

APPENDIX K7

EDUCATIONAL INSTITUTIONS

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COMMENT(S)

RESPONSE(S)

E1

Eastern Oregon University

comment@boardmantohemingway.com

From: Karen Antell <kantell@eou.edu>
Sent: Thursday, March 19, 2015 2:43 PM
To: comment@boardmantohemingway.com
Subject: Public comment on DEIS Eastern Oregon University
Attachments: EOU B2H DEIS Comments 19 March 2015.pdf

Please find attached comments from Eastern Oregon University on the B2H DEIS.

Should you have any questions, please don't hesitate to contact me.

Karen

Dr. Karen Antell
Professor of Biology
Eastern Oregon University
La Grande, OR 97850
541-962-3610
kantell@eou.edu

COMMENT(S)

RESPONSE(S)

E1	Eastern Oregon University (cont.)
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EASTERN OREGON UNIVERSITY
Office of the President

March 18, 2015

Boardman to Hemingway Transmission Line Project Public Comments
P.O. Box 655
Vale, OR 97918

To Whom It May Concern:

Eastern Oregon University offers these comments on the Draft Environmental Impact Statement for the Boardman to Hemingway Transmission Line Project. Our comments pertain to Segment 2 – Blue Mountains, and more specifically the Glass Hill portion of Segment 2 in Union County.

E1a

Eastern Oregon University does not support either the Proposed Route or the Alternate Route across Glass Hill. We recommend, instead, that Segment 2 be re-routed to avoid traversing Glass Hill as much as possible. The current Proposed Route and the Alternate Route both would result in high impacts, both initial and residual, to wildlife habitat, rare species (including plants and salmonids), and cultural resources, and be in violation of Oregon Statewide Planning Goal 4, Forest Lands (OAR 660-015-0000(4). Beginning in 2010, Eastern Oregon University and other Glass Hill landowners sought to encourage Idaho Power to consider other routes through Union County that would minimize these impacts (Attachments 1, 2). Other routes may result in higher visual impact from I-84 and La Grande; however, our opinion is that these visual impacts are less consequential than the very large, permanent disturbance to natural ecosystems that would result from the IPC proposed Glass Hill routes.

In this document we provide specific descriptions of critical natural values of Glass Hill ecosystems that lie either within or near to the path of the current proposed routes. We outline specific concerns about possible disturbance to the EOU Rebarrow Research Forest, violation of Statewide Planning Goal 4 criteria, wildlife, priority special status species, cultural resources, and mitigation.

E1b

Rebarrow Research Forest:
Although the current proposed Glass Hill routes (July 2012, B2H Map 21 of 94, Attachment 3) do not impact the EOU Rebarrow Research Forest directly, they do pass in close proximity to the forest. We wish to call to your attention the Oregon Administrative Rules that govern this property. OAR 579-065-0020 describes the Jurisdiction and Powers of the Rebarrow Research Forest Advisory Board. Among the charges to the board are the following:

One University Boulevard • La Grande, OR 97850-2807 • Voice: 541-962-3512 • Fax: 541-962-3113 • Web: www.eou.edu

E1a

Based on comments received by the BLM on the Draft EIS, collaboration with the counties, and on further discussion between the Applicant and landowners, a number of recommended routing options were incorporated into the network of alternative routes analyzed for the Final EIS. Refer to Sections 2.1.1.3 and 2.5.2. Analysis of the alternative routes is reported throughout Chapter 3.

E1b

Comment noted.

COMMENT(S)

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E1	Eastern Oregon University (cont.)
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E1b (2) In advising on educational uses, the Board shall consider such uses as:
 (a) Field trips for the College’s science classes;
 (b) Self-guided nature trails set up by the College;
 (c) Designating study areas within the Forest Reserve for use by students in classes studying plants, animals, forest soil systems and riparian zones.

(4) In advising on the overall preservation, maintenance and development of the forest, the Board shall seek to:
 (a) Promote the natural forest habitat, including game and wildlife inhabiting the areas;
 (b) Manage the forest habitat to benefit the entire forest, including game and nongame wildlife inhabiting the area;
 (c) Manage the riparian habitat in a manner befitting the water shed and the entire ecosystem;
 (e) Develop a portion of the research forest into a material climax stand

The Rebarrow Forest has been established as a research natural area since 1989. A large community-based restoration project was initiated in 1993 (Attachment 4). The forest is utilized by Eastern Oregon University as well as the larger regional community for educational and research programs and has been managed for maintenance of maximum species diversity and natural values. It is one of the few areas on Glass Hill in which cattle have been excluded for an extended period of time. The property hosts a large diversity of wildlife species, including Rocky Mountain Elk, American Black Bear, and Moose. Great Gray Owls and a wide variety of other avian species have been observed on the property.

E1c The Rebarrow Forest comprises one portion of an extremely important wildlife corridor between the Ladd Marsh Wildlife Area and the upper elevations of Glass Hill (Attachment 5). Large numbers of Rocky Mountain Elk and other wildlife make extensive use of the corridor consisting of the Rebarrow Forest, Winn Meadow (Joel Rice property), and ODFW land that extends westward from Foothill Road. The ODFW property that extends westward from Foothill Road was purchased by the Rocky Mountain Elk Foundation because of its exemplary wildlife value (Attachment 6). It was later transferred to ODFW with a conservation easement in place, and ODFW maintains a winter elk feeding station on this property. Portions of the Rice property are designated as Oregon wetlands (Attachment 7) and portions are under protection from future development by Rocky Mountain Elk Foundation Conservation Easements. This protected corridor provides the predominant route for wildlife movement between the valley and upper elevations. Access to low elevation forage is essential for winter survival.

E1d Statewide Planning Goal 4, Forest Lands:
 Union County has zoned the lands of Glass Hill, including the Rebarrow Research Forest, as Zone A4, Timber – Grazing Zone. This zone is created under Statewide Planning Goal 4, Forest Lands, which has as its purpose the conservation of forest lands (Oregon Administrative Rules 660-015-00(4) and 660-006-0025). The routing of the power line across Glass Hill would severely impact forest and natural resources.

E1c The information provided has been incorporated into the Final EIS. The Applicant has committed to design features and site-specific mitigation measures to minimize anticipated B2H Project impacts on elk and other wildlife, including seasonal and spatial restrictions, a Plan of Development that includes a Biological Resources Conservation Plan, and limiting new or improved accessibility to sensitive habitat.

E1d Siting of the proposed transmission line would be in compliance with applicable federal, state, and local land use regulations and guidance. Applicant-committed design features including selective mitigation measures will be used to reduce impacts to natural resources including the forest.

COMMENT(S)

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E1	Eastern Oregon University (cont.)
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E1e

Wildlife:

In Table S-3 of the DEIS Executive Summary, Residual Effects on Wildlife, impacts to virtually all wildlife groups are rated as Moderate to High, both for initial and residual impact. Specific impacts include mortality due to bird strikes, noise disturbance, introduction of human presence, disruption of breeding and foraging behavior, habitat loss and modification, fragmentation and loss of connectivity. All of these impacts are difficult to mitigate, especially when the area that is being impacted constitutes some of the highest quality habitat available. There simply are no good mitigation alternatives for most of this habitat.

Priority Special Status Species:

The three species of highest concern on Glass Hill are (1) Douglas' Clover and (2) Spring Chinook Salmon (*O. tshawytscha*) and Steelhead (*O. mykiss*).

E1f

1.) Douglas' clover (*Trifolium douglasii*) is an Oregon state-listed endangered species of high concern. It is included on the Oregon Biodiversity Information Center's July 2013 publication of Rare, Threatened and Endangered Species of Oregon (Attachment 8). The species is ranked as a Federal Species of Concern and as an Oregon List 1 species ("taxa that are threatened with extinction or presumed to be extinct throughout their entire range"). This clover is an extremely rare plant that has its best chance of avoiding extinction in populations on Ladd Marsh and Glass Hill. It is a rhizomatous perennial that does not appear to establish new populations easily. It does not seed well in areas that are disturbed or colonized by invasive species, especially rhizomatous grasses. The DEIS lists initial impact on Douglas' clover as high and residual impact as moderate. Road construction, modification of hydrology, and invasive species introduction all pose high risks to survival of the species. Populations of Douglas' clover have been documented in Winn Meadow, Bushnell Meadow, and in localized places in between by Dr. Karen Antell, Professor of Biology, Eastern Oregon University (Attachment 9). It has not been located south of Winn Meadow on Glass Hill (pers. comm. Jimmy Kagan to K. Antell, June, 2013). It also occurs in meadows east of Foothill Road on the Ladd Marsh Wildlife Area (ODFW Vascular Plant Checklist for Ladd Marsh).

One barrier to establishment and survival of Douglas' clover, as well as to other sensitive native plant species, is encroachment of invasive species. The DEIS lists impact on noxious weeds as high initially and low residual. The residual impact is very likely underestimated in the DEIS. On-going clearing of vegetation within the project right-of-way and expansion of roads throughout the area will result in continual introduction of invasive species over the long term.

E1g

2.) Both Spring Chinook Salmon (*O. tshawytscha*) and Steelhead (*O. mykiss*) have been documented in Grande Ronde River tributaries on Glass Hill. The Confederated Tribes of the Umatilla Indian Reservation conducted surveys for fish and spawning redds in the Rock Creek subwatershed from 2011-2014 (Attachment 10). CTUIR biologists have expressed concern about water run-off and resulting sedimentation in Rock Creek. Construction of new roads in the area would exacerbate this problem and contribute to decreased water

E1e

Updated design features and site-specific mitigation measures have been included in the Final EIS, as has a revised impact analysis for all alternatives considered.

E1f

The criteria for assessing impacts has been revised for the Final EIS (refer to Section 3.2.3.4). Impacts resulting from project construction on state-listed species like Douglas' clover are still analyzed in the EIS in Section 3.2.3.

The analysis of impacts resulting from noxious weed invasion has been expanded to include the effects of vegetation clearing and road expansion on promoting weed invasion (refer to Section 3.2.3.4).

The analysis of impacts to sensitive plant species has also been expanded to greater discuss how B2H Project implementation could impact Douglas' clover and how several project design features and selective mitigation measures aimed to reduce disturbance and minimize the establishment and spread of noxious weeds are expected to reduce impacts on Douglas' clover (refer to Section 3.2.3.6).

Idaho Power has committed to several measures designed to mitigate effects from noxious weeds, among them the creation of a Noxious Weed Management Plan and a Reclamation, Revegetation, and Monitoring Plan, which will be included in the Plan of Development. These plans detail the methods used to conduct preconstruction weed surveys, areas requiring ongoing weed control activities both before and after B2H Project construction, and post-construction weed monitoring. Preconstruction surveys of areas of existing weed infestations would be conducted for the selected route to identify appropriate weed control measures, which could include installation of gates (upon landowner approval) as well as other measures to reduce vehicular transmission of invasive weeds. Noxious weed populations will be monitored and controlled for three years following B2H Project construction, with possible weed control efforts continuing depending on monitoring results. All required weed control activities would be documented in the Plan of Development, which must be approved by BLM and cooperating agencies prior to issuance of the Record of Decision and right-of-way grant. The Plan of Development would be a condition of the Record of Decision and a stipulation of the right-of-way grant.

E1g

The Applicant has committed to updated design features and selective mitigation measures designed to minimize anticipated potential B2H Project impacts on streams from herbicide use and sediment transport from new access roads. Refer to Section 3.2.5 of the Final EIS for analysis of these impacts.

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E1	Eastern Oregon University (cont.)
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E1g [quality for salmonid rearing. Run-off of herbicides used to control vegetation in the right-of-way also may cause injury to native fish, invertebrates, and other aquatic species.

E1h [Cultural Resources:
In the EIS Executive Summary, Table S-4 summarizes the potential impacts to cultural resources. Segment-2 – Blue Mountains, through Union County, is rated as a medium impact. Tower and road construction will disturb cultural sites permanently. Use of new access roads may encourage artifact collection and vandalism. Glass Hill was used widely by indigenous people for hunting, camping, arrowhead manufacturing, and harvesting of first foods. Many sites undoubtedly have not yet been documented, and much more effort should be directed toward avoiding the most sensitive cultural sites.

E1i [Mitigation:
The Draft EIS does not address mitigation for any impacts. Because of the high quality habitat that currently exists on Glass Hill, there are few mitigation options that could offset the loss of this habitat. In fact, because of their high ecological value, Glass Hill lands previously have been proposed for possible mitigation acquisition resulting from other proposed energy development projects in Union County.

As the foregoing indicates, the current proposed and alternate routes through the Glass Hill area would have an unacceptable level of impact to forest and wetland habitats. While we appreciate that the routes do not cross the Rebarrow Research Forest itself, the proposed routes would have a serious impact on the very species that the forest was created to protect and study, including a state-listed endangered plant, salmon, steelhead and large mammals such as elk. Eastern Oregon University urges that the line be routed in an area where it will not impact these resources.

Sincerely,



Jay Renton, Interim President
Eastern Oregon University

E1h [Comment noted. Based on comments on the Draft EIS, the alternative routes have been re-analyzed for the Final EIS using the most up-to-date information available. Where additional data have been compiled, the impacts assessment presented in the Final EIS will reflect these data. Standard approaches to treatment identified in the EIS focus on the avoidance or minimization of potential adverse effects resulting from the B2H Project. Once a route has been selected, additional opportunities for avoidance or minimization of effects on specific resources would be explored. Specific treatment measures for the mitigation of adverse residual effects would then be developed in consultation with the applicable state and federal agencies and consulting parties as required under the Programmatic Agreement for the B2H Project.

E1i [Comment noted. The Mitigation Framework is intended to be a detailed framework, not a site-specific mitigation plan. The Mitigation Framework (1) establishes how avoidance and minimization have eliminated and/or reduced impacts; (2) identifies residual resource effects that meet criteria for warranting compensatory mitigation; and (3) provides a framework for how the appropriate level and type of compensatory mitigation will be determined for those resource effects. The BLM has established a mitigation standard, through application of the mitigation hierarchy, of a no net loss outcome for affected resources and their values, services, and functions, or, as required or appropriate, a net benefit (or gain, if appropriate) in outcomes where it has determined that compensatory mitigation is warranted.

E1i [Upon selection of the final route in the Record of Decision and following final engineering and design, the Compensatory Mitigation Plan will be prepared using the Mitigation Framework as a guide in assessing the direct and indirect impacts based on an engineered and designed alignment, and will identify a suite of site-specific compensatory mitigation projects for selection and implementation under the review and guidance of the cooperating agencies. The final detailed Compensatory Mitigation Plan must be accepted and approved by the cooperating agencies prior to the Notice to Proceed.

Any necessary modifications to the Mitigation Framework will be addressed in the Record of Decision.

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E1

Eastern Oregon University (cont.)



24 August 2010

Keith Georgeson
Project Manager
B2H Transmission Line Project
P.O. Box 70
Boise, ID 83707

Dear Keith,

We are writing in regards to the proposed location of the Boardman to Hemmingway transmission line through Union County, Oregon. We recently became aware that the current proposed transmission line route runs directly through the 360-acre Rebarrow Research Forest property located on Glass Hill south of La Grande (T4S, R38E, Secs. 5, 6).

We wish to insure that you are aware of the qualities and value of the Rebarrow Forest to the communities of La Grande and Eastern Oregon University and of the exceedingly important wildlife habitat that exists on the forest.

The Rebarrow Forest is owned by Eastern Oregon University and the State Board of Higher Education. It is utilized as a research forest and outdoor classroom site by Eastern Oregon University and several La Grande schools. The property was donated to the University in 1990 and beginning in 1993, we initiated a large-scale public community restoration project that resulted in the planting of tens of thousands of trees on the property. Since that time, the university has invested many thousands of dollars in the active restoration of this forest property over nearly twenty years of time. Several EOU student research projects have been completed on the forest, and many others are planned. Every 8th Grade student of La Grande Middle School visits Rebarrow twice for forest ecology activities that are integrated into a significant science study unit that incorporates both mathematics and writing projects.

The Rebarrow Forest occupies the most important migratory corridor for Rocky Mountain Elk from the Ladd Marsh Wildlife Management Area in the Grande Ronde Valley up to higher elevation habitat. The forest lies in close proximity to the ODFW property extension (T4S, R38E, Secs. 3, 4) from the winter feeding station along Foothill Road up to Glass Hill, and provides safe conduit between ODFW-managed land and higher elevation winter range in nearby meadows.

Because the Rebarrow property is linear in dimension from east to west, a 250-ft wide pathway cleared of vegetation through the entire length of the property would be devastating to the forest and would dramatically diminish the value of this property to Eastern Oregon University and the

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Eastern Oregon University (cont.)

La Grande community. It will literally thwart all of the research and scholarship efforts that have been done, as well as future planned activities, and these efforts cannot be replicated without significant resources, energy and time.

We urge you to consider this information as you move forward in finding a route that minimizes impact to this sensitive area. We would be happy to supply any additional information that you might request, including GIS shape files of the forest location. Please don't hesitate to contact us with any questions that you might have.

Sincerely,



Dr. Bob Davies, President
Eastern Oregon University
One University Blvd.
La Grande, OR 97850



Dr. Karen Antell, Professor of Biology
Faculty Chair of Rebarrow Forest Advisory Board
Eastern Oregon University
One University Blvd.
La Grande, OR 97850
541-962-3610 (office)
541-910-4220 (cell)
Email: kantell@cou.edu

COMMENT(S)

RESPONSE(S)

E1

Eastern Oregon University (cont.)



EASTERN OREGON UNIVERSITY

Office of the President

January 24, 2012

Keith Georgeson, Project Manager
 Boardman to Hemingway Transmission Line
 Idaho Power; P.O. Box 70
 Boise, ID 83707

Dear Keith,

Thank you for your recent letter regarding the proposed Coulter Ridge Alternative route for the B2H transmission line over Glass Hill in Union County. It appears that this route would have less impact to the area surrounding Eastern Oregon University's Rebarrow research forest. The Rebarrow Forest is an important educational resource for the university and community and its value is enhanced by the quality of the surrounding lands. Winn Meadow, in particular, is an exceptional example of a native grass, mid-montane meadow that may provide outstanding educational and research opportunities for EOU faculty and students in future years.

The close proximity of both the Rebarrow Forest and Winn Meadow to the ODFW Glass Hill parcel known as the "miracle mile" also enhances the habitat diversity and value of the area. This ODFW land was originally purchased by the Rocky Mountain Elk Foundation and then transferred to ODFW a few years ago. This acquisition was a high priority for the Rocky Mountain Elk Foundation because of the exemplary wildlife value of the land.

The ODFW/Winn Meadow/Rebarrow complex establishes a protected corridor for wildlife passage between the Grande Ronde Valley and the upper elevations of Glass Hill. Eastern Oregon University has been privileged to have the opportunity to provide stewardship to the Rebarrow Forest for the past 21 years. Our restoration efforts can now be seen in the recovery of the mixed conifer forest in the area. We look forward to providing a location close to the Grande Ronde Valley, in which students and individuals from all of our local communities can visit and learn about forest health, ecology, and wildlife for many years to come.

We thank Idaho Power for working with land owners in an attempt to minimize disturbance to Glass Hill ecosystems and private lands, and we support the newly proposed Coulter Ridge Alternative route.

Sincerely,

Bob Davies, President

Steve Adkison, Provost

COMMENT(S)

RESPONSE(S)

E1

Eastern Oregon University (cont.)



12 January 2012

Keith Georgeson, Project Manager
Boardman to Hemingway Transmission Line
Idaho Power
P.O. Box 70
Boise, ID 83707

Dear Keith,

We received the recent communication from Idaho Power regarding the proposed Coulter Ridge Alternative route over Glass Hill in Union County. We wish to offer our strong support for adoption of this line in preference to the earlier proposed routes.

State owned and managed lands (ODFW), Winn Meadow (Joel Rice), and EOU's Rebarrow Forest comprise a unique and extremely important wildlife corridor that connects the Ladd Marsh Wildlife Management Area in the Grande Ronde Valley with upland habitat along the ridges and higher elevation meadows of Glass Hill (Fig. 1). Wildlife utilization of this corridor is heavy, especially during spring and fall months as animals move between lower and higher elevations. Many types of wildlife use this corridor on a frequent basis, including Rocky Mountain Elk, American Black Bear, Mountain Lion, and Bobcat. Moose and moose tracks have been observed recently on Rebarrow and Winn Meadow. Great gray owls have been observed roosting on the Rebarrow Forest, and a possible nest site was discovered near the lower meadow west of Glass Hill Road in 2006.

The route proposed prior to the recent Coulter Ridge Alternative crosses Winn Meadow, which is owned by Dr. Joel Rice. In 2007, Dr. Rice initiated his application to place Winn Meadow into the Wetlands Reserve Program. His intent is to place not just Winn Meadow, but other wetlands within the area into WRP for permanent protection from development. Winn Meadow is adjacent to the Rebarrow forest and Dr. Rice has allowed EOU faculty and students educational and research access to the property.

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Eastern Oregon University (cont.)

In an effort to document and convey the significant biological importance of Winn Meadow to Idaho Power and to the community, I spent several days in the field in August 2011, and compiled a biological inventory of Winn Meadow (Appendix A). In summary, Winn Meadow is a spectacular example of a native Tufted hairgrass, mid-montane meadow. Perennial springs along the southern perimeter keep the meadow moist throughout the dry summer months, and provide reliable freshwater sources for wildlife year round. The meadow is remarkably free of invasive species, and hosts an outstanding variety of native grasses and wetland plants, such as sedges and rushes. Few examples remain of native meadows in this condition, with active, perennial springs, in close proximity to developed areas. The meadow is absolutely unique and of inestimable biological value. Placement of a permanent conservation easement through the federal Wetlands Reserve Program will protect it for the indefinite future.

Other types of development ultimately may come to Glass Hill, including resource extraction, energy development, and home construction. Protecting the integrity of the ODFW-Winn Meadow-Rebarrow corridor should be a high priority among all who know of its value. We have one chance to protect this corridor. If it is lost, the loss will be permanent and far-reaching. We commend Idaho Power on their willingness to work with landowners as the B2H transmission line siting process continues. We understand that there would be additional financial costs associated with following the Coulter Ridge Alternative line. However, we believe that the ecological benefits of avoiding disturbance to the ODFW-Winn Meadow-Rebarrow habitat complex are a compelling incentive to follow the Coulter Ridge Alternative route.

Please don't hesitate to contact me if you have any questions about the Winn Meadow Biological Inventory or the biology of the Glass Hill area.

Sincerely,



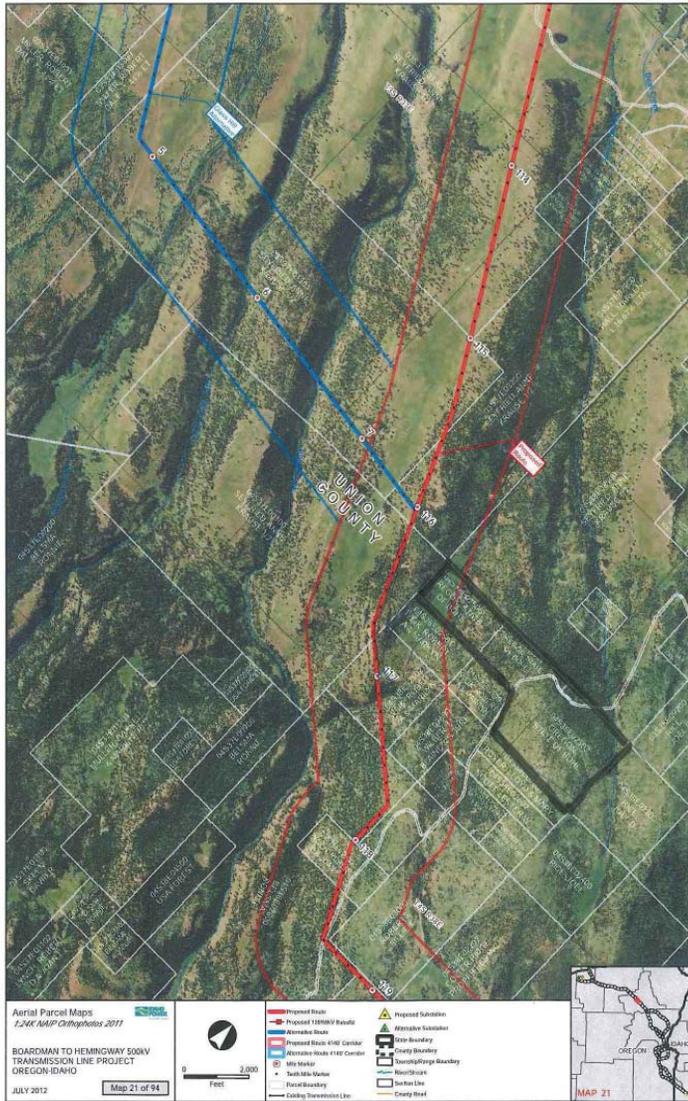
Dr. Karen Antell
Professor of Biology
Eastern Oregon University
One University Blvd.
La Grande, OR 97850
kantell@eou.edu
541-962-3610

*attached Report on Vegetation of Winn Meadow
prepared 16 August 2011*

COMMENT(S)

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E1	Eastern Oregon University (cont.)
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ATTACHMENT

E1	Eastern Oregon University (cont.)
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History
 Eastern Oregon University's Rebarrow Research Forest was created in 1990 from 220 acres of land donated to the University by Esther Badgley. She stipulated that the land be managed to promote the natural forest habitat and to provide outdoor educational and research opportunities for Eastern students and faculty. An endowment provides funds for Rebarrow projects, and an advisory board oversees management of the forest.

Location
 The Rebarrow Forest is located along Glass Hill Road approximately six miles south of La Grande, OR. It comprises a north-facing hillside between 4900 feet to 5300 feet elevation.





For More Information
 If you are interested in learning more about the Rebarrow Forest, visit the website at:
<http://www.eou.edu/~kannell/rebarrow.html>

or contact:
 Dr. Karen Annell
 Eastern Oregon University
 One University Bldg.
 La Grande, OR 97850
 (541) 962-3316
 e-mail: kannell@eou.edu

Donations
 Donations can be made to the Eastern Oregon University Foundation Rebarrow Endowment fund. For information about this fund, contact Mindi McAllister at (541) 962-3835.



Eastern Oregon University
 Oregon's Selective Undergraduate University



Rebarrow Research Forest
 Community Stewardship Project

Eastern Oregon University
 School of Arts and Science

ATTACHMENT

E1	Eastern Oregon University (cont.)
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Rebarrow Research Forest
Eastern Oregon University

Working Together for Forest Health

Forest Health

The Rebarrow Forest was badly degraded by a combination of many of the same factors that have affected much of the Blue Mountains. Between 1978 and 1984, 5.7 million board feet of timber were harvested from the forest. This harvest was followed by a winter storm in 1984 with high winds that blew down much of the reserve timber. Between 1984 and 1987, several years of drought and insect infestation resulted in the mortality of many remaining trees.

Meeting our Goals

The Rebarrow Research Forest community stewardship project is meeting its goals of restoring forest health and providing educational opportunities to the university and the larger community. As restoration efforts progress, some groups are shifting their emphasis to management and assessment of the growing forest.

Stewardship Project

The Rebarrow community stewardship project was developed in 1993. Twenty stewardship groups from the La Grande area were given responsibility for managing 10-acre plots within the forest. These groups include schools, churches, families, and other organizations. Each group has developed and implemented its own management plan. Stewards are free to experiment with a variety of forest management techniques. Some groups have been active in reforestation and wildlife habitat improvement while others have chosen to watch natural processes of forest recovery.

ATTACHMENT

E1

Eastern Oregon University (cont.)

Vegetation of Winn Meadow
Glass Hill, Union Co., Oregon

Dr. Karen Antell
Eastern Oregon University
16 August 2011



Winn Meadow

ATTACHMENT

E1	Eastern Oregon University (cont.)
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INTRODUCTION

Winn Meadow is located at 5,100 ft. elevation on Glass Hill, T 4 S, R 38 E, SE ¼ Sec. 5 (Fig. 1). The meadow comprises 27 acres of native montane wet meadow. Winn Meadow was purchased by Joel Rice at the same time as the Rocky Mountain Elk Foundation purchase of 900 acres of land to the east. That parcel was subsequently acquired by ODFW, and is managed as part of the Ladd Marsh Wildlife Management Area. Winn Meadow is situated in between the ODFW Ladd Marsh property on the east and Eastern Oregon University's 360-acre Rebarrow Research Forest on the west. The Rebarrow Forest was gifted to the university in 1990. Active restoration projects over the past twenty years have restored the forest to good health, and elk utilization of the area is highly apparent. Moose, bear, and other wildlife also have been seen on the forest. Because of its unique location, Winn Meadow provides critically important habitat for Rocky Mountain Elk and other wildlife, as they move between the lower elevations of Ladd Marsh in the Grande Ronde Valley up to higher elevations on Glass Hill. The habitat corridor between the valley and the upper ridge on the Rebarrow property is continuous and currently is uninterrupted by development, except for a few, seldom-used old road beds.

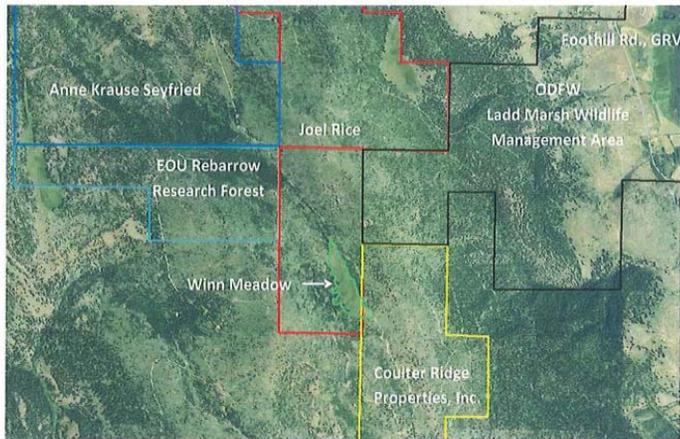


Figure 1. Location of Winn Meadow and surrounding property.

ATTACHMENT

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Eastern Oregon University (cont.)

PROTECTING THE MIRACLE MILE | La Grande Observer | Union a... http://www.lagrandeobserver.com/index2.php?option=com_content&t

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PROTECTING THE MIRACLE MILE

March 16, 2001 12:00 am

The Miracle Mile.

When Jim Ward of La Grande speaks of it he is not referring to Roger Banisters first sub-four-minute mile in 1954.

Ward instead is discussing one of Union Countys wildlife gems a portion of land running south along Foothill Road from the Ladd Marsh Wildlife Area viewpoint to Oxen Springs.

Many refer to this as a miracle mile for wildlife viewing. It is often said that this stretch has a greater diversity of wildlife than any portion of Eastern Oregon, said Ward, a member of the Rocky Mountain Elk Foundation.

The future of the miracle mile has been brightened by the Rocky Mountain Elk Foundation. The RMEF has purchased about 900 acres of undeveloped land adjacent to the miracle mile stretch. The land rises up a hillside from the west side of Foothill Road south

of La Grande.

The RMEFs purchase greatly reduces any chance the miracle mile will be hurt by nearby development. Prior to the purchase people had been expressing interest in buying the land for the purpose of developing it, Ward said.

The property was owned for many years by Richard and Martha Smutz. Their daughter, Geraldine Daggett, later acquired the land and accepted an RMEF offer to sell it. The significance of the sale cannot be underestimated.

This is the Rocky Mountain Elk Foundations most significant acquisition in the region in terms of its direct impact on elk and people, said Art Talsma of Boise, director of northwest field operations for the Rocky Mountain Elk Foundation.

He explained that the purchase also means that one of Oregons most remarkable wildlife corridors will be preserved. Elk, deer, bears, and many other animals regularly move back and forth between the former Daggett property and Ladd Marsh.

Elk are a prime and vital example. Throughout the year elk, seeking security, spend their days on the hillside property under the cover of timber. At night the elk come down to the ODFWs Ladd Marsh Wildlife Area to feed.

Most of the time they return by daybreak but sometimes they remain at Ladd Marsh for several days.

Had the hillside property been developed with homes and ranchettes, a volatile situation would have developed. The elk might have felt so uncomfortable that they would have moved out and ventured on to agricultural land. Conflicts between ranchers and elk would have resulted, said La Grande U.S. Forest Service biologist Mark Penninger, a member of the RMEF.

Penninger is also a strong supporter of the land purchase for other reasons. He said it helps guarantee that the area will continue to be a resource for people who want to enjoy and learn about wildlife in a special setting. He noted that it is unusual to have such a site so close to a community. The area is just three miles south of La Grande.

It is unique to see something like this so close to town, Penninger said. It provides many learning opportunities.

Penninger noted that at the Ladd Marsh viewpoint one can see elk, bear, white-tailed deer, mule deer, valley quail, waterfowl, shorebirds, ring-necked pheasants and more in close proximity to each other.

It is rare to have upland and marsh wildlife side by side, Penninger said.

Talsma echoes this sentiment.

You would be hard-pressed to go anywhere else in the state and see more wildlife, he said.

Those who have played key roles in the purchase include Ward, Penninger said. He noted that Ward first found out that the land might be available. He then started a letter writing campaign to the RMEF.

He is the one who brought the opportunity to everyones attention, Penninger said.

The Rocky Mountain Elk Foundation land will eventually be managed by the Oregon Department of Fish and Wildlife. The RMEF and the ODFW are forming a management agreement. Once the agreement is reached the land will become part of the ODFWs Ladd Marsh Wildlife Area.

Erickson stressed that the land will remain accessible to the public. Steps to protect wildlife, such as road closures, may be taken

ATTACHMENT

E1

Eastern Oregon University (cont.)

PROTECTING THE MIRACLE MILE | La Grande Observer | Union a... http://www.lagrandeobserver.com/index2.php?option=com_content&t..

though.

The Rocky Mountain Elk Foundation has started a fund-raising drive to replace the money used to purchase the Daggett property. A commemorative Ladd Marsh belt buckle is being sold as part of this drive.

Later a painting of the property will be commissioned by the RMEF. Prints will be sold at fund raisers.

The Rocky Mountain Elk Foundation will hold a celebration to commemorate the purchase on June 16 at Ladd Marsh. The celebration will be conducted the same day as the RMEF's annual banquet in La Grande.

The June 16 celebration is more than warranted, La Grande ODFW biologist Mark Henjum said.

Every once in a while during a career you see something happen which will have a positive long-term effect on fish and wildlife. This is one of them, Henjum said.

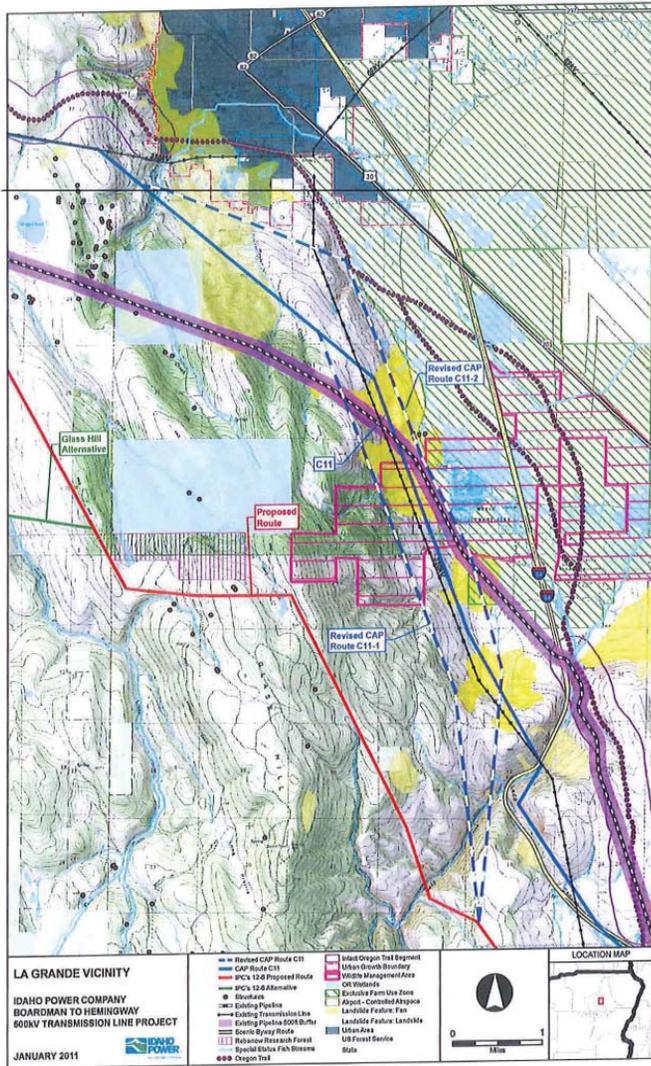
Story by Dick Mason of The Observer

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ATTACHMENT

E1 Eastern Oregon University (cont.)



ATTACHMENT

E1

Eastern Oregon University (cont.)

RARE, THREATENED AND ENDANGERED
SPECIES OF OREGON



OREGON BIODIVERSITY INFORMATION CENTER

July 2013

ATTACHMENT

E1

Eastern Oregon University (cont.)

**Oregon Biodiversity Information Center
Institute for Natural Resources
Portland State University**

PO Box 751, Mail Stop: INR
Portland, OR 97207-0751
(503) 725-9950
<http://orbic.pdx.edu>



With assistance from:

U.S. Forest Service
Bureau of Land Management
U.S. Fish and Wildlife Service
NatureServe
The Nature Conservancy
Oregon Parks and Recreation Department
Oregon Department of State Lands
Oregon Department of Fish and Wildlife
Oregon Department of Agriculture
Native Plant Society of Oregon

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Cover Photo: *Euphydryas editha taylori* (Taylor's checkerspot butterfly). Photo by Dana Ross, used with permission.

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ATTACHMENT

E1

Eastern Oregon University (cont.)

DEFINITIONS

Endangered taxa are those which are in danger of becoming extinct within the foreseeable future throughout all or a significant portion of their range.

Threatened taxa are those likely to become endangered within the foreseeable future.

LE = Listed Endangered. Taxa listed by the USFWS or the National Marine Fisheries Service (NOAA Fisheries) as Endangered under the Endangered Species Act (ESA), or by the ODA or ODFW under the Oregon Endangered Species Act of 1987 (OESA).

LT = Listed Threatened. Taxa listed by the USFWS, NOAA Fisheries, ODA, or ODFW as Threatened.

PE = Proposed Endangered. Taxa proposed by the USFWS or NOAA Fisheries to be listed as Endangered under the ESA or by ODFW or ODA under the OESA.

PT = Proposed Threatened. Taxa proposed by the USFWS or NOAA Fisheries to be listed as Threatened under the ESA or by ODFW or ODA under the OESA.

C = Candidate. Taxa for which NOAA Fisheries or USFWS have sufficient information to support a proposal to list under the ESA, or which is a candidate for listing by the ODA under the OESA.

SOC = Species of Concern. Taxa which the USFWS is reviewing for consideration as Candidates for listing under the ESA.

PS = Partial Status. Taxa for which some but not all infraspecific taxa have status.

Lists Following Animal and Plant Sections

In addition to the main lists summarizing information on animals and plants, this booklet includes the agency lists compiled from the most recent information available:

- Federal and State, listed and proposed animals (USFWS, NOAA Fisheries, ODFW)
- Federal candidate (USFWS, NOAA Fisheries) and species of concern (USFWS) animals
- State sensitive animals (ODFW)
- Federal listed, proposed and candidate plants, and species of concern (USFWS)
- State listed and candidate plants (ODA)

The criteria for the ORBIC lists are as follows:

List 1 contains taxa that are threatened with extinction or presumed to be extinct throughout their entire range.

List 2 contains taxa that are threatened with extirpation or presumed to be extirpated from the state of Oregon. These are often peripheral or disjunct species which are of concern when considering species diversity within Oregon's borders. They can be very significant when protecting the genetic diversity of a taxon. ORBIC regards extreme rarity as a significant threat and has included species which are very rare in Oregon on this list.

List 3 contains taxa for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range.

List 4 contains taxa which are of conservation concern but are not currently threatened or endangered. This includes taxa which are very rare but are currently secure, as well as taxa which are declining in numbers or habitat but are still too common to be proposed as threatened or endangered. While these taxa may not currently need the same active management attention as threatened or endangered taxa, they do require continued monitoring.

Drops and Name Changes contains taxa deleted or had their names changed from the previous edition (October 2010).

NatureServe/Natural Heritage Network Ranks

ORBIC participates in an international system for ranking rare, threatened and endangered species throughout the world. The system was developed by The Nature Conservancy and is now maintained by NatureServe in cooperation with Heritage Programs and Conservation Data Centers in all fifty states (plus the Navajo Nation, Tennessee Valley Authority, Puerto Rico and the Virgin Islands), all of Canada except for two territories, and many Latin American countries.

ATTACHMENT

E1

Eastern Oregon University (cont.)

Rank Definitions

The ranking is a 1-5 scale, based primarily on the number of known occurrences, but also including threats, sensitivity, area occupied, and other biological factors. In this booklet, the ranks occupy two lines. The top line is the Global Rank and begins with a "G". If the taxon has a trinomial (a subspecies, variety or recognized race), this is followed by a "T" rank indicator. The second line is the State Rank and begins with the letter "S". The ranks are summarized below (see page 6 for migratory bird ranks):

- 1 = Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences.
- 2 = Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6-20 occurrences.
- 3 = Rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences.
- 4 = Not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences.
- 5 = Demonstrably widespread, abundant, and secure.

H = Historical Occurrence, formerly part of the native biota with the implied expectation that it may be rediscovered.
 X = Presumed extirpated or extinct.
 U = Unknown rank.
 NR = Not yet ranked.

Rank Qualifiers

Q = Questionable taxonomy. Global ranks sometimes have a "Q" at the end. This indicates that there are questions related to the taxonomic validity of the taxon.
 ? = Inexact Numeric Rank. Taxa that can be ranked, but for which the rank is not certain. Ranks with a "?" indicate that the rank is probably correct, but that either documentation is lacking or there is still some uncertainty. Such ranks are always provisional.
 Range Ranks = Ranks with more than one value. These can be G1G2, G1G3, etc. These indicate that the predicted final rank would be within the range, but with no indication of preference among the possibilities.

More details on the Heritage Ranking system and more definitions can be found at the NatureServe web site: <http://www.natureserve.org/explorer/ranking.htm>

SPECIAL ANIMALS

Information on Oregon's rare, threatened and endangered animal species is presented here in two formats. The first is a list summarizing the distribution, federal and state status, and Heritage Network rank of the species as described on pages 4 and 5. The second format breaks the species into lists based on their status.

In both formats, the special animals are divided into major groups (fish, amphibians, reptiles, birds, mammals, invertebrates), then listed alphabetically by scientific name. The invertebrate summary list is unique in being further subdivided into class and order.

The animals included in this booklet are those rare, threatened and endangered vertebrate and invertebrate species that are native to Oregon and have (or have had) sustained breeding populations within the state. Open-ocean mammals or sea turtles which generally occur offshore and do not breed in Oregon are not

included in this book. Wintering bird species and those which occur on an accidental or occasional basis present special problems which are described below.

Animal Species Tracked

ORBIC strives to serve as a clearinghouse of information regarding site-specific locations of rare, threatened and endangered species in Oregon. The goal is to obtain and computerize information for all locations of all state and federally listed animal species. Location data is also computerized for other animal species that are rare (of limited abundance or restricted distribution), threatened, endangered or otherwise vulnerable in Oregon, based on the NatureServe/Natural Heritage Network ranks. Locations for a species are tracked only if it is possible to track all sites in the state.

Ranking decisions are made based on the best available information. Comments on ranks or on the inclusion or exclusion of taxa are welcome. Funds are

ATTACHMENT

E1

Eastern Oregon University (cont.)

Oregon Department of Fish and Wildlife's Threatened, Endangered and Sensitive Species Program – ODFW

Martin Nugent, Threatened, Endangered and Sensitive Species Coordinator
Eric Rickerson, Assistant Administrator, Wildlife Division

The Oregon Department of Fish and Wildlife (ODFW) maintains a list of threatened and endangered species under the authority of ORS 496.172, the Oregon Endangered Species Act, 1987. The list included in this booklet reflects ODFW's revisions as of October 2013. There are currently 32 taxa on the list. The list includes 12 marine animals (i.e. whales, sea turtles, pelagic birds) that are not included in this book. The Act requires state agencies to develop programs for the management and protection of endangered species, and requires agencies to comply with guidelines adopted by the Oregon Fish and Wildlife Commission for threatened species. The Oregon Fish and Wildlife Commission has adopted administrative rules, OAR 635-100-100 to 130, which clarify the Act and provide criteria for listing, delisting and protection of listed species.

Oregon Department of Fish and Wildlife maintains a Sensitive Species list in accordance with OAR 635-100-0040 which is designed to provide a positive, proactive approach to species conservation. The Sensitive Species list focuses fish and wildlife management and research activities on species that need conservation attention. Although the intent of the Sensitive Species list is to prevent species from declining to the point of qualifying as threatened or endangered, this list is not used as a "candidate" list for species to be considered for listing under the Oregon Threatened and Endangered Species rules. The Sensitive Species list serves as an early warning system for biologists, land managers, policy makers, and the public. It helps ensure that conservation actions are prioritized, cost-efficient, and effective. The sensitive species list is updated by ODFW every five years. The sensitive species list was last revised in 2008.

"Sensitive species" are those naturally-reproducing fish and wildlife species, subspecies, or populations which are facing one or more threats to their populations and/or habitats. Implementation of appropriate conservation measures to address the threats may prevent them from declining to the point of qualifying for threatened or endangered status.

Sensitive species categories are defined as follows:

"Critical" sensitive species (SC) are imperiled with extirpation from a specific geographic area of the state because of small population sizes, habitat loss or degradation, and/or immediate threats. Critical species may decline to point of qualifying for threatened or endangered status if conservation actions are not taken.

"Vulnerable" sensitive species (SV) are facing one or more threats to their populations and/or habitats. Vulnerable species are not currently imperiled with extirpation from a specific geographic area or the state but could become so with continued or increased threats to populations and/or habitats.

All efforts towards management and protection of threatened, endangered and sensitive species in Oregon will be coordinated with other state and federal agencies and private conservation organizations. The current threatened and endangered species list is available on ODFW's website at: http://www.dfw.state.or.us/wildlife/diversity/species/threatened_endangered_species.asp. The sensitive species list is available at: http://www.dfw.state.or.us/wildlife/diversity/species/sensitive_species.asp

Copies of the Oregon Endangered Species Act or administrative rules, or the Sensitive Species rule, or lists of the threatened and endangered or sensitive species may also be requested from the department by writing to:

Oregon Department of Fish and Wildlife
4034 Fairview Industrial Drive SE
Salem, OR 97302

ATTACHMENT

E1 Eastern Oregon University (cont.)

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORBIC List
<i>Oncorhynchus kisutch</i> Coho salmon (Oregon Coast ESU)	CR, KM, ME, WC, WV Bent, Clat, Colu, Coos, Curr, Doug, Lane, Linc, Polk, Till, Wash, Yamh	G4T2Q S2	LT	SV	1
<i>Oncorhynchus kisutch</i> Coho salmon (Southern Oregon/Northern California Coasts ESU)	CR, KM, ME, WC, CA Curr, Jack, Jose	G4T2Q S2	LT	SV	1
<i>Oncorhynchus mykiss</i> Callow Valley redband trout	BR Harr, Lake	G5T1Q S1	SOC	SC	1
<i>Oncorhynchus mykiss</i> Chewaucan redband trout	BR, EC Lake	G5T3Q S3	--	SV	3
<i>Oncorhynchus mykiss</i> Fort Rock redband trout	BR, EC Lake	G5T3Q S3	--	SC	3
<i>Oncorhynchus mykiss</i> Goose Lake redband trout	EC, CA Lake	G5T2Q S2	SOC	SC	1
<i>Oncorhynchus mykiss</i> Klamath Basin redband trout	EC, WC Jack, Klam, Lake	G5T3T4Q S3	--	SV	4
<i>Oncorhynchus mykiss</i> Malheur Lakes redband trout	BM, BR Gran, Harr	G5T3Q S3	--	SV	3
<i>Oncorhynchus mykiss</i> Redband trout Warner Valley/Wamer Lakes SMU	BR, EC, CA, NV Lake	G5T2Q S2	SOC	SC	1
<i>Oncorhynchus mykiss</i> Steelhead (Klamath Mountains Province ESU, summer run) (SV in KM ecoregion; SC in Upper Klamath)	CR, KM, ME, WC, CA Curr, Jack, Jose	G5T2T3Q S2S3	--	SC/SV	2
<i>Oncorhynchus mykiss</i> Steelhead (Klamath Mountains Province ESU, winter run)	CR, KM, ME, WC, CA Curr, Jack, Jose	G5T3Q S2S3	--	--	2
<i>Oncorhynchus mykiss</i> Steelhead (Lower Columbia River ESU, summer run)	CR, EC, ME, WC, WV, WA Clac, Clat, Colu, Hood, Mari, Mult	G5T2Q S2	LT	SC	1
<i>Oncorhynchus mykiss</i> Steelhead (Lower Columbia River ESU, winter run)	CR, EC, ME, WC, WV, WA Clac, Clat, Colu, Hood, Mari, Mult	G5T2Q S2	LT	SC	1
<i>Oncorhynchus mykiss</i> Steelhead (Middle Columbia River ESU, summer run)	BM, CB, CR, EC, ME, WC, WV, WA Clat, Colu, Croo, Gill, Gran, Hood, Jeff, Morr, Mult, Sher, Umat, Wasc, Whee	G5T2Q S2	LT	SC	1
<i>Oncorhynchus mykiss</i> Steelhead (Middle Columbia River ESU, winter run)	BM, CB, CR, EC, ME, WC, WV, WA Clat, Colu, Croo, Gill, Gran, Hood, Jeff, Morr, Mult, Sher, Umat, Wasc, Whee	G5T2Q S2	LT	--	1
<i>Oncorhynchus mykiss</i> Steelhead (Oregon Coast ESU, summer run)	CR, KM, ME, WC, WV Bent, Clat, Colu, Coos, Curr, Doug, Lane, Linc, Polk, Till, Wash, Yamh	G5T2T3Q S2S3	SOC	SV	1
<i>Oncorhynchus mykiss</i> Steelhead (Oregon Coast ESU, winter run)	CR, KM, ME, WC, WV Bent, Clat, Colu, Coos, Curr, Doug, Lane, Linc, Polk, Till, Wash, Yamh	G5T2T3Q S2S3	SOC	SV	1
<i>Oncorhynchus mykiss</i> Steelhead (Snake River Basin ESU)	BM, WA, ID Umat, Uno, Wall	G5T2T3Q S2S3	LT	SV	1
<i>Oncorhynchus mykiss</i> Steelhead (Southwest Washington ESU, winter run)	CR, ME, WV, WA Clat, Colu	G5T3Q S2	--	SC	2

ATTACHMENT

E1 Eastern Oregon University (cont.)

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORBIC List
<i>Oncorhynchus mykiss</i> Steelhead (Upper Willamette River ESU, winter run)	CR, ME, WC, WV Bent, Clac, Clat, Colu, Linn, Mari, Mult, Polk, Wash, Yamh	G5T2Q S2	LT	SV	1
<i>Oncorhynchus mykiss gairdneri</i> Inland Columbia Basin redband trout	BM, BR, CB, EC, ID, WA + Bake, Croo, Desc, Gill, Gran, Harn, Jeff, Klam, Malh, Morr, Sher, Umat, Unio, Wall, Wasc	G5T4 S3	SOC	SV	4
<i>Oncorhynchus nerka</i> Sockeye salmon (Snake River ESU)	BM, ID (migratory/non-breeder in OR, WA) Unio, Wall	G5T1Q SXB,S1M	LE	--	1-ex
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Deschutes River ESU, summer/fall run)	BM, CB, ME Jeff, Sher, Wasc	G5T3Q S2S3	--	SV	1
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Lower Columbia River ESU, fall run)	CR, EC, ME, WC, WV, WA Clac, Clat, Colu, Hood, Mult	G5T2Q S2	LT	SC	1
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Lower Columbia River ESU, spring run)	CR, EC, ME, WC, WV, WA Clac, Clat, Colu, Hood, Mult	G5T2Q S2	LT	SC	1
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Middle Columbia River ESU, fall run)	BM, CB, EC, WC Gill, Gran, Hood, Jeff, Morr, Mult, Sher, Umat, Wasc, Whee	G5TNRQ SNR	--	SV	3
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Middle Columbia River ESU, spring run)	BM, CB, EC, ME, WC Gill, Gran, Hood, Jeff, Morr, Mult, Sher, Umat, Wasc, Whee	G5T3Q S3	--	SV	4
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Oregon Coast ESU, spring run)	CR, ME Coos, Doug, Linc, Polk, Till, Wash	G5T3Q S3	--	SC	4
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Snake River ESU, fall run)	BM, CB, CR, EC, ME, WC, WV, ID, WA Clat, Colu, Gill, Hood, Morr, Mult, Sher, Umat, Wall, Wasc	G5T1Q S1	LT	LT	1
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Snake River ESU, spring/summer run)	BM, CB, CR, EC, ME, WC, WV, ID, WA Clat, Colu, Gill, Hood, Morr, Mult, Sher, Umat, Unio, Wall, Wasc	G5T1Q S1	LT	LT	1
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Southern Oregon/Northern California Coast ESU, fall run)	CR, KM, ME, WC, CA Curr, Jack, Jose	G5T3Q S2	--	SV	2
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Southern Oregon/Northern California Coast ESU, spring run)	CR, KM, ME, WC Curr, Jack, Jose	G5T4Q S4	--	SV	3
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Upper Willamette River ESU, spring run)	CR, ME, WC, WV Bent, Clac, Clat, Colu, Lane, Linn, Mari, Mult, Polk, Yamh	G5T2Q S2	LT	SC	1
<i>Oregonichthys crameri</i> Oregon chub	WC, WV Bent, Lane, Linn, Mari, Polk, Yamh	G3 S3	LT	SC	1
<i>Oregonichthys kalawatseli</i> Umpqua chub	CR, KM, WC Doug	G2G3 S2S3	SOC	SC	1
<i>Rhinichthys cataractae</i> ssp. Millicoma dace	CR Coos, Doug	G5T2 S2	SOC	SV	1
<i>Rhinichthys osculus</i> ssp. Foskett Spring speckled dace	BR Lake	G5T1 S1	LT	LT	1

ATTACHMENT

E1

Eastern Oregon University (cont.)

SPECIAL PLANTS AND FUNGI**Nomenclature**

Ongoing research has resulted in a number of recent changes which have been included in this version of the booklet. Whenever possible, for vascular plants we have used names and authorities provided by the Oregon Flora Project at the Oregon State University Herbarium. More information on this project is included on page 41.

Lists

This plant list is an update of the 2010 edition of this publication. All status changes for specific taxa reflect new information obtained since then.

Species that have been dropped from the list or have had name changes are not included within the main body of the lists. These are listed separately in the "Drops and Name Changes" section on page 106. If you do not see a species name that had been in the 2010 edition of the booklet, please refer to that section.

The lists are arranged alphabetically by scientific name. Descriptions of the categories and lists can be found in the Introduction on page 1. State distribution is included for all vascular plant taxa in this edition. Distribution information for the non-vascular plants and fungi is not complete.

At the end of the main list, taxa are listed again by status. These include: a) the USFWS Federal Listed, Candidate and Species of Concern, b) the ODA State Listed and Candidate taxa, c) List 1, d) List 2, e) List 3, and f) List 4.

List 1 contains taxa which are endangered or threatened throughout their range or which are presumed extinct. The status of taxa on this list represents its status throughout its range. Species which have been extirpated from Oregon are included with an -ex after the List number (e.g. 1-ex). Taxa known or thought to be extinct throughout their range have an -X following the list number (e.g. 1-X).

List 2 contains taxa which are threatened, endangered or possibly extirpated from Oregon, but are stable or more common elsewhere. Taxa extirpated from Oregon are included with an -ex after the List number (e.g. 2-ex).

List 3 contains taxa for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range.

List 4 contains taxa of concern which are not currently threatened or endangered. This list includes taxa which are very rare but are currently secure, as well as taxa which are declining in numbers or habitat but are still too common to be proposed as threatened or endangered.

Other Information

ORBIC recognizes that fungi are not plants and should be recognized as a distinct kingdom. However, for this booklet they are included with the plants. As in previous editions, information on the fungi in the lists is not as complete as other groups of species. As a result, most remain on the Review List (List 3).

New information on these species has been summarized from recent work, which included extensive herbaria searches and fieldwork from federal agency biologists as well as from OSU faculty and staff. Most of this work was a result of the efforts by the USFS and BLM in implementing the Survey and Manage program of the Northwest Forest Plan. The heritage ranks are the best determination of a species' status, but due to their limited inventory, heritage ranks for fungi are generally less certain than for other vascular and non-vascular species. We hope their inclusion here will stimulate more research and survey, since many of these taxa may be among Oregon's rarest.

ORBIC is interested in obtaining and databasing information for all locations of taxa on Lists 1 and 2. Manual files are maintained for locations of those on List 3 and 4. It is critical that additional information be obtained for List 3 taxa so accurate status determinations can be made. The submission of additional information on status or occurrences of any species included on these lists would be appreciated. Distribution information is based on historical and current reports and is included to aid in searches and to increase knowledge of these taxa.

ATTACHMENT

E1 Eastern Oregon University (cont.)

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODA Status	ORBIC List
<i>Townsendia montana</i> M.E. Jones Mountain townsendia	BM; ID+ Wail	G4 S1	--	--	2
<i>Townsendia parryi</i> D.C. Eat. Parry's townsendia	BM; CA, WA+ Wail	G4? S1	--	--	2
<i>Townsendia scapigera</i> D.C. Eat. Tufted Townsend daisy	BR, CA, ID, NV, UT Malh	G4G5 S2	--	--	2
<i>Trichophorum cespitosum</i> (L.) Hartman Tufted clubrush	BM, WC, ID, WA + Clac, Gran, Hood, Lane, Linn	G5 SNR	--	--	3
<i>Trifolium douglasii</i> House Douglas clover	BM; ID, WA Umat, Unio	G2 S1	SOC	--	1
<i>Trifolium leibergii</i> A. Nels. & J.F. Macbr. Leiberg's clover	BR, NV Harn, Malh	G2 S1	SOC	C	1
<i>Trifolium ovyhaense</i> Gilkey Owyhee clover	BR; ID Malh	G2 S2	SOC	LE	1
<i>Triglochin palustris</i> L. Slender bog arrowgrass	BM, CA, ID, NV, WA + Bake, Unio	G5 S2	--	--	2
<i>Triglochin striata</i> Ruiz & Pavon Three-ribbed arrow-grass	CR, CA + Clat, Coos, Curr, Doug, Lane, Linc, Till	G5 SNR	--	--	3
<i>Trillium kurabayashii</i> J.D. Freeman Giant purple trillium	CR, KM, CA Curr	G4G5 S1	--	--	2
<i>Trileleia crocea</i> (Wood) Greene var. <i>crocea</i> Yellow trileleia	KM, CA Jack, Jose	G4T4 S4	--	--	4
<i>Trileleia hendersonii</i> Greene var. <i>leachiae</i> (M.E. Peck) Hoover Leach's brodiaea	CR, KM Coos, Curr	G4G5T3 S3	SOC	C	4
<i>Trileleia ixiooides</i> (Ait. f.) Greene ssp. <i>anilina</i> (Greene) Lenz Sierra brodiaea	KM, CA Jack	G5T4 SH	--	--	2-ex
<i>Trileleia ixiooides</i> (Ait. f.) Greene ssp. <i>scabra</i> (Greene) Lenz Golden trileleia	KM, CA Jack	G5T3? SNR	--	--	3
<i>Trileleia laxa</i> Benth. Ithurie's spear	CR, KM, CA Curr, Jack	G4 S1	--	--	2
<i>Trollius laxus</i> Salisb. ssp. <i>albiflorus</i> (Gray) A & D. Love & Kapoor American globeflower	BM; ID, WA+ Wail	G5T5 S1	--	--	2
<i>Utricularia gibba</i> L. Humped bladderwort	CR, WC, WV, CA, ID, WA+ Bent, Coos, Doug, Lane, Linn	G5 S1	--	--	2
<i>Utricularia minor</i> L. Lesser bladderwort	BM, BR, CR, EC, KM, WC, CA, ID, NV, WA+ Bake?, Clac, Coos, Doug, Gran?, Harn, Jack, Klam, Lane, Linn, Malh, Wail?, Wasc	G5 S2	--	--	2
<i>Utricularia ochroleuca</i> R.W. Hartman Northern bladderwort	WC, CA, WA, BC+ Clac, Lane	G4? S1	--	--	2
<i>Vaccinium oxycoccos</i> L. Wild bog cranberry	CR, WC, WA, ID+ Clac, Clat, Doug, Lane, Linc, Linn, Mari, Mull, Till, Wasc	G5 S4	--	--	4
<i>Vancouveria chrysantha</i> Greene Yellow vancouveria	KM, CA Curr, Jose	G4 S4	--	--	4

ATTACHMENT

E1

Eastern Oregon University (cont.)

Documentation of Douglas' Clover on Glass Hill
Dr. Karen Antell, Professor of Biology, Eastern Oregon University



Trifolium douglasii, Winn Meadow, 20 July 2014



Trifolium douglasii, Bushnell Meadow, 10 July 2013



Trifolium douglasii, Rice property, ridge west of Bushnell Meadow, 24 May 2014

ATTACHMENT

E1

Eastern Oregon University (cont.)

Confederated Tribes *of the*
Umatilla Indian Reservation

DNR Fish & Wildlife Programs



46411 Timline Way
Pendleton, OR 97801

www.ctuir.org email: info@ctuir.org
Phone 541-276-3447

3/11/2015

Dear Mr. Allen,

Following our recent March 2015 conversations about Endangered Species Act listed fish use of the Rock Creek Sub-Watershed I would like to give you an update on the recent fish surveys/sampling conducted by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR).

- **Steelhead Spawning:** CTUIR started steelhead spawning surveys within the sub-watershed in 2011. Each year during the spawning season (March to June) approximately 12.1 miles of streams have been surveyed. These streams include Rock Creek (lower 4.8 mile), Graves Creek (lower 4.2 miles), Sheep Creek (lower 1.2 miles), Little Rock Creek (lower ½ mile), and Little Graves Creek (lower 1.4 miles).
 - The number of redds found each year range between 7 and 14 with an average of 10 per year for all stream miles combined.
 - Typical peak spawning occurs in April and May. However, in 2015 CTUIR observed 12 redds on March 10 within the lower 4.8 miles of Rock Creek.
 - On March 11th 2015 CTUIR biologists observed 3 steelhead redds on Rock Creek within the Elk Song Ranch property boundary. Juvenile *O.mykiss* were also observed on the ranch in Little Rock Creek.
- **Juvenile Steelhead/*O.mykiss* presence:**
 - Snorkel surveys: CTUIR conducted snorkel surveys on Rock Creek in 2011, 2012, and 2014 with estimated average densities of 1 fish per m² of pool habitat.
 - **Fish Salvage as part of restoration actions:** In summer 2014 CTUIR conducted salvage operations on Rock Creek to remove all fish species (including ESA listed fish) from areas of stream bed/bank disturbance during placement of large wood habitat. Methods used were electro-fishing and sein nets, with 24 sites salvaged. Results were:
 - 3,664 fish salvaged of which 2,185 were ESA listed fish (steelhead/*O.mykiss*).
 - ESA listed fish made up 59.6% of all fish captured.
 - Densities of captured ESA fish were 2.67 fish/m² of pool habitat (nearly 3 times the density of fish salvaged in Catherine Creek in the same year).
 - Snorkel surveys underestimated fish densities by approximately 60%
- **Juvenile Chinook Salmon presence:**
 - CTUIR recorded 30 juvenile Chinook in 2011 during snorkel surveys.

Limiting factors affecting the recovery of ESA fish species within this sub-watershed have been identified by the Grande Ronde Subbasin Plan (2009), Oregon Draft Recovery Plan for Spring/Summer Chinook and Steelhead Populations (2010), and Bonneville Power Administration's (BPA) Atlas process (2014) as:

- 1.1 Habitat Quantity: Anthropogenic Barrier
- 4.1 Riparian Condition: Riparian Condition
- 4.2 Riparian Condition: LWD Recruitment (STS)
- 6.1 Channel Structure and Form: Bed and Channel Form
- 6.2 Channel Structure and Form: Instream Structural Complexity
- 7.2 Sediment Condition: Increased Sediment Quantity
- 8.1 Water Quality: Temperature
- 9.2 Water Quantity: Decreased Water Quantity

Treaty June 9, 1855 ~ Cayuse, Umatilla and Walla Walla Tribes

ATTACHMENT

E1

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The watershed is also ranked second highest priority for conservation actions within the Upper Grande Ronde by the Natural Resource Conservation Service (NRCS) 2013 Conservation Implementation Strategy.

As we discussed in early March water run-off from the ridges and slopes does naturally contribute water and sediment to the stream with these slopes typically remaining saturated for extended periods through the winter and spring into early summer. However, the addition of new roads within the Rock Creek drainage would be a concern for the potential negative impacts from concentrated or increased sediment supply to the stream system, particularly along the slopes and ridges of Rock Creek (as sediment quantity has been identified as one of the limiting factors affecting the recovery of listed species).

We look forward to working with you on restoration projects along the 13 miles of fish bearing streams on your ranch. These species are not only listed as threatened and/or endangered, but are also historically and culturally significant to the Tribe.

Leslie M Naylor

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Treaty June 9, 1855 ~ Cayuse, Umatilla and Walla Walla Tribes
