</a>	<b>Hc:</b>	Olympic Resource Management 321 Maurin Road Chehalis, WA 98520

<b>eMail:</b>	Erich Gaedeke Federal Energy Regulatory Commission 805 SW Broadway, Suite 550 Portland, OR 97205 <a href="mailto:Erich.Gaedeke@ferc.gov">Erich.Gaedeke@ferc.gov</a>	<b>eMail:</b>	Bryan Nordlund NMFS 510 Desmond Drive Lacey, WA 98503 <a href="mailto:bryan.nordlund@noaa.gov">bryan.nordlund@noaa.gov</a>
<b>eMail:</b>	Chris Maynard Department of Ecology PO Box 47600 Olympia WA 98504-7600 <a href="mailto:cmay461@ecy.wa.gov">cmay461@ecy.wa.gov</a>	<b>eMail:</b>	Taylor Aalvik PO Box 2547 Longview, WA 98632 <a href="mailto:taalvik@cowlitz.org">taalvik@cowlitz.org</a>
<b>Hc:</b>	Tony Pranger ANE/Elkhorn Forestry, Inc. PO Box 1864 Oregon City, OR 97045	<b>eMail:</b>	Rhidian Morgan PO Box 428 Ridgefield, WA 98642 <a href="mailto:rmmorgan@plasnewydd.org">rmmorgan@plasnewydd.org</a>
<b>eMail:</b>	Evan Haas Habitat Restoration Coordinator Lower Columbia River Estuary Par. 811 SW Naito Parkway, Suite 410 Portland, OR 97204 <a href="mailto:haas@lcrep.org">haas@lcrep.org</a>	<b>eMail:</b>	LCFEG Tony Meyer 12404 SE Evergreen Hwy Vancouver, WA 98683 <a href="mailto:cwfish@comcast.net">cwfish@comcast.net</a>
<b>eMail:</b>	Gardner Johnston Inter-fluve <a href="mailto:gjohnston@interfluve.com">gjohnston@interfluve.com</a>	<b>eMail:</b>	Lisa Moscinski Deputy Director Gifford Pinchot Task Force 917 SW Oak Street, Suite 410 Portland, OR 97205 <a href="mailto:lisa@gptaskforce.org">lisa@gptaskforce.org</a>
<b>eMail:</b>	James Bryne WDFW <a href="mailto:James.Byrne@dfw.wa.gov">James.Byrne@dfw.wa.gov</a>		

**APPENDIX C**

EMAIL DATED OCTOBER 25, 2012

MEMO TO ACC FROM K. McCUNE – PACIFICORP ENERGY  
REVIEW OF CY 2013 AQUATIC FUND PRE-PROPOSALS



## McCune, Kimberly

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**From:** McCune, Kimberly  
**Sent:** Thursday, October 25, 2012 3:49 PM  
**To:** '(Aaron.roberts@dfw.wa.gov)'; '(michael\_hudson@fws.gov)'; '(Timothy\_Whitesel@fws.gov)'; 'Adam Haspiel (ahaspiel@fs.fed.us)'; 'Bart Stepp'; 'Bill Bakke'; 'Bob Rose (rosb@yakamafish-nsn.gov)'; 'Bryan Nordlund'; 'Craig Olds (colds@cowlitz.org)'; 'David Hu'; 'Diana MacDonald'; 'Doyle, Jeremiah'; 'Eric Kinne'; 'Ferraiolo, Mark'; 'gghalseth@gmail.com'; 'Jeff Breckel'; 'Jim Malinowski'; 'Karchesky, Chris'; 'Kathryn Miller (kmiller@tu.org)'; 'Lesko, Erik'; 'LouEllyn Jones'; 'Mariah Stoll-Smith Reese (M.Reese@tds.net)'; 'Maynard, Chris (ECY)'; 'Melody Tereski'; 'Michelle Day'; 'Olson, Todd'; 'Patrick Frazier (pfrazier@lcfwb.gen.wa.us)'; 'Patrick Lee'; 'Paul Pearce'; 'peggy.miller@dfw.wa.gov'; 'Rhidian Morgan (rmmorgan@plasnewydd.org)'; 'Ruth Tracy'; 'Samagaio, James'; 'Shannon Wills'; 'Shrier, Frank'; 'Taylor Aalvik (taalvik@cowlitz.org)'  
**Subject:** ACTION REQUIRED - Lewis River 2012/2013 Aquatic Fund Pre-proposals  
**Attachments:** 10252012 - ACC Lewis River AQ Fund evaluation (2012-2013) Utilities' comments\_ACC Review.xls

Attn: ACC Participants

Please find attached the 2012/2013 Aquatic Fund Pre-proposals Evaluation Matrix to include the Utilities comments and recommendations.

Complete and detailed electronic copies of the Pre-proposals can be located at:

<http://www.pacificorp.com/es/hydro.html> <license implementation>, <ACC>, <2013>

I will provide hard copies of the Pre-proposals at the November ACC meeting, or sooner by request. Please review the Pre-proposals and come prepared with your comments and recommendations on November 8, 2012.

Thank you.

**Kimberly McCune**  
Sr. Project Coordinator  
PacifiCorp Energy - Hydro Resources  
825 NE Multnomah, Suite 1500  
Portland, OR 97232  
Ph: (503) 813-6078  
Fx: (503) 813-6633

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**From:** McCune, Kimberly  
**Sent:** Thursday, October 11, 2012 2:41 PM  
**To:** '(michael\_hudson@fws.gov)'; '(Timothy\_Whitesel@fws.gov)'; 'Adam Haspiel (ahaspiel@fs.fed.us)'; 'Bart Stepp'; 'Bill Bakke'; 'Bob Rose (rosb@yakamafish-nsn.gov)'; 'Bryan Nordlund'; 'Craig Olds (colds@cowlitz.org)'; 'David Hu'; 'Diana MacDonald'; 'Doyle, Jeremiah'; 'Eric Kinne'; 'gghalseth@gmail.com'; 'Jeff Breckel'; 'Jim Malinowski'; 'Karchesky, Chris'; 'Kathryn Miller (kmiller@tu.org)'; 'Lesko, Erik'; 'LouEllyn Jones'; 'Mariah Stoll-Smith Reese (M.Reese@tds.net)'; 'Maynard, Chris (ECY)'; 'Melody Tereski'; 'Michelle Day'; 'Olson, Todd'; 'Pat Frazier (frazipaf@dfw.wa.gov)'; 'Patrick Lee'; 'Paul Pearce'; 'peggy.miller@dfw.wa.gov'; 'Rhidian Morgan (rmmorgan@plasnewydd.org)'; 'Ruth Tracy'; 'Shannon Wills'; 'Shrier,

Frank; 'Taylor Aalvik ([taalvik@cowlitz.org](mailto:taalvik@cowlitz.org))'

**Subject:** Lewis River 2012/2013 Aquatic Fund Pre-proposals

Attn: ACC Participants

In accordance with the ACC meeting today, please note that the 2012/2013 Aquatic Fund Pre-proposals are in review with the Utilities. Their evaluation and comments are due on or before Friday, October 26, 2012.

Per your request I've attached the Funding Process Timeline for your consideration. Please familiarize yourself with the pre-proposals as we will be discussing them in more detail at the November 8, 2012 ACC meeting.

We received six (6) habitat enhancement pre-proposals by the October 5, 2012 deadline (see attached Evaluation Matrix for cursory detail). Complete and detailed electronic copies of the pre-proposals can be located at:

<http://www.pacificorp.com/es/hydro.html> <license implementation>, <ACC>, <2013>

Thank you.

K

**APPENDIX D**

EMAIL DATED FEBRUARY 1<sup>ST</sup> AND 14<sup>TH</sup>, 2013

MEMO TO ACC FROM K. McCUNE – PACIFICORP ENERGY

Lewis River 2012/2013 Aquatic Fund Full Proposals, 30-day Review and  
Comment Period

## McCune, Kimberly

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**From:** McCune, Kimberly  
**Sent:** Friday, February 01, 2013 8:46 AM  
**To:** '(Aaron.roberts@dfw.wa.gov)'; '(michael\_hudson@fws.gov)'; '(Timothy\_Whitesel@fws.gov)'; 'Adam Haspiel (ahaspiel@fs.fed.us)'; 'Bart Stepp'; 'Bill Bakke'; 'Bob Rose (rosb@yakamafish-nsn.gov)'; 'Bryan Nordlund'; 'Craig Olds (colds@cowlitz.org)'; 'David Hu'; 'Diana MacDonald'; 'Doyle, Jeremiah'; 'Eli Asher (easher@cowlitz.org)'; 'Eric Kinne'; 'Ferraiolo, Mark'; 'gghalseth@gmail.com'; 'Jeff Breckel'; 'Jim Malinowski'; 'Karchesky, Chris'; 'Kathryn Miller (kmiller@tu.org)'; 'Lesko, Erik'; 'LouEllyn Jones'; 'Mariah Stoll-Smith Reese (M.Reese@tds.net)'; 'Maynard, Chris (ECY)'; 'Melody Tereski'; 'Michelle Day'; 'Olson, Todd'; 'Patrick Frazier (pfrazier@lcfwb.gen.wa.us)'; 'Patrick Lee'; 'Paul Pearce'; 'peggy.miller@dfw.wa.gov'; 'Rhidian Morgan (rmmorgan@plasnewydd.org)'; 'Ruth Tracy'; 'Samagaio, James'; 'Shannon Wills'; 'Shrier, Frank'; 'Taylor Aalvik (taalvik@cowlitz.org)'  
**Subject:** ACTION REQUIRED: Lewis River 2012/2013 Aquatic Fund full proposals, 30-DAY REVIEW AND COMMENT PERIOD  
**Attachments:** 0201013 - ACC Lewis River AQ Fund evaluation (2012-2013) Utilities' & ACC comments.xls  
**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Attn: ACC Participants and interested parties

Please be advised that we received five (5) Lewis River habitat enhancement full proposals by the deadline of January 31, 2013.

Complete and detailed electronic copies of the full proposals can be located at: <http://www.pacificorp.com/es/hydro.html> <license implementation>, <ACC>, <2013>

A representative(s) from USFS and LCFEG will be providing more detailed presentations of their proposed projects to the ACC on Thursday, February 14, 2013.

We ask that you provide your comments on the full proposals to PacifiCorp **on or before Friday, March 1, 2013** to my attention at [kimberly.mccune@pacificorp.com](mailto:kimberly.mccune@pacificorp.com)  
In addition, I've attached the latest version of the ACC evaluation matrix for your reference.

Thank you.

K



## McCune, Kimberly

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**From:** McCune, Kimberly  
**Sent:** Thursday, February 14, 2013 3:09 PM  
**To:** '(Aaron.roberts@dfw.wa.gov)'; '(michael\_hudson@fws.gov)'; '(Timothy\_Whitesel@fws.gov)'; 'Adam Haspiel (ahaspiel@fs.fed.us)'; 'Bart Stepp'; 'Bill Bakke'; 'Bob Rose (rosb@yakamafish-nsn.gov)'; 'Bryan Nordlund'; 'Craig Olds (colds@cowlitz.org)'; 'David Hu'; 'Diana MacDonald'; 'Doyle, Jeremiah'; 'Eli Asher (easher@cowlitz.org)'; 'Eric Kinne'; 'Ferraiolo, Mark'; 'gghalseth@gmail.com'; 'Jeff Breckel'; 'Jim Malinowski'; 'johnson@co.skamania.wa.us' (johnson@co.skamania.wa.us)'; 'Karchesky, Chris'; 'Kathryn Miller (kmiller@tu.org)'; 'Lesko, Erik'; 'LouEllyn Jones'; 'Mariah Stoll-Smith Reese (M.Reese@tds.net)'; 'Maynard, Chris (ECY)'; 'Melody Tereski'; 'Michelle Day'; 'Olson, Todd'; 'Patrick Frazier (pfrazier@lcfrb.gen.wa.us)'; 'Patrick Lee'; 'Paul Pearce'; 'peggy.miller@dfw.wa.gov'; 'Rhidian Morgan (rmmorgan@plasnewydd.org)'; 'Ruth Tracy'; 'Samagaio, James'; 'Shannon Wills'; 'Shrier, Frank'; 'Taylor Aalvik (taalvik@cowlitz.org)'  
**Subject:** RE: ACTION REQUIRED: Lewis River 2012/2013 Aquatic Fund full proposals, 30-DAY REVIEW AND COMMENT PERIOD  
**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Attn: ACC Participants and interested parties

In accordance with the ACC meeting today I have uploaded the 2012/2013 Aquatic Fund project presentations to the Lewis River website for further reference. Electronic copies of the project presentations can be located at: <http://www.pacificorp.com/es/hydro.html> <Lewis River> <License Implementation>, <ACC>, <2013>

Please note the following timeline for Aquatic Fund responses and decisions:

Activity	Actual Date
Proposed Evaluation report submitted to ACC (30 day review)	2/1/13
Conduct proposed project information meeting (opportunity for project proponent to present project information to ACC)	2/14/13
<b>Proposal report comments due to Utilities</b>	<b>3/1/13</b>
Utilities provide draft selection matrix to ACC for review	3/4/13
<b>Conduct project selection meeting (finalize list of projects to receive funding pending FERC's approval)</b>	<b>3/14/13</b>
Submit project selection report to FERC	4/15/13 (latest date possible)

Thank you.

Kim

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**From:** McCune, Kimberly

**Sent:** Friday, February 01, 2013 8:46 AM

**To:** HML LRN (Roberts, Aaron); ([michael\\_hudson@fws.gov](mailto:michael_hudson@fws.gov)); ([Timothy\\_Whitesel@fws.gov](mailto:Timothy_Whitesel@fws.gov)); Adam Haspiel ([ahaspiel@fs.fed.us](mailto:ahaspiel@fs.fed.us)); HML LRN (Stepp, Bart); Bill Bakke; Bob Rose ([rosb@yakamafish-nsn.gov](mailto:rosb@yakamafish-nsn.gov)); Bryan Nordlund; Craig Olds ([colds@cowlitz.org](mailto:colds@cowlitz.org)); David Hu; Diana MacDonald; Doyle, Jeremiah; Eli Asher ([easher@cowlitz.org](mailto:easher@cowlitz.org)); HML LRN (Kinne, Eric); Ferraiolo, Mark; [gghalseth@gmail.com](mailto:gghalseth@gmail.com); 'Jeff Breckel'; Jim Malinowski; Karchesky, Chris; Kathryn Miller ([kmiller@tu.org](mailto:kmiller@tu.org)); Lesko, Erik; LouEllyn Jones; Mariah Stoll-Smith Reese ([M.Reese@tds.net](mailto:M.Reese@tds.net)); Maynard, Chris (ECY); Melody Tereski; Michelle Day; Olson, Todd; Patrick Frazier ([pfrazier@lcfrb.gen.wa.us](mailto:pfrazier@lcfrb.gen.wa.us)); Patrick Lee; Paul Pearce; [peggy.miller@dfw.wa.gov](mailto:peggy.miller@dfw.wa.gov); HML LRN (Morgan, Rhidian); Ruth Tracy; Samagaio, James; Shannon Wills; Shrier, Frank; Taylor Aalvik ([taalvik@cowlitz.org](mailto:taalvik@cowlitz.org))

**Subject:** ACTION REQUIRED: Lewis River 2012/2013 Aquatic Fund full proposals, 30-DAY REVIEW AND COMMENT PERIOD

Attn: ACC Participants and interested parties

Please be advised that we received five (5) Lewis River habitat enhancement full proposals by the deadline of January 31, 2013.

Complete and detailed electronic copies of the full proposals can be located at: <http://www.pacificorp.com/es/hydro.html> <license implementation>, <ACC>, <2013>

A representative(s) from USFS and LCFEG will be providing more detailed presentations of their proposed projects to the ACC on Thursday, February 14, 2013.

We ask that you provide your comments on the full proposals to PacifiCorp **on or before Friday, March 1, 2013** to my attention at [kimberly.mccune@pacificorp.com](mailto:kimberly.mccune@pacificorp.com)  
In addition, I've attached the latest version of the ACC evaluation matrix for your reference.

Thank you.

K

**APPENDIX E**  
EMAIL DATED MARCH 27, 2013  
TO THE ACC FROM K. McCUNE – PACIFICORP ENERGY  
CY 2012/2013 LEWIS RIVER AQUATIC FUND PROJECT FINAL SELECTION

**McCune, Kimberly**

**From:** McCune, Kimberly  
**Sent:** Wednesday, March 27, 2013 9:06 AM  
**To:** '(Aaron.roberts@dfw.wa.gov)'; '(michael\_hudson@fws.gov)'; '(Timothy\_Whitesel@fws.gov)'; 'Adam Haspiel (ahaspiel@fs.fed.us)'; 'Bart Stepp'; 'Bill Bakke'; 'Bob Rose (rosb@yakamafishnsn.gov)'; 'Bryan Nordlund'; 'Craig Olds (colds@cowlitz.org)'; 'David Hu'; 'Diana MacDonald'; 'Doyle, Jeremiah'; 'Eli Asher (easher@cowlitz.org)'; 'Eric Kinne'; 'Ferraiolo, Mark'; 'gghalseth@gmail.com'; 'Jeff Breckel'; 'Jim Malinowski'; 'johnson@co.skamania.wa.us' (johnson@co.skamania.wa.us)'; 'Karchesky, Chris'; 'Kathryn Miller (kmiller@tu.org)'; 'Lesko, Erik'; 'LouEllyn Jones'; 'Mariah Stoll-Smith Reese (M.Reese@tds.net)'; 'Maynard, Chris (ECY)'; 'Melody Tereski'; 'Michelle Day'; 'Olson, Todd'; 'Patrick Frazier (pfrazier@lcfwb.gen.wa.us)'; 'Patrick Lee'; 'Paul Pearce'; 'peggy.miller@dfw.wa.gov'; 'Rhidian Morgan (rmmorgan@plasnewydd.org)'; 'Ruth Tracy'; 'Samagaio, James'; 'Shannon Wills'; 'Shrier, Frank'; 'Taylor Aalvik (taalvik@cowlitz.org)'  
**Cc:** Tony Meyer (Tony@lcfeg.org)  
**Subject:** RE: 2012/2013 Lewis River Aquatic Fund Project Final Selection

Attn: ACC Participants and Interested Parties

Please be advised that consensus was reached at the March 14, 2013 ACC meeting. To accommodate those ACC participants not in attendance, the Utilities provided an additional 7-day comment period until March 26, 2013. The final Resource Project list is as follows:

Project No.	Applicant	Project Title	Funding Requested	Dec
1	USDA Forest Service	Lewis River Side Channel near Little Creek	\$60,000 (Resource Funds)	Y
3	USDA Forest Service	Little Creek Fish Habitat Restoration	\$69,000 (Resource Funds; saved \$18K by combining with Project No. 1)	Y
4	USDA Forest Service	Survey of Bull Trout Stream habitat features to develop future habitat restoration projects	\$59,226 (Bull Trout Funds)	Y
5	Lower Columbia Regional Fisheries Enhancement Group	Cedar Creek Reach 1A Restoration	\$53,000 (Resource Funds)	Y

Consensus was reached to *not* select the following project for funding:

Project No.	Applicant	Project Title	Funding	Dec
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			<b>Requested</b>	
2	USDA Forest Service	Muddy River Tributary near Hoo Hoo Bridge	\$39,000	N

The 2013 Aquatics Fund Annual Report will be submitted to the Commission prior to April 15, 2013 and the final document will be posted to the Lewis River website. PacifiCorp will notify the ACC and interested parties once we have received Commission approval.

We greatly appreciate your time and efforts in participating in the Lewis River 2012/2013 Aquatic Fund selection process.

**Kimberly McCune**

Sr. Project Coordinator  
PacifiCorp Energy - Hydro Resources  
825 NE Multnomah, Suite 1500  
Portland, OR 97232  
Ph: (503) 813-6078

Lewis River Aquatic Fund - Utilities' Evaluation of 2012/2013 Project Proposals										
								Cost	Consistency with	Selected by Utilities
No.	Applicant	Project Title	Project Schedule	Benefit	Bull Trout	Project Partners	Funding	Share?	Fund Objectives	for funding
1	USDA Forest Service	Lewis River Side Channel near Little Creek	2013 - 2015	This project will place 25 large wood structures in two side channels in the LR near the Little Creek confluence to maximize summer and winter rearing habitat for coho and spring Chinook salmon, winter steelhead and bull trout.	No	Gifford Pinchot National Forest, Mt. St. Helens Institute, LCFRB, Cowlitz Indian Tribe	\$ 60,000.00	Yes	1 Benefit Recovery Y 2 Support reintro. Y 3 Enhance habitat Y	Y
3	USDA Forest Service	Little Creek Fish Habitat Restoration	2013 - 2015	Enhance 2,200 feet of Little Creek with instream LWD structures. Place 20 structures into stream bank by trench-excavating and backfilling; provide excellent potential rearing and refugia habitats. FS will spot-treat noxious weeds; collect temperature readings to establish likelihood of bull trout use.	No	Gifford Pinchot National Forest, Mt. St Helens Institute	\$ 69,000.00	Yes	1 Benefit Recovery Y 2 Support reintro. Y 3 Enhance habitat Y	Y
4	USDA Forest Service	Survey of Bull Trout stream habitat features to develop future habitat restoration projects	2013/2014	Survey Rush Creek, Pine Creek, Little Creek and other cold NF Lewis tributaries to locate functional bull trout habitat features, identify degraded reaches and prioritize habitat restoration and improvement opportunities. Report will form the basis of a strategy for bull trout habitat restoration in the Lewis River.	Yes	Mt. St. Helens Institute, WDFW, Cowlitz Indian Tribe	\$ 59,226.00	Yes	1 Benefit Recovery Y 2 Support reintro. N 3 Enhance habitat N	Neutral
5	Lower Columbia Regional Fisheries Enhancement Group	Cedar Creek Reach 1A Restoration	2013 - 2015	Acquire and install LWD in 1,525 feet of lower Cedar Creek to increase spawning and rearing habitat for ESA listed chum, Chinook, coho and steelhead. Also, monitoring component for impacts of restoration on the Pacific lamprey population in lower Cedar Creek.	No	WDFW, USFWS, Clark County Public Works	\$ 53,000.00	Yes	1 Benefit Recovery Y 2 Support reintro. Y 3 Enhance habitat Y	Y
Fund Objectives:							Resource Funds Requested \$ 182,000.00			
							Bull Trout Funds Requested \$ 59,226.00			
							Total Aquatic Funds \$ 241,226.00			

ACC/Utilities													
Decision for Funding		Applicant	Project Title	Funding	WDFW	Fish First	LCFRB	Yakama Nation	USFS	Cowlitz Indian Tribe	USFWS	Utilities	NMFS
YES	1	USDA Forest Service	Lewis River Side Channel near Little Creek	\$ 60,000.00	There are not fish up there yet; has concern about funding when we don't know where it is needed. <b>Does not approve funding but will not stand in the way.</b>	Make sure large woody debris is buried adequately in the bank; confirm bank is stable. <b>YES - proceed to funding.</b>	I notice that this project is classified as yes for bull trout. I also notices that in the spending totals at the bottom of the spreadsheet all of the funds for this project are applied to the bull trout fund. When I read the proposal there was no mention of benefit to bull trout whatsoever. <b>YES - proceed to funding.</b>	Defer to ACC via email dated March 13, 2013.	No comments - <b>Yes, - proceed to funding.</b>	Does this project actually benefit Bull trout? For salmon, adding complexity to any system is always beneficial. Large Wood is always good. <b>Do select project for funding</b>	No response was received within the 7-day comment period.	<b>Yes - proceed to funding</b>	No response was received within the 7-day comment period.
YES	3	USDA Forest Service	Little Creek Fish Habitat Restoration (A cost saving of approximately \$18,000 can be obtained if this project is combined with Lewis River Side Channel 4). Savings would be reduced NEPA and equipment move-in costs for a total of \$69,000.	\$ 87,000 (or \$69,000 if combined with project no. 1)	<b>Yes - proceed to funding.</b>	<b>Yes - proceed to funding.</b>	This is a tier 2 or 3 and not a high priority; fits and is efficient. <b>Yes - proceed to funding.</b>	Defer to ACC via email dated March 13, 2013.	Yes - supports this project. <b>Proceed with funding.</b>	The Tribe has no issues with this project. <b>Do select project for funding</b>	No response was received within the 7-day comment period.	<b>Yes - proceed to funding</b>	No response was received within the 7-day comment period.
YES	4	USDA Forest Service	Survey of Bull Trout Stream habitat features to develop future habitat restoration projects	\$ 59,226.00	<b>Yes - proceed to funding.</b>	Aren't agency funds available to conduct this study? Do not want to spend project funds on this project. <b>Do not fund but will not stand in the way.</b>	Agrees that bull trout data is available but not the full pictures. The study will identify where the data gaps are, data will be collected to fill the gaps, identify the limiting factors and what projects will benefit. We need good sold well-rounded picture which will get us to the end point on bull trout. This is a consistent message from the ACC. The end of the project will include where to focus bull trout project efforts. <b>Yes - proceed to funding.</b>	Defer to ACC via email dated March 13, 2013.	This project is well thought out; every major player in the arena supports this project (agency cooperation). There is benefit and value. <b>Yes - proceed with funding.</b>	The Tribe supports this project and very much wants it to be funded. This project needs to be completed for numerous reasons. It will be beneficial in helping the ACC determine where future Bull Trout dollars should be spent as well as help to indicate whether a salmonid project that is being proposed may affect Bull Trout in a 'sensitive' area. <b>Do select project for funding</b>	No response was received within the 7-day comment period.	PacifiCorp said that many agencies have been collecting bull trout data since the 1980s. What more will be learned that hasn't beendone already? What information there that has not already been addressed? Cowlitz PUD said that the project sponsor needs to collect data and present to the ACC in a proper proposal. Cowlitz PUD would like the project proponent to clearly outline how this is different than data that already exists. Some measurable way to determine how research can be used. Demonstrate how this project is useful. PacifiCorp would like to see identification of the data gaps; define gaps in a meaningful way. No do not proceed with funding. PacifiCorp said that if the ACC proceeds with funding, would like to focus efforts on certain tributaries. Cowlitz PUD said that this is outside the discussion of the Settlement Agreement. The intent was not to use the Aquatic Funds for research and studies. The project sponsor has not completed background research. <b>Utilities say no - do not proceed with funding.</b>	No response was received within the 7-day comment period.
YES	5	Lower Columbia Regional Fisheries Enhancement Group	Cedar Creek Reach 1A Restoration	\$ 53,000.00	Concerns about lamprey. <b>Proceed to funding with caveat that LCPEG work closely with USFS and WDFW on this project.</b>	Habitat good there already. Is habitat that degraded that it needs this treatment? <b>Do not fund but will not stand in the way.</b>	There should be a stipulation that funds from the Lower River Wood Fund be used for this project before any of the Resource Fund dollars are allocated to this project. I believe you said there is \$40,000 in the Lower River Wood Fund, which would cover most if not all of the wood expense needed to implement this project. <i>Note: ACC determined this project does not qualify for the LWD funds - see SA 7.1.1).</i> This project has been evaluated by by LCFRB (panel of appx. 10). Initially a tier 3 or 4 (low priority); directly connected to main stem Lewis could benefit main stem Lewis fish so it became a tier 1 because of its connection. Good coordination with USFW and WDFW to achieve protection of lamprey <b>Yes - proceed with funding.</b>	Defer to ACC via email dated March 13, 2013.	<b>Yes - proceed with funding.</b>	The Tribe supports this project. <b>Do select project for funding.</b>	No response was received within the 7-day comment period.	Cowlitz PUD defers to PacifiCorp. Lamprey is not a target species. <b>PacifiCorp said yes - proceed with funding.</b>	No response was received within the 7-day comment period.
			Resource Funds	\$ 182,000.00									
			Bull Trout Funds	\$ 59,226.00									
			Total Aquatic Funds	\$ 241,226.00									

**APPENDIX F**  
Lewis River Side Channel near Little Creek

## 1. Project Title

### Lewis River Side Channel IV 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](mailto:ahaspiel@fs.fed.us)

## 3. Identification of problem or opportunity to be addressed

***Problem:***

In the Upper North Fork Lewis River there is minimal high quality side channel spawning and rearing habitat. This habitat is essential for species listed under the Endangered Species Act (ESA) that use the Lewis River Basin, including coho and Chinook salmon, steelhead trout, and bull trout. These species have endured many effects that threaten the survival of the species. Effects to their habitats in the Upper North Fork Lewis River include past land management activities such as logging, road building, and development of hydro-resources, which until recently has blocked all access into the upper basin for anadromous species. To ensure reintroduction efforts of salmon and steelhead into the upper basin are successful the Forest Service has worked with PacifiCorp on a variety of projects including acclimation ponds for juvenile spring Chinook salmon, road decommissioning, replacement of migration blocking culverts with bridges, and various streambank and instream fish habitat restoration projects.

***Opportunity:***

This project proposal develops the opportunity to ensure fish reintroduction efforts into the upper North Fork Basin are successful. This project of restoring instream fish habitat in two side channels of the Lewis River to its full potential prioritizes opportunities for ESA listed fish species. Enhancement and restoration of instream habitat will increase the overall abundance of functional habitat in the upper basin.

The Forest Service proposes to place 25 large wood structures composed of 300 pieces of Large Woody Material in two side channels in the Lewis River near the confluence of Little Creek to improve habitat for juvenile salmonids. Research has shown that side channels provide preferred summer and overwintering habitat for juvenile coho (Everest et al. 1985; Everest et al. 1986). Each structure will contain an average of 12 pieces of large wood, and be strategically located to maximize summer and winter rearing habitat for coho and spring Chinook salmon, winter steelhead, and possibly bull trout. The project will improve a total of 0.75 miles of side channel habitat on both sides of the mainstem Lewis. The Forest Service will hire a contract helicopter to import wood to the project site. A tracked excavator will access the area via an abandoned road, and will assemble the instream structures. Wood for this project would come from USFS lands Peppercat unit 21 and/or from Swift Reservoir cleaning operations. If the ACC funds this proposal, the Cowlitz Indian Tribe will seek additional funding for this project from the

Salmon Recovery Funding Board to cover helicopter contract costs and leverage ACC funds.

#### **4. Background**

Reconnaissance surveys conducted for this project occurred during September 2012. Water flows year round into the side channel located on the east side of the river. The amount of flow is controlled by an island at the head of the channel. Side channel flows vary with increase river flows. An outlet to the river is always flowing, providing easy access into and out of the side channel. The outlet is located approximately 500 feet upstream from the confluence of Little Creek. The side channel varies between 20 and 30 feet in width, and is well protected by a stable island. The side channel on the west side of the river has minimal flows during summer months; however it provides excellent refugia for juveniles during high winter flows. The outlet for this channel is approximately 600 feet upstream from the confluence of Little Creek and on the opposite side of the river. This side channel varies in width from 12 to 20 feet wide and is protected by a large gravel bar.

Presently, habitat in the side channels is limited due to lack of cover and large woody material (LWM). Some hiding cover in the form of grasses and forbs is present near the top of the east side channel which is where the majority of fish (approximately 200 juvenile coho) have been located. Large woody material will provide additional cover in the side channel allowing full use of the channel by juvenile salmonids. In addition to cover, gravels will be sorted during high flow events increasing spawning opportunities.

The Lower Columbia Salmon Recovery Plan 2009 Six Year Habitat Work Schedule identifies this as a Tier 1(highest priority) reach. EDT analysis identifies high production potential for spring Chinook and winter steelhead, and medium potential for coho. EDT results suggest that off channel and side channel habitat and channel structure restoration are high multi-species priorities in the reach. The ACC Synthesis Matrix rated this section of the river as having low restoration potential and as a Primary coho population area, a medium rating for coho reach potential.

#### **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 accomplished during the summer and fall of 2013. The final document should be completed and signed by March 2014, and the project would be implemented July 2014.
- 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 were completed during reconnaissance visits in 2012.
- 2) A laser level will be used to obtain a longitudinal profile and cross-sectional information as we finalize designs.
- 3) 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 helicopter contract. A standard RFQ contract will be developed to deliver logs with a helicopter from a staging area to the side channel.
- 2) Develop equipment and logging 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.
- 3) 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 and volunteers including urban youth 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 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 via Forest Road 9310 and stockpiled at the 9310 junction with the 9310240 Road. From there, the wood will be flown in by helicopter to the project site. Once at the site the logs will be moved and placed by an excavator. The excavator would gain access to the Lewis River using a decommissioned road on the south side of Rush Creek. The reason a helicopter is a preferred method to deliver the trees to the creek is to keep the access road near Rush Creek in a decommissioned state to continue to avoid negatively affecting bull trout. 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. The overall design will appear natural and meet scenery management objectives.

## **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 2013. Project implementation would occur July 15<sup>th</sup> 2014 and is expected to take two weeks to complete. 'As built' documents will be completed by December 31<sup>st</sup>, 2014. An initial report documenting fish response to the structures will be completed by December 31<sup>st</sup>, 2015. The first monitoring report with pre and post project data will be available December 31, 2015. 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 and fall of 2013 NEPA document will be completed Spring 2014.

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.

## 11. Matching Funds and In-kind Contributions

Partner	Contribution	Funds
Forest Service	Project development, Contracting, Permitting, Monitoring	\$14,000 In-kind
Materials from USFS	Trees with rootwads	\$45,000 In-kind
LCFRB	Helicopter funds	\$70,000 Cash-(proposed)
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) Soil and Water program manager, Ruth Tracy and Cowlitz Indian Tribe Restoration Ecologist Eli Asher.

## 13. Budget

	NEPA	Final designs	Project Mgmt	Construction	Monitoring/Labor /Reporting/Coord.
<b>Personnel Costs</b>					
FS - Zone Team or Contract	\$8,000 (ACC)				
FS –Fish Bio and Hydrologist		\$4,000 (IK) \$1,000 (ACC)			
FS - Fish Bio and Bio technician			\$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)
<b>Materials</b>					
Forest Service 300 Pieces of LWM with rootwads				\$45,000 (IK)	
<b>Contract Payables</b>					
Excavator Contract				\$15,000 (ACC)	
Helicopter Contract				\$70,000 (SRFB)	
Logging and hauling of trees				\$25,000 (ACC)	
Materials and Supplies			\$ 1,000(ACC)		
<b>Total ACC Funds</b>	<b>\$60,000</b>	<b>\$8,000</b>	<b>\$1,000</b>	<b>\$4,000</b>	<b>\$3,000</b>
<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>\$72,000</i>			<i>\$70,000</i>	<i>\$2,000</i>
<b>Project Total</b>	<b>\$191,000</b>				
FS personnel estimated as \$400/day.					

## Lewis River Side Channel IV expanded budget 2013

Item	Personnel	Estimated Days/units*	Cost Per Unit	Total*
NEPA Environmental Assessment required by Federal Law	Fish Biologist Wildlife Biologist Hydrologist Botanist Archeologist Soil Scientist Recreation Forester NEPA Coordinator	4 3 3 3 3 1 0.5 0.5 2	\$400 per day per person	\$8,000 (ACC)
Final Designs	Fish Biologist Hydrologist Fish Technician	5 2 5.5	\$400 per day per person	\$4,000 (IK) \$1,000 (ACC)
Project Management	Fish Biologist Fish Technician Mileage	10 7.5 2000 miles	\$400 per day per person \$0.50	\$4,000 (IK) \$3,000 (ACC) \$1,000 (IK)
Construction	Contract Administration/Prep  Transportation  Logging contract Equipment contract Helicopter contract	21  1,000 miles	\$400 per day per person \$0.50	\$4,500 (IK) \$4,000 (ACC) \$500 (IK) \$25,000(ACC) \$15,000 (ACC) \$70,000 (LCFRB)
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  Volunteers  Transportation	10   25  1,000	\$300 per day per person  \$20 \$0.50	\$1,500 (IK) \$2,500 (ACC)  \$500 (IK) \$500 (ACC)
<b>Total</b>				<b>\$191,000</b>

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

## Lewis Side Channel IV Equipment Budget 2013

Item	Cost per unit	Number of units	ACC cost	Total Cost
Excavator Operator/Fuel/Supplies, misc	\$125 hour	108	\$13,500	\$13,500
Excavator Move in/out	\$1,500	1	\$1,500	\$1,500
Logging and Hauling cost: Based on Previous Contract	\$25,000	1	\$25,000	\$25,000
<b>Total</b>			<b>\$30,000</b>	<b>\$40,000</b>

### **Questions from ACC members**

All projects: Proposals should demonstrate that the project is scientifically supported, has a clear nexus to the Lewis River hydroelectric projects, and clearly supports the Aquatic Fund objectives. Please prepare the document with the assumption that the reader is not familiar with the Lewis River basin, its issues, or its resources.

### **Lewis River Side Channel near Little Creek**

*WDFW: Need better breakdown of budget. How will the structures be anchored. Need additional information on how fish will use area in high and low flows. Please explain the need for helicopter.*

The budget has been broken down and is available in the budget section of this proposal. Structures will be anchored by burying them into the stream bank, no cable will be used. An excavator will dig a long trench and then bury 30 feet or more of the bole of the tree, the rootwad and a portion of the bole will be in the water. The reason a helicopter is being proposed is because a decommissioned road near Rush Creek will be used get the excavator to the river. This is the road that WDFW and PacifiCorp currently walk down to access PIT tag detectors. If we opened the road to vehicle traffic and log trucks it will negatively affect the recovery of riparian area and make the public aware of the previous roadbed that accesses Rush Creek, and in particular the deeper pool which bull trout occupy during summer months.

*LCFRB: To fully evaluate this project it is important to know if the side channels are currently functional and are they accessible year round or seasonally. In addition to providing greater habitat diversity, would large wood structures also enhance or maintain flows in the side channels? A diagram showing approximate structure locations*

*and elaborating on the type, location and scale of expected habitat outcomes (sort gravel, provide juvenile rearing, etc...) should be included in a final proposal. A full description of existing habitat and the improvement resulting from this project would assist in evaluating this project.*

The side channel on the east side of the river is currently functional and accessible to fish year round. There are no functional amounts of functional LWD in the side channel. The west side channel is not functional during the summer months of July, August and September, but is functional the rest of the year, providing refugia from high flow events. Actual flows into the side channel would not be affected by this project. A diagram has been included in this proposal that addresses above concerns.

Reconnaissance surveys conducted for this project occurred during September 2012. Water flows year round into the side channel located on the east side of the river. The amount is controlled by an island at the head of the channel and side channel flows vary with increase river flows. An outlet to the river is always flowing, providing easy access into and out of the side channel. The outlet is located approximately 500 feet upstream from the confluence of Little Creek. The side channel varies between 20 and 30 feet in width, and is well protected by a stable island. The side channel on the west side of the river has minimal flows during summer months; however it provides excellent refugia for juveniles during high winter flows. The outlet for this channel is approximately 600 feet upstream from the confluence of Little Creek and on the opposite side of the river. This side channel varies in width from 12 to 20 feet wide and is protected by a large gravel bar.

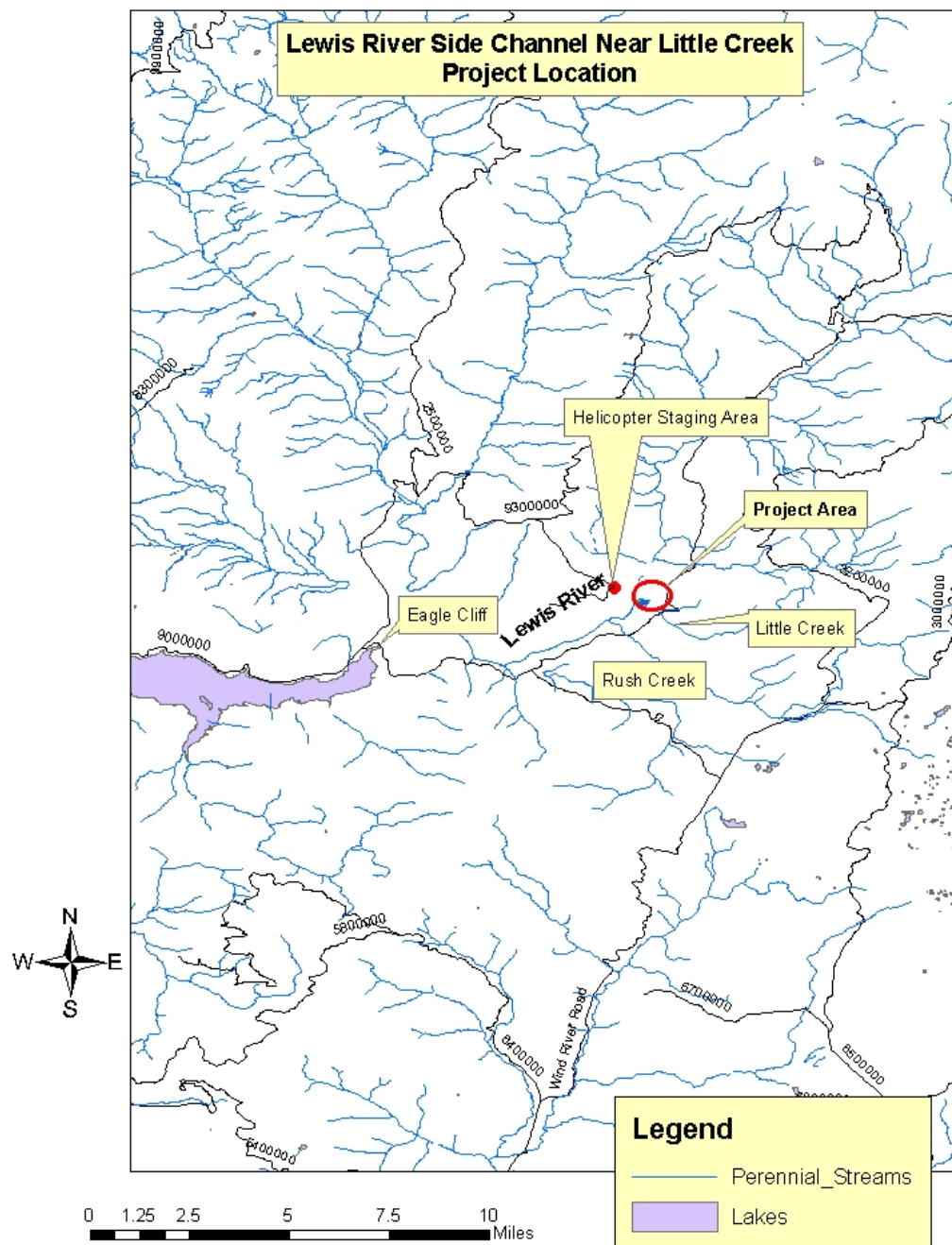
Habitat in the side channels is presently limited due to lack of cover and lack of LWM. Some hiding cover in the form of grasses and forbs is present near the top of the east side channel which is where the majority of fish (approximately 200 juvenile coho) have been located. Additions of LWD will provide cover in the side channel allowing full use of the side channel by juvenile salmonids. In addition to cover gravels will be sorted during high flow events increasing spawning opportunities.

*USFS: Please expand on project need and current fish usage; Please explain why helicopter is needed (vs. ground based/use of current abandoned road); Please clarify what scenario is if SRFB helicopter costs are not received; Please show map of proposed structure locations (e.g. zoomed aerial map with asterisks or symbols where log placement); Please describe more on "opportunity to treat invasives"; Recommend describing how fits into and contributes to Forest restoration plans.*

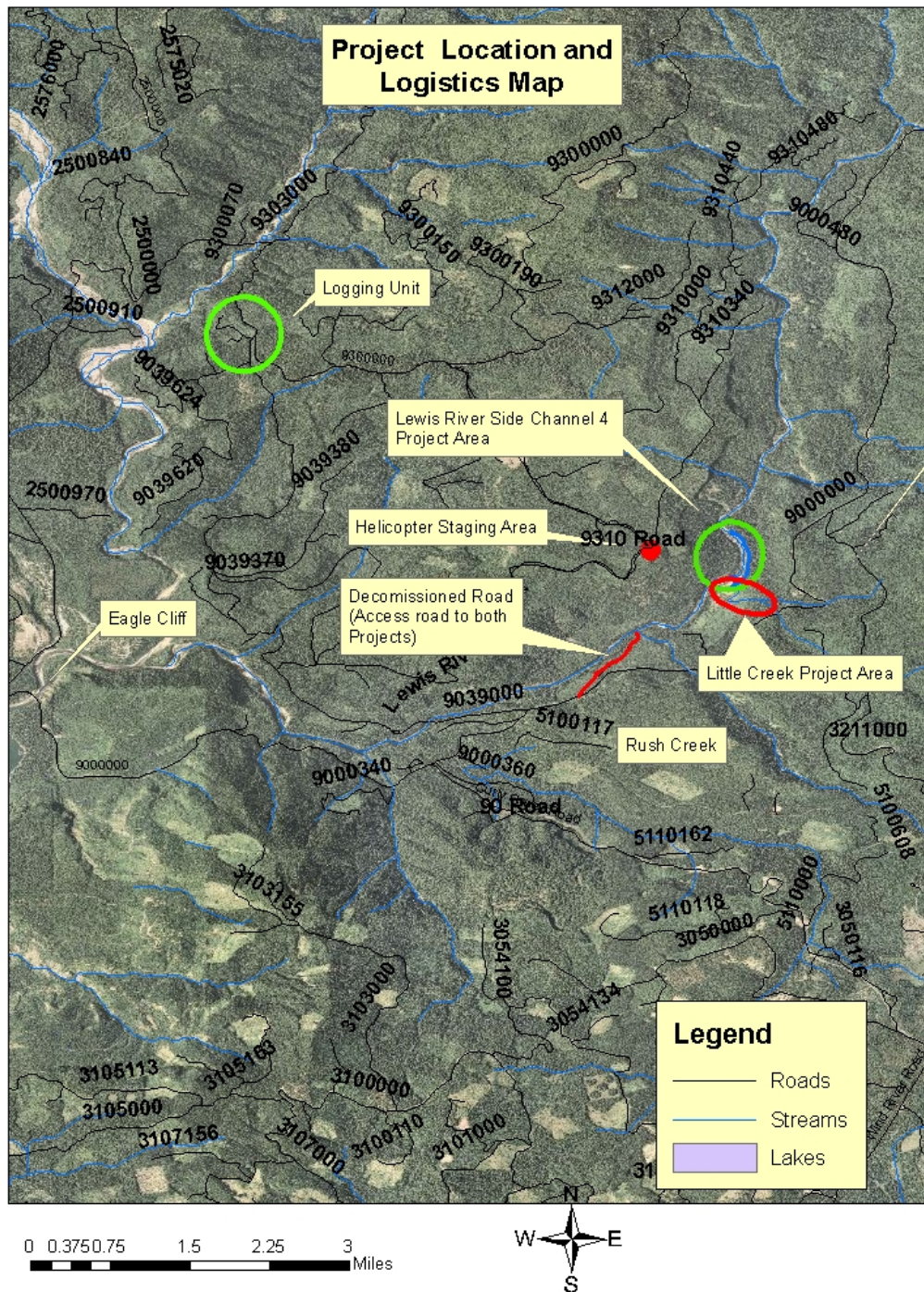
The need for this project is to enhance critical side channel habitat in the Upper Lewis River System. Functional side channel habitat is in short supply in the Upper Lewis River Basin and it is well documented the role side channels play in a river system. (Everest et al. 1985; Everest et al. 1986). Several hundred juvenile coho were observed in the grassy portion at the upper end of the east side channel, the only area with hiding cover in the side channel.

The reason a helicopter is being proposed is because a decommissioned road near Rush Creek will be used to move the excavator to the river. This is the road that WDFW and PacifiCorp currently walk down to access PIT tag detectors. If we opened the road to vehicle traffic and log trucks it will negatively affect the recovery of the riparian system and make the public aware of the previous roadbed that accesses Rush Creek, and in particular the deeper pool which bull trout occupy during summer months. If funds from

SFRB are not received, we will go back to the ACC and ask for more money to fund the helicopter portion. If the ACC group does not want to fund the helicopter portion, then the project will either be dropped or we will apply for funds through other granting agencies such as Ecotrust. A diagram/map has been included in this proposal that addresses above concerns. Based on discussions in the ACC group invasive weed treatments will be limited to areas directly affected by implementation of the project.









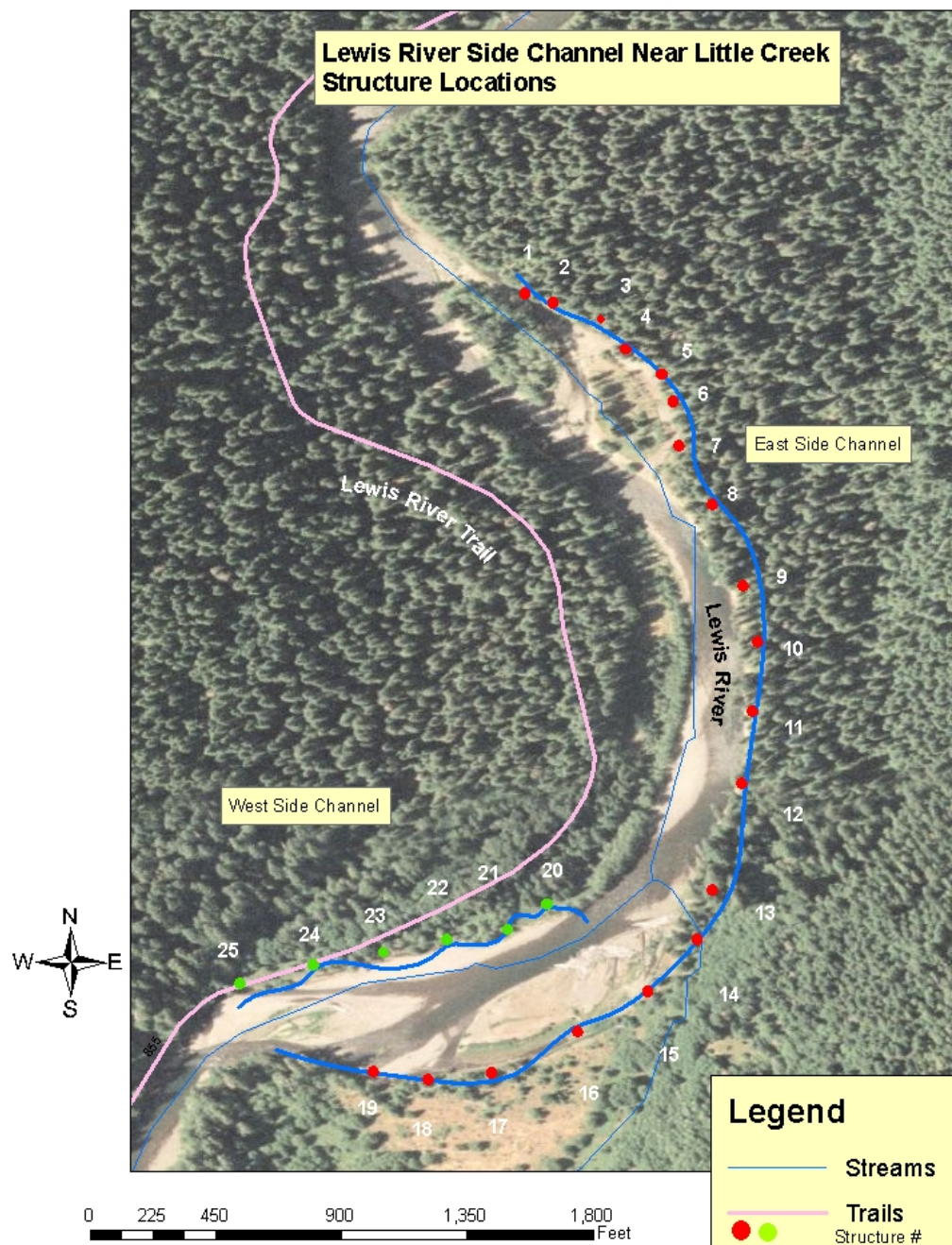


Table of structure design criteria and expected outcomes

Structure Number	Hiding Cover	Overwintering Refugia	Summer Rearing	Pool Formation	Gravel Sorting	Bank Stability
1	x	x	x	x		
2	x	x	x	x		
3	x	x	x	x		
4	x	x	x	x	x	
5	x	x	x	x	x	
6	x	x	x	x	x	
7	x	x	x	x	x	
8	x	x	x	x	x	
9	x	x	x	x	x	
10	x	x	x	x	x	
11	x	x	x	x	x	
12	x	x	x	x	x	
13	x	x	x	x	x	
14	x	x	x	x	x	
15	x	x	x	x	x	x
16	x	x	x	x	x	x
17	x	x	x	x	x	x
18	x	x	x	x		x
19	x	x	x	x		x
20	x	x		x		
21	x	x		x		
22	x	x		x		
23	x	x		x		
24	x	x		x		
25	x	x		x		





1. Photo of Typical Section of East Side Channel



2. East Side Channel





3. West Side Channel

#### References

Everest, Fred, James Sedell, John Wolfe, 1985. "Fisheries Enhancement in the Fish Creek Basin", Project No. 1984-01100, 234 electronic pages, (BPA report DOE/BP-16726-1)

Everest, Fred H. Gordon H. Reeves, James R. Sedell, Pacific Northwest Forest and Range Experiment Station 1986. Abundance, Behavior, and Habitat Utilization by Coho Salmon and Steelhead in Fish Creek, Oregon as Influenced by Habitat Enhancement 1985 Annual Report.

**APPENDIX G**  
Little Creek Fish Habitat Restoration

## **1. Project Title**

### **Little Creek Fish 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](mailto:ahaspiel@fs.fed.us)

## **3. Identification of problem or opportunity to be addressed**

### ***Problem:***

In the Upper North Fork Lewis River there is scarce quality non-mainstem spawning/rearing habitat. This habitat is essential for species listed under the Endangered Species Act (ESA) that use the Lewis River Basin, including coho and Chinook salmon, steelhead trout, and bull trout. These species have endured many effects that threaten the survival of the species. Effects to their habitats in the Upper North Fork Lewis River include past land management activities such as logging, road building, and development of hydro-resources, which until recently has blocked all access into the upper basin for anadromous species. To ensure reintroduction efforts of salmon and steelhead into the upper basin are successful the Forest Service has worked with PacifiCorp on a variety of projects including acclimation ponds for juvenile spring Chinook salmon, road decommissioning, replacement of migration blocking culverts with bridges, and various streambank and instream fish habitat restoration projects.

### ***Opportunity:***

This project proposal helps to ensure successful fish reintroduction into the upper North Fork Basin. This project of restoring instream fish habitat in Little Creek to its full potential prioritizes opportunities for ESA listed fish species. Enhancement and restoration of instream habitat will increase the overall abundance of functional habitat in the upper basin.

The Forest Service proposes to enhance 2,700' of Little Creek with instream structures composed of large woody material with rootwads. Little Creek has cooler summer water temperatures than many of the streams entering the Lewis River and meanders through a meadow reach before flowing into the Lewis River. It currently lacks large woody material, but because of the low gradient meander qualities of the stream it has the potential to provide excellent rearing and refugia habitats. Enhancing the stream with large woody material should bring it to its full potential and create desirable habitat for fish (Everest et al. 1985; Everest et al. 1986).

A tracked excavator will place 20 structures constructed from approximately 200 pieces of large wood, into the stream. The large wood will come from Peppercat unit 21 and be delivered to the project site using a contract helicopter. A tracked excavator will access the area via an abandoned road, and will assemble the instream structures. Structures will

be keyed into the stream bank by trench-excavating and backfilling over 2/3 of each log length.

This project could be implemented at the same time as the Lewis River Side Channel 4 project which would save helicopter and equipment move in costs. Any cost savings due to this will be returned to the ACC for future project awards. The Forest Service will also collect water temperature readings to establish likelihood of bull trout use.

#### **4. Background**

Reconnaissance surveys conducted for this project occurred during September 2012. Little Creek crosses FR 90 passing through a large culvert. Below the FR 90 crossing, the creek flows down a fairly steep channel and turns into a low gradient stream when it enters a grassy meadow. The banks of the stream in the meadow are sandy and the minimal wood that is currently instream is not functioning to create pool or hiding cover for fish.

A stream survey of the lower 0.4 miles of Little Creek was completed in June 7<sup>th</sup> 1990. A spot water temperature was taken at that time documenting the stream at 8 Degrees Celsius. Little Creek has several braid channels as it flows through the meadow. At the time of the survey there was an old road with a log bridge that crossed Little Creek in the meadow. The area was clear cut logged in the past, but currently the riparian zone has recovered and is consists predominately of Alder and some mid seral stands. In 1990 the average wetted width was 11 feet and the average depth was 1.4 feet. Pools had a residual depth of 1.8 feet. Instream large wood was minimal. Since 1990, the channel has shifted in the meadow and enters the Lewis River about 500 feet downstream of where it once did. Cutthroat trout were documented using electrofishing techniques in 1984.

During the 2012 reconnaissance it was determined that fish habitat in Little Creek is presently limited due to lack of cover and instream large wood. Minimal hiding cover in the form of grasses and forbs is present as the creek winds through the meadow. Currently, only a few pieces of large wood are present and generally are not functioning to form pools, and only provide minimal cover. Additions of LWD will provide cover in Little Creek allowing full use of the creek by juvenile salmonids, particularly coho salmon. In addition to cover, gravels will be sorted during high flow events increasing spawning opportunities. If cool water temperatures are currently present, bull trout may use this creek after restoration efforts are completed.

The Lower Columbia Salmon Recovery Plan 2009 Six Year Habitat Work Schedule identifies this as a Tier 3 reach. For coho salmon it has an Overall Preservation rank of 56 of 100, and Overall Restoration rank of 63 of 103. Concern ratings were high for habitat diversity, sediment loads, and channel stability. The ACC Synthesis Matrix rated this section of the river as having low restoration potential and as a Primary coho population area with a medium rating for coho reach potential.

#### **5. Project Objective(s)**



## GOAL:

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

- ◆ Improving habitat complexity and diversity in Little Creek using Large Woody Material
- ◆ 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 pools in Little Creek. 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, 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 2013. The final document should be crafted and signed by March 2014, and the project would be implemented July 2014.
- 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 were completed during reconnaissance visits in 2012. A laser level will be used to obtain a longitudinal profile and 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 helicopter contract. A standard RFQ contract will be developed to deliver logs with a helicopter from a staging area to the side channel.
- 2) Develop equipment and logging 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.
- 3) 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 and volunteers including urban youth to perform monitoring work. They will perform all aspects of the monitoring with supervision and training from the Forest Service.
- 2) Perform post 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 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 200 pieces of LWM would be harvested during thinning operations from a nearby timber sale unit which would allow us to use long stems (50+ feet) with attached rootwads. Woody material will be trucked via Forest Road 9310 and stockpiled at the 9310 junction with the 9310240 road. From there, the wood will be flown in by helicopter to the project site. Once at the site, the logs will be moved and placed by an excavator. The excavator would gain access to the Lewis River using a decommissioned road on the south side of Rush Creek. The reason a helicopter is a preferred method to deliver the trees to the creek is to keep the access road near Rush Creek in a decommissioned state to continue to avoid negatively affecting bull trout. 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 8 to 10 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: A NEPA Document with associated permits

Deliverable 2: Completed project. Twenty structures will be created using 200 pieces of LWD.

Deliverable 3: Construction Completion Report describing the project. Report to include project narrative, lessons learned and photographs of completed projects.

Deliverable 4: Monitoring Report.

Deliverable 5: Final Report describing the entire process and the status of the project two years after implementation.

## **9. Project Duration**

Monitoring for this project would begin during the summer of 2013. Project implementation would occur July 15<sup>th</sup> 2014 and is expected to take two weeks to complete. 'As built' documents will be completed by December 31<sup>st</sup>, 2014. An initial report documenting fish response to the structures will be completed by December 31<sup>st</sup>, 2015. The first monitoring report with pre and post project data will be available December 31, 2015. 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 and fall of 2013. The NEPA document will be completed Spring 2014.

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.

#### **11. Matching Funds and In-kind Contributions**

<b>Partner</b>	<b>Contribution</b>	<b>Funds</b>
Forest Service	Project development, Contracting, Permitting, Monitoring	\$14,000 In-kind
Materials from USFS	Trees with rootwads	\$30,000 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) Soil and Water Program Manager, Ruth Tracy.

### 13. Budget

	NEPA	Final designs	Project Mgmt	Construction	Monitoring/Labor /Reporting/Coord.
<b>Personnel Costs</b>					
FS - Zone Team or Contract	\$8,000 (ACC)				
FS –Fish Bio, Hydrologist and Bio technician		\$4,000 (IK) \$1,000 (ACC)			
FS - Fish Bio and Bio Technician			\$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)
<b>Materials</b>					
Forest Service 200 Pieces of LWM with rootwads				\$30,000 (IK)	
<b>Contract Payables</b>					
				\$12,000 (ACC)	
Excavator Contract					
Helicopter Contract				\$40,000 (ACC)	
Logging and hauling of trees				\$15,000 (ACC)	
Materials and Supplies			\$1,000 (ACC)		
<b>Total ACC Funds</b>	<b>\$87,000*</b>	<b>\$8,000</b>	<b>\$1,000</b>	<b>\$4,000</b>	<b>\$71,000</b>
<i>Total FS Funds</i>	<i>\$44,000</i>		<i>\$4,000</i>	<i>\$5,000</i>	<i>\$35,000</i>
<i>Total Partner Funds</i>	<i>\$2,000</i>				<i>\$2,000</i>
<b>Project Total</b>	<b>\$133,000</b>				
FS personnel estimated as \$400/day.					
*Total ACC Funds would be \$69,000 if the Lewis River Side Channel 4 project is funded and equipment move-in and NEPA costs are shared between the projects.					

## Little Creek expanded budget 2013

Item	Personnel	Estimated Days/units*	Cost Per Unit	Total*
NEPA Environmental Assessment required by Federal Law	Fish Biologist Wildlife Biologist Hydrologist Botanist Archeologist Soil Scientist Recreation Forester NEPA Coordinator	4 3 3 3 3 1 0.5 0.5 2	\$400 per day per person	\$8,000 (ACC)
Final Designs	Fish Biologist Hydrologist Fish Technician	5 2 5.5	\$400 per day per person	\$4,000 (IK) \$1,000 (ACC)
Project Management	Fish Biologist Fish Technician Mileage	10 7.5 2000 miles	\$400 per day per person \$0.50	\$4,000 (IK) \$3,000 (ACC) \$1,000 (IK)
Construction	Contract Administration/Prep  Transportation  Logging contract Equipment contract Helicopter contract	21  1,000 miles	\$400 per day per person \$0.50	\$4,500 (IK) \$4,000 (ACC) \$500 (IK) \$15,000(ACC) \$12,000 (ACC) \$40,000 (ACC)
Materials & Supplies	Field Equipment, Notebooks, Misc Supplies			\$1,000 (ACC)
Trees with rootwads		200		\$30,000 (IK)
Monitoring <i>MSHI</i>  <i>USFS</i>	Supervisor Assistant Fish Biologist  Volunteers  Transportation	10   25  1,000	\$300 per day per person \$20 \$0.50	\$1,500 (IK) \$2,500 (ACC) \$500 (IK) \$500 (ACC)
<b>Total</b>				<b>\$133,000</b>

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

## Little Creek Equipment Budget 2013

Item	Cost per unit	Number of units	ACC cost	Total Cost
Excavator Operator/Fuel/Supplies, misc	\$125 hour	84	\$10,500	\$10,500
Excavator Move in/out	\$1,500	1	\$1,500	\$1,500
Helicopter Contract	\$40,000	1	\$40,000	\$40,000
Logging and Hauling cost: Based on Previous Contract	\$15,000	1	\$15,000	\$15,000
<b>Total</b>			<b>\$67,000</b>	<b>\$67,000</b>

### Questions from ACC members

All projects: Proposals should demonstrate that the project is scientifically supported, has a clear nexus to the Lewis River hydroelectric projects, and clearly supports the Aquatic Fund objectives. Please prepare the document with the assumption that the reader is not familiar with the Lewis River basin, its issues, or its resources.

### **Little Creek Fish Habitat Restoration**

WDFW: *Is helicopter service funded with this project or is it dependent on funding project #1 through aquatics funds or SRFB funding. Need explanation of how structures will be anchored.* Funding for the helicopter is entirely through PacifiCorp Aquatics Fund for this grant. If Project #1 (Lewis River Side Channel 4) project is funded there will be costs savings on the helicopter because of a fixed rate move-in cost. Structures will be anchored into the streambanks by digging a trench with an excavator, burying key pieces of material, and then backfilling the trench. At least 2/3rds of the log will be buried in the streambanks because trenches will be between 30 and 40 feet in length depending upon the length of the log used.

LCFRB: *A diagram showing approximate structure locations and elaborating on the type, location and scale of expected habitat outcomes should be included in a final proposal.* Please see attached maps and tables that addressed this question.

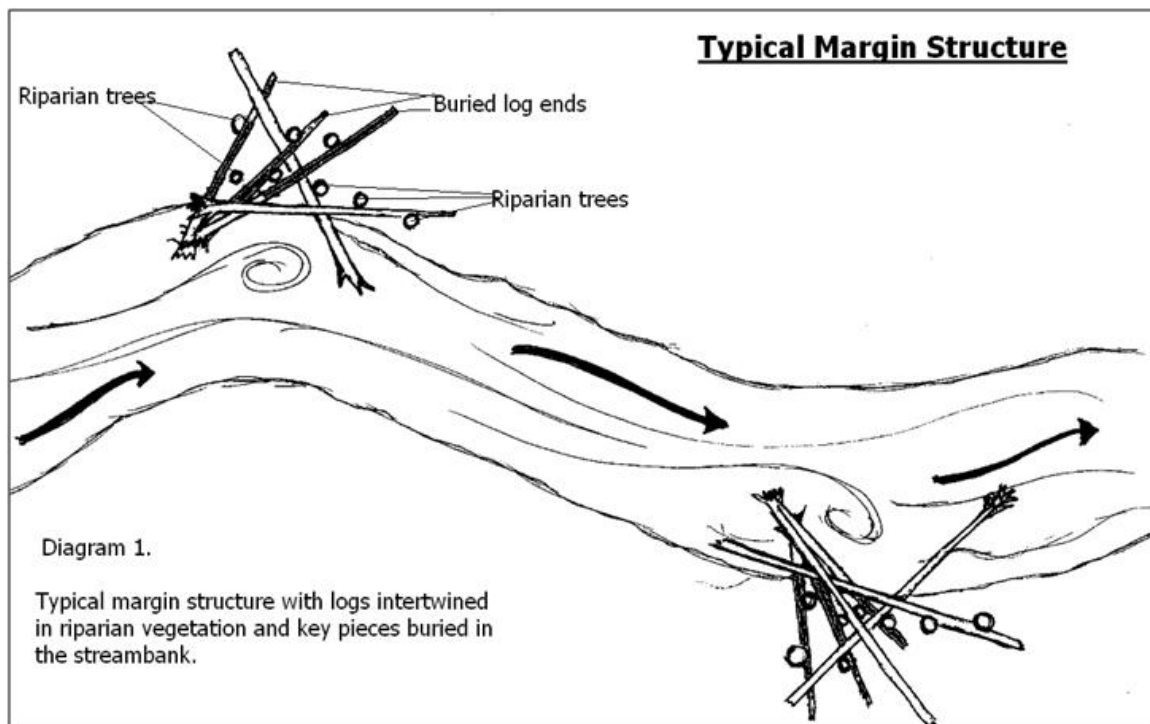
USFS: *Please expand on project need and current fish usage; like the invasive treatment as part of appropriate stewardship; recommend describing how fits into and contributes*

*to Forest restoration plans* In the Upper North Fork Lewis River there is scarce quality non-mainstem spawning/rearing habitat. This habitat is essential for species listed under the Endangered Species Act (ESA) that use the Lewis River Basin, including coho and Chinook salmon, steelhead trout, and bull trout. These species have endured many impacts effects that threaten their survival of the species in the watershed. Impacts Effects to their habitats in the Upper North Fork Lewis River include past land management activities such as logging, road building, sediment inputs and development of hydro-resources, which until recently has blocked all access into the upper watershed basin for anadromous species. To ensure reintroduction efforts of salmon and steelhead into the upper basin are successful the Forest Service has worked with PacifiCorp on a variety of projects including acclimation ponds for juvenile spring Chinook salmon, road decommissioning, replacement of migration blocking culverts with bridges, and various streambank and instream fish habitat restoration projects.

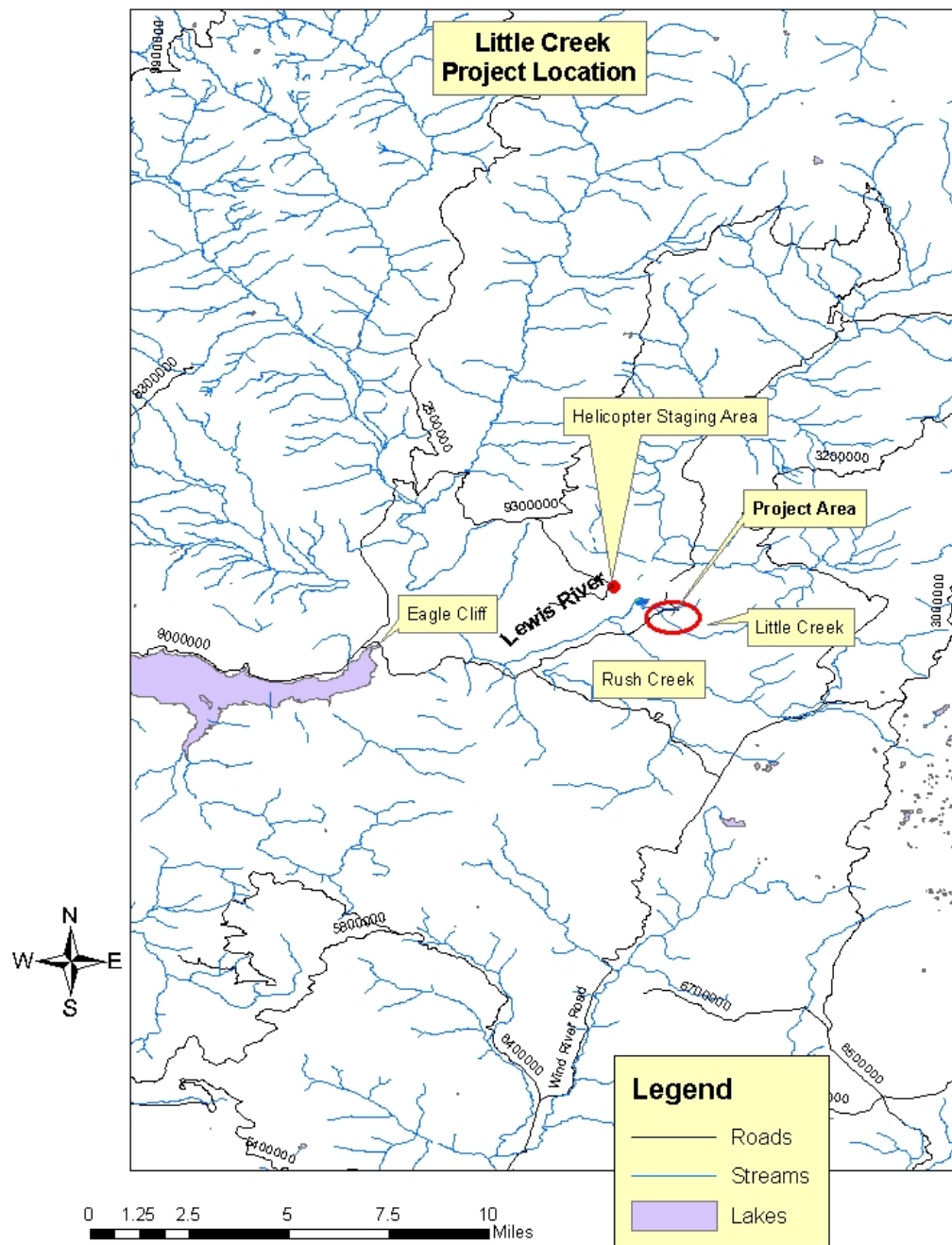
Current documented fish use includes cutthroat trout. Anadromous fish released into the basin through the Habitat Preparation Process have not found their way into Little Creek based on a observation in September 2012.

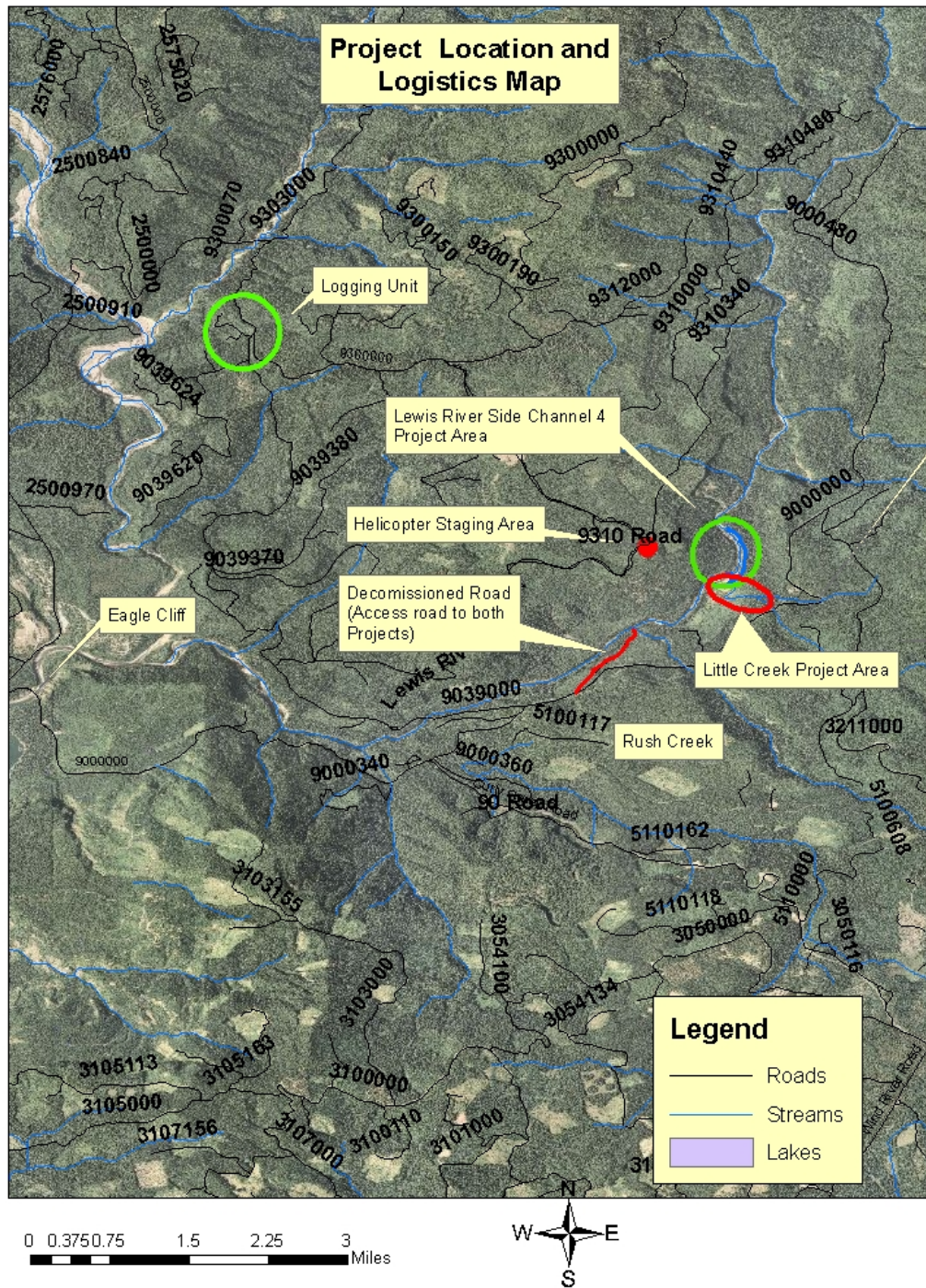
Based on discussions in the ACC group, invasive weed treatments will be limited to areas directly affected by implementation of the project.

PacifiCorp: *Need more specificity about weed control.* Based on discussions in the ACC group, invasive weed treatments will be limited to areas directly affected by implementation of the project.











**Little Creek Project Proposal  
Structure Locations**

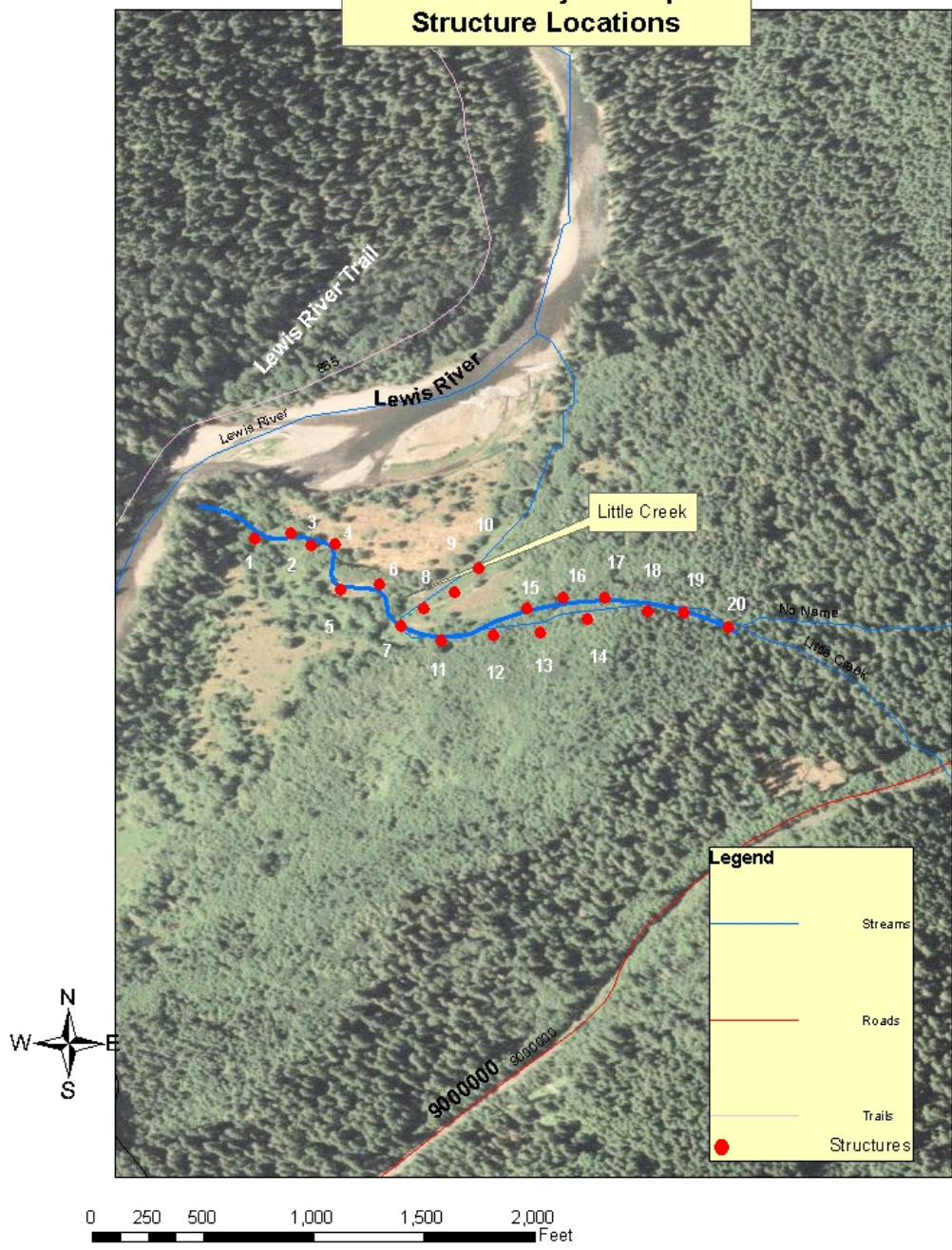


Table of structure design criteria and expected outcomes

Structure Number	Hiding Cover	Overwintering Refugia	Summer Rearing	Pool Formation	Gravel Sorting	Bank Stability
1	x	x	x	x	x	x
2	x	x	x	x	x	x
3	x	x	x	x	x	x
4	x	x	x	x	x	x
5	x	x	x	x	x	x
6	x	x	x	x	x	x
7	x	x	x	x	x	x
8	x	x	x	x		x
9	x	x	x	x		x
10	x	x	x	x		x
11	x	x	x	x	x	x
12	x	x	x	x		x
13	x	x	x	x		x
14	x	x	x	x		x
15	x	x	x	x	x	x
16	x	x	x	x	x	x
17	x	x	x	x	x	x
18	x	x	x	x		
19	x	x	x	x		
20	x	x	x	x		



1. Typical Section of Little Creek





2. Typical Section of Little Creek



3. Typical Section of Little Creek



4. Typical Section of Little Creek

## References

Everest, Fred, James Sedell, John Wolfe, 1985. "Fisheries Enhancement in the Fish Creek Basin", Project No. 1984-01100, 234 electronic pages, (BPA report DOE/BP-16726-1)

Everest, Fred H. Gordon H. Reeves, James R. Sedell, Pacific Northwest Forest and Range Experiment Station 1986. Abundance, Behavior, and Habitat Utilization by Coho Salmon and Steelhead in Fish Creek, Oregon as Influenced by Habitat Enhancement 1985 Annual Report.

## **APPENDIX H**

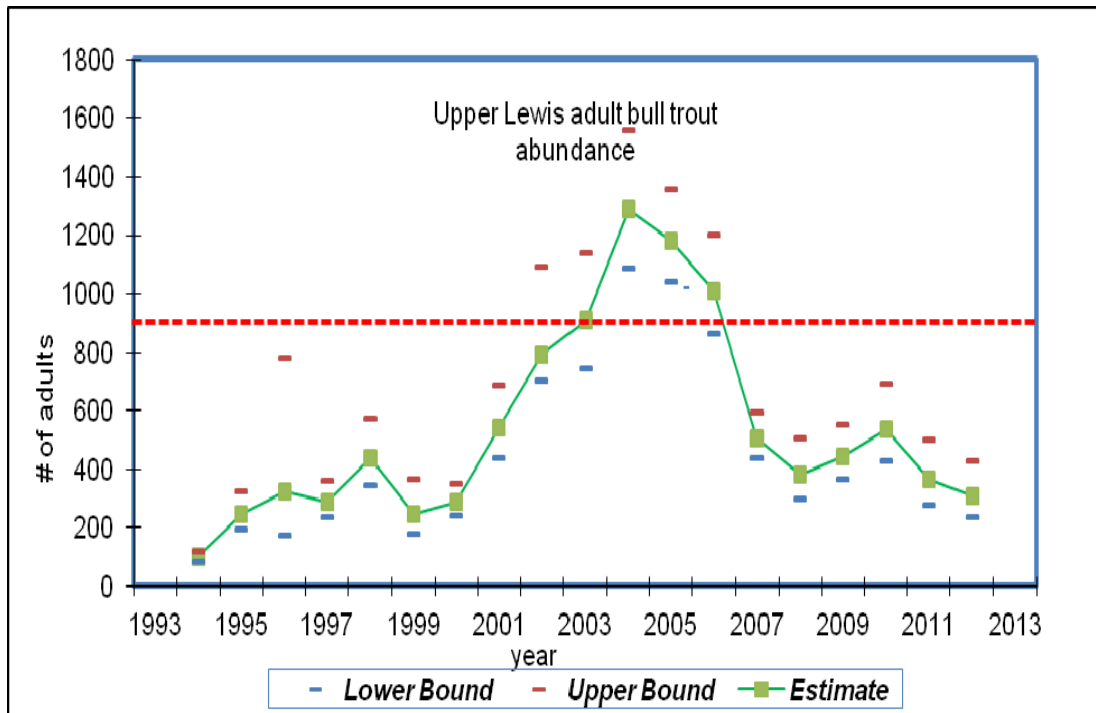
Survey of Bull Trout Stream habitat features  
to develop future habitat restoration projects



**PROPOSAL FORM -  
*Lewis River Aquatic Fund***

1. Project Title  
Bull Trout Habitat Restoration Project Identification Assessment
2. Project Manager  
Adam Haspiel USFS  
Abi Groskopf Mount S. Helens Institute (MSHI)
3. Identification of problem or opportunity to be addressed

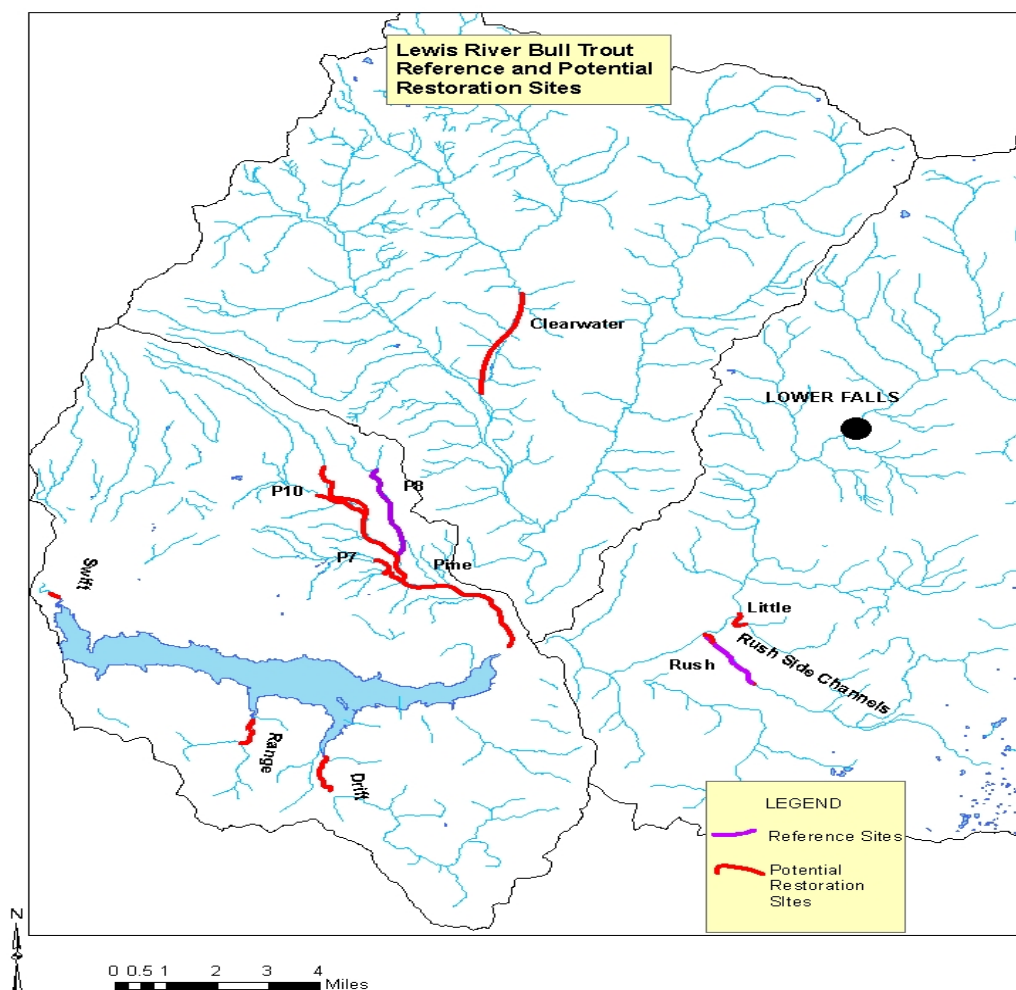
Bull trout adult abundance in the upper North Fork Lewis River Basin has been estimated annually since 1994. Based on annual abundance estimates of migratory adults the population has exhibited 3 distinct patterns of abundance; with lower abundance levels during 1994-2000 and 2007-present being separated by a period when abundance increased to and decreased from a peak of 1,300 migratory adults. The US Fish and Wildlife Service identified a minimum population target of 900 individuals to maintain population viability and this target has been exceeded only four times since 1994 (19 years). Recent population estimates (2005-2012) range from 250-500 migratory adults, which is 20%-40% of the peak abundance observed in 2004 and 25%-56% of the minimum population target (see figure below). While numerous factors are likely affecting the overall abundance estimates, many interested parties (e.g., WDFW, USFS, LCFRB, CIT, and MSHI) believe that spawning and/or rearing habitat could be limiting thus inhibiting the recovery and long-term stability of the bull trout population.





As part of the Lewis River Hydroelectric Projects Settlement Agreement (Settlement Agreement), PacifiCorp provides a dedicated source of funding for bull trout habitat restoration projects. This funding is stewarded by the Aquatics Coordinating Committee (ACC), members of which have been reluctant to recommend projects for funding in recent years because project scoping and prioritization has been impossible with existing bull trout habitat knowledge. Despite past and ongoing studies regarding bull trout spawning and rearing in the upper Lewis Basin, habitat characteristics that will direct successful restoration projects for the local subpopulations remains largely unknown.

This partner-driven project team proposes to fill the project scoping and prioritization void by initially using results of past or ongoing data collection efforts to characterize bull trout spawning and rearing habitat in Pine, P8, Rush, and Cougar Creeks. Subsequent portions of this project would conduct additional spawning and habitat surveys to collect habitat parameter data that would be used to site and scope specific restoration projects for future bull trout funding rounds (See Map Below for initial potential survey locations). The ultimate goal of this project is to develop concept scoping design of habitat restoration projects in areas outside of existing spawning and rearing locations to expand the range of available bull trout spawning and rearing habitat. The expected outcome of this project is improved long term stability of the bull trout population in the upper Lewis Basin.



#### 4. Background

Bull trout are confined to waters with exceptionally cool ( $<9^{\circ}\text{C}$  for spawning and rearing through age 1+;  $<16^{\circ}\text{C}$  for rearing age 2+ and older) water. In the upper Lewis watershed, bull trout routinely use the upper mainstem, Pine (especially P8), Rush, and Cougar Creeks for spawning and early rearing. Suitable bull trout spawning and rearing locations can be effectively predicted by water temperature in multiple basins, but other habitat conditions may limit bull trout usage of these locations. Based on information presented in Figure 1 status of the bull trout population in the upper Lewis Basin can be described as stable, but depressed. Current spawning habitat and/or juvenile rearing habitat may be limiting population productivity; however, habitat conditions limiting productivity have not been identified due to a lack of targeted studies concerning habitat quantity and quality. Recent studies have primarily focused on collecting data in areas currently being used by bull trout for spawning and/or rearing, as follows:

USFWS has completed a patch analysis of likely bull trout habitats in the Lewis watershed based largely on water temperature. This analysis will be used to help focus this project on streams that exhibit habitat conditions that could potentially support bull trout spawning and/or rearing, but bull trout usage has not been confirmed based on recent study results.

WDFW has conducted spawning surveys in several areas of the watershed, including lower Rush Creek, Pine, and P8. WDFW will continue to operate a PIT tag detector located in Rush Creek.

USFS has conducted Level II habitat surveys in some of the drainages including Rush Creek in 2004, and Pine Creek, P8, and P7 in 2005.

PacifiCorp will fund bull trout monitoring activities in the upper Lewis Basin. Activities funded include redd surveys in selected streams (i.e. P8 and Pine Creek) plus PIT tagging activities (i.e. annual netting) and subsequent snorkeling efforts to determine migratory adult bull trout abundance. PacifiCorp will operate PIT tag detectors in selected streams in the upper Lewis Basin.

Consistent with the purpose of this project – improve bull trout population status by expanding the quantity and quality of spawning and rearing habitat available for bull trout in the upper Lewis Basin - this proposal will focus on stream reaches that are known to be used by bull trout, but where physical habitat has been significantly degraded through natural (e.g., Mt. St. Helens' 1980 eruption) or anthropogenic (e.g. riparian logging) factors. This project will build on the existing knowledge base (see descriptions below) by synthesizing existing spawning, tagging, and trapping data. Patch analysis completed by USFWS will also be critical for providing direction with regard where to implement habitat improvement projects in the upper Lewis Basin, and what habitat deficiencies should be addressed. However, existing information and plans have significant gaps that limit the direction provided with respect to on-the-ground projects that will result in improved population status for bull trout in the upper Lewis Basin. This project will implement additional spawning and physical habitat surveys to fill in the gaps not covered by existing efforts. Additionally, this project will take the next critical step by connecting habitat survey data with juvenile and adult presence/absence data to make recommendations for site-specific habitat improvements that will ultimately improve the status of the bull trout population in the upper Lewis Basin.

5. Project Objective(s)

The primary objective of this project is to develop a prioritized list of habitat restoration opportunities that will increase the stability and viability of the Lewis River bull trout population.

The prioritized list of habitat restoration projects will enable project sponsors to propose successful project proposals to access the bull trout fund for the purpose of implementing on-the-ground improvements to bull trout habitat. The project partners expect that the biological benefits of implemented projects will include improved spawning and rearing habitat for bull trout in suitable bull trout areas.

6. Tasks

Task 1: Collect and synthesize existing bull trout data

Time Frame: Summer-Fall 2013

Lead: MSHI

Contributing Partners: USFS and WDFW

Description: Bull trout population, survey, and tagging data exist in several organizations' databases and files. The Mt. St. Helens Institute and WDFW will work together to collect and synthesize existing data to highlight perennial high-use areas. The Forest Service (and potentially others) has existing Level II habitat survey information for many of the stream reaches. These data sets will be compared and analyzed for major gaps while preparing the final survey methodology.

Task 2 Collect temperature data and collect habitat parameter data in selected streams in the upper Lewis Basin

Time Frame: Summer-Fall 2013

Lead: USFS

Contributing Partner(s): MSHI

Description: MSHI will deploy temperature data loggers in suspected cold water streams from summer through October to capture peak temperatures and spawning temperatures. As part of their annual habitat survey efforts, the USFS will conduct Level II habitat surveys in key streams in the upper Lewis Basin.

Task 3: Conduct spawning surveys

Time Frame: Fall 2013

Lead: USFS

Contributing Partner(s): MSHI, CIT & WDFW

Description: MSHI survey teams trained by USFS and WDFW staff will conduct spawning surveys in streams that exhibit habitat conditions (primarily temperature) that are suitable for bull trout spawning but have not been recently surveyed. Presence/absence data obtained through these surveys will be used to assist in focusing habitat parameter surveys. Additional assistance in training staff will be provided by PacifiCorp staff and other experts in the region.

Task 4: Finalize field data collection study design

Time Frame: Fall 2013-Winter 2014

Lead: WDFW

Contributing Partner(s): USFWS, USFS & MSHI

Description: WDFW, USFWS, USFS, and MSHI will collaboratively finalize survey method selection and refinement. The team will use past bull trout study designs and other habitat data collection protocols (see methods section) to guide development of the study design for this project. The team will refine existing protocols to include parameters that are specific to successful bull trout habitats in the upper Lewis Basin. The protocols will be detailed enough to form habitat suitability criteria that will apply to habitat project design in other reaches. Team members will establish quantitative analysis tools to measure redd and juvenile densities and correlate these densities to measured habitat parameters. Information collected from spawning surveys collected in Task 3 will be used to assist in determination of stream reaches to be surveyed to collect habitat parameter data.

Task 5: Conduct habitat parameter surveys

Time Frame: Summer-Fall 2014

Lead: MSHI

Contributing Partner(s): USFS & WDFW

Description: MSHI survey teams will measure habitat parameters in successful bull trout habitats to develop a habitat characterization specific to the Lewis River. Two or three two-person survey crews will walk stream reaches to collect data regarding habitat parameters. Survey locations will include stream reaches that are known to be utilized by bull trout to identify habitat conditions that constitute productive bull trout spawning and rearing habitat. Additional survey locations will include stream reaches that support little to no use by bull trout to identify habitat conditions that need to be improved to support bull trout spawning and/or rearing.

Task 6: Data summarization and analyses

Time Frame: Fall 2014-Winter 2015

Lead: WDFW

Contributing Partner(s): USFWS, USFS & MSHI

Data collected during spawning and habitat surveys will be summarized. Habitat parameters will be correlated the adult spawning and juvenile rearing usage data to determine key habitat conditions that support adult spawning or juvenile rearing. Results of these analyses will be used to direct locations to conduct habitat restoration projects and habitat conditions to be improved by restoration actions. Data analyses will be based on past similar studies (see methods section). MSHI and WDFW staff will develop a formalized habitat suitability matrix for Lewis River bull trout and habitat use maps as part of this task.

Task 7: Develop conceptual project scoping designs

Time Frame: Winter-Spring 2015

Lead: WDFW

Contributing Partner(s): USFWS, USFS & MSHI Description: MSHI, WDFW, CIT, and USFS personnel will develop a list of site-specific project conceptual scoping designs that could be implemented to improve bull trout habitat in lesser-used areas. The projects would be prioritized based on the likely benefit to bull trout, ease of access, certainty of achieving long-term habitat gains, and cost. The draft report will be presented to the ACC for review and comment for incorporation into the final draft. Conceptual scoping designs will identify habitat conditions to be targeted, but will not identify specific actions to address these habitat conditions. Subsequent project proposals will describe how the project will benefit the habitat conditions in that specific location.

## 7. Methods

This project relies heavily on the work previously completed by PacifiCorp, WDFW, and USFWS to direct field investigations. These data will be useful identifying suitable for spawning and early rearing habitat conditions for bull trout in the upper Lewis Basin. Study design and data analyses conducted as part of this proposal will rely on other similar studies conducted in other locations in the Pacific Northwest. Additionally, the USFWS 1998 document titled *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale* provides excellent guidance with respect to habitat elements and criteria to be assessed. This document, in conjunction with other documents listed below, will be used to develop study design and guide data analyses.

### USFS Level II Stream Survey:

The level II stream survey methodology is the USFS standard used for stream inventory and monitoring. This protocol has been developed by USFS fish biologists and hydrologists over a 23 year time period so it is an excellent starting point to base our methodology on. Refinements need to be made to the protocol to adapt it for this project; these modifications may include refined inventory design and reach length. The Stream Inventory Handbook/Manual is approximately 125 pages in length. The following link will take you to the latest version of the Stream Inventory Handbook. .

[http://www.fs.usda.gov/detailfull/r6/landmanagement/resourcemanagement/?cid=fsbdev2\\_026966&width=full](http://www.fs.usda.gov/detailfull/r6/landmanagement/resourcemanagement/?cid=fsbdev2_026966&width=full)

### EPA Environmental Monitoring and Assessment Program (EMAP) physical habitat assessment protocols:

This quantitative assessment identifies seven general physical habitat attributes: stream size (channel dimensions), channel gradient, substrate size and type, habitat complexity and cover, riparian vegetation cover and structure, anthropogenic alterations and channel-riparian interactions. Sample reach length is determined as 40 times low flow wetted width and is divided into 11 transects for channel dimension, substrate and riparian areas. Other attributes are measured throughout the reach length. Modifications to sampling design to target determinations of Task 2. Data analysis can be complex without the use of SAS. Protocol is available for wadable and non-wadable streams and can be found at the following link: [http://water.epa.gov/type/rsl/monitoring/riverssurvey/upload/NRSA\\_Field\\_Manual\\_4\\_21\\_09.pdf](http://water.epa.gov/type/rsl/monitoring/riverssurvey/upload/NRSA_Field_Manual_4_21_09.pdf)

### Inventory and Monitoring of Salmon Habitat in the Pacific Northwest:

This document reflects an effort to establish a consistent format for the collection of salmonid habitat data across the Pacific Northwest. More specifically, our objectives were to: 1) provide a synthesis of the salmon habitat protocols applicable to the Pacific Northwest, 2) recommend a subset of these protocols for use by volunteers and management/research personnel across the region, 3) link these protocols with specific types of habitat projects, 4) establish a Quality Assurance/Quality Control framework for the data derived from the use of these protocols, and 5) to the degree possible, identify the format and destination where the data is routinely sent.

Following a detailed review of the protocols, we used selection criteria combined with a scientific peer-review process to recommend a subset of protocols for use across the Pacific Northwest. Protocols were evaluated in terms of: 1) a review of the protocol elements; 2) the accessibility and practicability to workers with diverse training; 3) applicability across the different environments of the region, so that data and analysis are comparable; 4) listing of tools and implements needed; and 5) kinds of data generated. We were not able to assess

implementation costs, as budgetary information was seldom included in the protocols. We ultimately identified 68 protocols for use by volunteers, and 93 protocols for use by management/research personnel across the Pacific Northwest.

The following link will take you the website containing this document:

<http://wdfw.wa.gov/publications/00650/>

Using a Spatially Explicit Approach to Evaluate Bull Trout Spawning Habitat Selection  
Master of Science Doctorate Thesis by James S. Lamperth, Jr.

Understanding the relationship between habitat and fish populations is essential to recovering imperiled species such as bull trout *Salvelinus confluentus*. Most bull trout research has focused on juvenile or sub-adult rearing habitat leaving gaps in knowledge concerning bull trout spawning habitat. In this study, I used a resource selection function in the form of logistic regression to model the probability of bull trout redd occurrence in 100 m stream reaches. Aquatic habitat structure (23 predictors) and bull trout redd distribution data were collected from approximately 17 km in two headwater streams of the Yakima River basin, WA using spatially continuous surveys. I fit the logistic regression models to each stream separately and to the pooled data set (3 data sets total), ranked the models using Akaike's information criterion, and assessed model predictive performance and accuracy. Bull trout redds were non-uniformly distributed and present in approximately 58% of the reaches in each stream. The best logistic regression models for each stream contained different combinations of predictors possibly suggesting differences in habitat selection between streams. However, due to predictor selection methods, the same predictors were not used to fit the models of each stream making between-stream comparisons difficult. The best model fit with the pooled data set showed that redd occurrence was positively related to pool density and area of potential spawning patches. The range of habitat measures selected by bull trout differed between streams which caused relatively poor predictive ability; however, the predictive ability increased and was relatively good when the models were fit with standardized (mean = 0, SD = 1) habitat measures. This suggests bull trout were selecting spawning locations relative to stream-specific habitat availability. In a separate analysis, I evaluated patterns between bull trout redd distribution and the thermal environment using data collected from spatially-fixed temperature data loggers, and longitudinal thermal profile surveys. Both streams displayed thermal heterogeneity; however, there were only weak associations between bull trout redd distribution and reaches that were coldest during spawning and warmest during egg incubation. This is the first study to model bull trout spawning habitat and demonstrate that typical measures of aquatic physical habitat can be used to predict the occurrence of bull trout redds. These results increase our knowledge of bull trout – spawning habitat relationships and can be used to help restore imperiled populations.

Additional similar type studies that will help guide the completion of the final study plan are listed below. The list below is not an exhaustive list but does provide some examples of other similar effort to connect fish abundance and habitat characteristics

A Review of Bull Trout Habitat Associations and Exploratory Analyses of Patterns across the Interior Columbia River Basin

Geomorphology, hyporheic exchange, and selection of spawning habitat by bull trout (*Salvelinus confluentus*)

Influences of Temperature and Environmental Variables on the Distribution of Bull Trout within Streams at the Southern Margin of Its Range



Patch-based Models to Predict Species Occurrence: Lessons from Salmonid Fishes in Streams

Chinook Salmon use of Spawning Patches; Relative Roles of Habitat Quality, Size and connectivity

Seasonal Movement and Habitat Use by Subadult Bull Trout in the Upper Flathead River System, Montana

Utility and Validation of Day and Night Snorkel Counts for Estimating Bull Trout Abundance in First- to Third-Order Streams

#### 8. Specific Work Products

The team will deliver a final report highlighting a prioritized list of conceptual project scoping designs for habitat restoration projects that will benefit bull trout in the upper Lewis watershed. This list will form the foundation of a restoration short term action plan for future ACC and other bull trout funding streams. The report will also include the data and analyses used to support the decisions on restoration priorities. These data and analyses will constitute a compendium of available information on Lewis River bull trout to date.

This project will also support a long term restoration strategy to be developed through the implementation of the USFWS bull trout recovery plan. It is expected that additional studies and restoration activities will occur as part of the recovery plan implementation. Data and projects implemented through this project will assist in future efforts to implement the recovery plan and improve the status of bull trout in the upper Lewis Basin

#### 9. Project Duration

This project will commence upon contract with PacifiCorp, expected in late summer 2013 (if funded). Literature review and collection of existing data will be completed by fall 2013. Field work will be completed during summer and fall 2014, and the prioritized list of restoration actions and the supporting report will be complete in summer 2015.

#### 10. Permits

No ground-disturbing activities are included as part of this work. Planned survey techniques will not require permits. If the team elects to use survey techniques that have the potential to take bull trout (e.g. electro-fishing), the MSHI will acquire a scientific collection permit and incidental take permit for bull trout.

#### 11. Matching Funds and In-kind Contributions

Several project partners have agreed to provide in-kind assistance to this effort, as follows:

The Washington Department of Fish and Wildlife (WDFW) will commit two months of Biologist staff time, including salary and benefits, to assist in training survey crews, participate in project planning, developing study design, completing data analyses and prioritizing habitat restoration actions.

The U.S. Forest Service (USFS) will commit one month combined time from of a Fish Biologist and a Fisheries Technician to assist in project development, project implementation and prioritization of habitat restoration actions.

The Cowlitz Indian Tribe (CIT) will contribute staff time, including fringe benefits, to participate in project identification/scoping, report writing, and group coordination.

The Mount St. Helens Institute (MSHI) will contribute staff time, including overhead, to conduct literature reviews, compile existing data, manage field crews and provide survey equipment.

The U.S Fish and Wildlife Service (USFWS) will contribute staff time to assist in developing study design, data collection protocol and data analyses methodologies.

The Lower Columbia Fish Recovery Board (LCFRB) will contributes staff time, including administrative staff and overhead, to prioritize habitat restoration actions, develop project conceptual scoping designs and assist in project development and implementation.

Details of funds committed though commitments of in-kind activities are presented in the budget section of this proposal.

## 12. Peer Review of Proposed Project

This proposal is the collaborative work of multiple personnel from six organizations interested in bull trout recovery in the Lewis River. All parties agree that this is a critical step in implementing on-the-ground recovery actions for bull trout.

### 13. Budget

Provide a **detailed** budget for the project stages (Final design, Permitting, Construction, Monitoring/Reporting) by work task. Include:

Personnel costs

Labor and estimated hours for each project employee

Operating expenses

Supplies and materials

Mileage

Administrative overhead

Budget: Personnel Costs				
Partner	In Kind	In Kind Task	Requested ACC Funds	Requested ACC Funds Task
LCFRB	\$55,215.50	Recovery Plan Implementation and Project Oversight Habitat Restoration Project Development and Prioritization	\$0	
USFS	\$5,000	ACC Project Lead and Oversight, Field Survey Project Lead and Development/Training of Field Staff	\$7,000	Field Training, Restoration Project Development, Project Oversight and Coordination
WDFW	\$16,156	Train field Staff, Participate in Field Investigations, , Project Implementation and Study Design and Statistical Analyses	\$19,406	Study Design and Statistical Analyses Research Scientist (2 mos.)
MSHI	\$1000	ACC Project lead and Existing Data Collection and Gap Analysis	\$10,000 \$14,000 \$4,000	Conduct spawning and habitat surveys Field Leader (2 mos.) Field Assistant (8 mos.) Spawning Assistants (2 mos.)
USFWS	\$1,000	Study Design and Statistical Analysis		
CIT	\$1,000	Field Survey Assistance and Restoration Project Development and Prioritization.		
Budget: Operating Expenses				
MSHI	\$3000 \$1000	Mileage Supplies and materials	\$0 \$2000	Dry suits, Temp. data loggers
SUBTOTAL			\$56,406	
TOTAL	\$83,371.50		\$59,226	Includes Grant Administration (5%)

If in-kind contributions have been acquired, please note contributions according to project stage within the budget.

14. Photo Documentation (Per National Marine Fisheries Service's Biological Opinion for Relicensing of the Lewis River Hydroelectric Projects):

Since this project will not directly result in on-the-ground habitat improvements, photo documentation of the project is infeasible. Instead, photographs of high-use bull trout habitats and sites for proposed habitat restoration projects will be included as part of the prioritized project list.

## **Attachment 1**

### **ACC Comments and Questions on Pre-Proposals**

#### **USDA Forest Service - Lewis River Side Channel Near Little Creek, Muddy River Tributary near Hoo Hoo Bridge, Little Creek Fish Habitat Restoration and Survey of Bull Trout stream habitat features to develop future habitat restoration projects**

*Note: Questions that follow are directly from emails and/or discussions by the ACC.*

All projects: Proposals should demonstrate that the project is scientifically supported, has a clear nexus to the Lewis River hydroelectric projects, and clearly supports the Aquatic Fund objectives. Please prepare the document with the assumption that the reader is not familiar with the Lewis River basin, its issues, or its resources.

#### **Survey of Bull Trout stream habitat features to develop future habitat restoration projects**

WDFW: Final proposal needs to have a clear plan that identifies specific spawning and rearing habitats. What are the areas in Rush Cr. Pine Cr. and P-8 that BT actually use. What are the specific attributes: depth, channel width, substrate, tree canopy, gradient, etc. WDFW supports this effort in having a more strategic planning effort with multiple partners that can provide information to the Bull Trout Technical Work Group.

LCFRB: A final proposal for this study needs to provide a clear plan to: 1) Identify and prioritize stream reaches; 2) Define Habitat Suitability Criteria; 3) Define the methodologies and protocols to be used in conducting the habitat surveys; and 4) Implement the survey and habitat strategy development, including identification of tasks, a schedule, management structure and partner responsibilities, needed skills and qualifications, and a detailed budget. The final proposal should provide additional information on which streams are being surveyed and what criteria was used to select these streams. Additionally, it will be important to describe how people conducting this work will be trained to collect the data necessary to guide future habitat restoration projects.

USFS: Please describe proposed inventory methodology...should incorporate a methodology for all habitat parameters.

**All above questions were all addressed during development of the final proposal and are encompassed in the body of the document.**



United States  
Department of  
Agriculture

Forest  
Service

Gifford Pinchot  
National Forest

10600 NE 51<sup>st</sup> Circle  
Vancouver, WA 98682  
Office: (360) 891-5001  
FAX: (360) 891-5045  
TTY: (360) 891-5003

File Code: 2670

Date: February 1, 2013

2013 Lewis ACC Project Reviewers  
PacifiCorp/Cowlitz PUD  
Ariel, WA 98603

RE: Letter of Support for Bull Trout Habitat Restoration Project Identification Assessment Project

To Whom It May Concern,

The Gifford Pinchot National Forest supports the Bull Trout Habitat Restoration Project Identification Assessment application collaboratively submitted to the Lewis River Aquatic Coordination Committee by the Mount St Helens Institute, Mount St Helens National Volcanic Monument, Mount St Helens Ranger District, US Fish and Wildlife Service, Washington State Department of Fish and Wildlife, Lower Columbia Fish Recovery Board, and Cowlitz Tribe.

Continued development of a truly collaborative approach to identify and manage bull trout habitat on the forest ranks among the highest of our forest aquatic and fishery objectives. This project is certain to enhance the success of our forest and partners' efforts towards the conservation and enhancement of bull trout habitat in many different and positive ways.

Sincerely,

  
for JANINE CLAYTON  
Forest Supervisor

cc: David Hu. Dave Olson Ruth Tracy Diana H Perez. Abigail S Groskopf. Adam I Haspiel  
Mailroom R6 Gifford Pinchot, Tom Mulder



**APPENDIX I**  
**Cedar Creek Reach 1A Restoration**



**PROPOSAL FORM -**  
***Lewis River Aquatic Fund***

Form Intent:

To provide a venue for an applicant to clearly indicate the technical basis and support for proposed project. Specifically the project's consistency with recovery plans, SA Fund objectives, technical studies and assessments which support the proposed action and approach.

Proposal format:

Please complete the following form for your proposal. Maps, design drawings and other supporting materials may be attached.

**The deadline for Proposal Form submission is January 31, 2013.** Please submit materials to:

Frank Shrier  
PacifiCorp – LCT 1500  
825 NE Multnomah  
Portland, OR 97232

1. Project Title

Cedar Creek Reach 1A Restoration

2. Project Manager

Peter Barber  
12404 SE Evergreen Highway Vancouver, WA 98683  
[Peter@lcfeg.org](mailto:Peter@lcfeg.org) 360-882-6671 [www.lcfeg.org](http://www.lcfeg.org)

3. Identification of problem or opportunity to be addressed

Summarize information about the problem or opportunity addressed by your proposal.

LCFEG was recently awarded a \$209,108 Salmon Recovery Funding Board (SRFB) grant to construct the Cedar Creek Reach 1A restoration project. This restoration project will design, permit, and install large wood through 1,525 linear feet of lower Cedar creek to increase spawning and rearing habitat benefitting ESA listed chum, Chinook, coho and steelhead.

As part of the SRFB project, PacifiCorp agreed to provide large wood from its reservoirs to support this project which is the equivalent of a \$53,000 local match. This proposal is tendered as a contingency plan in the event suitable wood is not available in the reservoirs and must be purchased prior to construction in 2014.

#### 4. Background

Provide information related to how this project fits into greater watershed objectives and any previously collected information at the project site (e.g. fish surveys, habitat delineation, etc)

The proposed project begins at the Cedar Creek confluence with the NFK Lewis River and extends upstream 1,575' feet to the remnant concrete dam footing. Aerial photo review and site visits by LCFEG staff show current site conditions consist of a continuous glide/ riffle spanning 1,350' from the Etna road bridge upstream to a relict concrete dam. The concrete dam is a hydro-electric dam (Shane Hawkins, WDFW pers. comm.) that was also used to trap adult coho for brood stock for the salmon hatchery. The dam was abandoned in place in 1946 and now represents the only habitat forming structure observed in lower Cedar creek. The hydraulics associated with the structure reveal the presence of extensive spawning gravels but elsewhere the channel substrate is a cobble/ gravel mixture with some embedment present. The dam structure is the only hydraulic break in an otherwise bedrock confined valley with limited flood/ velocity refuge present (except the dam). The structure may be responsible for maintaining and/ or protecting the floodplain terrace immediately downstream on the left bank which is vegetated with reed canary grass, blackberry and a few alder. The site visit in April 2012 showed no signs of erosion to the toe of the bank or deposition of fine sediments or debris on top of the floodplain surface which indicates the creek is incised and seldom exceeds bank full elevation.

The creek is a single thread channel with a bank-full width of 50' containing a deep pool at the dam and at the bridge separated by 1,350' of riffle-glide habitat that is incised against the bedrock toe on the right bank. The absence of wood or any other velocity breaks in the reach increases velocity through this section of the creek. There is a 250' long back water channel area located immediately upstream of the Etna road bridge. The bridge constricts the floodplain width from an average of 300' down to 50'. This constriction is located just 140' upstream of the confluence with the NFK Lewis. The floodplain is confined laterally by a basalt toe on each side of the valley. The channel has been stable at least since 1990 and the only wood in the lower mile of Cedar creek is caught on the concrete dam, none of which meets the definition of a key piece of LWD.

The road constriction and abandoned dam likely increase fine sediment deposition in addition to the natural backwater events caused by high flows in the NFK Lewis. This would explain the long riffle immediately upstream of the confluence and the lack of any changes in morphology at least back to 1991. Historically this low gradient reach would have been filled with logjams and individual pieces of old growth wood. However, stream adjacent logging, fire, snagging wood from the channel and use of splash dams to drive timber downstream to the NFK Lewis have resulted in the virtual absence of large wood structure in the channel and adjacent floodplain. This is remarkable given the relatively small size of the stream and the location of the project at the lower extremity of the watershed. Future large wood recruitment may resume as riparian forests recover in response to current forest practice rules but until then there is no reason to expect habitat conditions in this reach will change.

Limiting factors in this reach include lack of pools, lack of cover, reduced connectivity to floodplain surfaces and high water velocity. Perhaps the greatest limiting factor in Reach 1A is the lack of velocity breaks and cover along the channel margins (wood) which constrains the ability of juvenile salmonids to volitionally move back and forth between the NFK Lewis and Cedar creek. The presence of large wood in this reach would increase the frequency of pool: riffle complexes to provide cover and reduce flow velocity which would allow juvenile salmonids to migrate freely between the cold sterile water in the NFK Lewis and the warmer biologically rich water in Cedar creek, and vice versa. However, high stream velocity and lack of cover prevent

juvenile fish from migrating into lower Cedar creek to take advantage of the seasonal differences in water chemistry, flow, temperature and food.

##### 5. Project Objective(s)

State the objectives of your proposal including how the project is consistent with Aquatics Fund objectives and recovery plans. **Clearly describe the biological benefits and expected outcome of your project.** Describe the technical basis for the objectives including the identification of any supporting technical references. Identify biological metrics to help quantify the benefit of the project.

The goal of this project is to increase stream habitat function *in a manner* that leads to increased reproductive success of anadromous and freshwater salmonids in EDT Reach 1A of Cedar creek, tributary to NFK Lewis River. This will be accomplished by installing large root wads and small multi-log structures along channel margins and within the active channel to create the desired habitat conditions to benefit both rearing and spawning salmonids. The project proposes to increase the frequency of pool: riffle habitat, increase channel margin cover, and increase connectivity with adjacent floodplain features.

The objectives identified for this project are:

- Install >15 pieces of large wood material per 100ft in the lower 1,525' of Cedar Creek
- Increase pool frequency from 1:500ft to 1:100ft of stream channel
- Reduce flow velocity along channel margins; increase habitat diversity; increase spawning and rearing habitat function

This project addresses Aquatic Fund priorities #1 & #3:

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

Cedar Creek is the largest tributary to the NFK Lewis (below Merwin) and contains ESA listed (threatened) populations of Fall & Spring Chinook, Lower Columbia chum, Type S (early) & N (late) coho, Winter and Summer steelhead, and Pacific Lamprey (*Entosphenus tridentatus*) which are identified by WDFW as a species of concern. This project will contribute to the recovery of these species by increasing the amount and quality of complex rearing pools in lower Cedar creek, and will increase the function of spawning habitat associated with the wood complexing.

**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, at the confluence of NFK Lewis and Cedar creek. The project directly benefits all salmonids originating in and returning to Cedar creek, as well as juvenile fish produced in the NFK Lewis River upstream of the confluence with Cedar creek. Fish produced in the Lewis upstream of Cedar creek will use the restored habitat in lower Cedar creek for off-channel rearing.

## 6. Tasks

State the specific actions which must be taken to achieve the project objectives.

### January 2013 thru July 2014

- Acquisition of large wood materials via PacifiCorp reservoir wood or ACC fund.
- Coordination with USFWS and WDFW to assess Pacific lamprey presence/absence within project reach.
- Project design and permitting with Interfluve.
- Installation of photo reference points.
- Installation of riparian plantings.

### August - September 2014

- Lamprey monitoring- removal if necessary
- Installation of large wood structure.
- Photo documentation

### November 2014 - June 2015

- Installation of riparian plantings, monitoring of wood structures and fish response, documentation of channel changes, lamprey monitoring

### July 2015 thru August 2015

- Project maintenance (if required)
- Lamprey documentation
- As-built survey, photo documentation

### October 2015 thru December 2015

- Complete final reports, closeout project

## 7. Methods

Describe methods to be used. When using Best Management Practices (BMPs) identify sources of BMPs and how they will protect resource values.

Methods for design and construction have and will follow established protocols that have a proven track record for successfully improving habitat conditions in the Lewis River Basin and in the Lower Columbia Region as a whole. Design and construction techniques, as well as benefits of proposed enhancements for fish habitat, are well-documented (e.g. Washington Stream Habitat Restoration Guidelines). The design process will be guided by well-established design criteria to ensure all objectives are met. The project sponsor and project consultants have extensive experience designing these types of enhancement features. Project design will be conducted by engineers, habitat biologists, hydrologists, and fluvial geomorphologists who have been successfully designing and constructing similar habitat enhancement features for decades.

Best Management Procedures (BMP's) for Pacific Lamprey (*Entosphenus tridentatus*) have been recently (Spring 2010) developed by U.S. Forest Service and Bureau of Land Management. Project staff will work in close coordination with USFWS and WDFW to ensure lamprey data will be incorporated into our project design to ensure minimal lamprey impacts and protection of existing ammocoete rearing habitat.

Access for construction will occur from Etna road which will require equipment crossings. Once on the other side of the creek we can access the entire project area “in the dry”. The areas disturbed by construction will be re-planted with native riparian species. The donated fish habitat wood will be anchored on the margins using a combination of wood piling, boulder ballast and epoxy/threaded-rod anchors drilled into the bedrock walls.

#### 8. Specific Work Products

Identify specific deliverable results of the project. Project managers will be required to provide status updates with submission of project invoices.

Benefits of project will be increased number of complex pools and spawning habitat associated with the placement of over 100 pieces of wood. We anticipate the number of pools will increase from 1 to a minimum of 6, as a direct result of project. Project staff expects to observe an increase of spawning adults building redds as well as an increase of Pacific lamprey usage which will be documented via post project surveys.

Deliverables:

- 1) Topographic survey data
- 2) Hydraulic model
- 3) Preliminary and Final Design packages
- 4) Design narrative
- 5) Permits
- 6) Construction, including placement of >100 pieces of wood.
- 7) Tech memo of monitoring results

#### 9. Project Duration

- a. Identify project duration. Note that duration of a project funded from Fiscal Year 20xx appropriations may extend beyond the end of the fiscal year.

2013 – December, 2015

- b. Provide a detailed project schedule to include:
  - Initiation of project.
  - Completion date for each milestone or major task.
  - Project close-out site visit (with PacifiCorp, Cowlitz PUD, and ACC representatives)

Project schedule listed above #6.

#### 10. Permits

Identify any applicable permits and resource surveys required for project. Please include timeline for obtaining and any action taken to-date. Applicant will be responsible for securing all such necessary permits. Landowner permission is required prior to finalization of a Funding Agreement with PacifiCorp.

On-the-ground (dirt moving) projects will be required to be in compliance with Sections 401 and 404 of the Clean Water Act, Sections 7 and 10 of the Endangered Species Act, and the National Historic Preservation Act of 1966, as well as Department of the Interior regulations

on hazardous substance determinations. Project site surveys may be required in order to comply with these and other regulations.

The Cedar Creek Reach 1A project will require the following permitting documents; USACE NWP 27, DAHP, WDFW HPA and a landowner (WDFW) agreement.

11. Matching Funds and In-kind Contributions

\$45,000 LCFEG in-kind  
\$209,108 SRFB

12. Peer Review of Proposed Project

It is encouraged that the proposal be reviewed by an independent resource professional prior to submission for funding. Focus of such review should be on biological value and proposed methodology. Please note who completed the review and contact information. This does not have to be a third party review, and can come from someone associated with the sponsoring organization.

This proposal is part of a larger restoration proposal reviewed and approved for funding by numerous resource professionals on behalf of the Lower Columbia Fish Recovery Board and Salmon Recovery Funding Board.

13. Budget

Attached.

14. Photo Documentation (Per National Marine Fisheries Service's Biological Opinion for Relicensing of the Lewis River Hydroelectric Projects):

Monitoring procedures will be developed collaboratively with WDFW & USFWS during the design phase of the project. Reporting of results will be done using ACC protocols (if existing), or standard SRFB protocols which include a final as-built report and photo summary.

## **Attachment 2**

### **ACC Comments and Questions on Pre-Proposals Lower Columbia Regional Fisheries Enhancement Group - Eagle Island North Channel Restoration and Cedar Creek Reach 1A Restoration**

*Note: Questions that follow are directly from emails and/or discussions by the ACC.*

All projects: Proposals should demonstrate that the project is scientifically supported, has a clear nexus to the Lewis River hydroelectric projects, and clearly supports the Aquatic Fund objectives. Please prepare the document with the assumption that the reader is not familiar with the Lewis River basin, its issues, or its resources.

#### **Cedar Creek Reach 1A Restoration**

WDFW - WDFW is very concerned with Lamprey impacts. When will the amount of donated wood be known?

LCFRB - When will it be known whether sufficient donated wood is available? Should the grant funds for wood be contingent on donated wood not being available?

USFS - Encourage the incorporation of and consideration for neglected Lamprey species;

1/28/2013 Conversation with Kurt Naler from PacifiCorp - Current surplus wood gathered from Swift reservoir has been designated to support USFS restoration projects during 2013. We do not know if USFS will still require additional reservoir wood for project during 2014. If all or a portion of the required wood becomes available in 2014 we will be able to reduce the amount of ACC funds requested.



## Cedar Creek Reach 1A Restoration

ACC Funds - Expanded Budget

Description	Unit	Quantity	Unit Cost	SRFB Funds	ACC Funds	LCFEG Match	Total Cost	Comment
Mobilization and demobilization	LS	1	\$5,000	\$5,000	\$0	\$0	\$ 5,000	mob excavators to project site
LWD- straight logs	EA	50	\$265	\$0	\$13,250	\$0	\$ 13,250	40' logs 18" diameter; PacifiCorps reservoir donation or ACC funds
LWD- straight logs	EA	25	\$550	\$0	\$13,750	\$0	\$ 13,750	>2' on big end x >50' long, PacifiCorps reservoir donation or ACC funds
LWD- Standard Rootwads	EA	25	\$500	\$0	\$12,500	\$0	\$ 12,500	35' long x 18" dia. x 5' dia. rootwads; PacifiCorps reservoir donation or ACC funds
LWD- Racking wood	LS	5	\$2,200	\$0	\$11,000	\$0	\$ 11,000	small diameter logs 3-8" dia.; PacifiCorps reservoir donation or ACC funds
LWD- Slash	LS	5	\$500	\$0	\$2,500	\$0	\$ 2,500	300 cu. yds. small wood debris; PacifiCorps reservoir donation or ACC funds
LWD- Wood pile logs	EA	100	\$80	\$8,000	\$0	\$0	\$ 8,000	Wood piling; PacifiCorps reservoir donation or ACC funds
Materials hauling	LS	1	\$20,000	\$20,000	\$0	\$0	\$ 20,000	Haul donated materials down from Swift Res. Or transport ACC wood
Wood placement- Trackhoe	HR	220	\$220	\$48,400	\$0	\$0	\$ 48,400	330 excavator w/ clamshell bucket & pile driver to move & install LWD
Misc. Project Materials	LS	1	\$25,000	\$25,000	\$0	\$0	\$ 25,000	epoxy, chain, threaded rod, nuts, washers, anchors
Misc.rented/ purchased tools and equipment	LS	1	\$5,000	\$5,000	\$0	\$0	\$ 5,000	180 cfm air compressor; gas cut-off saw, rock drill & bits
Riparian plants- live stakes	EA	1,000	\$0.63	\$0	\$0	\$380	\$ 380	\$0.63 per 3' live willow/ dogwood cutting
Riparian plants- containerized	EA	1,000	\$2	\$0	\$0	\$2,000	\$ 2,000	native trees/ shrubs, LCFEG nursery grown
Donated tools and equipment	LS	1	\$2,000	\$0	\$0	\$2,000	\$ 2,000	LCFEG equipment package
Labor- LCFEG Construction Mgmt.	HR	160	\$45	\$7,200	\$0	\$1,040	\$ 8,240	LCFEG/ contracted construction supervisor
Labor- LCFEG Crew Supervision	HR	350	\$35	\$12,250	\$0	\$0	\$ 12,250	LCFEG construction foreman
Labor- DOC Contract	LS	30	\$130	\$3,900	\$0	\$0	\$ 3,900	130.00 per day to cover DOC officer & transport
Labor- Donated	HR	0	\$0	\$0	\$0	\$42,000	\$ 42,000	DOC crew labor to fasten large wood, install riparian plantings
Permits	LS	1	\$5,000	\$5,000	\$0	\$0	\$ 5,000	Acquire permits
<b>Construction Sub-Total</b>				<b>\$139,750</b>	<b>\$53,000</b>	<b>\$47,420</b>	<b>\$ 240,170</b>	
<b>Sales Tax (approx. 8.2% of purchased goods and services)</b>				<b>\$9,358</b>				
<b>A&amp;E (\$35,000 engineering), audit, project management, administration</b>				<b>\$60,000</b>				
<b>Project Sub-Total</b>				<b>\$209,108</b>				
<b>Funded SRFB Project Amount</b>				<b>\$209,108</b>				
<b>LCFEG Project Match</b>				<b>\$47,420</b>				
<b>ACC Request or value PacifiCorp wood donation</b>				<b>\$53,000</b>				
<b>Project Grand Total</b>				<b>\$309,528</b>				

### Key

LS = Lump sum  
CY = Cubic yard  
LF = Lineal foot  
SF = Square foot  
AC = Acre  
EA = Each  
HR = Hours