Oregon Watershed Enhancement Board
775 Summer St, NE
Salem, OR 97310-1290

RE: Oak and Prairie Focused Investment Priority

Dear OWEB Board Members,

Please see the attached proposal "Focused Investment Priority: Willamette Valley Oak and Prairie Habitats," for consideration as a priority for OWEB's Focused Investment Partnership program. Native oak and prairie habitats in the Willamette Valley represent some of the most endangered environments in Oregon and the northwest. These rich biotic ecosystems once covered much of the Willamette Valley, but have nearly disappeared because of human impacts. A number of species associated with these habitats have experienced substantial population declines and are listed under the Endangered Species Act or designated as a species-of-concern. Unlike wetland and riparian areas, oak and prairie habitats are not protected under any regulatory mechanisms so converting these areas to other uses such as residential development and vineyards has been a relatively easy land use action that has accelerated over the last few decades.

It is widely recognized in many conservation plans that the protection and restoration of remaining Willamette Valley oak and prairie habitats is a very high priority because these areas represent the last best hope to provide opportunities for the recovery of numerous declining populations of native plants and animals and to sustain the legacy of a nearly extinct natural resource. Many public and private natural resource organizations (land trusts, watershed councils, local, state and federal land management agencies) in the Willamette Valley have developed the practical knowledge that it takes to successfully restore native oak and prairie ecosystems, and initiated efforts to protect and recover oak and prairie habitats under their jurisdiction. These efforts have resulted in some significant outcomes, but are scattered and encumbered by a lack of resources and the difficulty of building larger conservation zones within a highly fragmented landscape without a focused investment. The long-term persistence of oak and prairie habitats in the Willamette Valley is at a tipping point. The human population in the Willamette Valley is expected to grow by 40-50% over the next 3 decades and will likely result in further loss and degradation of remaining oak and prairie habitats. A focused investment now into protecting and restoring these irreplaceable environments will offer the opportunity that these areas will be available for future generations of Oregonians.

Sincerely,

Tom Kaye

Eric N. Wold

Jonathan Soll

Michael D. Pope

Michael Wetter

Tom Kaye, Institute for Applied Ecology
Eric Wold, City of Eugene
Jonathan Soll, Metro Regional Government
Michael Pope, Greenbelt Land Trust
Michael Wetter, The Intertwine Alliance

Proposal, Focused Investment Priority: Willamette Valley Oak and Prairie Habitats

1. Proposed Priority Description

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

Oak and prairie habitats in the Willamette Valley Ecoregion are some of the most iconic, culturally important and imperiled in Oregon. From time immemorial, the Kalapuya peoples of the valley encouraged frequent fires on prairie and oak savanna to prevent the invasion of conifer trees, and encourage grass and staple foods such as camas bulbs and acorns. In the 1840s, the first Euro-American settlers found 1.7 million acres of oak-prairie providing the matrix land cover. Since that time, 95 percent of this habitat has been converted to agriculture or other uses. Despite 170 years of habitat loss and fragmentation, however, substantial and urgent conservation opportunities are now present that will have lasting benefits to Oregon's plants and wildlife. Focused conservation investment will benefit numerous species of conservation concern such as western meadowlark, Oregon's state bird, and sustain momentum for recovery of rare species such as Fender's blue butterfly and Kincaid's lupine. Without swift action, these opportunities may be missed and additional species added to the endangered species list, complicating conservation and creating new barriers to economic development.

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

Successfully addressing this priority would mean conserving and restoring large, connected networks of oak-prairie habitat that are resilient in the face of climate change and invasive species. In addition, habitat restoration will result in stable or increasing populations of conserved species and the recovery and delisting of threatened and endangered species. Addressing this priority will necessarily bring together practitioners, planners and community groups, leveraging their individual skills and capacities through a cooperative approach that will outlast the six-year time horizon of the FIP.

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

The proposal encompasses the prairie and oak habitats of the Willamette Valley Ecoregion, generally excluding riparian areas and wetlands associated with the main stem of the Willamette River and its major tributaries. The ecoregion encompasses roughly 5,300 square miles with elevations ranging from near sea level to 780 feet.

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?

According to the Oregon Conservation Strategy, approximately 250 species of wildlife regularly occur in the Willamette Valley Ecoregion. Three mammals, nine plants, three invertebrates and 14 birds are among the strategy species that consistently occur in the ecoregion's oak and prairie habitats, including the western meadowlark, Oregon's iconic state bird.

On a regional scale, the Willamette Valley is a latitudinal corridor between southern Oregon and the similar Puget Trough and Georgia Basin ecoregions to the north. This geographic position puts the valley in a strategic location for long-term planning and response to climate change in our region. Neotropical songbirds and migratory butterflies such as monarchs and painted ladies rely on Willamette Valley habitats as they navigate north and south through the fragmented landscape. Much of the east-west movement of animals between the Cascades and Coast Range traverses the Willamette Valley. Maintaining connectivity of oak and prairie vegetation is crucial not only to support animal passage, but also the gradual movement north or up in elevation of plants and less mobile animals in response to a changing climate.

Proposal, Focused Investment Priority: Willamette Valley Oak and Prairie Habitats

Several species listed as threatened or endangered are endemic or nearly endemic to the oak and prairie habitats in this ecoregion, such as Fender's blue butterfly (endangered) and its primary host plant, Kincaid's lupine (threatened). Both have received conservation attention, but more habitat restoration and acquisition are needed to achieve recovery. In addition, Oregon populations of Taylor's checkerspot butterfly, listed as threatened in 2013, are found only in the Willamette Valley. Willamette daisy is one of the ecoregion's most at-risk species, with an average population size under 100 individuals. Recent surveys in the Willamette Valley have found that even for species with population numbers approaching levels needed for recovery, such as Nelson's checkermallow and Bradshaw's lomatium, habitat quality is inadequate at most protected sites. Because habitat quality is one of the criteria for delisting these species, without habitat restoration at secured sites, recovery may stall.

As perhaps the best studied and documented ecoregion in the state, prospects for successful habitat restoration are good. Building from previous work, The Nature Conservancy's Willamette Synthesis Project identified and mapped conservation opportunity areas. Species locations are relatively well documented from previous surveys, and researchers and practitioners have developed and tested effective restoration and reintroduction methods.

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

Nine of Oregon's 10 largest cities and two-thirds of the state's population are in the Willamette Valley Ecoregion. Habitat conservation in close proximity to where people live increases public awareness of conservation issues. Awareness of imperiled species and habitats and of measures individuals can take to assist in their restoration engages the public, which increases public support for funding conservation programs, even outside the Willamette Valley. Vibrant habitat in this ecoregion will also provide significant recreational and outdoor educational opportunities.

Western Oregon's population density and projected growth create strong social and economic pressures to develop lands, but the oak and prairie habitats have fewer land use regulations in place to conserve them, unlike wetlands, riparian corridors and conifer forest.

Once dismissed as biological deserts, the urban landscapes of the valley are now understood to be capable of supporting diverse and valuable habitats. Communities throughout Oregon have successfully woven green spaces and habitat into their planning and development. These habitats are home to many common and at-risk species, including strategy species listed in the Oregon Conservation Strategy.

Ninety-eight percent of remaining oak and prairie habitat in the Willamette Valley exists on private lands. Thus, a concerted effort by partners to engage private landowners in understanding the importance of restoring this habitat, identifying viable opportunities for restoration, and facilitating on-the-ground activities will be integral along with land protection.

c) Identify how the proposed priority fits within regional & local ecological priorities.

Regionally, conservation of oak and prairie habitats is a clear priority. In a national assessment, Willamette Valley prairie and savanna have been identified as one of the United States' most endangered ecosystems (Noss and Peters 1995). Oak and prairie habitats have high priority in the Oregon State Conservation Strategy (2006), the Regional Conservation Strategy for the Greater Portland-Vancouver Region (2012) and the Willamette Valley-Puget Trough-Georgia Basin Ecoregional Assessment (2004). Washington's State Wildlife Action Plan identifies the grasslands and oak woodlands of the Puget Trough as key at-risk habitat types.

These priorities have in turn been incorporated into many local scale priority setting and planning efforts. Please see Question 5-b-1 for existing conservation groups and partnerships that have been addressing this priority in various locales within the region.

3. <u>Limiting Factors</u>

a) What ecological limiting factors exist that relate to the proposed priority identified? Limiting factors are the physical, biological, or chemical conditions or 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).

Prior to Euro-American settlement in the mid-1800s, the Willamette Valley contained an estimated 1.7 million acres of prairie, oak savanna and oak woodland habitats. The landscape was intensively managed by Native Americans who used fire to manage lowland forests and shrubs, and facilitate the growth and expansion of grassland and oak savanna habitats for wildlife and plant foods. The landscape supported a rich biota that included 31 fish, 18 amphibian, 15 reptile, 154 bird and 69 mammal native species.

With the settlers' arrival, burning on the valley floor and adjacent hilltops largely ceased. The result: conversion of many oak woodlands, prairies and savannas to dense coniferous forests, farmland or residential/commercial developments. Settlers also introduced agricultural crops and domestic livestock, as well as many invasive species that further impacted native habitats.

These extensive alterations to oak and prairie habitats resulted in the loss of 99 percent of all oak savanna and upland prairie and nearly 92 percent of oak woodlands. In the Willamette Valley Ecoregion, 37 species are currently listed as threatened, endangered or as a species of significant conservation concern. The primary cause of their declines is the loss of native habitats.

Currently, most of the human population in Oregon resides in the Willamette Valley, and 96 percent of the valley's land is privately owned and highly fragmented. The valley's population is expected to grow by 40 percent by 2050, resulting in increasing pressures to further convert natural landscapes.

The ecological integrity of many remaining native prairie and oak habitats is at risk due to the introduction of a number of stressors or limiting factors that compromise key functions that traditionally supported biota associated with these habitats. Limiting factors include:

1) **altered successional and disturbance patterns**
   Willamette Valley prairies, oak savannas and oak woodlands were historically managed by human-induced fires and were adapted to this periodic burning. The loss of this major disturbance factor has altered successional trajectories in prairie and oak habitats and encouraged development of shrub cover and encroachment of conifer forest.

2) **lack of biological diversity and capacity**
   Introduction of invasive species pre-adapted to the valley's soil and climatic conditions and capable of out-competing natives has reduced the diversity and abundance of native forbs, grasses and shrubs in prairie and oak habitats, resulting in understories with a lack of species richness.

3) **loss of connectivity**
   Conversion to agricultural or urban use has resulted in severe fragmentation of a landscape that once contained an interconnected network of floodplains, prairies, savannas and oak woodlands. The result: many remaining native prairie-oak patches are isolated and provide limited capacity for native plant and wildlife populations, particularly for listed species or species of conservation concern. Limited patch size and adjacency of similar patches, loss of transitional ecotones, and the varying quality of habitats are additional factors that influence connectivity.

4) **barriers to movement**
   Movement between and within many populations of native terrestrial species in the valley's prairie and oak habitats is constrained by barriers such as roads, fences, residential and commercial developments and other impediments.

5) climate change

Modeling of the impacts of climate change in the Willamette Valley predicts rising temperatures, longer and more intense fire seasons, disruptions in vegetation successional and phenological stages, and altered soil conditions. These changes may also facilitate introduction of new invasive weeds, insect pests and pathogens that negatively impact native species and habitats. Additionally, many climate change projections suggest the Willamette Valley may be a major repository for climate refugees, greatly increasing the socioeconomic pressures to convert existing wild lands to residential and commercial uses.

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

Several regional and local plans and assessments list Willamette Valley oak and prairie habitats as priority areas for conservation, restoration and protection. They include:

- Willamette Subbasin Plan (NWPCC 2004)
- Willamette Valley-Puget Trough-Georgia Basin Ecoregional Assessment (TNC 2004)
- Oregon Conservation Strategy (ODFW 2006)
- Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010)
- Benton County Prairie Conservation Strategy (Benton County 2010)
- Willamette Basin Synthesis Project (TNC 2012)
- Regional Conservation Strategy for the Greater Portland-Vancouver Region (2012)
- Strategic Conservation Management in Oregon's Willamette Valley (USFWS 2014)
- USFWS Willamette Valley Conservation Mapping Project (USFWS 2014)
- Conservation Strategy for Fender's Blue Butterfly and Associated Habitats in Yamhill County (YSWCD 2014)

4. <u>Threats and Benefits</u>

a) What overall threats exist to the proposed priority identified? *Threats* are the human actions (fishing, development, road building, etc.) or natural (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.

Seven past, present and future threats combine to create urgency for intensive strategic investment in oak and prairie habitat conservation in the Willamette Valley:

1. conversion (intentional) to agriculture, Douglas fir forestry or residences
2. conversion (passive) to other habitat types due to loss of historic disturbance and lack of management
3. habitat degradation by invasive species
4. loss of patch size and connectivity at multiple spatial scales
5. death of mature oaks without replacement
6. lack of data with which to develop landscape-scale conservation strategies
7. lack of public awareness

The first threat above is largely responsible for the loss of oak and prairie habitat in flat, deep-soil and relatively mesic hillslope areas. More recently, the wine industry has led a new wave of conversion, including steep hillsides with shallow soil, with the warmest sites (most likely to retain oak) regarded as desirable. Human population in the Willamette Valley, predicted to grow by several million in the coming decades, threatens the remaining oak habitat on the fringes of current residential areas.

For at least 7,000 years prior to Euro-American settlement, anthropogenic fire and natural flooding were responsible for maintaining prairie and oak in a climate and edaphic setting suitable for succession to other habitats. Soon after 1840, most burning ceased. By 1969 flood control dams ended major seasonal flooding. In the absence of disturbance, remnant oak and prairies convert to a range of shrub or tree-dominated habitat

types. Most significantly, encroachment by Douglas fir threatens the very persistence of oaks, while invasion by shrubs threatens the basic habitat structure.

Invasive species threaten the biodiversity of oak and prairie habitats, if not always the oaks themselves. A multitude of non-native and invasive trees, pasture grasses and broadleaf forbs threaten more than 300 plant species with high or moderate fidelity to prairie and oak habitat. With loss of plant diversity comes the loss of invertebrate and vertebrate diversity.

Once matrix habitat types for the Willamette Valley, oak and prairie are now increasingly relegated to habitat islands. As the islands become smaller and functionally isolated, plant and wildlife populations become more vulnerable to local and regional extirpation.

An unknown but substantial percentage of remaining oak habitat and habitat connectivity is supported by mature trees persisting within or at the edges of fields and in other developed areas. These trees are typically not replaced when they die. Their loss will have unknown but likely significant effect on regional connectivity.

Smart conservation planning relies on data. Although oak distribution maps are available for much of the valley, there are gaps in most areas. Some areas, especially in the lower valley, entirely lack credible maps. Work is necessary everywhere to understand the connectivity needs of oak and prairie species, and to develop strategies at local and regional scales.

Oregon's residents have shown a consistent willingness to invest in their values through supporting public investment and individual action. Unfortunately too few individuals know of the beauty, biological diversity and historic importance of oak and prairie habitat.

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

Habitat loss or degradation inevitably results in local population declines or extirpations. The accumulation of such losses, especially during a period of rapid climate change, may lead to regional or full extirpation, especially for rare or endemic species. At least six bird, one mammal and one listed plant species are documented to have disappeared from the Willamette Valley. Population declines can lead to federal listings and legal restrictions on private activity. More than 185 vertebrate species, including 17 Oregon Conservation Strategy species, use oak and prairie, as well as an unknown, but presumably large number of native pollinators (including 2 federally listed butterflies). There are 13 federally listed species or species of concern. More than 300 plant species have high or moderate fidelity to oak and prairie habitats; more than two dozen are endemic and nine are Oregon Conservation Strategy focal species.

The effects of loss of habitat and habitat connectivity are not only local. Connectivity loss across north-south and elevation gradients will prevent adaptation to climate change and lessen the likelihood that these habitats and the species reliant on them will persist long-term. Our actions now will set the stage for determining if the future Willamette Valley will be a connection or a gap between more abundant oak habitat to the south and to the north.

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

Native American culture in the Willamette Valley is inextricably tied to the plants and animals within oak and prairie habitats. Oak and prairie also represent an iconic component of Oregon's natural heritage as well as providing recreation opportunities for the state's residents. Native oak-prairie ecosystems in Oregon, and all of the plant and animal life associated with them are a historical link to the past and a type of "legacy habitat" that is now far more rare than old-growth forests.

While conservation of prairie and oak habitats does not provide an obvious economic boost, opportunities for sustainable industries in oak lumber (wine barrels, flooring and furniture) and ecotourism (bird watching) exist. Furthermore, restoration harvest (oak release) of Douglas fir from within oak habitat provides much needed large wood for stream restoration projects and local mills as well as financial return for landowners. Furthermore, conservation now avoids the future cost of recovery planning and implementation as more species reach the precipice of federal listing.

Proposal, Focused Investment Priority: Willamette Valley Oak and Prairie Habitats

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

Conservation efforts aimed at oak and prairie habitats have been building over the last 30 years. Substantial, albeit geographically uneven, progress has been made in five areas: data, planning, protection, restoration and education.

Data: Oak mapping in areas visible from roads is complete for much of the Willamette Valley, but largely excludes the greater Portland area, where an Intertwine Alliance effort is currently underway to fill that gap and assess connectivity in the lower valley. Valley-wide, 544 tax lots supporting roughly 50 percent of remaining oak-prairie have been identified. Filling remaining gaps in the regional map and better understanding patch size and connectivity needs would improve our ability to plan for and effect landscape-level conservation.

Planning: The Oregon Conservation Strategy identifies core restoration actions and conservation priorities. The Willamette Synthesis better defines a set of conservation opportunity areas targeting oak-prairie, but lacks detail within the polygons and explicit corridors between them. Efforts such as the Eugene region's Rivers to Ridges, Benton County's Habitat Conservation Plan, and the USFWS Recovery Plan for grassland species offer blueprints of integrated habitat conservation at a local-regional scale. When data is developed, the Portland region's Intertwine Alliance will develop such a strategy.

Protection: With only about 5 percent of the Willamette Valley in conservation management, additional protection efforts are essential. However, USFWS refuges form a core of protected lands, and land trusts, public agencies, Native American tribes and jurisdictions are working to protect oak-prairie habitats at priority sites throughout the valley. More protection of key sites, including connectivity areas, is needed. A 15- to 30-year goal of 10 percent protection of historic prairie and oak habitats is a difficult but reachable target.

Restoration: Significant habitat restoration progress has been made at several regionally important sites, including areas within the Eugene area's Rivers to Ridges project, Benton County, USFWS refuges, Yamhill County and key anchor sites in the Portland region. The USFWS Partners for Fish and Wildlife Program, soil and water conservation districts, and local watershed councils have worked with landowners in these areas to restore oak and prairie at locations mostly focused on rare species recovery efforts.

Education: Although much remains to be done, several fine pieces of outreach material have been developed, including "A Landowner's Guide for Restoring and Managing Oregon White Oak Habitats" (Vesely and Tucker, 2004), and "Restoring Rare Native Habitats in the Willamette Valley (Campbell, 2004). OakQuest, a model citizen science effort to map and teach about oaks, has proven successful in the Portland region. The USFWS, numerous soil and water conservation districts and nonprofits have been active in educational outreach to landowners and students.

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?

Addressing oak and prairie habitat conservation in the Willamette Valley is a long-term and admittedly expensive proposition that will involve complex partnerships and diverse funding approaches. Without defined regional measures of success, meaningful estimation of the full cost is not possible. However, in the time frame and budget limitations of a Focused Investment Partnership, substantial gains can be made in several areas, including developing better data and detailed strategic plans, raising public awareness of the issue and, most important, implementing restoration on anchor sites on public and private land. Such efforts will lay the foundation for long-term success throughout the region.

An ambitious medium-term (15-30 year) goal is 50,000 restored acres under conservation management. We are roughly halfway at present. Filling the protection gap is estimated to cost between $3,000 and $8,000

per acre, with roughly one-third of the funds available through the BPA/ODFW Willamette Wildlife Mitigation Program over the next 10 years. Restoration costs range from nearly break-even (due to timber receipts) to $5,000 or more per acre.

5. <u>Opportunities</u>

a) Ecological

1. What are the measures and likelihood of ecological success: short, medium, and long-term?

Four important measures of ecological success are:

1. establishing or augmenting large networks of protected oak-prairie habitat
2. increasing connectivity among networks to facilitate movement
3. improving habitat condition (e.g., controlling invasive species, thinning overcrowded stands)
4. stabilizing or increasing populations of oak-prairie dependent species, including threatened and endangered species

The likelihood of success in the short-term (6 years), medium-term (15 years), and long-term (30 years) is high if momentum generated by partnerships in the upper, middle and lower Willamette Valley during the past decade continues with sustained financial support.

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

Conservation organizations, land trusts and park districts can purchase oak-prairie habitat from willing sellers and implement restoration projects. Private landowners and agencies can manage their oak-prairie property for conservation values or donate conservation easements. Many watershed councils and soil and water conservation districts work actively with landowners in key sub-basins to restore and maintain oak and prairie on private lands.

3. Should the proposed priority be divided into geographic areas appropriate for partners?

As described below, three distinct partnerships exist in the upper, middle and lower Willamette Valley. Each has a record of success and further implementation could be divided into these regions. However, geographic gaps exist between these partnerships, the most ecologically significant being the gap between lands where the Rivers to Ridges Partnership has worked and the Greenbelt Land Trust and its partners have worked. With substantial opportunity for oak-prairie conservation in this area, further coordination of "service areas" between the upper and middle Willamette would be needed.

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.

Yes, partnerships exist in three geographic areas within the Willamette Valley:

- In the upper valley, for 20 years the ***Rivers to Ridges Partnership*** has successfully collaborated on nearly 10,000 acres of wetland, riverine and oak-prairie acquisition and restoration in the Eugene-Springfield area. Recent projects focusing on oak-prairie habitat conservation include Coburg Ridge (1,250 acres, The Nature Conservancy), South Eugene Meadows (193 acres, City of Eugene), and Wild Iris Ridge (250 acres, City of Eugene). All are part of a regional vision to protect and connect high quality habitat along the ridgeline surrounding Eugene and Springfield.

Proposal, Focused Investment Priority: Willamette Valley Oak and Prairie Habitats

- In the middle valley, collaboration between ***Greenbelt Land Trust*** and ***Benton County Natural Areas and Parks*** has led to conservation of oak-prairie habitat in the Corvallis area. Achievements include acquisition of Bald Hill Farm (587 acres), Bald Hill Natural Area (284 acres) and Fitton Green Natural Area (308 acres). A partnership between ***Institute for Applied Ecology*** and Benton County led to a 2011 Habitat Conservation Plan for Benton County focusing on oak-prairie habitats and species. Benton County, the U.S. Fish and Wildlife Service, the Confederated Tribes of Siletz Indians the Confederated Tribes of Grand Ronde are collaborating to restore native prairie and oak woodlands in McDonald-Dunn Forest north of Corvallis. In the middle-lower valley, the Yamhill Soil & Water Conservation District has protected over 1700 acres including Mt. Richmond (285 acres) and Yamhela Oaks Conservation Overlook (173 acres), and partnered with USFWS to complete a Habitat Conservation Plan for 7800 acres of privately held lands which harbor the endangered Fender's blue butterfly. YSWCD is a member of the **Yamhill Partnership for Land & Water** which works to conserve significant land with within the county.

- In the lower valley, **The Intertwine Alliance** is a collaborative group of agencies, nonprofits, corporations and healthcare providers working on integrating conservation, recreation and education in the Portland metropolitan area. The Alliance's *Regional Conservation Strategy for the Portland-Vancouver Area* prioritized oak- prairie conservation. A 23-member working group has subsequently met for two years to fund and complete first priorities: oak mapping and community engagement. The partners will use the map to develop spatially explicit conservation strategies. Such planning will help partners contribute to recovery of listed and at-risk species, capitalizing on significant investments to protect and restore oak-prairie sites such as Willamette Narrows (526 acres, Metro), Cooper Mountain (232 acres, Metro) and Tualatin Hills Nature Park (222 acres, Tualatin Hills Park & Recreation District).

In addition, the **Cascadia Prairie Oak Partnership** focuses on conservation and species recovery efforts in British Columbia, Washington and Oregon via collaboration and information transfer among conservation and restoration practitioners. The **USFWS Partners for Fish and Wildlife and Recovery Programs** have partnered on multiple oak-prairie restoration projects in the Willamette Valley. Finally, 26 watershed councils and 10 soil and water conservation districts in the Valley assist landowners with conservation.

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

Strong social momentum exists to protect and connect oak-prairie habitats in the three geographic areas described above and to offer compatible, passive outdoor recreation in those protected lands. Through the partnerships described above, and the voters and residents who financially support them, thousands of acres of oak-prairie habitat have been acquired, priorities for future acquisition and restoration identified, and recreational trails constructed.

3. Describe the educational benefits, if any.

This will create new educational, ecological and cultural opportunities. Informal education can be accomplished through interpretive signage and artwork at conserved sites. Structured education opportunities also exist, not unlike the Cathlapotle Plankhouse at Ridgefield Wildlife Refuge and we expect tremendous public interest in similar sites, thanks to top-notch organizations that specialize in environmental education within each of the three partnership areas. City of Eugene, The Nature Conservancy and Metro have sponsored oak restoration workshops for restoration practitioners through the Oregon Recreation & Park Association.

Proposal, Focused Investment Priority: Willamette Valley Oak and Prairie Habitats

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

Immense social and community support, via voter support for governmental acquisitions of natural areas, has enabled the acquisition and restoration of many thousand acres of oak-prairie habitats over the past 20 years in the three partnership areas. Voluntary efforts that can reduce the need for future regulations should resonate with private landowners.

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

In the work to acquire and restore prairie and oak habitats, the above-referenced partnerships have demonstrated the ability to leverage funding resources, including Bonneville Power Administration Wildlife Mitigation Funds, Forest Legacy Funds (USDA Forest Service), Community Forest Program (USDA Forest Service), OWEB acquisition and restoration funds, USFWS program funds and local park district bond funds (e.g., City of Eugene, Willamalane Park and Recreation District and Metro). Furthermore, the thousands of acres of oak-prairie already conserved by these partnerships can help leverage additional funding, leading to connected, highly functioning landscapes. Finally, extensive ecological expertise resides within multiple partnership organizations to support or lead strategic- and management-planning efforts.

c) Economic benefits

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

Conserved oak-prairie lands, especially those that are part of large regional systems (e.g., the Bald Hill and Fitton Green natural areas in Corvallis and Benton County, and the Ridgeline Trail System in Eugene and Springfield) bring in increased tourism dollars because they are regional draws for outdoor recreation. Furthermore, they provide significant ecosystem services, including pollination, water quality, water regulation, climate stability, air quality and visual quality services.

6. Assess the proposed priority by locating it in one of the quadrants below. Describe why the proposed priority falls in this quadrant.

Concerns about the dramatic declines of historically widespread oak and prairie habitat in the Willamette Valley have been increasing for three decades. These concerns are reflected in the prioritization of protection and restoration of these habitats in numerous conservation plans, including the Oregon Conservation Strategy, the Willamette Subbasin Plan, and USFWS Prairie Species Recovery Plan. Considerable work has been completed to identify and map remaining oak and prairie habitats in much of the Willamette Valley, and nonprofits and governmental organizations have become increasingly adept at restoring these systems. A consequence of these concerns and investments is that the ecological issues are **well understood**.

However, implementing actions to restore upland prairies and savannas is **complex** and remains a work in progress. Restoring oak woodlands is **less complex**, but with the introduction of rapidly expanding populations of invasive species such as false brome, it is becoming more costly and difficult.

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

The ability to protect and restore the remaining prairie-oak habitat in the Willamette Valley is at a tipping point. The Willamette Valley experienced extensive and widespread land use conversions following the arrival of Euro-Americans, resulting in the loss of nearly all prairies and savannas and most oak woodlands. More recent conversions of remaining oak habitat to vineyards and Christmas tree farms have exacerbated the loss. The loss of these unique ecosystems has been followed by dramatic declines in plants and wildlife associated with these habitats, resulting in federal listing of eight species.

Proposal, Focused Investment Priority: Willamette Valley Oak and Prairie Habitats

Nearly 73 percent of Oregon's human population resides in the Willamette Valley. Over the next 50 years, millions more are expected to settle in this agriculturally rich region with its mild climate and abundant water resources. Continued purposeful conversion to farms or residences and unintentional succession to Douglas fir forests threaten much of the 5 percent of remaining habitat, with each lost mature oak tree representing a minimum 100-year investment.

Although government agencies and nonprofit land trusts have been active in permanently protecting and restoring lands that contain important oak and prairie habitats, this work has been somewhat scattered and opportunistic. A long-term investment that provides a consistent and directed source of funding to support the conservation of remnant prairie and oak will assist the many local efforts to maintain this irreplaceable part of Oregon's natural resource legacy.

8. List other supporting individuals or organizations.

The following individuals and organizations reviewed this proposal and indicated their support for submitting this Focused Investment priority to OWEB:

Audubon Society of Portland#
Benton County Natural Areas and Parks Department, Jeff Powers
Benton Soil and Water Conservation District
Calapooia Watershed Council, Tara Davis
City of Eugene*
Clackamas County Soil and Water Conservation District
Columbia Land Trust#
East Multnomah Soil and Water Conservation District#
Ed Alverson, ecologist
Friends of Buford Park and Mt. Pisgah*, Chris Orsinger
Greenbelt Land Trust
Kingfisher Consulting#
Institute for Applied Ecology
Long Tom Watershed Council*, Dana Dedrick
Luckiamute Watershed Council, Kristen Larson
Mark Griswold Wilson, urban ecologist#
Marys River Watershed Council, Xan Augerot
McKenzie River Trust*, Joe Moll
Metro Regional Government#
Middle Fork of the Willamette Watershed Council*, Eve Montenaro
Native American Youth and Family Services#
North Clackamas Parks and Recreation
Oregon Department of Forestry Urban and Community Forestry Assistance Program, Paul Ries#
Oregon Habitat Joint Venture, Bruce Taylor
Portland Parks#
Portland State University
Rivers to Ridges Partnership
The Intertwine Alliance and Oak Working Group
The Nature Conservancy*
Trout Mountain Forestry
Trust for Public Land, Owen Wozniak
Tualatin Hills Parks and Recreation#
U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, Mikki Collins
Urban Greenspaces Institute, Mike Houck#

Proposal, Focused Investment Priority: Willamette Valley Oak and Prairie Habitats

West Multnomah Soil and Water Conservation District
Willamalane Park and Recreation District*, Bob Keefer
Willamette Valley National Wildlife Refuge Complex*, Damien Miller
Yamhill Soil and Water Conservation District
Yamhill Watershed Stewardship Fund

*Members of upper Willamette Basin Rivers to Ridges Partnership
#Members of Intertwine Alliance Oak Working Group