GRANDE RONDE MODEL WATERSHED

1114 J Ave.
La Grande, Oregon 97850

(541) 663-0570
Fax: (541) 962-1585

http://www.grmw.org

OWEB Board
c/o Linda Burnett
775 Summer St. NE
Suite 360
Salem, OR 97301

Dear Ms. Burnett,

The Grande Ronde Model Watershed is pleased to provide the attached Proposed Priority Response to questions for consideration by the OWEB Board. Our responses include input from our restoration partners in the area, and we hope you'll consider our input valuable during your selection process. We look forward to working with OWEB to clearly identify and address ecological priorities systematically and collaboratively with all our funding and implementation partners.

Sincerely,

Jeff Oveson

Executive Director
Grande Ronde Model Watershed

Proposed Priority Response Questions for OWEB Board

1. Proposed Priority Description

a) What is the native fish or wildlife habitat to be conserved or other natural resource issue to be addressed?

In accordance with Oregon's Native Fish Conservation Policy, habitat for all native species of fish will be addressed, with priority emphasis on spring Chinook salmon and summer steelhead habitat.

b) What are the specific expected ecological outcome(s) to be achieved after this priority is addressed?

Enhanced salmonid habitat that will lead to increased fish abundance and productivity:

1. Increased instream habitat complexity: increased amount and diversity of habitat types with more natural sequence of pools, riffles, glides and runs to provide habitat for all native fish life stages.
2. Improved floodplain connectivity: increased hyporheic exchange, improved water quality, reduction in the effect of solar inputs, improved water retention and improved late-season stream flows.
3. Increased side channel habitat: enhanced the rearing capability of the region's rivers and streams via increasing habitat complexity and providing low velocity refuge for juvenile fish.
4. Increased late season stream flow providing more habitat and reduction in thermal barriers.
5. Improved fish passage-providing access to historic habitat by removing or replacing anthropogenic barriers to juvenile and adult migration.
6. Enhanced riparian areas: both planted and naturally recruited riparian species of grasses, forbs, shrubs and trees to provide reduction of solar inputs, increased habitat and habitat complexity; protected with voluntary landowner agreements.

c) What is the defined geographic location within which this proposed priority can be successfully addressed?

Upper Grande Ronde, Catherine Creek, Wallowa River and Imnaha River, (4th Level HUC's) and Joseph Creek, (5th Level HUC), will be the general boundaries. Within each of these subbasins and watersheds more specific and smaller geographic locations will be identified as the FIP/Capacity Development process progresses. GRMW and partners expect to submit two FIP proposals and two Capacity Development proposals, each based on the level of strategic and action planning and the relative viability of functional partnerships within specific geographic locations.

2. Significance to the State

a) Why is this proposed priority of ecological significance to the state, even though it may not be present everywhere in the state?

"If the salmon and steelhead are running, then as far as I am concerned, God knows that all is well in His world…the health of the environment is good if the salmon and steelhead are around. It is that simple." - Tom McCall

Spring Chinook salmon and summer steelhead are identified as strategy species for the Blue Mountains Ecoregion within the Oregon Conservation Strategy. Recommended conservation actions are to maintain or restore aquatic and riparian habitat and continue ongoing restoration efforts involving landowners, tribes, and agency partners.

The mission of the Oregon Plan for Salmon and Watersheds is "restoring our native fish populations and the aquatic systems that support them to productive and sustainable levels that will provide substantial environmental, cultural, and economic benefits."

Of all the so-called "indicator species", there are likely none as iconic or ecologically representative as the spring Chinook salmon. Spring Chinook and summer steelhead have historically been a major part of

the economies and diets of coastal communities and Tribes while also serving as the major vector of marine derived nutrients to the inland reaches of the state.

b) Are there any social and/or economic considerations that the Board should understand regarding this proposed priority?

Travel generated expenditures for fishing in eastern Oregon	$27.6 million
Travel generated expenditures for fishing in Union County	$1.7 million
Travel generated expenditures for fishing in Wallowa County	$2.8 million

Local Expenditures for Fishing in 2008. ***Courtesy of Oregon Dept. of Fish & Wildlife (ODFW)***

Most of the Pacific Northwest region enjoys relatively inexpensive electricity because of the hydropower infrastructure in the Columbia River system; while at the same time, this system has negatively affected the abundance and productivity of salmonids and many other native fish species. In lieu of removing the dams, more emphasis is being placed on the enhancement of tributary habitat in the historic range of salmonids.

Many of the anthropogenic impacts on habitat have come about as a tradeoff for economic development. Wetlands have been drained, rivers and streams have been channelized and diked, riparian areas have been logged, grazed and plowed. Cities, roads, and railroads were sited adjacent to water for the obvious reasons, then required some form of "protection" from the unpredictable behavior of these same water courses, protection that is usually detrimental to habitat. Past intent is not the consideration inasmuch as today's intent will determine the outcome of efforts to restore historic habitat such that it is complementary to economic productivity.

Most of the best opportunities for cost-effective habitat improvement are on private property, lands that are currently used for farming, grazing and timber production. Legacy impacts on much of this private land resulted from activities in the uplands on public land, such as mining and splash dam log transport that significantly altered channel form and composition. Nevertheless, the opportunities for habitat enhancement dictate that voluntary restorative actions, to be successful and sustainable, must happen on these private lands without significant economic impacts on landowners.

c) In addition to its significance to the state, identify how the proposed priority fits within regional & local ecological priorities.

Regional Ecological Priorities: 13 Columbia River basin salmon and steelhead stocks are listed under the federal Endangered Species Act as either threatened or endangered including Snake River spring/summer Chinook (elsewhere in this document referred to as spring Chinook) and Snake River basin steelhead (elsewhere in this document referred to as summer steelhead), both of which are listed as threatened. Spring Chinook were listed in 1992 while summer steelhead were listed in 1997. Both are classified under Oregon Law (ORS 496.171-496.192) as Threatened.

The Federal Columbia River Power System Biological Opinion (BiOp) released in 2008 identifies problems with habitat, harvest, hatcheries and the hydropower system and identifies actions in the Reasonable and Prudent Alternative through which the BiOp meets the law's requirement to protect fish and improve prospects for recovery.

Local Ecological Priorities: The mere existence of the Grande Ronde Model Watershed (GRMW) program is evidence of the local focus on salmonid habitat restoration and watershed health. Led by Union and Wallowa County Boards of Commissioners and leaders from the Confederated Tribes of the Umatilla Indian Reservation and the Nez Perce Tribe, local citizens with diverse backgrounds and interests recognized the need for locally driven watershed enhancement, with a priority on salmonids that were once abundant here.

The Grande Ronde Subbasin Plan and the Imnaha Subbasin Plan (Northwest Power & Conservation Council) point out the need to address the severe reduction in both abundance and productivity of salmonids from historic numbers to present day:

The Grande Ronde River subbasin once supported fisheries that were an important part of tribal cultures and economies (James 1984, Wallowa County and Nez Perce Tribe 1999, Ashe etal. 2000). These fisheries included both anadromous and resident populations and a variety of species. As European settlement came to the area, the fisheries were woven into the culture of these new inhabitants, as well. During the intervening years, some species have been lost from the subbasin and other, non-native species have been introduced.[Grande Ronde SBP 2004]

3. Limiting Factors

a) What ecological limiting factors exist that relate to the proposed priority identified? Limiting factors are the physical, biological, or chemical conditions and associated ecological processes and interactions (e.g., population size, habitat connectivity, water quality, water quantity, etc.) experienced by the habitat that may influence viable population parameters (i.e. abundance, productivity, spatial structure, and diversity).

b) Reference any framework(s) that exist (Recovery Plans, Implementation plans, etc.).

(Responses to 3.a, 3.b)

The factors limiting the success of salmonids in the Grande Ronde Basin are related to habitat conditions. The specific factors for salmonids (that also apply to most native fish species) as described in the draft NOAA Recovery Plan for Oregon spring/summer Chinook salmon and steelhead populations are: decreased water quantity, poor water quality (increased summer temperatures, pH, excess nutrients, contaminants), excess fine sediment, lack of habitat quantity (pools and woody debris), predation, degraded riparian condition, channelization, and fish passage. The Grande Ronde Subbasin Plan identifies a similar list of limiting factors and keys out the most important ones affecting salmonids as habitat quantity, habitat diversity, high water temperatures, sediment loads, and flow modifications. Bonneville Power Administration (BPA) in conjunction with its local partners has begun a process called the Restoration Atlas (Atlas) to refine and prioritize habitat restoration activities in Grande Ronde Basin. The development phase of the Atlas is almost complete in the Catherine Creek watershed, with the implementation phase to follow; the Atlas development phase for the Upper Grande Ronde is just beginning. During this process the Oregon Department of Fish and Wildlife Fish Research office has presented data on density dependence for juvenile Chinook salmon summer rearing. This is certainly another ecological limiting factor affecting these priority populations.

4. Threats and Benefits

a) What overall threats exist to the proposed priority identified? Threats are the human actions (e.g., fishing, development, road building, etc.) or natural (e.g., flood, drought, volcano, tsunami, etc.) events that cause or contribute-to limiting factors. Threats may be associated with one or more specific life cycle stages and may occur in the past, present, or future.

General threats associated with human actions in the Grande Ronde Basin include roads, railroads, agricultural practices, residential development, livestock grazing, timber harvest and recreation. These threats affect all life stages of native fish present in the Grande Ronde Basin. Natural threats include climate change, drought and mass wasting. These threats directly affect key limiting factors for native fish populations. Threats and limiting factors by river reaches and watersheds are more specifically identified in the Subbasin Plans, draft NOAA Recovery Plan and especially the Restoration Atlases which are currently under development.

b) What will happen if the threats aren't addressed?

Some threats to the Grande Ronde Basin native fish populations are more serious than others. There are three fish species listed as threatened under the Endangered Species Act: Bull trout, summer steelhead, and spring Chinook salmon. These species are threatened by overall poor habitat conditions in the basin.

Individual threats negatively affect listed fish but when combined the overall effect results in a real risk of extinction for these species. For example, low flows and high summer water temperatures combined with climate change could create unsuitable habitat for most of Oregon's native fish species. If left untreated, not only salmonids but all native fish species will be in imminent danger. Many of these threats affect the entire ecosystem in and around our streams, not just fish.

c) Describe the economic, social, iconic and cultural benefits of addressing the outcome and impacts of not addressing it.

Job creation and recreation opportunities are some of the most prominent economic benefits from funding riparian restoration. The GRMW and partners take pride in providing river restoration jobs to local contractors. Without addressing these priorities there are limited opportunities for restoration jobs. Chinook salmon fishing is very limited in the basin but through improved habitat and abundance there are several opportunities to create or improve the salmon fishery; an industry which already brings dollars into the basin. Social benefits include cultural, aesthetic, education opportunities and recreation. Salmon are a First Food for local tribes that still hunt and fish in the basin. A restored river with abundant wildlife provides many opportunities for viewing, birding, field trips, boating, swimming, fishing and much more.

d) Briefly summarize how much has been done already, how much is remaining.

Much has been done in the last 20 plus years. It's difficult to estimate the percent of the basin that has been restored but we do know that over 400 restoration and passage projects have been funded and implemented in part or entirely through GRMW. Many more have been completed by our partners utilizing other funding sources. One limiting factor that can be summarized easily is passage. As of 2014, there are no more remaining physical passage barriers for salmonids on Catherine Creek or the Upper Grande Ronde River and there are very few in the other priority areas.

Many of the early restoration projects were poorly prioritized, addressed insufficient limiting factors, and were small in scope and scale. Today, typical restoration projects, after being prioritized on a larger landscape scale, are most often implemented by more than one partner , address multiple limiting factors and serve as complementary work to other projects.

e) What is your best estimate of cost to address the priority, and as a result, how economically feasible do you believe it is to address this priority over time?

The draft NOAA Northeast Oregon Snake River Recovery Plan identified proposed tributary restoration actions and assigned a dollar amount to those actions by watershed and species. BPA, NOAA and local restoration partners are refining the process of prioritizing restoration actions with development of the Restoration Atlas. The Atlas is nearing completion on Catherine Creek and will soon be started on the Upper Grande Ronde. Although the Atlas does not define a dollar amount it does narrow the actions down to highest priority areas and most critical limiting factors. This process has resulted in a much more economically feasible plan for restoration.

5. Opportunities

a) *Ecological*

1. What are the measures of ecological success? What's the likelihood of ecological success in the short (6-year), medium and long-term (define the term lengths)?

Short term measures of ecological success (up to 5-years) include restoration project implementation reporting and subsequent project monitoring. Each project implemented, funded or managed by GRMW requires a completion report. These reports serve as an accounting method to confirm if the project was implemented as proposed, if stated objectives are staged for success, and if ecological benefits as understood during review are likely to be realized. If the restoration action was altered between review and completion then the completion report identifies these changes, reasons why, and what ecological benefits can be expected.

Subsequent monitoring reports can continue for up to 10-years with the length of the reporting period, as well as the parameters monitored, commensurate with project complexity. Simple actions such as off-site stock water or culvert replacements may only require 2-years of simple monitoring (eg. photopoints), where channel reconstruction projects may require up to 10-years of measuring several parameters, (eg. channel morphology, groundwater response, fish use). The measure of ecological success in the short term is whether individual restoration project objectives and expected project benefits are being realized as described in the project monitoring reports.

Our long term, 20 plus years, measure of ecological success is based upon expected results from the Columbia Habitat and Monitoring Program (CHaMP) occurring in the Columbia River Basin and in the Grande Ronde Basin. This monitoring approach, funded by BPA and implemented by several partners, is a statistically valid and spatially robust method by which habitat improvements over the long-term are quantified. The goal of CHaMP is to generate and implement a standard set of fish habitat monitoring (status and trend) methods in up to 26 watersheds across the Columbia River basin. The Grande Ronde Basin is one of the selected watersheds. Surveys are being conducted in watersheds with perceived large juvenile life-stage survival gaps due to habitat impairments or that are home to existing high quality fish monitoring infrastructure. There are approximately 75 CHaMP sites in the Grande Ronde Basin, of which are either on annual, 3 year or one-time sampling schedules.
The CHaMP protocol is fish-centric, i.e., it measures habitat relevant to salmonids of interest under the BiOp. The CHaMP protocol is structured around a general understanding of the link between habitat attributes and specific life history requirements of salmonids.

CHaMP data will be used to evaluate the quantity and quality of tributary fish habitat available to salmonids. The stream habitat data generated by CHaMP will be used in conjunction with salmonid growth, survival, abundance and productivity data to estimate fish-habitat relationships and assess the impact of habitat management actions on fish population processes. In addition to meeting FCRPS BiOp prescriptions (RPA 56.3), CHaMP supports the habitat restoration, rehabilitation, and conservation action performance assessments and adaptive management requirements of the 2008 FCRPS BiOp. The results of CHaMP status and trend monitoring will be the gauge of long term ecological success.
It is difficult to predict the short or long-term likelihood of success but by implementing projects using state-of-the-art restoration methods and techniques addressing key limiting factors in high priority areas the prospect of success is quite good.

2. What types of voluntary conservation actions could be undertaken to address the proposed priority?

- Improve water quantity and quality through acquisition or lease of water rights or water conservation actions including irrigation water management, aquifer storage and recovery, wetland creation and improved floodplain connection.

- Protect riparian and upland areas through conservation easements, livestock exclusion fencing and development of land management plans.

- Improve riparian and instream habitats through targeted restoration activities. Actions include fish passage restoration, channel reconstruction, large wood and boulder additions, side-channel habitat creation, floodplain activation and riparian planting.

3. Should the proposed priority be divided into geographic areas that are appropriate for partners to address?

The GRMW service area (Grande Ronde and Imnaha subbasins) will be divided into 4 geographic areas. They are Catherine Creek, Upper Grande Ronde, Wallowa/Lostine, and Imnaha/Joseph Creek. The

reasons for division are capacity, partnerships, status of action planning (Atlas), and FCRPS BiOp priorities.

1. Catherine Creek: Partnership includes GRMW, ODFW (La Grande), Bureau of Reclamation, Confederated Tribes of the Umatilla Indian Reservation, Union Soil and Water Conservation District, U.S. Forest Service, Natural Resource Conservation Service, The Freshwater Trust and others with specific tasks to restore conditions in Catherine Creek. At this time the partnership has nearly completed a Restoration Atlas that spatially prioritizes restoration based on Chinook life stage. The Atlas takes into account feasibility of restoration actions.
2. Upper Grande Ronde: Partnerships are the same as in Catherine Creek and the Atlas development process is scheduled to start in the fall of 2014.
3. Wallowa/Lostine: Partnership includes GRMW, ODFW (Enterprise), Nez Perce Tribe (NPT) and others with specific tasks to restore fisheries habitat in the subbasin. At this time the partnership is seeking capacity support to develop the Restoration Atlas in the fall of 2016.
4. Imnaha/Joseph: Partnership includes GRMW, ODFW (Enterprise), NPT, The Freshwater Trust and others with specific tasks to restore fisheries habitat in the subbasin. At this time the partnership is seeking capacity support to develop the Restoration Atlas in the fall of 2017.

b) *Social*

1. Do partnerships exist to address the proposed priority? If so, briefly describe. If not, note why this proposed priority is important enough that partnerships may form to address it.

Currently in the Grande Ronde Basin strong partnerships exist to restore habitat for all native fish species. These partnerships exist in the forms of fiscal sponsorship, resource and knowledge sharing, and cooperative project planning. The partners involved include tribal groups, state and federal agencies, and nonprofits. The relationships which support important habitat and ecosystem restoration have been both tested and fortified over the 20 plus year life span of GRMW. For any proposed restoration project, a technical team (which consists of members representing ODFW, BOR, BPA, GRMW, CTUIR, FWS, and NOAA) visits the project site and evaluates the merit of the intended habitat restoration. This collaboration among local experts falls under Step 3 in the GRMW Stepwise Process for project planning. On accepted projects, technical and administrative contacts from 2-3 of the aforementioned agencies or tribal groups will jointly fund, execute and monitor the rebuilding of riparian systems in the Grande Ronde Basin. These high functioning partnerships have implemented over 400 ecological improvement projects during the last two decades.

2. What social opportunities exist to address the proposed priority? Is there momentum built?

With the understanding that people and organizations have different opportunities based on their social networks and the overall environment in which they exist, it's clear that a variety of social opportunities exist to address this priority. An obvious foundation for social opportunity is the makeup of the GRMW Board of Directors, representative of broad and diverse backgrounds and ideals brought together specifically to develop and capitalize on social opportunity. The Board itself, and the numerous interests and organizations encompassed because the Board is individually and collectively related, creates enormous social opportunity. It is possible that with a diagram including every individual in the basin, you could map a relationship to GRMW through its partners. Momentum has already been attained, but ability to capitalize on social opportunities is constrained by available fiscal resources.

3. Describe educational benefits, if any.

Educational benefits can be achieved in a number of ways. Articles in local publications, such as the GRMW's quarterly "Ripples in the Grande Ronde" newspaper-insert, highlighting completed restoration projects help to educate the general public. Project tours for landowners and students can demonstrate first-hand how restoration projects improve fish and wildlife habitat.

4. Summarize the social, community, political, regulatory or other factors that will help lead to the success of this proposed priority.

Union and Wallowa Counties, whose political boundaries are nearly a match for the watershed boundaries of the Grande Ronde Basin, are rural in nature, with natural resources playing a significant role in the local economies. A region that was once viewed as a cornucopia of natural resources to be exploited, citizens today value the biological, aesthetic and cultural values as part of the equation through which land management decisions are made. It was through the collaborative efforts of both County Boards of Commissioners and both the Nez Perce and Confederated Tribes of the Umatilla Indian Reservation that GRMW came to be established, with the mandate to serve both resources and people and do so in cooperation with people of all interests. Although ESA listings of both spring Chinook and summer steelhead were controversial and fomented some acrimony, the twenty-two year history of GRMW demonstrates an ability and adaptability of local residents to comply with and often times, exceed environmental regulatory standards such as the ESA, removal and fill regulations, water quality regulations, and local regulatory permit requirements.

5. What can be leveraged to address the proposed priority (funding, acreage impacts, other resources)?Under the Northwest Power Act, BPA is responsible for mitigating the impacts to wildlife caused by the ownership and operation of dams on the Columbia River. The financial investment which BPA has currently in the Grande Ronde Basin provides a great opportunity to be coupled with OWEB funding and make all investments go farther, restoring ecosystems holistically. Furthermore, GRMW has a twenty-two year relationship with the landowners and restoration partners in our area; a valuable social advantage for completing restoration work on the most crucial rivers and streams for native species. This financial investment by BPA and strong community ties are complemented by the restoration work which GRMW and partners have already completed over the last two decades. The ability for OWEB to leverage the progress which has already been made and build on it in a meaningful way makes the Grande Ronde Basin an ideal place for a focused investment priority. The Bureau of Reclamation has also provided substantial resources in terms of engineering and design to plan complex restoration projects, (eg. channel reconstruction work). Moreover, the technical expertise and knowledge provided by a multitude of biologists from partner organizations has been and will continue to be instrumental in planning, designing and implementing restoration projects.

c) *Economic Benefits*

1. Describe the economic benefits of addressing the ecological proposed priority, including ecosystem services

As was reported by University of Oregon's Ecosystem Workforce Program, investment from OWEB economically benefits communities. Their study concluded that OWEB investments result in creating between 15-24 jobs for every million dollars spent. Because the geographic extent of the Priority area is so rural, the resulting jobs which are brought into Union and Wallowa counties are extremely impactful to both the local economy and the viability to keep qualified individuals residing in such remote areas of the state.

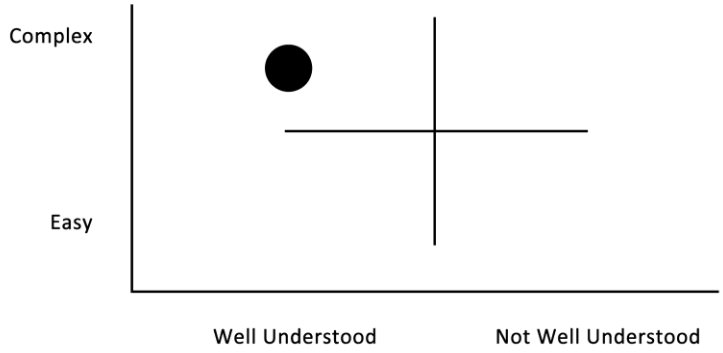
A recurring project element in our work involves increasing the efficiency of irrigation systems. The ability to help private landowners increase efficacy of water for crops means that more water remains in stream for native fish species. According to OSU's Extension Service, Union County's economy is centered on production agriculture; in Wallowa County, farming is the largest employer and most steady income base. Therefore, OWEB investments on projects which improve irrigation efficiency actually support the most important pillars of the local economy.

Another economic benefit of OWEB investment is in the cost which is avoided for taxpayers by reconnecting flood plains and enhancing riparian plantings. This regulating service prevents expenditures by individuals and municipalities during flood events or annual high flows. The natural flood mitigation which is provided by healthy riparian systems provides financial security in avoided

costs to private residences, businesses or municipalities (highways) which are in close proximity to our targeted waterways.

An additional service provided by healthy riparian habitat is the cultural value provided by Chinook Salmon and other native fish species to both tribal groups and residents of northeastern Oregon. Salmon is just one of the native species which ritualistically serve as a main dish in tribal meals for natives of the Umatilla Indian Reservation. In this way, OWEB's investment in restoration of natural riparian systems is also playing a role in cultural enrichment of our area. The presence of native fish species in Union and Wallowa counties also contributes to ecotourism, bringing dollars into the local economies (see question 2, part b). The ability to restore native fish habitat, and potentially delist Chinook and steelhead can provide exponential growth of the tourism industry in the Grande Ronde Basin.

6. Assess the proposed priority by locating the proposed priority in one of the quadrants below. Describe why the proposed priority falls in this quadrant. There is no wrong answer to this question and there may be multiple answers.



When this proposed priority is broken into smaller geographic areas this assessment will change for the individual areas. It is reasonable to assign this quadrant to the basin as a whole. ODFW Fish Research has conducted long term research on salmonid life histories in the upper Grande Ronde, Catherine Creek, Lostine, and Wallowa rivers. BOR has completed tributary assessments on Catherine Creek and the upper Grande Ronde River. ODFW and CRITFC have completed four years of CHaMP monitoring in Catherine Creek and the upper Grande Ronde River. The salmonid life histories and habitat needs are well understood in much of the basin because of these research efforts. There is still more to learn regarding summer rearing carrying capacity, mortality, etc. Issues of high mortality during spring immigration may be complex to address but many of the needs are well understood and remedies have been identified.

7. Is there other information the Board should know regarding this priority?
Conducted by ODFW & CRITFC and funded primarily by BPA and BOR, recent locally based research and monitoring data, when combined with Tributary Assessments and the Restoration Atlas will significantly improve the ability of the restoration partners to prioritize, design and construct habitat projects that return high value on the public investment.

8. In lieu of attaching letters of support for this proposal, please submit a list of other supporting individuals or organizations.
Bonneville Power Administration
Confederated Tribes of the Umatilla Indian Reservation
Nez Perce Tribe
U.S. Forest Service

Oregon Department of Fish and Wildlife
Union Soil and Water Conservation District
Bureau of Reclamation
NOAA Fisheries
U.S. Fish and Wildlife Service
Union County Board of Commissioners
Wallowa County Board of Commissioners
The Freshwater Trust
Oregon Water Resources Department