Evaluation Proposal
In-Stream

Applicants must respond to the following items. The local citizen and technical advisory groups will use the evaluation proposal to evaluate your project. Applicants should contact their lead entity for additional information that may be required.

Up to eight pages may be submitted for each project evaluation proposal.

(SUBMIT INFORMATION VIA PRISM ATTACHMENT)

1. BACKGROUND

Describe the fish resources, the current habitat conditions, and other current and historic factors important to understanding this project. Be specific—avoid general statements. When possible, document your sources of information by citing specific studies and reports. Discuss the need for this project and how it fits in with your regional recovery plan or local lead entity strategy.

Snyder Canyon Creek provides habitat for summer steelhead, winter steelhead and resident rainbow trout. The most recent version of the Klickitat Lead Entity's strategy includes this statement: "There is a high potential for steelhead production now that passage is restored. Production estimates were developed by the WA Dept. of Fish and Wildlife…. While flow limited, high quality habitat exists in canyon reaches upstream of mill site." The mill site at the lower end of Snyder Creek has undergone major restoration in order to open the stream up to steelhead, but now the same reach, while open, suffers from low water flow, limiting the availability of steelhead habitat. The intention of this project is to help ameliorate the low flow situation, while also improving downstream water quality by reducing sedimentation of the stream. The upper 4,000 stream feet of the project area and its headwaters have already been fenced to exclude cattle, but the stream has not fully repaired. The lower 2,600 stream feet of the project has not been fenced, but this project would install off-stream watering facilities for cattle to discourage use of the stream (the landowner and cattle permittee are opposed to further fencing). The landowner already holds appropriate water rights for watering cattle, and the installation of off-stream watering facilities will abide by the Policy for Conveying Stockwater Away from Streams to Protect Water Quality (WA Dept. of Ecology POL-1025, see attached). By restoring the upper meadows of Simmons Creek, the headwaters of Snyder Creek, winter flows should be able to recharge groundwater more effectively and remain in the lower stream later into the summer.

2. PROBLEM STATEMENT

State the nature, source, and extent of the problem that this project will address and help solve. Address the primary causes of the problem, not just the symptoms. When possible, document your sources of information by citing specific studies and reports.

Snyder Creek, a tributary of the Klickitat River, lacks adequate water for summer salmonid habitat. The Klickitat Lead Entity's strategy states that the Limiting Factors for Snyder Canyon Creek are "low baseflows through the lower reach, limit[ing] available summer and fall rearing habitat." The habitat-forming processes creating this situation in the lower reaches of Snyder Creek are described in the strategy as well: "Downcutting of channels in meadows within headwaters likely reduces water storage and affects the timing and magnitude of water runoff downstream. Downcutting also contributes fine sediment to lower spawning areas." The Limiting Factors Analysis for the Klickitat Basin mentions sediment and temperature issues and recommends restoring riparian function (pgs. 36-7). The Yakima/Klickitat

Fisheries Project Annual Report, 2003-04, suggests that sediment levels in spawning areas of the Klickitat are moderately high in some years, and this project would help reduce sediment load. The report cites sediment levels at Diamond Fork Bottom of Meadows, a comparative headwaters stream. This reach has localized bank erosion and fine sediment deposition, resulting from past grazing and road use practices (Evenson & Zendt 2004). While Simmons Creek has a similar history and condition as Diamond Fork, unfortunately, no sediment or flow data is available for Simmons or Snyder Creek.

Simmons Creek, a tributary of Snyder Creek, has at least 6,600 linear feet of severe bank erosion and incision. The stream has suffered from historic agricultural ditching and intensive grazing. The deep, fine soils erode easily and winter storm flows drain the watershed quickly, taking sediment with them. Because the stream is not connected to its floodplain, there is less water recharge to the aquifer. As a result, summertime water flows are low and temperatures are higher.

3. PROJECT OBJECTIVES

List the project's objectives. Objectives are statements of specific outcomes that typically can be measured or quantified over time. Objectives are more specific than goals (visions of the desired future condition) and less specific than tasks (the specific steps that would be taken to accomplish each of the objectives). For example, the objectives of an in-stream habitat project might be to increase channel complexity, to provide cover, to capture sediment, to reduce erosion, to create pools, and to reconnect side-channels or floodplain. Explain how achieving the objectives will address and help solve the problem identified in #2 above.

Objectives:

Add channel roughness

Capture sediment

Reduce erosion

Increase groundwater recharge and storage

Increase summer instream flow

Reduce sedimentation of stream

Provide off-stream watering sites to reduce cattle impacts to stream

These project objectives will address the problem described in #2 by helping the stream to become repaired. Adding channel roughness, capturing sediment, and preventing further erosion will allow the stream to slowly aggrade, revegetate and hold water more effectively. This will in turn reconnect the channel to the floodplain, increase water storage, and increase summer instream flows, benefiting downstream salmon habitat. These project objectives align with the Klickitat Lead Entity Strategy's Recommended Action for Snyder Canyon Creek: "Restore upper meadow areas and address continued grazing impacts." The rationale for this action is: "The land use in this basin is mostly timberlands. There is neglible water use in the basin. Improving water storage in the meadows areas has the greatest potential to increase baseflows in the lower basin" for salmonids.

4. PROJECT APPROACH

a. *Briefly describe the geographic setting of the project (marine nearshore, estuary, main stem, tributary, etc) and the life cycle stage(s) affected.*

Simmons Creek is a tributary of Snyder Creek and the Klickitat River, set on the high plateau above Snyder Canyon. The area is a mix of timberlands and meadows. The deepest incision of the stream

occurs in fine, deep soils in relatively open meadows. The life cycle stages of steelhead affected by these headwater conditions are spawning and rearing, due to low flow conditions in the downstream reaches.

b. *List the individuals and methods used to identify the project and its location.*

The project vicinity is currently leased from Hancock Forest Management for cattle grazing. In 2000, an exclosure fence was built along about 5,000 feet of Simmons Creek that excludes cattle from the streamside area. This fencing served to eliminate site disturbance caused by cattle, but did not actively repair the existing condition of the stream. Because there is limited water at this grazing allotment, the leasee has had to resort to letting cattle into the stream for watering at least one time. This issue will be addressed by locating two watering stations upland from the stream so that the fencing continues to serve as a cattle exclosure. The area upstream of the project site, consisting of the headwaters of Simmons Creek, is fully excluded from use by cattle. A 2,600 stream foot section downstream of the fenced exclosure will receive woody debris placement and plantings, and without fencing out cattle, will benefit from the upland watering stations which serve to discourage the use of streams by cattle (see attached studies showing this).

The proposed project first surfaced at a Coordinated Resource Management meeting of the leasee and landowner, along with NRCS and Underwood Conservation District. In the past decade, similar work has been conducted in nearby Snyder Creek, and Rattlesnake Creek, via cooperative efforts by the landowner, range permittees, the Underwood Conservation District, and other cooperators. A field trip to the site was enough to demonstrate the need for this work to be done. Photos of the area (see attached) clearly show the downcutting occurring. In conversations with fish biologists (for both USGS and Yakama Nation), there is support for this project. A presentation to the Klickitat Lead Entity TAG and language in the Lead Entity Strategy also affirmed the technical need for this work.

c. *If project includes an acquisition element, then briefly describe the extent to which habitat to be acquired is currently fully functioning and/or needs restoration; the timeframe in which responses or improvements in habitat functioning are expected; and the continuity of the proposed acquisition with other protected or functioning habitat in the reach.* N/A

d. *Describe the project design and how it will be implemented.*

The project proposal is to build approximately 40-50 channel roughness structures within a 6,600 linear foot stream segment of Simmons Creek. Currently, Mid-Columbia Fisheries Enhancement Group (MCFEG) is planning to install 10 pilot structures in this creek in Fall of 2007. We will partner with MCFEG and the landowner to monitor the success of their design along with the results from previous efforts, and determine the best practices for this creek. Installations of channel roughness/sediment capture structures will also be accomplished under the direction of our Conservation District Engineer using NRCS practices and WDFW's Integrated Streambank Protection Guidelines. The design of these structures will likely entail channel-spanning woody debris and fascines, combined with dense livestake plantings, creating a live checkdam. We may use a few different designs, given the amount/type of material available and size of downcut channel at specific locations. Riparian plantings of willow, black cottonwood, and other riparian zone species would be included in the areas between structures. The objective is to use wood, vegetation, and small rock to add channel roughness, stabilize eroding banks, capture sediment, increase groundwater recharge, and increase summer flows in downstream salmonid habitat.

Structures will be built by Northwest Service Academy Americorps volunteers along with a contracted light excavator. UCD staff will supervise the work. Work will start at the upstream end of the reach which is currently fenced in from cattle use, focussing on the worst headcuts and erosive areas first. We will avoid building structures in areas that are already aggrading and recovering, although some additional planting in those areas will accelerate recovery.

Two off-stream watering systems will be installed outside and downstream of the riparian exclusion fencing. They will mimic similar efforts done in Wasco County, Oregon, by OR Dept. of Fish and Wildlife. The landowner, Hancock Forest Management, will provide technical design and construction assistance. Solar panels will likely be used to pump water to off-stream sites, but a gravity fed design will be used where possible. Unused water will be returned to the creek. Off-stream water troughs will likely be accompanied by salt/mineral

licks to attract cattle away from the stream. Studies have shown that providing off-stream water alone can greatly reduce cattle's use of the stream: "the presence of a watering tank reduced the time that livestock spent drinking or loafing in the stream by more than 90%. Logically, there is a corresponding decrease in direct deposition of manure into that stream" (Hudson, pg. 4, see attached WSU Extension Fact Sheet #1061-2005). "Economic and environmental implications suggest that [placement of water tanks] may be a viable alternative to the total exclusion of livestock along sensitive stream systems" (Miner, Buckhouse, & Moore, OSU, 1992). See accompanying study and fact sheet for information about the effectiveness of off-stream watering systems in stream protection.

e. *Explain how the project's cost estimates were determined.*

See attached budget. The project costs were outlined by UCD staff time, travel, equipment, goods and services. We plan to contract labor from NW Service Academy and utilize a small excavator. NSWA's costs are predictable, but we estimated the cost of a contracted excavator based on $140/hour rate along with mobilization costs. We also put values on the in-kind contributions that are comparable to today's market prices.

f. *Describe other approaches and opportunities that were considered to achieve the project's objectives. Describe why this project will be successful in meeting the objectives identified.*

Another approach that might achieve the project's objectives is to simply revegetate the stream without installing sediment capture/channel roughness structures. UCD believes that by installing the structures in addition to planting, the stream can more quickly recover and store water. The increased water storage will also help the vegetation become established more quickly.

While most of the project area is fenced from cattle, the downstream end of the project area remains unfenced, allowing cattle to access the creek for water (see attached map). These locations could be fenced further, in addition to providing off-stream watering, but the landowner and the grazing leasee do not favor further fencing due to its long-term maintenance requirements and cost. UCD would like to reduce the costs associated with this project, as well as work with the landowner's wishes to avoid further fencing. The landowner will, however, require the leasee in the lease agreement to maintain the existing riparian fence.

It was recommended that we consider improving overall water quality and habitat in the lower Snyder Creek area at the Klickitat mill site by providing more riparian vegetation and breaking through the concrete floor of the flume to provide for more subsurface flow recharge. That project is beyond the scope of the work UCD does. We work with private landowners to install conservation and restoration projects, and WDFW has been the main lead on the mill site recovery. A number of assessments have been done to determine the best restoration approaches for the mill site, and toxin release has been a concern associated with breaking up the concrete. The price tag of $2-3 million for this project is beyond the scope of UCD and SRFB. The project being proposed for Simmons Creek Restoration is appropriate because we have a good relationship and history with the landowner, the need for the work is clear and the LE Strategy directly recommends the actions in this project. The primary habitat factor being addressed in this proposal is the water quantity in salmonid habitat of lower Snyder Creek, which will be best addressed by improving aquifer recharge in the upper headwaters. As the Klickitat Lead Entity Strategy's Recommended Action for Snyder Canyon Creek states: "Improving water storage in the meadows areas has the greatest potential to increase baseflows in the lower basin" for salmonids.

g. *List project partners. When appropriate, include a letter from each participating partner briefly outlining its role and contribution to the project (see sample form in section 2).*

Northwest Service Academy – Americorps (partnership letter unavailable as director is out of town for several weeks)

Hancock Forest Management – landowner, providing donated time and assistance to project. See partnership letter.

Mid-Columbia Regional Fisheries Enhancement Group – constructing 10 pilot structures on Simmons Creek. See partnership letter.

h. *List all landowner names. Include a signed form from each landowner acknowledging their property is proposed for SRFB funding consideration (see sample form in section 2).*

Hancock Forest Management

i. *Describe the long-term stewardship and maintenance obligations of the project. Projects should be consistent with habitat forming processes in the watershed, requiring reduced up-keep and long-term maintenance over time.*

The sediment capture/channel roughness structures will be constructed of biodegradable, natural materials. They will be designed to become a part of the environment. Planted vegetation will also become established after the first year and require no extra maintenance. We are not building a fence in order to reduce further maintenance, but the existing exclosure will need to continue to be maintained. The off-stream watering systems will require some up-keep in order to maintain functionality. They will become the responsibility of the landowner and grazing leasee, but UCD will monitor their effectiveness as well.

j. *When known, identify the staff, consultants, and subcontractors that will be designing and implementing the project, including their names, qualifications, roles and responsibilities. If not yet known, describe the selection process.*

UCD staff includes a forester (Jim White), technician/conservation planner (Tova Cochrane), and a physical engineer (Paul Cleary). Jim and Tova have worked with the landowner to plan a project suited to the site, using expertise in appropriate vegetation and stream function. Paul Cleary will provide guidance in designing the structures to fit the stream morphology. Northwest Service Academy will provide an Americorps crew to build the structures and plant the vegetation. NWSA has been involved with similar projects for years, providing training, tools and energy. The light excavating work will be put out for bid, and a contractor will be selected based on price and qualifications.

k. *Describe the consequences of not conducting this project at this time. For acquisition projects, also describe the current level and imminence of risk to habitat, and provide the current zoning and Shoreline Master Plan designation.*

Without this project at this time, Simmons Creek will continue to downcut and erode. There is so little structure and vegetation in the project area that winter flows will continue to scour and wash away soil, exacerbating headcuts and preventing functional floodplain activity or effective water storage. Lower Snyder Creek will continue to have low water flows in the summer, reducing habitat quality for Steelhead in newly-restored areas. The Klickitat River will also continue to receive excessive sediment from Snyder Creek, degrading habitat for Steelhead, Bull Trout and Chinook.

5. TASKS AND TIME SCHEDULE

List and describe the major tasks and time schedule you will use to complete the project. Describe your experience managing this type of project.

Jan. ’08-June ’08 – Planning and Design

We will work with MCRFEG and the landowner to monitor their 10 pilot sediment capture structures on Simmons Creek. We will also work with our engineer to plan and design our structures. At this time we will also apply for necessary permits.

April ’08 – Off-stream Watering System Purchase and Installation

Working with the landowner and grazing leasee, we will determine best locations for off-stream watering stations. We will also purchase the necessary materials for the stations, and install them before cattle have been released in the allotment for the summer time.

June ’08 – Project Layout and Preparation

We will develop a light excavating contract and put it out for bid. Materials such as jute mat, logs, and plant materials will be located and/or acquired.

July ’08-Sept. ’08 – Implementation

With the light excavating contractor and NWSA, we will build the sediment capture/channel roughness structures. NWSA will also collect livestakes and plant them, along with purchased plant materials and erosion control grass seed.

Sept. '08-June '11 – Effectiveness Monitoring and Site Maintenance

We will establish photopoints and monitor the structures through the winter flows, photodocumenting their success/failure. When spring comes, we will monitor the growth of planted vegetation and assess the need for replanting. We'll hire the NWSA crew as needed and purchase more materials for replanting and maintenance.

6. CONSTRAINTS AND UNCERTAINTIES

State any known constraints or uncertainties that may hinder successful completion of the project. Identify any possible problems, delays, or unanticipated expenses associated with project implementation. Explain how you will address these constraints and the likelihood of success.

Unknown costs may be associated with the light excavator, the erosion control jute mat, erosion control grass seed, and off-stream watering system materials. Our budget is based on estimates from past projects. If costs are higher than we anticipated, we will leverage other grant money or partnerships to find the resources needed to do the job right. We would prefer to purchase native grass seed, but availability and price may require us to opt for non-invasive, non-native seed. The likelihood of a cost increase that would delay the project is very low.