

## **GNLCC Proposal 3/12/2014**

### **Project Title:**

Collaborative efforts to inform the science, management and policies of First Foods of the Cayuse, Walla Walla and Umatilla Indians

### **Project Coordinator:**

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### **Project PI:**

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Don Justice, FSVeg/FACTS Coordinator & Data Analyst, Umatilla National Forest

### **Partners:**

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Other Umatilla National Forest partners include:

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### **Project Summary**

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) has been working collaboratively with the Bureau of Land Management and US Forest Service (USFS) to inventory and map current and potential distributions of plant communities which support species of cultural concern on federal lands. This proposal seeks funding to continue this collaborative effort to develop plant community information and GIS datasets about three culturally important plant species located throughout the Columbia basin which are impacted by climate change, land use, invasive species, and increased incidence and severity of fire. This proposal will help determine historical, current and likely future distribution and productivity in the face of climate change and to evaluate the ability of management practices, including accelerated restoration activities being proposed in the Eastside Restoration effort of the USFS Pacific Northwest Region in eastern Oregon and Washington, to ensure the continued persistence of these resources for tribal use. Products from this proposal will be used to identify impacts of climate change with a model being developed by the USFS.

### **Category Tribal**

### **Need**

The USFS Pacific Northwest Region is supporting a strategy of managing the forest to be more resilient to climate change and the effects of disease, insect outbreaks, and large wildfires. Climate change is expected to cause the migration of plants northwards, up in elevation and latitude. Anticipated drier summers will likely cause species greater stress and less tolerance for herbivory, disease and fire. To accomplish this the USFS has created the Eastside Restoration Strategy; to accelerate the pace and scale of restoration of fire-adapted landscapes in the Blue Mountains of eastern Oregon and Washington, in a manner that is ecologically appropriate, and socially, and economically acceptable. This will be accomplished by planning and implementing large-scale vegetation management projects with a dedicated high-level planning team. This Eastside Restoration team is currently identifying and

employing the best available science to working at a large scale (40,000ha and larger), and expanding the depth and breadth of involvement of collaborative groups, other interested publics, state and local governments, and the tribes. The vision is one of large landscapes that are prepared for and support characteristic disturbance processes, including fire, and that are reflective of appropriate reference conditions in terms of health and resilience of upland and riparian ecosystems.

In order to develop land management actions that move the condition of landscapes towards reference conditions and maintain the essential components, processes and functions, we propose to do this by:

1. Determining the relevant reference condition, including consideration of climate change scenarios as well as historical conditions.
2. Evaluating where, how, and to what extent management practices can be used to conserve or “facilitate migration” of ecosystem components, including Tribal First Foods resources, as climate change and other disturbance processes operate on the landscape and
3. Learn how to competently evaluate and describe the effects of management practices and disturbances on culturally important resources such as First Foods.

Decision makers need this information in order to prioritize planning and make appropriate decisions, taking actions that result in resilient landscapes and provide for the demands of society - including culturally important traditional uses of CTUIR.

### **Objective**

This proposal will create products which inform the science and management of First Foods and provide an evaluation of the ability of climate-informed vegetation models, both existing and those under development, to predict the future range of huckleberry and sagebrush-scabland areas, and to assess impacts of planned land management actions on these habitats.

### **Methods**

Funding from this proposal will support development of multiple products to inform a collaborative effort among the USFS and CTUIR to inform the science, management and policies of First Foods. First Foods are culturally important species to CTUIR. The Department of Natural Resources (DNR) of the CTUIR has adopted a mission based on First Foods which are ritualistically served at tribal meals. The First Foods framework prioritizes efforts that foster natural processes that sustain First Foods and provides a direct and culturally appropriate means for monitoring and reporting restoration progress to the tribal community. First foods of concern in this proposal are *Lomatium cous*, *Lewisia rediviva*, and *Vaccinium membranaceum* commonly referred to as huckleberry.

Changes in the distribution and species composition of plant communities due to climate change affect Tribal people’s ability to continue practicing traditional customs, such as gathering of food by affecting availability and access. Oral history from the Umatilla, Walla Walla and Cayuse Indians indicate that production of the huckleberry and root crops are declining and that the current distributions of the gathering areas do not match historical distributions. This proposal seeks to compile oral history information in a traditional use report to document the Tribal perspective of the nature, composition and distribution of huckleberry plant communities within the areas of traditional use of the Umatilla, Walla Walla and Cayuse Indians. The traditional use report will include information about historical accounts of the conditions and components of huckleberry stands within the Blue Mountains, concerns about the impacts of climate change on productivity and descriptions of tribal management for

productive huckleberry stands. The traditional use report will be used to inform the accelerated restoration activities being proposed in the Eastside Restoration effort of the USFS Pacific Northwest Region in eastern Oregon and Washington. The traditional use report is one component of baseline information needed to inform the science and management of plant communities which support First Foods.

The second component needed is a literature review which will be used to inform the gap in scientific knowledge about huckleberry occurrence and management for productivity. Research strategies to fill those gaps will be designed by the USFS and CTUIR. This information will inform treatment designs to increase the range and productivity of huckleberries and to set up effectiveness monitoring of different treatments. Effectiveness monitoring is being proposed as a part of the Eastside Restoration strategy being conducted by the USFS.

The third component of this proposal is the collaborative development of distribution maps through the compilation of existing USFS data on current and potential distribution of huckleberries. An initial inspection of the forest inventory and analysis plots within Umatilla NF showed that of 325 plots, 133 had huckleberry. Associated with this information is the distribution of huckleberry across forest types. Of additional concern is our ability to identify the canopy closure within those forest types to determine potential huckleberry productivity. Current and historical distribution maps will be used to inform multiple efforts including the climate change modeling effort being undertaken by the Forest Service as well as the Eastside Restoration planning. The distribution maps as well as the results of the literature review and recommended monitoring actions will be made available to the GNLCC.

The last component of this proposal is the enhanced collaboration on the development of a conservation assessment on rigid sagebrush plant communities which support Tribal First Foods. The Umatilla National Forest is proposing through their InterAgency Special Status Fund to conduct a matching effort of conservation assessment on rigid sagebrush plant communities which support Tribal First Foods including, *Lomatium cous* and *Lewisia rediviva*. The Tribe's traditional-cultural knowledge will inform this conservation assessment. This effort will produce current and potential distribution maps of the rigid sagebrush plant community which supports many culturally important species. The conservation assessment draws on existing USFS data including over 10,000 ecology plots, stand exams and forest inventory plots. Since 2008 working groups with members from the Umatilla National Forest and CTUIR have been working toward developing products which can inform the current distribution, historical distribution and plant community composition of culturally important plant species. Invasive plant species (*Ventenata dubia*, *Taeniatherum caput-medusae*, *Bromus tectorum*) ability to displace native species and the disappearance of the shrub component is leading to the observed decline of plant communities associated with *Lomatium cous* and *Lewisia rediviva*. Using WorldView Imagery data acquired in 2012 and the vegetative class associated with three of the target species, six areas on Heppner District were chosen to set up a long term monitoring. Two of these six areas were monitored in 2013, with the next two scheduled for 2014, and the final two for 2015. In 2016, the first two plots initiated in 2013 will be revisited and this protocol will continue with two of the six plots scheduled for data collection each year. The output from this monitoring effort will be trend analysis for three culturally significant root crops (*Lomatium cous*, *Lewisia rediviva*) over the long term. There is concern about the trend/condition of scablands supporting the three root crops with observed encroachment of ventenata grass the decline of rigid sage communities as well as the loss of shrubs and native bunchgrasses due to competition, grazing and /or increased incidence and severity of fire. Long term monitoring plots will allow us to monitor plant community trends over time. The deliverable would be an interim report with location of the plots, photographs that are representative of a few of the plots

and an initial baseline description of the plant communities and their ecological state at year 0. The Database for Inventory Monitoring and Assessment or DIMA database from the Jornada Experiment Station will be used to process the data.

**Deliverables:**

1. Traditional use report (one for internal use and a second for public distribution) of huckleberries by the Umatilla, Walla Walla and Cayuse Indians to inform the historical distribution, historical use of and plant community compositions of huckleberries. – CTUIR effort
2. Literature review of existing scientific knowledge of huckleberry species to produce recommendations for future research. – CTUIR effort
3. GIS datasets of the current and potential distribution of huckleberry throughout the Umatilla NF, Wallowa-Whitman NF, and Malheur National Forest which will inform USFS Eastside Restoration Strategy. –CTUIR effort with USFS match
4. Enhanced collaboration on the development of an assessment on rigid sagebrush plant communities which support Tribal First Foods. Expected collaborative products dependent on InterAgency Special Status and USFW GNLCC grant Funds include:
  - GIS datasets of the current and potential distribution of sagebrush-scabland areas throughout the Umatilla NF, Wallowa-Whitman NF, and Malheur NF which will inform US Forest Service Eastside Restoration Strategy. – USFS match effort
  - Report on the baseline community level data associated with declining sagebrush-scabland areas to inform the conservation assessment by the USFS. – USFS match effort
  - An evaluation of the ability of climate-informed vegetation models, both existing and those under development, to predict the future range of huckleberry and sagebrush-scabland areas and riparian communities, vegetation models will be used to assess impacts of planned land management actions on these habitats. – USFS match effort

**Statement of Compliance**

Stacy Schumacher, Teara Farrow-Ferman, Dave Powell, and Don Justice have read the GNLCC Information Management, Delivery and Sharing Standards and agree to comply with those standards if this proposal is selected.

**Schedule**

June 2014 through December 2014 – Traditional Use Report conducted by CTUIR

- Research CRPP archive for ethnographic information about huckleberry harvest locations and methods.
- Researching existing oral histories pertaining to huckleberry harvesting.
- Work with elders and community members to identify areas used for huckleberry harvest.
- Map huckleberry harvesting locations identified by CTUIR elders and community members.
- Compile ethnographic research and oral history data into a traditional use report.

June 2014 through December 2014 - Huckleberry Literature Review subcontracted by CTUIR

- Subcontract for the review of scientific literature on huckleberry plant communities, stand production and management of.

January 2015 through June 2015 - Huckleberry current and potential distribution mapping conducted by CTUIR

- Compile existing Forest Service data information including potential vegetation, existing vegetation, FIA plots, canopy closure information.
- Develop distribution map of current and potential huckleberry plant communities.
- Analyze the potential productivity of huckleberry stands by evaluation canopy closure.
- Compile the results

**Budget**

Oral Histories interviews – \$20,457 Appendix A.

Huckleberry current and potential distribution mapping – \$26,421 Appendix B.

Literature Review for Huckleberries and recommendation for monitoring productivity \$3,566 Appendix C.

Total Budget - \$50,444