PRE-PROPOSAL FORM
Lewis River Aquatic Fund

1. Applicant organization.
Lower Columbia Fish Enhancement Group

2. Organization purpose
Our program was established in 1990 by the Washington State Legislature as a 501-c3 non-profit organization responsible for restoring salmon and steelhead populations to healthy, harvestable levels.

3. Project manager (name, address, telephone, email, fax).
Tony Meyer
12404 SE Evergreen Hwy
Vancouver, WA 98683
360-882-6671; cwfish@comcast.net

4. Project Title
NF Lewis RM 13.5 Side-Channel Habitat Enhancement

5. Summary of Project proposal
The project site is located along the east bank of the NF Lewis River near river mile 13.5, in reach Lewis 5, a Tier 1 reach according to the Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan (LCFRB 2004). Previous design funding was provided as part of SRFB Project #08-2059 “North Fork Lewis Side-Channel Design”. Final designs have been completed and the project has been approved by LCFRB for funding by SRFB. Pending final approval by SRFB in January 2011, the LCFEG is requesting additional project support/match by the Lewis River Aquatic Fund to purchase/transport LWD.

The project will create and enhance important spawning, rearing, and adult holding habitat for ESA-listed steelhead, Chinook, Coho and Chum populations in the North Fork Lewis River. Currently, connected side-channel habitat and LWD complexity have been reduced in this reach of the Lewis River due to past channel clean-outs, riparian clearing, hydro-regulation, and instream gravel mining. The project will enhance key habitat for ESA-listed salmonids through the construction of a 2,500 foot long side-channel with pool-riffle habitat, LWD placements, and connected off-channel (backwater) habitat. The project will also include the rehabilitation of approximately 200 feet of a perennial spring-fed tributary using channel re-grading and LWD placements. This project will also restore native riparian and floodplain vegetation within the disturbance limits of the project.

The following restoration objectives helped to guide the project design approach:
1) Promote channel complexity and habitat-forming processes.
2) Increase the abundance and complexity of off-channel and side-channel habitat.
3) Increase pool habitat quality and quantity.
4) Increase LWD quantities to increase the availability of rearing and holding cover, complexity, and velocity refuge.
5) Restore a native streambank, riparian, wetland, and floodplain vegetation community to provide stability, shade, wildlife habitat, and future LWD recruitment.
6) Restore passage and habitat complexity to a perennial spring-fed tributary

6. Project location (including River/Stream and Lat/Long coordinates if available).
Mainstem Lewis River approximately River Mile 13.5; river left bank
Latitude: 122° 39’ 7” W  Longitude: 45° 55’ 41” N
7. Expected products and results (Please attach any drawings).
The desired future condition is a stream reach that provides the habitat quantity and complexity that better resembles the conditions to which Lewis River fish populations have adapted to over time. Expected products include the implementation of the following elements. See attached design drawings:

1. Creation of 50,000 square feet of side-channel habitat connected to the mainstem Lewis River. The side-channel area will be constructed in an abandoned meander-scar of the historical mainstem Lewis River.

2. Elimination of existing stranding risk. The perennial tributary currently flows into an abandoned Lewis River channel. The relic Lewis River pool forms a ponded area that does not have an outlet to the mainstem that allows for fish passage. Furthermore, the ponded area creates a stranding risk to fish that seek velocity refuge and forage habitat on the floodplain and become trapped in the ponded area as flood stage recedes.

3. Restoration of fish passage into the perennial tributary. Reconnecting the off-channel area will also restore fish access to the tributary. A failed culvert near the mouth of the tributary will also be removed to improve passage conditions.

4. Restoration of the native riparian plant community. Riparian areas will be planted with site-adapted native riparian species. Invasive/noxious species will be removed, primarily Japanese knotweed and Scotch Broom.

8. Benefits of proposed Project
This project benefits fish recovery in the NF Lewis River, with priority given to federal ESA-listed species. Side-channel construction and placement of LWD pieces will directly benefit the Lewis ESA-listed Chinook, coho, steelhead, and chum populations.

The quantity and quality of LWD has been reduced as a result of historical streambank clearing, in-stream snagging, basin-wide riparian harvest, reduction in channel dynamics, and interruption of fluvial wood transport due to the hydrosystem (Interfluve et al 2008). This project will restore wood quantity and quality to within the range of historical conditions. Recovery of native riparian forest vegetation will also ensure that long-term benefits are provided.

9. Project partners and roles.
Project partners and roles are described below:

- Lower Columbia Fish Enhancement Group: LCFEG will provide project management and coordination. The LCFEG has conducted numerous stream habitat projects in the region and will play an active role in design and implementation of enhancements.

- Lower Columbia Fish Recovery Board: Approval is pending for Salmon Recovery Funding Board (SRFB) funds for the side-channel habitat improvement elements associated with this project. The LCFRB staff and TAC have assisted with review of the proposed treatments and will be an important cooperator throughout project implementation.

- Sam Kysar (east bank landowner): Sam remembers coho salmon spawning in the tributary. He is very supportive of this effort and has indicated his interest in providing project support in the form of labor and materials and long-term maintenance and monitoring. The Kysars have also expressed interest in placing a conservation easement on their floodplain property to protect salmon recovery investments.

- Inter-Fluve: Inter-Fluve will perform construction oversight services and effectiveness monitoring. Inter-Fluve has already conducted survey, analysis, and design work for the project.

10. Community involvement (to date and planned).
The LCFEG and Inter-Fluve have worked closely with primary landowners at the project site. These landowners will be important and active partners. We will ensure that other community interests, including recreation interests, are factored directly into design criteria for the project. Currently, LCFEG has already coordinated with WDFW, Pacificore and Clark County and posted permanent signage at boat ramps to inform recreational users of the restoration activities in the area.

11. Procedure for monitoring and reporting on results.
Implementation monitoring will be performed to ensure design criteria are met. Implementation monitoring metrics include amount of connected off-channel habitat created, pieces of LWD installed, and density and survival of riparian plantings. As-built drawings will be developed and a long-term monitoring plan will be created in order to measure project success and guide maintenance activities. Before and after photo points will be established.

12. Project schedule (anticipated start date, major milestones, completion date).
Start: April/May 2011
Survey, design and permitting: Design is complete, permitting is underway as part of the 2011 funded SRFB project.
Construction: July-Sept 2011 & 2012

13. Funding requested.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWD Purchase/transport</td>
<td>$47,500</td>
<td>Purchase and transport of LWD to project site.</td>
</tr>
<tr>
<td>Misc. tools/ materials</td>
<td>$15,000</td>
<td>Drills, drill bits, plants, tubes, stakes, threaded rod, nuts, washers etc.</td>
</tr>
</tbody>
</table>

Total request $62,500

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

Salmon Recovery Funding Board (SRFB) – Pending 2011 funding equaling $531,520 (C) for construction of side-channel project components.
Sam Kysar (landowner) – labor, materials, maintenance TBD (IK) (P)
LCFEG – $15,000 labor and materials (IK) (Co)

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

Inter-Fluve, Inc has produced the final design and will assist in implementation of this project.
2 SECTION VIEW
GENERAL BACKWATER CHANNEL SEGMENT

PROTECT EXISTING TREES THAT WILL REMAIN. TREES REMOVED FROM EXCAVATION AREA SHALL BE SALVAGED AND USED AS LWD.

SUBSTRATE NOTES:
FROM STATION 3+50 TO 23+00, THE SIDE CHANNEL WILL BE EXCAVATED INTO A RELIC LEWIS RIVER CHANNEL ALIGNMENT WHERE NATIVE RIVER GRAVELS AND COBBLES ARE EXPECTED TO BE THE PREVAILING SEDIMENTS ENCOUNTERED AT THE DESIGN SURFACE.

IN MANY AREAS, THE UPPER 2 FT OF EXCAVATION IS EXPECTED TO CONTAIN FINE GRAINED FLOODPLAIN SEDIMENTS DEPOSITED IN THE RELIC CHANNEL AFTER IT WAS ABANDONED BY THE RIVER.

SOME AREAS MAY REQUIRE DEEPER EXCAVATIONS TO GRAVEL AND/OR PLACEMENT OF SALVAGED GRAVEL/Cobble MATERIAL.

1 SECTION VIEW
BACKWATER SEGMENT POOL WITH LWD
SUBSTRATE NOTE:
FROM STATION 23+00 TO 32+40, THE SIDE CHANNEL WILL BE EXCAVATED INTO LEWIS RIVER GRAVELS AND COBBLES.
SOME AREAS MAY REQUIRE DEEPER EXCAVATIONS TO GRAVEL AND/OR PLACEMENT OF SALVAGED GRAVEL/Cobble MATERIAL.

PROTECT EXISTING TREES THAT WILL REMAIN. TREES REMOVED FROM EXCAVATION AREA SHALL BE SALVAGED FOR USE AS LWD.

SECTION VIEW 1
POOL SEGMENT WITH LWD

SECTION VIEW 2
RIFLE

0 10 20
SECTION SCALE FEET

VERTICAL SNAG FOR HABITAT AND STABILITY
EXISTING GROUND
LOG WITH ATTACHED ROOTS

FLOODPLAIN WIDTH
40 FT

CHANNEL, TOP WIDTH
24 FT

BOTTOM WIDTH
20 FT

LOG (LYP)

1 FT DEEP

PROPOSED GROUND

VARIES 2 TO 10'

OHW

EXISTING GROUND

LOG WITH ATTACHED ROOTS

PROPOSED GROUND

OHW

CHANNEL

TOP WIDTH VARIES 20-30 FT

DEPTH VARIES 2-4 FT
### Restoration Seed Mix

**Seeding rate = 35 lbs/acre**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>% per lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elymus glaucus</td>
<td>Blue wildrye</td>
<td>40</td>
</tr>
<tr>
<td>Festuca rubra</td>
<td>Red Fescue</td>
<td>25</td>
</tr>
<tr>
<td>Deschampsia caespitosa</td>
<td>Tufled hairgrass</td>
<td>20</td>
</tr>
<tr>
<td>Bromus carinatus</td>
<td>California Brome</td>
<td>10</td>
</tr>
<tr>
<td>Lupinus polyphyllus</td>
<td>Large leaf Lupine</td>
<td>5</td>
</tr>
</tbody>
</table>

**Notes:**
- Apply to disturbed areas including the access road and staging area.
- Apply via broadcast seeding to be uniformly and evenly distributed.
- Seed mix shall be well-mixed before and during application to ensure even distribution of all species.
- Total acreage = 4.54 acres; total lbs = 159 lbs

### Planting Zone A - Gravel Bar Restoration Area (1.10 acres)

<table>
<thead>
<tr>
<th>Species</th>
<th>Plant Form</th>
<th>Minimum Size</th>
<th>Spacing</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black cottonwood</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Alder</td>
<td>B. Root</td>
<td>20</td>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>Sitka willow</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific willow</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snowberry</td>
<td>B. Root</td>
<td>18-24</td>
<td>10</td>
<td>75</td>
</tr>
<tr>
<td>Salmonberry</td>
<td>B. Root</td>
<td>24-36</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Serviceberry</td>
<td>B. Root</td>
<td>18-24</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

**Total Plantings:** 595

### Planting Zone B - Forsted Restoration Area (1.65 acres)

<table>
<thead>
<tr>
<th>Species</th>
<th>Plant Form</th>
<th>Minimum Size</th>
<th>Spacing</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western red cedar</td>
<td>B. Root</td>
<td>18-24</td>
<td>12</td>
<td>80</td>
</tr>
<tr>
<td>Douglas fir (Pseudotsuga menziesii)</td>
<td>B. Root</td>
<td>18-24</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Red alder</td>
<td>B. Root</td>
<td>18-24</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>Big leaf Maple</td>
<td>B. Root</td>
<td>18-24</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>Black cottonwood</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>Bitter Cherry</td>
<td>B. Root</td>
<td>18-24</td>
<td>8</td>
<td>150</td>
</tr>
<tr>
<td>Vine maple</td>
<td>B. Root</td>
<td>18-24</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td>Snowberry</td>
<td>B. Root</td>
<td>18-24</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>Ocean Spray</td>
<td>B. Root</td>
<td>18-24</td>
<td>8</td>
<td>125</td>
</tr>
<tr>
<td>Indian Plum</td>
<td>B. Root</td>
<td>18-24</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>Sitka willow</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Pacific willow</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Red-Osier Dogwood</td>
<td>B. Root</td>
<td>18</td>
<td>8</td>
<td>125</td>
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</tbody>
</table>

**Total Plantings:** 1525

### Planting Zone C - Upstream Flood plains (0.55 acres)

<table>
<thead>
<tr>
<th>Species</th>
<th>Plant Form</th>
<th>Minimum Size</th>
<th>Spacing</th>
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<tbody>
<tr>
<td>Black cottonwood</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>160</td>
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<tr>
<td>Scouler willow</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Pacific willow</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>Red-Osier Dogwood</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>125</td>
</tr>
</tbody>
</table>

**Total Plantings:** 535

### Planting Zone D - Downstream Floodplains (1.24 acres)

<table>
<thead>
<tr>
<th>Species</th>
<th>Plant Form</th>
<th>Minimum Size</th>
<th>Spacing</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oregon ash</td>
<td>B. Root</td>
<td>18-24</td>
<td>12</td>
<td>175</td>
</tr>
<tr>
<td>Black cottonwood</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Red-Osier Dogwood</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>195</td>
</tr>
<tr>
<td>Nootka rose</td>
<td>B. Root</td>
<td>18-24</td>
<td>8</td>
<td>200</td>
</tr>
<tr>
<td>Scouler willow</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>300</td>
</tr>
<tr>
<td>Douglas Spiraea</td>
<td>Cuttings</td>
<td>36</td>
<td></td>
<td>150</td>
</tr>
</tbody>
</table>

**Total Plantings:** 1220

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**LEGEND**

- **Limits**
- **Existing Ground Contour**
- **Proposed Ground Contour**
- **Planting Zone A**
- **Planting Zone B**
- **Planting Zone C**
- **Planting Zone D**

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**Notes:**

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- Seed mix shall be well-mixed before and during application to ensure even distribution of all species.
- Total acreage = 4.54 acres; total lbs = 159 lbs