

Wasco County Watershed Councils
c/o Wasco County Soil & Water Conservation District
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October 15, 2014

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

RE: Proposed Priority Response Questions for OWEB Board - East Cascades Oak Woodlands

Dear OWEB Board:

Please find responses in blue to your questions regarding a proposed focused investment partnership priority below.

1. Proposed Priority Description

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

The wildlife habitat to be conserved is oak woodlands in the East Cascades. Oak woodlands are characterized by an open canopy dominated by Oregon white oak (*Quercus garryana*). Depending upon the site characteristics, oak woodlands may also have ponderosa pine and Douglas fir. The understory is relatively open with shrubs, grasses, and wildflowers. The tree canopy obscures between 30 to 70 percent of the sky. Oak habitats are maintained through fire, which removes small conifers and maintains a low to moderate shrub cover.

- b) What are the specific expected ecological outcome(s) to be achieved after this priority is addressed?
1. Improved understanding of historical and potential extent of eastside oak woodlands
 2. Restored and conserved eastside oak woodlands
 3. Improved habitat for priority species
 4. Reduced catastrophic wildfire risk
 5. Protected drinking water

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

The defined geographic location for the proposed priority is the 467 square miles (298,880 acres) of the Oak/Conifer Foothills Level IV Ecoregion within the Level III Eastern Cascades Slopes and Foothills (Thorston et al. 2003. Ecoregions of Oregon Map: Reston, Virginia, USGS). The Oak/Conifer Foothills

occurs at elevations ranging from 600 to 3000 feet and is more diverse than other parts of the Eastern Cascades Slopes and Foothills Region.

Marine weather enters this ecoregion from the Columbia River Gorge, moderating the climate. As a result, soil, climate and vegetation share characteristics of both eastern and western Oregon. Grasslands, oak woodlands, and forests dominated by ponderosa pine and Douglas-fir occur. Mean annual precipitation ranges from 16 to 40 inches.

Current land cover is mostly woodland and forest with some grassland. Land use includes logging, recreation, municipal watershed protection, wildlife management, livestock grazing, rural residential development, orchards, and grain and hay farming.

The proposed priority area extends west to the northeastern portion of Hood River County to Mt. Defiance and east along the Columbia River into Wasco County to the western edge of The Dalles, and south to White River, just north of the Warm Springs Reservation.

The proposed priority area includes a portion of the Columbia River Gorge Scenic Area (30,000 acres), the entire Wasco Oaks Conservation Opportunity Area (30,000 acres), a portion of The Dalles Municipal Watershed (4,500 acres), the Oregon Department of Fish and Wildlife White River Wildlife Management Area (30,000 acres), and two high priority Wildland-Urban Interfaces (Juniper Flats and Pine Hollow).

Ownership within the Oak/Conifer Foothills Ecoregion is a little more than half in private ownership (~153,000 acres), of which 350 acres are owned by conservation land trusts. In the Wasco County portion of the priority, there are 2,115 parcels that are less than 10 acres in size covering a total area of 5,550 acres. The remaining area is publicly owned by federal (~111,000 ac.), state (~30,000 ac.), and local governments (~5,000 ac.). The lands in state ownership consist mostly of the White River Wildlife Management area, managed for elk, mule deer, and turkey. A majority of the land owned by local government is within The Dalles municipal watershed, which is managed for drinking water. The federal lands are mainly managed by the US Forest Service (USFS) for recreation, timber, wildlife, and grazing.

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?

The oak woodlands in the East Cascades represent a unique and diverse region of the state. The marine weather enters this area through the Columbia gorge moderating an otherwise continental climate. The soil, climate, and vegetation share characteristics of both eastern and western Oregon. Oregon white oak (*Quercus garryana*) is the species found in the Oak woodlands in the East Cascades. This species extends from southern British Columbia to southern California. Its acorns fed the Native Americans and its wood is used for fine furniture and oak barrels. Oak woodlands cover less than seven percent of their historic range in Western Oregon due to conversion to other land uses, fire suppression, and invasive species. Less is known about their historic extent in the East Cascades. Eastside oak woodlands are different in structure and composition than those in Western Oregon, but are just as important to a variety of wildlife and rare plants.

Oaks provide habitat for a variety of priority species. The dead branches and cavities of oaks provide safe places to rest and raise young for birds and mammals. Acorn woodpeckers and Western Gray squirrels feed on the acorns. The Western Gray Squirrel is a strategy species that lives in oak woodlands. It is a game mammal in Oregon, but classified as State Sensitive-Vulnerable in the Willamette Valley Ecoregion and was listed as Threatened in Washington State in 1993. ODFW is concerned with possible extinction of the species. Lewis woodpeckers eat acorns and use the tree's cavities for nests and food storage. They usually spend the winter in oak habitats and move around in response to acorn crops. Lewis' woodpeckers were once widespread and abundant, but have declined dramatically since the 1950s. Their decline is due, in part, to the loss of large diameter nest and food storage trees. The oak woodlands east of Mount Hood provide some of the state's last major nesting areas for the Lewis' woodpeckers.

The 2006 ODFW Oregon Conservation Strategy is the state's overarching strategy for conserving fish and wildlife to help ensure that Oregon's natural treasures are passed on to future generations. This strategy identified the Wasco Oaks (EC-02) as a Conservation Opportunity Area. The Wasco Oaks is

significant because it contains the ODFW White River Wildlife Management Area, winter range for mule deer and strategy species of Lewis' Woodpecker, Coastal Cutthroat Trout, and Winter Steelhead. The proposed priority area of the Oak/Conifer Foothills Ecoregion is slightly more expansive the Wasco Oaks Conservation Opportunity Area, in order to include the historic and potential extent of eastside oak habitat.

Historically, conservation efforts in this region have focused on aquatic species and their habitats through riparian and instream restoration work. Despite the designation of the Wasco Oaks Conservation Opportunity Area, limited resources have been focused on conserving and restoring these oak woodlands, particularly on private lands.

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

About half of the remaining East Cascades oak woodlands are located on private lands. An extensive educational component will be necessary, as part of this priority, to help landowners better understand the ecological importance of white oak to habitat conservation and fire resistance. Major conservation efforts will also be necessary in order to protect, restore, and manage critical oak woodlands throughout their east side range.

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

- The ODFW Oregon Conservation Strategy (2006) has identified Wasco Oaks (EC-02) as a Conservation Opportunity Area within the proposed priority area. This has been identified as a priority area because this area is believed to contain over 80% of the ecoregion's limited oak habitat.
- The Dalles Watershed Council Action Plan (2005) *Goal 5) Healthy Wildlife populations* rates *Objective 5b: Oak Woodlands will be managed to provide nesting and foraging habitat for gray squirrels* as a high priority.
- OWEB's Hood River Basin Priorities include oak woodland and the rare or at-risk plant communities, which include Ponderosa pine-Oregon white oak/arrowleaf balsamroot and white oak/bluebunch wheatgrass. Priority species include Lewis' woodpecker, ash-throated flycatcher, and Western Gray squirrel.
- USFS Mt. Hood National Forest Rocky Natural Restoration Plan (2014) identifies oak restoration and conservation as a priority.
- The Columbia Land Trust's Conservation Plan identifies several watersheds in Wasco County as high priority conservation areas. The Mill Creek Ridge Conservation Area, located south of The Dalles, in particular has a high number of oaks and high species diversity.
- Eastern Oregon Bird Conservation Plan (2000) by the American Bird Conservancy identifies Wasco Oaks as bird habitat conservation area in Eastern Oregon. The Plan calls for maintaining and enhancing the quality of existing oak/pine woodlands in priority areas, such as Wasco Oaks. Lewis' woodpecker is associated with this threatened habitat type as is ash-throated flycatcher.

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).

Oak trees are slow-growing and shade intolerant. Open-canopy, large diameter trees are continuing to be lost due to over shading by conifers, removal and natural causes, but are not being replaced. Oregon white oak flowers in the spring when the leaves are expanding. It is a wind-pollinated monoecious species, with separate male and female flowers on the same individual. Acorns develop over a single

growing season and reach maturity between August and October. Crown competition can reduce acorn production. Production is greatest for mushroom-shaped crowns associated with open-grown trees and least for vase-shaped crowns, associated with crowded forest grown trees. Acorn production is also highest for trees with high available water capacity. Riparian sites have the highest level of production in east side oaks. Acorns germinate in the fall and do not persist in the seed bank from year to year. Factors reducing germination rates are predation, desiccation and fire. Growth rates increase to a maximum when trees are about 16 inches in diameter. Growth rates also decline as stand density decreases. White oak can also reproduce vegetatively by sprouting from the root crown or roots.

Oak occurs as a climax tree species in oak woodlands because drought conditions are too severe for Douglas-fir and ponderosa pine species to consistently regenerate. Oregon white oak occurs on a wide range of soil types east of the Cascade Crest. Soils of native Oregon white oak may be a variety of igneous, sedimentary rock, alluvium and volcanic ash. Soils are commonly formed in basalt colluvium and are gravelly and stony. Moisture regimes range from moist, well-drained soils of riparian areas to shallow, dry, rocky soils.

Oregon white oak is highly adapted to fire. As a seedling, Oregon white oak is shade-tolerant but this tolerance decreases with age and mature trees are intolerant of shade from other oak trees and other species. When overtopped by Douglas-fir, oak suffers crown die-back, declining vigor and eventual mortality. In the absence of fire, the rate at which early seral Oregon oak succeeds to conifers is largely determined by available growing-season moisture. On eastside sites, the historical fire frequencies were lower because plant production and accumulation of fuels is slower. The fire recurrence interval ranged from 5 to 30 years. The distribution of eastside oak has been influenced by the fire regime that was present prior to European settlement.

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

- Oregon White Oak Restoration strategy for National Forest System Lands East of the Cascade Range, USDA PNW USFS, 2013.
- Rocky Restoration Plan, Barlow Ranger District, USFS, 2014.
- A Landowner's Guide for Restoring and Managing Oregon White Oak Habitats. Pacific Wildlife Research, BLM, 2004.
- The Dalles Watershed Council Action Plan: Goal 5/Objective 5b/Actions, 2005.
- The White River Wildlife Area Management Plan, ODFW, 2007.
- The Oregon Conservation Strategy, ODFW, 2006.

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.

The largest threats to Oak woodlands are fire suppression, fir encroachment, land use conversion to development, loss of habitat structure, and invasive species. Disease and insect infestations are also threats. Predicted climate change impacts on Oregon white oak habitats are varied and could be positive or negative, depending on the site.

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

If the threats to Oak woodlands aren't addressed, they will be over taken by conifer forests, which will result in loss of wildlife habitat for numerous species including the Lewis' woodpecker, Ash-throated flycatcher, Rocky Mountain Elk, Western Gray Squirrel and other dependent species. Very dense stands of oak will not provide the habitat benefits of a more open stand and may be more susceptible to crown fire due to fuel ladders. Development will fragment existing habitat. Invasive species will dominate the

understory of oak woodlands and provide limited habitat benefit.

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

Hunting is an important economic, social and cultural benefit, particularly in eastern Oregon communities. Restoring oak habitat will benefit priority hunting species of elk, mule deer, and wild turkey. The ODFW White River Wildlife Management Area provides public hunting grounds within the priority area. Private hunting clubs charge up to \$5,000 per hunter. Local restaurants, markets, and other businesses receive a significant portion of their revenue from hunters during the hunting season. If the threats aren't addressed, there will likely be reduced hunting opportunities and lost revenues generated from the elk and deer hunting season

Fire suppression and management has huge economic and social costs to society. According to the Government Accountability Office, federal appropriations for wildfire management activities have more than doubled in recent years to \$2.9 billion annually. In 2013, ODF spent a record \$122 million fighting fires, where more than 100,000 acres of land were burned. A 2012 study submitted to Society and Natural Resources entitled 'How much do homes contribute to wildfire suppression costs?' estimated that the average cost to protect a home in Oregon within six miles of a fire was \$56,614. Restoring oak habitat through thinning and reduction in ladder fuels along the Wildland-Urban Interfaces (WUI) and within The Dalles municipal watershed will reduce catastrophic wildfire risk. By not addressing catastrophic fire risk, areas around Juniper Flats and Pine Hollow WUIs and other areas are subject to increased fire. Drinking water for residents of The Dalles may be degraded through increased sediment loading into South Fork of Mill Creek.

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

Work to date has included land acquisition of lands zoned for residential development and thinning and brush piling on both private and public lands. The Columbia Land Trust (CLT) has removed the development threat on 350 acres of oak woodlands, but the threat still exists within the proposed priority area. The CLT has a goal of acquiring an additional 2,000 acres of lands at risk of development over the next 5 years. Within Wasco County, there are over 2,000 parcels (about 5,000 acres) less than 10 acres in size that could be targeted for acquisition depending upon their site specific characteristics and their location relative to wildlife corridors and other lands managed for conservation.

The Oregon Department of Forestry (ODF) has done some limited work to address the fire suppression and fir encroachment on private lands. According to the Oregon Conservation Strategy, the fire regime condition in 2000 for the proposed priority region is either classified as moderate or high departure from the historical regime for 75% of the entire area. Over the past 10 years, ODF has treated only about 3,500 acres on private lands leaving nearly 150,000 acres left to treat.

The ODFW has just started to embark upon a commercial harvest of the firs that have encroached into the oak woodlands in the White River Wildlife Management area. The White River Wildlife Management plan identifies 2,290 acres of oak woodland habitat to protect, enhance, and restore to benefit native wildlife and desired games species. This management plan identifies the strategy of working with the Columbia Land Trust and other partners to achieve this goal.

The USFS is planning oak woodland restoration along the eastern portion of a 24,000 acre planning area at the south end of the proposed priority region, called the Rocky Restoration Project. The goal of the project is to implement vegetation treatments across the 24,000 acres to improve resiliency and restore historic plant communities. Past harvesting and failure to treat the understory have created forests dominated by shade tolerant tree species, such as grand fir and Douglas-fir. Many stands are densely-stocked with limited understory development and structural complexity. Trees are competing for sunlight, water and nutrients causing reduced growth and vigor. Many of these stands are dominated by a single species, limiting habitat for wildlife species. While under-burning could help address some of these forest health problems, it is unsafe to underburn many stands in their current condition.

Lack of high quality habitat on public lands has resulted in reduced foraging habitat for priority

social and economic vertebrates, notably elk, mule deer, and turkey. These forests are generally unhealthy with epidemic or near-epidemic levels of native and non-native insects and diseases. The project would move plant communities to historically functioning condition, increase understory development and structural complexity, and lower the risk of detrimental impacts from large scale disturbance. The Tygh Creek and White River watersheds are both ranked in the top six watersheds for Oak and Pine Habitat within the USFS Pacific Northwest Region.

USFS efforts to date have treated an estimated 1,200 acres of oak habitat through a combination of fuels reduction projects around the community of Sportsman's Park and along Rock Creek. By the end of 2014, they plan to finish the remaining 400 acres of the thinning and piling along Rock Creek. All work completed will total 1,600 acres. In fall 2014, pile burning will be conducted around Rock Creek so a larger underburn can be carried out in the spring of 2016. Both the pile burning and underburn are intended to release existing oak and improve habitat around the Rock Creek area and neighboring ODFW White River Wildlife Management Area.

Twenty-five percent of the Rocky Project is located in the highest fire regime condition class, where the regime has been significantly altered from the historical range. Within this regime, dramatic changes in fire size, frequency, intensity, severity and landscape pattern are expected. Vegetation composition and structure have been significantly altered from the historical range and the area is in high need of restoration treatments.

The Rocky project is being developed to support the Eastside Fuels Strategy, which was developed with the National Cohesive Strategy. Additionally, the Rocky project will incorporate the Wasco County Community Wildfire Protection Plan, which outlines the Juniper Flats and Pine Hollow WUIs as a high priority in the county. These two WUIs include approximately 50% of the acres in the project.

There is a significant amount of work to be done in terms of broad scale restoration to conserve and restore oak woodlands in the East Cascades, in particular on private lands. As a first step, some landscape level inventory and planning will be necessary to focus conservation actions. For example, if the goal is to manage for wildlife habitat, specifically the Lewis' woodpecker, the initial effort will be to inventory the distribution of the species major habitat types, which include oak woodlands and also ponderosa pine, oak-pine woodlands, cottonwood riparian forests, and areas burned by wildfire. The conservation action will be to maintain these woodlands with a <40% canopy cover and shrub cover 30% to 80% with six trees per acre greater than 32 feet tall and six snags per acre greater than 20 inches in diameter. With additional resources, the partners can develop a plan that identifies critical habitats and then target outreach efforts to private and public landowners.

As a first step in educating managers and private landowners about how to manage their oak woodlands for wildlife, while reducing fire risk and managing invasive species, the Wasco County SWCD, the CLT, the USFS, and the Underwood SWCD (Washington) will be offering a workshop in late October of this year, which will likely be the first in a series of landowner workshops, contingent upon future funding opportunities.

- 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?

A rough estimate cost to address the priority is about \$16 million over the next five years. This would include restoration of an additional 10,000 acres on private and public lands and acquisition of 2,000 acres. Restoration costs for thinning, underbrush clearing, and piling are about \$1,000/acre and acquisition for lands zoned for development costs about \$3,000/acre.

One treatment that will be employed to address the priority will be to remove conifers that have encroached into oak habitat, thin existing oak stands, and remove ladder fuels. Conifer encroachment can be addressed through commercial logging and can generate revenue to pay for the other treatments. Additional work is needed to inventory priority areas for this treatment at a finer scale. Based upon the fire modeling that was done in 2000 in the Oregon Conservation Strategy, there is likely about 150,000 acres on private lands that could benefit from thinning and/or underbrush clearing. About 3,500 acres (\$2.8 million) have been treated in the past 10 years largely by one staff person. At the current rate, it will take over 40 years and

\$120 million to treat all of the land. With additional resources, the work could be expedited.

The CLT is targeting an additional 2,000 acres for acquisition over the next 5 years that is at risk of habitat fragmentation due to conversion to development. The market rate for lands within the urban growth boundary zoned for residential are priced at \$3,000/acre. It would cost \$6 million dollars to purchase these lands for conservation.

The USFS Rocky restoration project will likely generate some revenue through commercial logging of conifers that have encroached upon the oak woodlands.

5. Opportunities

f) 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)?

Ecological success measures will be based upon desired future conditions developed for each site but would include one or more of the following measures:

Short term

- percent of native species,
- a diversity metric,
- number of acres of existing oaks in conservation, and
- desired tree spacing.

Medium/Long term (20/50 years)

- abundance of keystone species,
- stand structure with increased resistance to wildfire, and
- desired plant community structure and composition.

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

- Inventory area to identify critical habitat.
- Plant oak seedlings.
- Conserve and preserve stands through acquisition or easement programs.
- Restore understory.
- Remove or reduce conifer competition.
- Prescribe burning, where possible.
- Thin existing oaks to reduce ladder fuels and improve habitat.
- Manage invasive species in understory.
- Remove development threat through conservation easements and purchase.
- Create snags for wildlife habitat.
- Monitor for effectiveness.

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

Not necessarily, unless OWEB prioritizes Oak woodlands statewide. If so, then Ecoregional boundaries (Coast Range, East Cascades, Klamath Mountains, West Cascades and Willamette Valley) might be an appropriate division.

g) 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.

Yes, partnerships are starting to address this proposed priority among the Wasco County SWCD, Underwood SWCD, CLT, Wasco County Watershed Councils, USFS, ODF, and ODFW. This partnership is offering a workshop on October 22nd for landowners and managers on how to restore and manage oak woodlands. Recent acquisitions by the CLT along the Mill Creek ridge have forged new partnerships among the Wasco SWCD, ODF, ODFW, and The Dalles Watershed Council. The 2013 Government Flats Fire burned in a similar footprint (4,500 acres) as the 1967 School Marm fire in The Dalles Municipal Watershed, which was largely in the proposed priority area. The Dalles Watershed Council offered a tour of the burned area in August 2014 to monitor the oaks and the understory for rejuvenation and to discuss efforts to revegetate some areas. The Wasco County SWCD is partnering with the city of The Dalles to revegetate the severely burned areas on slopes that are more susceptible to soil erosion with OWEB restoration dollars. The USFS Barlow District will be forming a collaborative advisory group for the Rocky Restoration Project over the next six months. A kick-off presentation was made to the White River Watershed Council on October 7, 2014. While strong partnerships either already exist or are beginning to form, there are also opportunities to develop partnerships. For example, the Confederated Warm Springs Tribes expressed support for an East Cascades Oak woodland priority area and future efforts will be made to cultivate this potential partnership. Additional partnership opportunities exist with bird conservation groups such as the Intermountain West Joint Venture.

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

Momentum is building. Partnerships are forming and new opportunities are being created to affect change. One example is the upcoming oak woodland landowner workshop put on by a group of partners. Another example is volunteer weed mapping on Columbia Land Trust lands along the Mill Creek Ridge. Community tours into The Dalles Municipal Watershed to monitor the response of the oak woodlands burned in the 2013 Government Flats fire provide education for citizens and officials.

3. Describe educational benefits, if any.

There are many educational benefits. Moreover, education will be one of the tools used to ensure ecological success. The SWCD is offering a landowner workshop to help educate landowners and agencies how to manage and care for their oak woodlands on October 22, 2014. Conserved lands with acquisition and conservation easements could provide outdoor education learning opportunities for the community and area public schools. Monitoring work by students and community members could include bird surveys and plant surveys, which could also provide a feedback loop for adaptive management.

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

There is a growing interest in oak habitat and its importance to many key species. Citizens and government agencies are beginning to appreciate the many benefits oaks provide. Scientists predict that with climate change, there will be larger and more frequent wildfires. There is great interest in reducing catastrophic wildfires by government and citizens. Oaks are one of the few species that can withstand and even benefit from fire. By protecting oaks, restoring and thinning oak stands, fire hazards can be reduced. These actions, in turn, help to protect existing communities, rural residences and municipal water supplies from the effects of wildfires. The Columbia Land Trust Mill Creek ridge acquisition project is gaining community support for land trusts.

5. What can be leveraged to address the proposed priority (funding, acreage impacts, other resources)?

The USFS has funding to embark upon a 24,000 acre restoration project in the southwestern corner of the proposed focused area that will involve oak restoration.

The ODF has been working with private landowners over the past 10 years to do fuels reduction work which benefits oak habitat.

ODFW has been managing the White River Wildlife area for cultural important game species including turkey, mule deer and elk and plans to do some conifer thinning to improve this habitat for these game species.

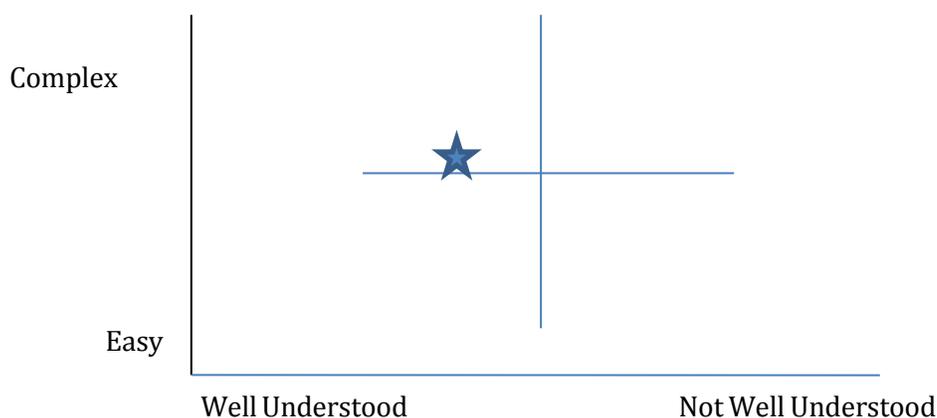
Columbia Land Trust continues to seek funding for acquisition and restoration of oak habitat in this area and can use these funds as match for other grants.

c) Economic Benefits

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

The economic benefits of addressing oak woodlands east of the Cascades are numerous but difficult to quantify in some cases. The economic benefit of reducing fire hazard would be significant to taxpayers, in general, and property owners living in WUIs. Commercial harvest of fir to reduce encroachment in oak woodlands will benefit the timber industry. Thinning and limbing of oak woodlands can reduce landowner's heating costs by providing a free source of fire wood. Maintaining the ecosystem service of providing quality drinking water to the 12,000 residents of The Dalles through a properly functioning watershed rather than investing in a new more expensive treatment method will be a huge savings for customers' water bills. Restoring oak woodlands will maintain and increase wildlife habitat and maintain public and private hunting opportunities. Invasive species management on oak woodlands will protect adjacent agricultural lands from weed encroachment. Oak woodlands on public lands provide numerous passive recreational opportunities including bird watching and wildflower hikes, which also result in tourist dollars that boost the region's economy.

6. FOR ALL SUBMISSIONS: 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.



The proposed priority is somewhat complex and understood. Significant work has been undertaken to conserve and restore Pacific Northwest oak woodlands, but the focus has been on lands west of the Cascade Range. A USFS publication (March 2013) identifies five areas of research

needs: 1) genetic structure of eastside oak populations; 2) understory management, including fire effects; 3) density management in oak-pine stands; 4) oak regeneration; 5) historical and potential extent of eastside oak habitat.

7. Is there other information the Board should know regarding this priority?

Thank you for the opportunity to recommend oak woodlands east of the Cascades as a proposed priority.

8. In lieu of attaching letters of support for this proposal, please submit a list of other supporting individuals or organizations.

1. Columbia Land Trust
2. Oregon Department of Forestry
3. US Forest Service
4. Wasco County Watershed Councils (The Dalles, Fifteenmile, White River, Mosier)
5. Oregon Department of Fish and Wildlife
6. Wasco County Soil and Water Conservation District
7. City of The Dalles Public Works Department
8. Natural Resource Conservation District – The Dalles office
9. Confederated Tribes of Warm Springs

Thank you for the opportunity to provide input on future focused investment partnership priorities and for considering eastside Oak woodlands as an OWEB priority. Please don't hesitate to contact me with any questions at 541-296-6178 x119 or anna.buckley@or.nacdnet.net.

Best regards,



Anna Buckley
Watershed Coordinator