Alsea Falls Meteorological Tower

Environmental Assessment and Draft Finding of No Significant Impact

Environmental Assessment: DOI-BLM-ORWA-S050-2016-0002-EA

JUNE 2016

United States Department of the Interior
Bureau of Land Management
Oregon State Office
Salem District
Marys Peak Field Office

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BLM/OR/WA/AE-16/022+1632

ALSEA FALLS METEOROLOGICAL TOWER
ENVIRONMENTAL ASSESSMENT

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1.0 INTRODUCTION

This environmental assessment (EA) includes an analysis of the impacts of the Proposed Action on the human environment. The EA will provide the decision-maker, the Marys Peak Field Manager, with current information to aid in the decision-making process. It will also determine if there are significant impacts not already analyzed in the Environmental Impact Statement (EIS) for the Bureau of Land Management (BLM) Salem District's Resource Management Plan (RMP) and whether a supplement to that EIS is needed or if a Finding of No Significant Impact (FONSI) is appropriate.

Chapter 1 provides a context for what will be analyzed in the EA, describes the kinds of actions the BLM will be considering, defines the project area, describes what the Proposed Action needs to accomplish, and identifies the criteria that the decision-maker will use for choosing the alternative that will best meet the purpose and need for this proposal.

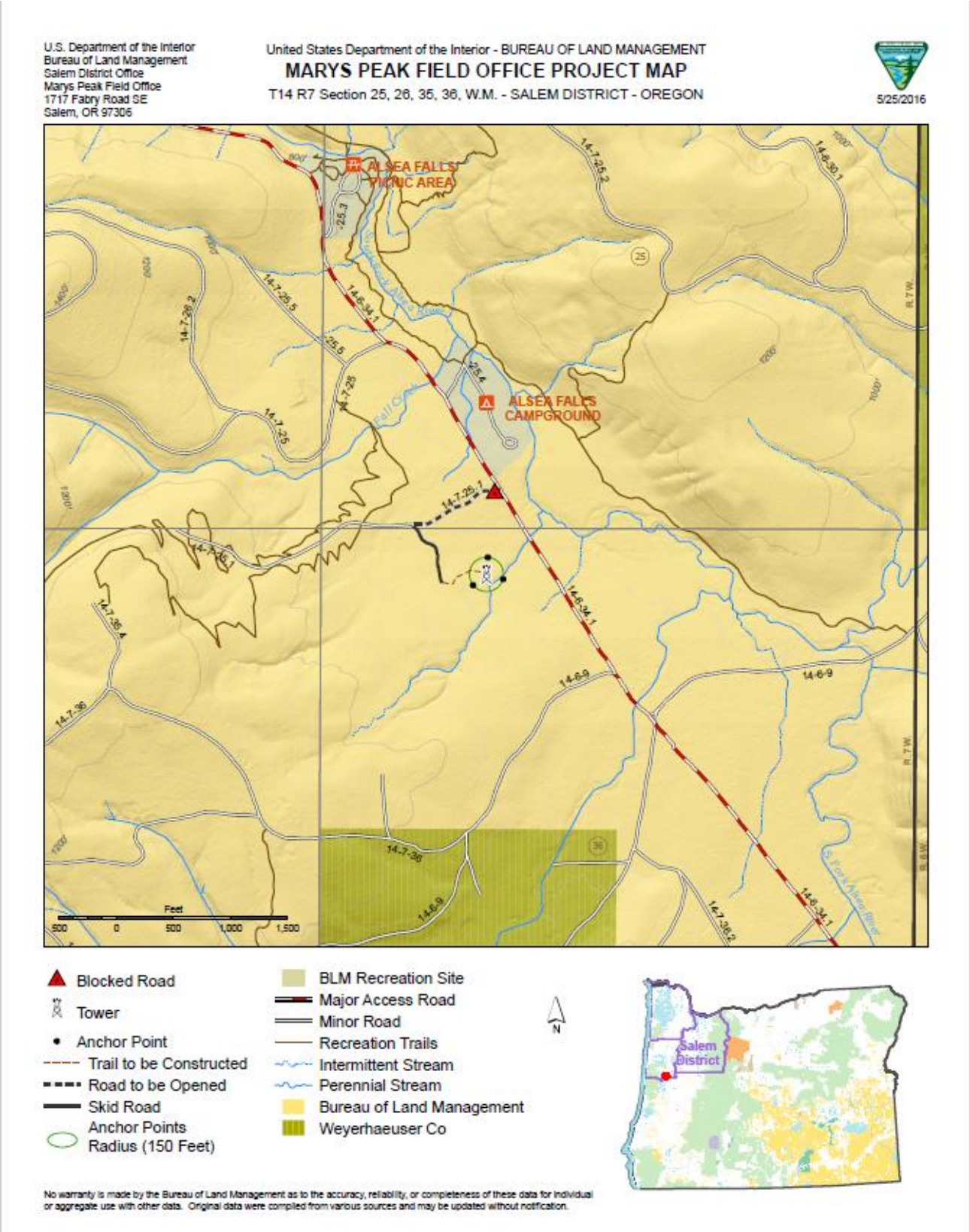
1.1 Project Covered In This EA/ Summary of Proposed Action

This EA will analyze a proposal by Oregon State University (OSU) to construct the Alsea Falls Meteorological Tower, which includes installing a meteorological tower, equipment shelter, access trail, power cable trench, tree-based solar array, and chain link fence enclosure. The tower site construction would disturb approximately one-half acre of BLM administered lands in Benton County, Oregon. Construction of the meteorological tower and associated features would take place in the summer of 2016 and last approximately one to two months. The meteorological tower and associated features, excluding the access trail, would remain in place for 20 years.

1.2 Project Area Location

The project area is located approximately five miles west of Alsea, Oregon, in Benton County on forested land managed by the Marys Peak Field Office of the Salem District BLM. The proposed project will be located on the General Forest Management Area (GFMA) portion of the Matrix Land Use Allocation (LUA), as described in the Salem District RMP (RMP p. 8). The project area lies within the Upper Alsea 5th Field Watershed in Township 14 South, Range 7 West, Section 36, Willamette Meridian (see Map 1). The 480 acres BLM manages in the Section are surrounded by other BLM managed lands to the north, east, and west. The southwest quarter of the Section, as well as the land to the south, is privately owned land.

Map 1: Vicinity Map



1.3 Purpose of and Need for Action

1.3.1 Purpose of the Project

The purpose of the Alsea Falls Meteorological Tower is to provide OSU with access to public land to construct a meteorological tower to measure carbon dioxide and water vapor exchange of Douglas-fir forests in Western Oregon to support OSU's carbon uptake and energy exchange research. BLM will decide whether to approve, approve with modifications, or deny the proposed project.

1.3.2 Need for the Project

The need for the action is established by the BLM's responsibility under the Federal Land Policy and Management Act (FLPMA) to respond to a request for a Right-of-Way Grant (ROW) that was submitted by OSU on June 1, 2015. The BLM is required to respond to ROW applications in compliance with 43 CFR 2800 and Title V of the FLPMA regarding ROWs, NEPA, and other statutes.

1.4 Decision to Be Made

The Marys Peak Field Manager will decide whether to implement the Alsea Falls Meteorological Tower as proposed, not at all, or to some other extent using the following criteria in the decisions-making process:

- Best meets the purpose of and need for action (Section 1.3).
- Is consistent with the Salem District RMP (Section 1.5).
- Does not have significant impact on the affected elements of the environment beyond those already anticipated and addressed in the RMP EIS.

1.5 Conformance with Land Use Plans, Policies, and Programs

1.5.1 Applicable Land Use Plans

The Alsea Falls Meteorological Tower complies with the following documents, which direct and provide the legal framework for management of BLM lands within the Salem District:

- *Salem District Record of Decision and Resource Management Plan, May 1995 (RMP) as amended*.
- *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl, April 1994 (the Northwest Forest Plan, or NWFP).*

- *Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, January 2001, as amended.(2001 SM ROD)*

This project specifically follows the direction on page 56 of the RMP, which directs the BLM to consider new locations for rights-of-way on a case-by case basis.

The analysis in this EA supplements analyses found in *the Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*, September 1994 (RMP/FEIS), the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl*, February 1994 (NWFP/FSEIS). The RMP/FEIS is amended by the *Final Supplemental Environmental Impact Statement for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, November 2000.

The above documents, along with the interdisciplinary team reports (EA section 7.0), are incorporated by reference in this EA and are available for review in the Salem District BLM Office. Additional information about the proposed project is available in the Alsea Meteorological Tower analysis file, which is also available at the Salem District BLM Office.

1.5.2 Compliance with the Aquatic Conservation Strategy (ACS)

The RMP incorporated the Aquatic Conservation Strategy (ACS), a component of the Northwest Forest Plan. Chapter 4.0 of this EA addresses how the Alsea Meteorological Tower meets each of the nine objectives of the ACS (RMP p. 5-6). In addition, project design features (PDFs) (EA section 2.4) would provide protection measures to meet ACS objectives.

1.5.3 Survey and Manage Review

The construction of the Alsea Falls Meteorological Tower does not constitute a ground-disturbing or habitat-disturbing activity that is subject to the Survey and Manage protocol because the project would not affect any habitat that supports Survey and Manage species. The scale and scope of the project are limited because it would occur on less than one-half acre in a forest stand less than 80 years of age, road renovation would occur on existing roads, and tree felling would be limited to less than 10 trees.

For the red tree vole, habitat-disturbing activities “are defined as those disturbances likely to have a significant negative impact on the habitat, life cycle, microclimate, or life support requirements of the species. The evaluation of the scale, scope, and intensity of the anticipated negative impact of the project on habitat or life requirements should include an assessment of the type, timing, and intensity of the disturbing activity. If the proposed activity is determined to not pose a potential significant negative effect at the site, then surveys are not required” (2001 SM ROD p. 22).

The Alsea Falls Meteorological Tower was determine to not pose a potential significant negative effect to red tree vole habitat because the project would disturb less than one-half acre in a less than 80 year old forest stand, utilize existing roads, and limiting tree felling to less than 10 trees.

1.5.4 Relevant Statutes and Authorities

This section provides a summary of the relevant statutes, acts, and authorities that apply to this project and briefly describes the project's consistency with each.

Archaeological Resources Protection Act of 1979 – The project is consistent with this act because construction operations would be suspended upon discovery of cultural material and the BLM would conduct pre-disturbance surveys for the proposed project location. Portions of the project area with the Willamette Valley Physiographic Province have been surveyed. Addressed in EA section 5.2.

Clean Air Act (1990) – This project is in compliance with this direction because the project would not result in significant impacts to air quality. Addressed in EA section1.7.2.

Clean Water Act of 1972 – This project complies with the Clean Water Act through use of PDFs designed to minimize or prevent the discharge of both point and non-point source pollutants from roads and construction activities. Addressed in EA section 3.2.

Endangered Species Act (ESA) of 1973 – The project is consistent with this act because the project would not result in adverse impacts to any threatened or endangered species or their critical habitat. No critical habitat for the northern spotted owl or marbled murrelet is within the project area. The BLM completed consultation as required under the ESA. Addressed in EA sections 3.6 and 5.1.

Federal Land Policy and Management Act of 1976 (FLPMA) – FLPMA provides the basic policy guidance for the BLM's management of public lands.

Migratory Bird Treaty Act of 1918 – This project is in compliance with this direction because there are no significant impacts to habitat for migratory birds due to the small disturbance acreage proposed for the project and the limited felling of less than 10 trees. The project will also utilize PDFs to protect migratory birds. Addressed in EA section 2.4 and 3.6.

National Environmental Policy Act (NEPA) of 1969 – The BLM utilized an interdisciplinary team (IDT) approach when developing this EA for the Alsea Falls Meteorological Tower. The BLM has satisfied requirements regarding documentation, public involvement, alternative development, analysis, and disclosure.

These statutes, along with the RMP and ROD, direct and provide the legal framework for management of BLM-administered lands within the Salem District.

1.6 Public Involvement

On February 18, 2016 the BLM sent a scoping letter to 18 potentially affected or interested individuals, groups, and agencies. In addition, the BLM published a legal notice in the Corvallis Gazette Times on February 18, 2016. The Alsea Falls Meteorological Tower was included in a Salem District Project update that was posted online and sent to a mailing list of 149 individuals, groups, and agencies. The BLM received 9 responses during the scoping period and used these comments to aid in the identification and analysis of issues described in the following section. The scoping comments are available for review at the Salem District BLM Office.

1.7 Relevant Issues

The BLM IDT identified relevant issues based on applicable law, management direction contained in the RMP, and information gathered during the internal and external scoping and the project planning process. Issues are analyzed in detail if the analysis of the issue is necessary to make a reasoned choice between alternatives, if the issue is associated with potentially significant impacts, or analysis is necessary to determine the significance of the impacts. Analysis of these issues provides a basis for comparing the environmental effects of the Proposed Action and the No Action Alternative as well as aids in the decision-making process. The IDT considered the following issues as it developed and refined the Proposed Action, identified PDFs, and analyzed the environmental effects.

1.7.1 Issues Analyzed In Detail

Hydrology (Addressed in EA section 3.2)

What effects would the proposed project and road renovation have on water quality?

Recreation and Visual Resources (Addressed in EA section 3.3)

What effects would the projects have on visual resources?

What are the visual impacts to the Alsea Falls Recreation Area, Alsea River, Fall Creek Bike Trail, and the town of Alsea?

How would the proposed projects affect designated and dispersed recreational use of the area?

Will construction noise impact recreational uses at the Alsea Falls Campground and the Fall Creek Trail System?

Will temporary trails be used by Off-Highway Vehicles (OHV)?

Soils (Addressed in EA section 3.4)

What effects would this project and road renovation have on the soils resource, including soil productivity?

Vegetation (Addressed in EA section 3.5)

What effects would the installation of the tower, equipment shed, fencing, access trail, and access road have on native vegetation?

What effects would installation of the tower, equipment shed, fencing, access trail, and access road have on the persistence of Bureau Special Status Species, including Survey and Manage botanical and fungal species?

What effects would installation of the tower, equipment shed, fencing, access trail, and access road have on the increase and spread of noxious and invasive species?

Wildlife (Addressed in EA section 3.6)

How would the Proposed Action affect terrestrial habitats within the project area and across the watershed?

How would the Proposed Action affect wildlife species, which BLM, by law and policy, is required to protect, maintain, or recover?

How much noise will the tower generate? How will noise impact species of concern or listed species? (From public scoping)

How will the tower impact migratory birds? Will the tower and guylines present a risk of bird collisions/mortality? (From public scoping)

1.7.2 Issues Considered But Not Analyzed In Detail

Air Quality, Fire Risk, and Fuels Management: *What effects would the installation of the tower, equipment shed, fencing, access trail, and access road have on Air Quality, Fire Risk, and Fuels Management?*

The project is unlikely to adversely affect air quality, fire risk, and fuels management because there will be minimal vegetation disturbance and equipment to construct the tower will be minimized to one skid-steer or track mounted loader to limit emissions realized from machinery.

Cultural Resources: *What effects would the installation of the tower, equipment shed, fencing, access trail, and access road have on Cultural Resources?*

This project is unlikely to have any impact on culture resources because the project activities would have minimal ground disturbance (EA section 2.3). However excavating the concrete foundations associated with the tower base and equipment shed could expose previously unknown sites (see EA section 2.4). If any cultural and/or paleontological resource (historic or prehistoric site or object) is discovered during project activities, all operations in the immediate area of such discovery shall be suspended until an evaluation of the discovery can be made by a professional archaeologist to determine appropriate actions to prevent the loss of significant cultural or scientific values.

Fisheries and Aquatic Habitat: *What effects would the installation of the tower, equipment shed, fencing, access trail, and access road have on resident and anadromous fish and aquatic habitat?*

Fisheries and Aquatic Habitat: *What effects would the installation of the tower, equipment shed, fencing, access trail, and access road action have on ESA listed fish and their habitat?*

The project is unlikely to adversely affect resident fish and aquatic habitat. Tower construction would not deliver sediment to streams because of the distance of the project site (150 feet) to the nearest stream channel. No more than 10 trees would be felled to construct the tower and associated features, which would be largely on the north side of the nearest stream with little to no change in shade levels because trees to the north of channels do not provide shading to the stream. Thus, stream temperatures in the tributary adjacent to the proposed tower would not be affected by the project, and consequently the project would have no effect on resident fish populations 0.1 downstream in the South Fork Alsea River, or on ESA listed Oregon Coast coho salmon and their habitat. The project is 1 mile upstream of Alsea Falls, which is the upstream limit of Oregon Coast coho salmon in the South Fork Alsea River.

Rural Interface, Lands with Wilderness Characteristics, Wild and Scenic Rivers, and Wilderness Areas: *How would the project activities affect the Rural Interface, Lands with Wilderness Characteristics, Wild and Scenic Rivers, and Wilderness Areas?*

The project would not adversely affect Rural Interface, Lands with Wilderness Characteristics, Wild and Scenic Rivers, and Wilderness Areas because the proposed project is not within lands identified as rural interface, lands with wilderness characteristics, wild and scenic rivers, or wilderness areas.

Wildlife – Red Tree Vole: *What effects would the installation of the tower, equipment shed, fencing, access trail, and access road have on Red Tree Vole?*

Red tree vole populations in this watershed appear to be abundant and widely distributed (Forsman *et al*. 2004, USDI-FWS 20011c) and voles are often found in younger forest stands in this watershed, especially if there are nearby patches of late-seral and old-growth forests (LSOG) forests (USDI-FWS 2011c). Vole use of younger stands may be temporary or intermittent (USDI-FWS 2011c). The project is unlikely to adversely affect red tree voles because the proposed tower location falls within a young, mid-seral stand (65 years old) that is not likely to provide sufficient canopy structure to support population vole persistence (Huff *et al*. 2012) and therefore does not trigger survey requirements. Further, the felling of less than 10 live trees would not affect forest stand conditions and would not impede potential dispersal if any red tree voles are present in this stand.

Timber Resources: *How will the trench impact old growth trees and their roots?*

The trench will not impact old growth trees or their roots because there are no old growth trees where the trench is proposed to be constructed.

2.0 ALTERNATIVES

2.1 Alternative Development

Pursuant to Section 102 (2)(E) of NEPA (National Environmental Policy Act of 1969, as amended), Federal agencies shall "Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." Within this EA, the BLM will analyze 2 alternatives: Alternative 1 (No Action) and Alternative 2 (Proposed Action). Alternatives considered but not analyzed in detail are discussed in section 2.5 of this EA.

2.2 Alternative 1 – No Action

The No Action alternative describes the environmental baseline against which the effects of the Proposed Action can be compared; i.e. the existing conditions in the project area and the continuing trends in those conditions if the BLM does not implement the Proposed Action. The No Action alternative means that the BLM would deny the application for the ROW.

Normal administrative activities and other uses (e.g. road use, programmed road maintenance, harvest of special forest products) would continue on BLM-administered lands within the project area. Selection of the No Action alternative would not constitute a decision to change the LUA of these lands, nor would it set a precedent for consideration of future action proposals.

2.3 Alternative 2 – Proposed Action

The Proposed Action is to issue a ROW that would authorize the Proponent, OSU, to construct a meteorological tower site to support carbon uptake and energy exchange research. The authorization would be for the right to construct, operate, and maintain the site and trail foot path for 20 years.

Construction would occur in summer of 2016 and last approximately one to two months. The total area of disturbance is approximately one half acre. Detailed construction drawings are included in EA section 8.0.

The components include the tower, including the carbon and water measurement components, concrete foundation, guyed wires, enclosure fencing, equipment shed, access trail, a tree-based solar array, a powerline trench for the solar array, and access road renovation.

Because this tower is intended to collect data on carbon uptake and energy exchange of the local forest, maintaining static vegetation is important to the study. Project activities would be designed to minimize vegetation disturbance.

Tower and Associated Structures

The 200-220 foot latticed monopole tower would be constructed of galvanized steel and would measure approximately 16.75 inches on each side of an equilateral triangle (see Appendix A for detailed construction drawings).

A concrete foundation, approximately five feet in width, length, and depth, would be constructed and a short four foot base section would be placed within the center of the foundation. The tower and equipment shed would be enclosed by a 30 foot by 30 foot chain link enclosure fence. Three guyed wires would be anchored approximately 150 feet from the base outside of the enclosure fence. The anchor points would consist of buried concrete blocks, approximately four feet in width, length, and depth, with steel anchor rods in the middle that the guyed cable would attach. Concrete to be used would be hand-mixed and poured on site. A level area next to the concrete tower foundation would be constructed for a 10 foot by 12 foot equipment shed that would be assembled on site.

Power to Site

Power to the site would be via a tree based solar array. Three 3 feet by 6 feet solar panels would be hung in trees approximately 500 feet due west of the site. Mounting would be designed to minimize damage to the trees. A trench, approximately 1 foot wide, 500 feet long, and 3 feet deep, would be dug for the power cable from the tree where the solar panels are hung to the equipment shed. The tree based solar array will be enclosed by a 20 foot by 20 foot fence.

Noise

The tower, carbon and water measurement components on the tower, and solar array would not generate any noise. The only noise generated would be from a low DC cooling fan that would be housed inside the equipment shed.

Lighting

OSU would install lighting on the tower according to FAA recommendations. To be in compliance with FAA regulations, the tower must have a red flashing light at the top and be painted orange and white on alternating tower sections. However, OSU has applied to the FAA for a waiver regarding the tower color and lighting specifications. This would allow the tower to be painted a matte black or matte green in order for the structure to blend in better with the existing landscape. The lighting waiver would allow for an additional component on the tower that would reflect the light upwards.

Access

The road that provides primary access, BLM road 14-7-25.1, into the site is currently blocked by log barriers and water barred. Approximately 1500 feet of road would be opened by removing the log barriers and feathering back the water bars in order to drive the components as close to the site as possible with a truck and trailer. A trail approximately 3 feet wide and 400 feet long would be constructed using a skid-steer or track mounted loader to facilitate transport of the tower and equipment shed components the remaining distance to the site. A temporary gate would be installed on the 14-7-25.1 road.

Along the South Fork Access Road, there is a deep ditch that runs parallel which blocks vehicle access to the 14-7-25.1 road. In order to access the site, an 18 inch type-S corrugated plastic pipe would be placed where road 14-7-25.1 intersects with the South Fork Access Road. The pipe will be placed in the ditch parallel to the South Fork Access Road and perpendicular to road 14-7-25.1. This will allow un-obstructed water flow in the ditch as well as temporary vehicle access to road 14-7-25.1.

Tree Felling

The BLM identified approximately three trees to be felled near the tower site. Additionally, another three to five trees would be cut on BLM road 14-7-25.1. All trees would be cut by BLM staff and would be left on-site as coarse woody debris (CWD).

After Site Construction

After site construction is finished, the corrugated pipe and the temporary gate would be removed, water bars would be reconstructed, and the log barriers would be replaced at their original locations. The constructed trail to the site would not be actively managed. No reclamation or re-vegetation of the trail is proposed. The trail would be left to grow over and would only be used on an as-needed basis by OSU to monthly monitor the site.

2.4 Project Design Features

The following is a description of the applicant proposed protection measures and the project design features (PDFs) for the Proposed Action, that reduce the risk of adverse effects to the environment. These design features would be enforced through the ROW administered by the BLM. Additional stipulations for the Proposed Action would also be included in the authorized ROW Grant.

Applicant Proposed Protection Measures

- **Color:** OSU has applied to the FAA for a waiver regarding the tower color and lighting specifications. This would allow the tower to be painted a matte black or matte green in order for the structure to blend in better with the existing landscape.

- **Lighting:** OSU has applied to the FAA for a waiver regarding the tower color and lighting specifications. The lighting waiver would allow for an additional component on the tower that would reflect the light upwards.
- **Timber and Vegetation:** OSU will remove minimal trees to construct the meteorological tower and associated features to minimize impacts to existing stand characteristics and wildlife habitat. Vegetation disturbance will be localized around the meteorological tower, associated features, and access trail to minimize impacts to existing vegetation and wildlife habitat.

Project Design Features (PDFs)

Cultural Resources

- PDF 1: If any cultural and/or paleontological resource (historic or prehistoric site or object) is discovered during project activities all operations in the immediate area of such discovery shall be suspended until an evaluation of the discovery can be made by a professional archaeologist to determine appropriate actions to prevent the loss of significant cultural or scientific values.

Noxious Weeds

- PDF 2: Clean soil disturbing equipment of dirt and vegetation prior to arriving on BLM-administered lands.

- PDF 3: Sow large areas of exposed mineral soil with red fescue (Festuca rubra) at a rate equal to 40 pounds per acre. Seed would meet or exceed the following factors:
    - Percent germination rate: 85% minimum
    - Percent pure seed: 97% minimum
    - Crop and weeds: none
    - Noxious weed seed: none

- PDF 4: If the prescribed seed above is not available, sow the project area with seed approved by the Marys Peak Field Office botanist. Prior to applying seed, the contractor would supply the BLM with the seed label showing the testing results for the factors listed above.

Recreation

- PDF 5: To protect recreation visitor's experience while at Alsea Falls Recreation Site and the Fall Creek Trail System:
    - Tower lighting should not point towards the campground or trail system.
    - The tower's finish (paint or other coating) should blend into the environment (not reflective or bright).
    - Avoid construction during the weekends and during holidays.

Soils/Hydrology

- PDF 6: Effectively drain the road surface by using crowning, insloping or outsloping, grade reversals (rolling dips), and waterbars or a combination of these methods. Avoid concentrated discharge onto fill slopes unless the fill slopes are stable and erosion proofed.

- PDF 7: Locate waste disposal areas outside wetlands, riparian management areas, floodplains and unstable areas to minimize risk of sediment delivery to waters of the state. Apply surface erosion control prior to the wet season. Prevent overloading areas which may become unstable.

Season of Operations or Operating Conditions

Table 1 summarizes the seasonal restrictions, the period in which they apply, and the intended objective of each restriction.

Table 1: Season of Operations/Operating Conditions

Season of Operation or Operating Conditions	Applies to Operation	Objective
During periods of low precipitation, generally May 1 to October 31	Road and trail construction, reconstruction, renovation, decommissioning, dry culvert installation	Minimize soil erosion
Install drainage at grade breaks during trail construction	Trail Construction	Minimize soil erosion

2.5 Alternatives Considered But Not Analyzed In Detail

The BLM is required to include a discussion of a range of reasonable alternatives to the Proposed Action, alternatives which are technically and economically feasible, meet the purpose and need, and which have a lesser environmental impact.

Meteorological Tower Site Alternate Location

OSU used the following three criteria in locating a potential site for their Meteorological Tower:

- Douglas Fir Forest
- Coast Range Location
- Flat Terrain

After exploring several sites in the coast range using GIS, slope analysis, and site visits, OSU identified the proposed location as having the necessary criteria. The site OSU currently operates on private land is no longer viable for their research because the private land owner clear-cut the site in the summer of 2015.

The BLM has not identified any alternatives to the Proposed Action that were technically and economically feasible.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

This section summarizes the physical, biological, and social environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the previous chapter. The IDT reports are incorporated by reference in this EA. Reports in their entirety are available at the Salem District BLM Office and upon request.

3.1 General Setting

The Alsea Meteorological Tower project is located in Benton County, west of the crest of the Coast Range Mountains, in northwestern Oregon. The project area is located just off the South Fork Alsea River Access Road near Alsea Falls in the Upper South Fork Alsea River sub-watershed, within the Upper Alsea River watershed (BLM 1995).

The area around the Proposed Action is a mix of forested and recreational lands managed by the BLM. The Proposed Action area is located roughly one-half mile southeast of the Alsea Falls Recreation Site. The proposed meteorological tower site is located approximately 600 feet west of the South Fork Alsea Access Road and 700 feet south of the 14-7-25.1 BLM road (see Map 1). Topographically, the Proposed Action area is relatively flat and is approximately 920 feet above mean sea level.

Forest Stand

The installation site would occur on BLM-administered lands within the Upper Alsea 5th field Watershed. The project area occurs within the western hemlock plant association and consists of a semi-open canopy of early- to mid-seral Douglas fir (Pseudotsuga menziesii) with regenerative western hemlock (Tsuga heterophylla) in the understory. Western red cedar (Thuja plicata) is common in the general area, but not dominant. The understory is robust due to the semi-open canopy and consists of regenerative western hemlock and shrubs such as: vine maple (Acer circinatum), California hazel (Corylus cornuta var. californica), Cascara buckthorn (Frangula purshiana), and salal (Gaultheria shallon).

The forest stands surrounding the installation site and access route are mid-seral conifer-dominated stands (55-65 years old) with high tree density, moderate to high canopy cover, and intermingled with scattered hardwoods (Wildlife Report p. 2). Portions of the surrounding forest stands were commercially thinned in 2005 (Gotaway Timber Sale). There are no older forest legacy trees within the affected forest stands. The access and installation activities are expected to remove three trees at the tower site, and up to five trees along the access route.

3.2 Hydrology

The following issues will be addressed in the environmental effects section below:

What effects would the proposed project and road renovation have on water quality?

3.2.1 Affected Environment

Project Area Streams

Within the project area, there are no connected streams. The closest stream channel is located approximately 150 feet away from the project area. The stream is a small, non-fish bearing 1st order tributary to the South Fork Alsea River. The stream is a low gradient 2-3 percent channel with dominant channel substrates consisting of sand and gravel. The low gradient channel has a narrow channel with flatter side slopes, low width to depth ratios, and low sinuosity. The stream has moderate amounts of small woody debris and large woody debris. Stream shade is provided by a mix of conifer, hardwood overstory, and stream side brush understory.

Water Quantity

The proposed meteorological tower is located within in the Upper South Fork Alsea River 6th Field watershed (HUC# 171002050104), which is comprised of 18,918 acres of contributing area.

The project area is located approximately 9 mile west of Alpine, Oregon in the coast range and receives approximately 50-120 inches of rain annually and has a mean 2-year precipitation event of 4.5 to 5 inches in a 24-hour period (N.O.A.A. Precipitation-Frequency Atlas for Oregon, Volume X). Most runoff is associated with winter storm events that result from low pressure fronts moving inland from the southwest off the Pacific Ocean. Peak stream flow events are concentrated in the months of November through March when Pacific Storm fronts are strongest. As a result of little or no snow pack accumulation and infrequent rainfall, stream flow in the summer is typically a fraction of winter levels and many headwater channels retreat to subsurface flow. At a distance of over 30 miles from the ocean, and east of the Coast Range, fog and fog drip are not major contributors to watershed hydrology in the project area.

Terrain in the Upper South Fork Alsea River 6th Field watershed ranges from approximately 800 to 3300 feet with all of the proposed project activities located at about 900 feet elevation which is below the 2000 foot elevation which is considered the transient snow zone in the Oregon Coast Range (USDI 1995). The area is not vulnerable to extreme storm events that may lead to large flood events (USDI 1997).

Water Quality

The South Fork Alsea River is listed by the Oregon Department of Environmental Quality (ODEQ) on the Clean Water Act 303(d) list (ODEQ 2012) for exceeding year around stream temperature for fish. Table 2 displays the South Fork Alsea River's listed parameters and the extent of the 303(d) listing.

Table 2: Waterbodies and 303(d) Listed Parameters

Waterbodies	303(d) Listed parameters (2010 List)	Extent of Listing
South Fork Alsea River	Biological Factors, Sediment, and Temperature (spawning)	Includes BLM Lands Mile 0.0 to 17.2

As of July 2014, the ODEQ is still in the process of developing the Mid-Coast TMDL which will cover the Alsea River Basin.

Fine Sediment and Turbidity

During field review of the stream channel near the project area, the perennial channel was observed to be mostly stable and functional with sediment supplies in the range expected for their stream type. Channel substrates were typically fine sediment and gravels. The channel contained moderate amounts of small and large woody debris. The channel has sections of discontinuous flow where water either went subsurface or there was no flow observed in the channel. There was no evidence of sediment delivery to the stream from the existing roads or from recent timber harvest activities.

Stream Temperature

No stream temperature data was available for the unnamed stream tributary near the project area. However, there are no stream segments near the project area that are listed by ODEQ for temperature impairment. There is one perennial stream near the project area which is generally shaded by alder, conifer, ferns, and brush. Stream shading varies between dense canopy cover by conifers to a mix of deciduous and conifer canopy. The stream near the project area is classified by the watershed analysis as having a "low" risk of detrimental changes in water temperature based on stream bank vegetation shading (USDI 1998). The stream has a 50 foot stream protection zone established for the Gotaway Alder Conversion project in 2014 which meets the Northwest Forest Plan Temperature TMDL Implementation Strategy primary shade zone sufficiency analysis (USDA, USDI-BLM 2005, revised 2012).

The stream is approximately 150 feet away from the closest project disturbance, well outside of the established stream protection zone and less than 10 trees would be felled during project construction. Based on field observations and aerial photo reviews of the stream, current streamside vegetation and valley topography appears adequate to shade surface waters during summer base flow and it is likely that stream temperatures consistently meet the Oregon state standard (18 degrees Celsius) for these waters.

Beneficial Uses

There are no known domestic water users in the project area. Additional recognized beneficial uses of the stream-flow near the project area include resident fish, anadromous fish, recreation, and esthetic value.

3.2.2 Environmental Effects

Alternative 1 – No Action

The No Action alternative would result in a continuation of the condition and trends of water resources as described under the Affected Environment section of the EA. No meteorological tower construction activities would occur, which include minor road disturbance, trail, trench and tower construction activities.

Alternative 2 – Proposed Action

Stream Channel Stability and Function

The project is very unlikely to affect stream channel stability and function because all the concrete footers and the equipment shelter area would be constructed on very flat terrain and have would be located a minimum of 150 feet from the nearest stream.

Water Quantity

Less than 10 trees (approximately three trees at the tower site and three to five trees along the road right of way) would be felled and approximately 0.04 acres of temporary new disturbance would occur for trail and trench construction.
The project areas interception and evapotranspiration rates would not be effected and the new temporary disturbance from trail and trail construction would be well below the one acre threshold that would be considered as a created opening for water yield analysis. This threshold was established by the Salem District Hydrology group for rain dominated watersheds (Fitting, personal communication). The areas of disturbance, including the trail and trench, would be left to recover and re-vegetate, which would sustain long-term site stability by maintaining the infiltration capacity, the nutrient storage and cycling, and minimizing surface water flow and erosion. The concrete footers and equipment shelter would create an additional 0.005 acres of permanent disturbance for a period of 20 years. The total new temporary and permanent disturbance for this project would be approximately 0.04 acres.

Water Quality

Fine Sediment and Turbidity

Road Use, Trail and Trench Construction and Maintenance

The minor proposed road disturbance activities, temporary road use, trail and trench construction, and temporary trail use would result in no increase in turbidity or sediment delivery as there are no stream crossings or connection to any waterbodies in the project area.

The Proposed Action includes 0.04 acres of trail and trench construction, 0.55 acres of road use, and 0.05 acres of road disturbance (water bar maintenance). All work would be conducted during dry soil conditions, typically occurring from July 1st through September 30th (see EA section 2.4, PDF 5). The existing 14-7-25.1 road has a gravel surface, is vegetated, and would only receive minor disturbance through water bar modification.

The native surface road segment is extremely well vegetated with a native grass and would only receive minor disturbance through water bar modification, while retaining all remaining road surface vegetation. The gravel and vegetation present on the road surfaces minimize road surface erosion processes (Burroughs and King 1989). Both of the roads are constructed on very flat terrain and have extensive vegetated buffers on both sides of the roads that would trap and store any sediment or turbid water before it could reach the stream (Belt G.H., O'Laughlin J., Merrill T. 1992).

The proposed trail would be constructed using a skid-steer or track mounted loader by removing ground vegetation (shrubs, grass and forbs) to facilitate transport of the tower and shelter materials to the site. The proposed trail would be native surface and approximately 3 feet wide and 400 feet long.

Trail surface drainage would be installed at natural grade breaks during construction. Leaving the areas of disturbance to recover and re-vegetate would sustain long-term site stability by maintaining the infiltration capacity, the nutrient storage and cycling, and minimizing surface water flow and erosion. Both the trench and trail would be constructed on very flat terrain and have extensive vegetated buffers on both sides of the roads that would trap and store any sediment or turbid water before it could reach the stream (Belt G.H., O'Laughlin J., Merrill T. 1992).

Meteorological Tower and Supporting Infrastructure

The meteorological tower and associated infrastructure construction and use would result in no increase in turbidity or sediment delivery as there are no stream crossings or connection to any waterbodies in the project area. There would be no Direct or Indirect effects to water quality.

Temperature

There would be no direct or indirect effects to shade and stream temperature because the BLM identified stream protection zone (SPZ) widths recommended by the Northwest Forest Plan Temperature TMDL Implementation Strategy primary shade zone sufficiency analysis (USDA, USDI-BLM 2005, revised 2012). Based on that analysis, no effect or increase in stream temperature due to BLM authorized activities is expected because the project is at least 150 feet from the nearest stream channel, which would exceed the width recommended in the Northwest Forest Plan shade zone sufficiency analysis. In addition, the less than 10 trees proposed for felling are at least 150 feet from the nearest stream.

3.2.3 Cumulative Effects

The Proposed Action would not contribute cumulative effects to other actions in the vicinity that may affect hydrology or water quality. The project would not affect hydrology or water quality because:

- Project actions are located a minimum of 150 feet from the nearest stream;
- Leaving the areas of disturbance to recover and re-vegetate would sustain long-term site stability by maintaining the infiltration capacity, the nutrient storage and cycling and minimizing surface water flow and erosion; and
- The minor proposed disturbance activities associated with the tower and its associated structures (one-half acre), the road, and trail would result in no increase in turbidity or sediment delivery because there are no stream crossings or connection to any waterbodies in the project area.

3.3 Recreation and Visual Resource Management

The following issues will be addressed in the environmental effects section below:

What effects would the projects have on visual resources?

What are the visual impacts to the Alsea Falls Recreation Area, Alsea River, Fall Creek Bike Trail, and the town of Alsea?

How would the proposed projects affect designated and dispersed recreational use of the area?

Will construction noise impact recreational uses at the Alsea Falls Campground and the Fall Creek Trail System?

Will temporary trails be used by Off-Highway Vehicles (OHV)?

3.3.1 Affected Environment

Recreation

The Proposed Action is located within a half mile of the Alsea Falls Recreation Site campground and adjacent to the Fall Creek Trail System along the South Fork Alsea River Back Country Byway. The Alsea Falls Recreation Site receives approximately 9,000 visitors annually while the Fall Creek Trail System receives 8,000 mountain bike visitors annually. Camping is open from May through September. Picnic use and the Fall Creek Trail System are open year round. Highest recreation use occurs during June through August. The Fall Creek Trail System's popularity is increasing as a destination for mountain bike enthusiasts and a location for permitted mountain bike race events, clinics, and demonstrations. The Alsea Falls Recreation Site and Fall Creek Trail System are closed to OHV use; however illegal OHV use of the area has occurred.

Visual Resources

Situated approximately five miles west of Alsea, Oregon, in Benton County, the area is characterized as rural with small communities separated by agriculture lands and managed forests. The landscape exhibits extensive forest management on the rolling hills of the eastern slopes and hilltops of the Coast Range. The Willamette Valley is located east of the project area. The overall VRI Class rating for the project area is Class II with Class I to the east and Class IV to the west.

This rating resulted from the overlap of a Scenic Quality Rating of B, which factors in the timber management landscape, coupled with low Visual Sensitivity to change, and the foreground-middle ground and background Distance Zones from the nearest Inventory Observation Points (Otak Visual Resource Inventory, January 2014).

The potential for viewing of the project area is primarily available when traveling east or west on the South Fork Alsea River Back Country Byway (Byway). The viewable landscape from this Byway consists of dense conifer stands with interspersed hardwoods and shrubs along the road corridor.

The foreground (trees right next to the road) is the only visible landscape within this corridor. It consists of the vertical and horizontal juxtaposition of the lines from the road and the vertical lines of the tree stems. Colors range from browns and greens of the vegetation to the grays of the road. Topography is relatively flat with an overall slight rise to the southwest and slight drop to the northeast. The middle ground and background are not visible from the Byway along this portion of road.

Visual Resource Management

Visual resources consist of the land, water, vegetation, structures, and other features that make up the scenery and physical features visible on a landscape. All Salem District BLM-administered lands have been classified under a Visual Resource Management (VRM) class system that was established by BLM during the last planning effort in the early 1990s. In 2014 the Salem District BLM re-inventoried for current scenic values and categorized BLM-administered lands into Visual Resource Inventory (VRI) classes derived from individual visual resource components. A VRI class is determined by overlaying the ratings of scenic quality (A, B or C), public sensitivity to changes in visual character (H, M or L), and distance zones as seen from major viewing platforms or travel routes (foreground-middle ground, background, or seldom seen). The foreground-middle ground zone includes areas seen from less than 3 miles away. Visible areas beyond 3 miles but usually less than 15 miles away are in the background zone. Areas either hidden from view or beyond 15 miles are in the seldom-seen zone (BLM Handbook H-8410).

BLM Salem District Resource Management Plan Guidance for Visual Resource Management Provides the Following Specific Guidance

Lands within the project area fall under VRM Class II, as assigned in the existing RMP. As visual contrasts in line, form, color, and texture under Class II may only repeat the basic elements found in the predominant natural features, specific visual management constraints would apply to management actions. For Class II, management activities may be seen, but should not attract the attention of the casual observer. However, mitigation of visual impacts would not be necessary with the proposed project area given that it is hidden by vegetation and out of the field of view of a casual observer.

The RMP states that every attempt should be made to minimize the impact of activities through careful location, minimal disturbance, and repeating the basic elements of line, form, color, and texture (RMP p. 37). These objectives do not apply on private residential lands or commercial timber land. The Environmental Effects section of this EA describes how the Alsea Meteorological Tower Project meets RMP direction for VRM class II and how it would affect the visual quality of the landscape as seen from locations frequently visited and traveled by the public. PDFs to help minimize the visual impacts of the project are unnecessary.

Methods

The BLM identified one Key Observation Point (KOP), where the project area would have possibility for viewing by the public to analyze the potential effect of the project on the characteristic landscape (see Table 3). BLM staff found the project area was located outside the travelers' field of view and screened by vegetation and not likely to be noticeable or visible.

Table 3: Key Observation Point (KOP) Summary

KOP Number	Distance Between KOP & Project	Notes
1	~100 meters (328 feet)	Initial view of grey. Colors include shades of green of grass and shrubs, gray and brown tree stems and dead vegetation. Project site is approximately 90 degrees off of both travel directions, outside average view-scape of traveler and heavily screened by vegetation.

3.3.2 Environmental Effects

Alternative 1 – No Action

No effects to recreation resources would occur because no project activities would take place.

Visual effects associated with the No Action alternative would include the continuance of existing BLM management activities in the project area.

The BLM would expect the project area to remain in the current condition with no tower development. No effects to visual resources would occur because no project activities would take place.

Alternative 2 – Proposed Action

Recreation

During project construction, construction noise would adversely affect the recreation experience at the Alsea Falls Recreation Site and the Fall Creek Trail System. The effect to recreationists in the area, including users of the Alsea Falls Recreation Site and Fall Creek Trail System as well as dispersed recreation, would be short term for the duration of the meteorological tower site. After the completion of the Proposed Action activities, noise would return to previous ambient levels.

Recreationists travelling on the Byway may experience traffic delays. However, prohibiting construction activities during weekends (EA section 2.4, PDF 5), when there are the most recreation users, would reduce these impacts. No site activities would occur within or immediately adjacent to recreational facilities or amenities. Activities are proposed far enough away to not attract attention.

After project construction, the tower and associated structures would not affect designated or dispersed recreation because the site will be left unoccupied with only occasional monitoring site visits where no noise or disruptions would take place.

With regard, to dispersed recreation, recreationists would no longer be able to use the project site during and after project activities.

Off Highway Vehicles

During site construction, the trails and road that would access the site could lead to additional illegal OHV use after work is done for the day. After the completion of project activities, the probability of additional OHV use is low because road 14-7-25.1 would be decommissioned and the trail would no longer be maintained.

Visual Resources

The Proposed Action is not expected to adversely affect the visual resource values in the Alsea Falls Recreation Area, Alsea River, Fall Creek Bike Trail, and the town of Alsea because the tower is not likely to be noticeable from these locations. The Proposed Action would not cause any change in the overall VRI Class rating or any of its components. The area would retain the features of the surrounding landscape which is comprised of a pattern of thinned conifer stands of varying ages. Visual modelling has shown the potential for the tower to be slightly visible but not likely to be noticeable because travel paths are at 90 degrees to the site and travelers would need to look at near vertical angles while driving to detect the tower above the canopy (see Figures 1 and 2). The greater area has been previously graded as possessing moderate visual quality. The Proposed Action would not contribute to heightened sensitivity levels or cause the scenic quality of the overall landscape to change.

Figure 1: Visibility from the Alsea Back Country Byway

This viewshed analysis shows what is visible from the Alsea back country byway considering LiDAR derived vegetation height. Green is Visible.

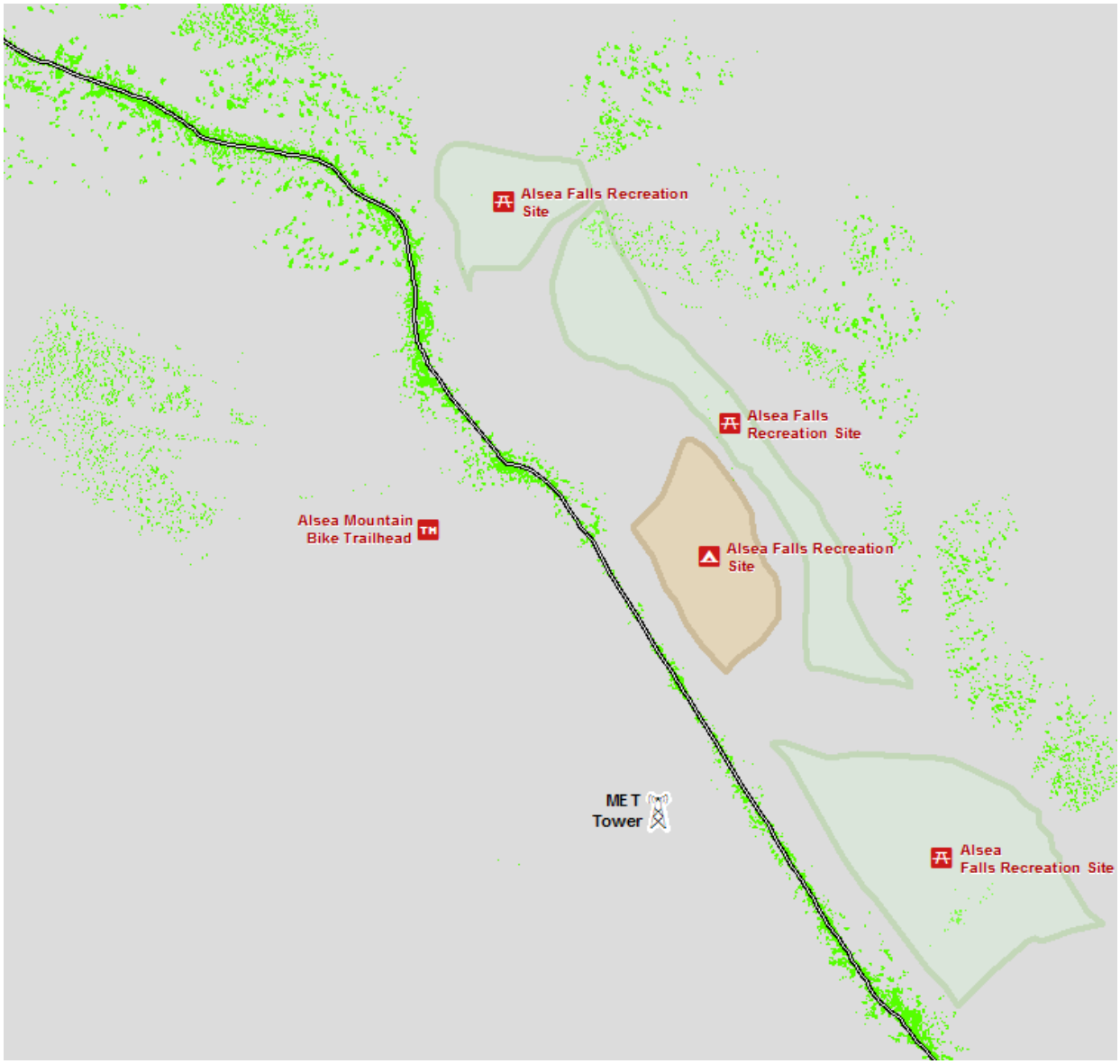


Figure 2: Visibility considering LiDAR derived vegetation height (Analysis completed with 220ft Tower)

This visibility analysis shows areas that the tower may be minimally visible after considering LiDAR derived vegetation heights. Green is visible.

Figure 3: Project site is located ~150m further behind the arrow in the picture below.

Arrow indicates compass direction of project from photo point (KOP). Photo is taken at 90 degree angle from view along hiking trail.

3.3.3 Cumulative Effects

There are no cumulative effects from noise to the recreationists in the Alsea Falls Recreation Site, Fall Creek Trail System, or dispersed recreation opportunities because there are no other noise producing activities operating at the same time as the proposed action.

The area analyzed for visual cumulative effects includes the greater Alsea Falls Recreation area. No development or timber harvest activities are planned within the immediate project vicinity, which would have provided the greatest potential for cumulative effects by opening the forest understory to increase site-lines. No cumulative effects for recreation are anticipated due to the Proposed Action because the project will have negligible effects on visual resources.

3.4 Soils

The following issues will be addressed in the environmental effects section below:

What effects would this project and road renovation have on the soils resource, including soil productivity?

3.4.1 Affected Environment

Soil properties were observed in the field and descriptions were obtained from the web-based USDA-NRCS Soil Survey (http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm).

The Chismore-Pyburn complex, Elsie silt loam and Kirkendall-Nekoma-Quosatana complex are the three soil series on and around the project location. These soils are typically found in the Oregon coast range.

The Chismore-Pyburn complex series consists of poorly to moderately drained soils formed in old mixed clayey alluvium derived from volcanic and sedimentary rock types. Chismore-Pyburn complex soils occur on stream terraces and onslopes ranging from 0 to 3 percent.

The Elsie silt loam series consists of moderately deep, well drained soils that formed in silty alluvium derived from volcanic and sedimentary rock. The Elsie silt loam soils occur on stream terraces and on slopes ranging from 7to 15 percent.

The Kirkendall-Nekoma-Quosatana complex series consists of shallow, poorly drained soils to deep, well drained soils that formed in recent loamy alluvium derived from sandstone and silty alluvium derived from volcanic and sedimentary rock. The Kirkendall-Nekoma-Quosatana Honeygrove-Peavine soils occur on water bars and floodplains and on slopes ranging from 0 to 3 percent.

The proposed new trail segment is located on the Chismore-Pyburn complex series and the Elsie silt loam series, which are both moderately suited for road and trail construction. No high surface erosion or mass wasting areas, as defined in the Timber Production Capability Classification[1] system (TPCC), are within the project area.

The existing rocked road surfaces within the proposed project area are stable with surface drainage features installed and functioning. The section of natural surfaced road show no signs of surface erosion and is well vegetated. No areas were found that had a high risk of contributing any amount of sediment to streams through surface erosion or mass failure.

[1] Timber Production Capability Classification[1] system (TPCC) includes the identification of sensitive soils to ground disturbing activities.

3.4.2 Environmental Effects

Alternative 1 – No Action

The No Action alternative would result in no change to the affected environment discussed above. The 14-7-25.1 road would remain closed and the trail, trench, and tower infrastructure would not be constructed. All short-term impacts to soils would be avoided.

Alternative 2 – Proposed Action

Soil Compaction

The proposed trail and trench construction and use would result in 0.04 acres of new temporary detrimental disturbance. The concrete foundations and equipment shelter would result in an additional 0.005 acres of new detrimental disturbance for a period of 20 years, which would result in a cumulative detrimental disturbance level of 0.04 acres. The aerial extent and degree of disturbance would remain within the accepted RMP guidelines of less than 10 percent disturbance (RMP Appendix C, p. C-2).

Site Productivity

The effect on overall project site productivity resulting from the proposed impacted acres is expected to be less than 0.01 percent reduction in overall yield for the project area. There would be no measurable direct or indirect impact to the soils resources within the proposed project area.

Compaction and Disturbance/Displacement of Soil and Site Productivity

Road Use, Trail and Trench Construction and Maintenance

The Proposed Action includes 0.04 acres of trail and trench construction, 0.55 acres of road use, and 0.05 acres of road renovation (water bar maintenance) in the outer portion of Riparian Reserves. Some soil displacement and compaction can be expected in trail and trench construction and use. All work would be conducted during dry soil conditions, typically occurring from July 1st through September 30th, reducing the effects of soil compaction (EA section 2.4, Table 1). After site construction is finished, the corrugated pipe and the temporary gate would be removed, water bars would be reconstructed, and the log barriers would be replaced at their original locations.

Both the trail and trench would be left to recover and re-vegetate sustaining the long-term site productivity and stability by maintaining the infiltration capacity, the nutrient storage and cycling and minimizing surface water flow and erosion. The overall the aerial extent and degree would remain well below the established RMP guidelines of10 percent or less (RMP Appendix C, p. C-2).

Meteorological Tower Infrastructure

The meteorological tower site infrastructure would be in place for 20 years. The concrete base foundation and the three guyline anchor concrete foundations would create 0.002 acres of soil displacement, compaction, and non-vegetated conditions for 20 years. After 20 years the tower, concrete foundations, and infrastructure would be removed. The foundation holes would be filled in with soil, allowing for those disturbed areas to recover and re-vegetate to restore site productivity. The overall the aerial extent and degree would remain well below the established RMP guidelines of10 percent or less (RMP Appendix C, p. C-2).

3.4.3 Cumulative Effects

There are no cumulative effects to soils because the effects would localized within the project area and short in duration. No other actions would take place within the project area for 20 years, so there is no potential for an overlap of effects between the Proposed Action and other actions operating in the vicinity.

3.5 Vegetation

The following issues will be addressed in the environmental effects section below:

What effects would the installation of the tower, equipment shed, fencing, access trail, and access road have on native vegetation?

What effects would installation of the tower, equipment shed, fencing, access trail, and access road have on the persistence of Bureau Special Status, including Survey and Manage botanical and fungal species?

What effects would installation of the tower, equipment shed, fencing, access trail, and access road have on the increase and spread of noxious and invasive species?

3.5.1 Affected Environment

Forest Stand (Native Vegetation)

EA section 3.1 describes the forest stand, including native vegetation.

Threatened and Endangered (T&E) and Bureau Special Status (Includes Survey And Manage) Botanical and Fungal Species

Inventory of the project area for Bureau Special Status botanical and fungal species were accomplished through a review of: 1) existing survey records and spatial data, 2) habitat evaluation and evaluation of species-habitat associations and presence of suitable or potential habitat, and 3) field clearance, field reconnaissance and inventory utilizing intuitive controlled survey technique, in accordance with survey protocols in September of 2015. Surveys were conducted by a Marys Peak Field Office Biological Science Technician (Plants).

No T&E or Bureau Special Status botanical or fungal species are known to occur in the project area, nor were any sites found during surveys. The project area, in general is too young to support suitable habitat for these species.

Noxious Weeds

The following noxious weeds occur within and adjacent to the project area: false brome (Brachypodium sylvaticum), bull thistle (Cirsium vulgare), Scot's broom (Cytisus scoparius), shiny geranium (Geranium lucidum), Robert's geranium (Geranium robertianum), St. John's wort (Hypericum perforatum), Armenian blackberry (Rubus bifrons), cutleaf blackberry (Rubus laciniatus), and tansy ragwort (Senecio jacobaea).

All of the known noxious weed species that occur within and adjacent to the project area are classified by the Oregon Department of Agriculture as "B" designated weeds. "B" designated weeds are weeds of economic importance which are regionally abundant, but which may have limited distribution in some counties. All of the noxious weeds species that are known to occur adjacent to the project area are regionally abundant and are widespread throughout western Oregon. A fully integrated statewide management plan has not been implemented for any of these species. The Marys Peak Field Office has an integrated non-native plant management plan in place for the control of non-native plant species and is active in its control of Oregon listed noxious weeds.

3.5.2 Environmental Effects

Alternative 1 – No Action

Under the No Action Alternative, natural succession would continue within the project area. The site for the proposed meteorological tower footprint would remain undisturbed and the existing closed ROW would not be reopened.

Federal T&E and Bureau Special Status (Includes Survey and Manage) Botanical and Fungal Species

Under the No Action Alternative, there would be no impact on T&E and Bureau Special Status botanical and fungal species because none are known from to occur within the project area nor were any sites found during surveys.

Noxious Weeds

The existing closed ROW would remain closed to vehicular traffic. The established noxious weed populations would likely remain at current levels in the short term (1–2 years) and are expected to gradually decline in the long term (3+ years) as native vegetation encroaches on the existing roadway, if the project is not implemented.

Alternative 2 – Proposed Action

The existing, but once decommissioned, ROW would be re-opened to provide access for the installation of the meteorological tower.

The ROW would then be decommissioned. Cement pads for the tower and guy wire footings would be installed and the minimal amount of vegetation in the proposed areas would be removed. Because this tower is intended to collect data on carbon uptake and energy exchange of the local forest, maintaining static vegetation is important to the study. Project activities would be designed to minimize vegetation disturbance. All effects would be localized within the small project area.

Federal Threatened and Endangered and Bureau Special Status (includes survey and manage) Botanical and Fungal Species

Implementing this project would have no impact on T&E and Bureau Special Status botanical and fungal species because none are known to occur within the project area nor were any sites found during surveys.

Noxious Weeds

Noxious Weeds Exposed mineral soil creates environments favorable for the establishment of non-native plant species. The risk rating for the long-term establishment of these species and consequences of adverse effects on this project area is low because:

- Project design features have been incorporated into this project to keep the amount of exposed mineral soil minimized (EA section 2.4, Table 1);
- The size of the project on a landscape scale is localized;
- The implementation of the Marys Peak integrated non-native plant management plan allows for early detection of non-native plant species which allows for rapid control;
- The known noxious weeds species which occur in the project area are regionally abundant throughout Benton County;
- Generally these species often persist for several years after becoming established but soon decline as native vegetation increases in density and size within the project areas; and
- There are no other Oregon listed noxious weed species that are anticipated to become established with the implementation of this project and PDFs.

In addition, the project area would be monitored, which would provide for the early detection of noxious weed infestations and provide for a rapid response to implement control, if needed. All listed noxious weed species would be eradicated as funding allows.

3.5.3 Cumulative Effects

There are no cumulative effects to native vegetation because effects of the Proposed Action on native vegetation are expected to be localized within the project area, and effects are short in duration.

3.6 Wildlife

The following issues will be addressed in the environmental effects section below:

How would the Proposed Action affect terrestrial habitats within the project area and across the watershed?

How would the Proposed Action affect wildlife species, which BLM, by law and policy, is required to protect, maintain, or recover?

How much noise will the tower generate? How will noise impact species of concern or listed species? (From Public scoping)

How will the tower impact migratory birds? Will the tower and guylines present a risk of bird collisions/mortality? (From Public scoping)

3.6.1 Affected Environment

Special Habitats and Special Habitat Components

There are no special habitat types within the project area. Some snags and down logs (a special habitat component) are present in the affected forest stand. There are no large diameter snags or down logs (>20 inch diameter) that would be affected by this Proposed Action. Less than 10 trees may need to be felled for safety and infrastructure protection, but they would be left on site. The access route may need to have a few down logs moved, but left on site. No further consideration of special habitats or special habitat components is necessary.

Northern Spotted Owl

The northern spotted owl generally inhabits forests older than 80 years of age that provide habitat for nesting, roosting and foraging (NRF). Stands that fulfill all three of these needs are commonly referred to as suitable habitat. Suitable habitat typically consists of: multi-layered, multi-species canopies dominated by large overstory trees greater than 20 inches in diameter breast height; canopy cover of 60 to 80 percent; open spaces within and below the canopy of the dominant overstory; presence of trees with large cavities and deformities such as broken tops and dwarf mistletoe infections; numerous large snags; and large amounts of down wood (Thomas *et al*. 1990, USDI-FWS 1990, Courtney *et al*. 2004).

No resident spotted owls are likely to occur within the project area because mid-seral forest stands (40-80 years old), such as those in the project area, lack habitat components suitable for nesting. Such stands may provide some roosting and foraging opportunities, but more likely provide forested connectivity between suitable patches to facilitate dispersal (Courtney *et al*. 2004, USDI-FWS 2011a). Dispersal habitat is defined as conifer-dominated forest stands with canopy closure exceeding 40 percent, and an average diameter at breast height of 11 inches or greater (Thomas *et al*. 1990). Dispersal habitat is essential to the movement of juvenile and non-territorial (e.g., single birds) northern spotted owls, enabling territorial vacancies to be filled, and for providing adequate gene flow across the range of the species (USDI-FWS 2011a).

There is a northern spotted owl site located 1.5 miles north of the proposed meteorological tower site. The northern spotted owl site is monitored annually and is considered vacant since 2012. In 2015 and continuing in 2016, BLM has surveyed suitable habitat patches west of the tower site (1 to 2 miles) and had no northern spotted owl detections. The proposed tower location falls within designated spotted owl critical habitat unit ORC-2 (USDI-FWS 2012).

Marbled Murrelet

This project area is 30 miles inland from the ocean and the nearest known occupied marbled murrelet is on BLM lands about 4.6 miles to the west. The forests stands at the proposed meteorological tower location do not contain any potential nesting structure for murrelets, which is composed of older conifer forest stands (>120 years old) having large canopy branches, mossy limbs, and abundance of branch whorl platforms (McShane *et al*. 2004).

The closest marbled murrelet suitable habitat is 0.3 miles northeast of the proposed meteorological tower location. Between 1992 and 2013, BLM staff conducted 79 marbled murrelet protocol surveys (Evans-Mack, *et al*. 2003) at 12 survey stations within 2.0 miles of the tower site. Only two surveys had murrelet presence (in 1995 and 2000), and no nesting or occupancy behavior was detected. The two detections occurred near a large patch of suitable murrelet habitat (about 250 acres), that is located along the South Fork Alsea River corridor, about 2 miles south of the meteorological tower site. The landscape within 2 miles of the project area has a few other smaller patches of suitable habitat, and most of these were surveyed during the 1992-2013 time period but had no detections. Still, the historical detections in this vicinity suggests that low numbers of murrelets may fly along the South Fork Alsea River and perhaps pass near the meteorological tower site when travelling to patches of suitable habitat elsewhere in the watershed. There is no designated marbled murrelet critical habitat (USDI-FWS 1996, USDI-FWS 2011b) within the project area.

Red Tree Vole

The red tree vole is the only Bureau Sensitive Species and Survey and Manage mammal species (USDA-FS and USDI-BLM 2001, Huff, *et al*. 2012). This small arboreal rodent feeds primarily on Douglas-fir needles and has been found to be closely associated with late-seral and old-growth forests (LSOG). This species appears to have limited dispersal capabilities and there is concern for isolation of populations due to fragmentation of LSOG habitat. The life history and current status of red tree voles has been well described in the Final Supplement to the 2004 FSEIS to Remove or Modify the Survey and Manage Mitigation Measure (USDA-FS and USDI-BLM 2007). In 2011, the U. S. Fish and Wildlife Service published a 12-month finding (USDI-FWS 2011c) which evaluated the status of a Distinct Populations Segment (DPS) of the red tree vole in the northern Oregon Coast Range. The Service decided that listing this DPS as threatened or endangered was warranted but precluded by higher priority listing actions. This DPS of the red tree vole is now a Candidate Species for listing. BLM policy requires that Candidate Species are to be treated as Bureau Sensitive Species.

The project area lies within the southern portion of the range of the DPS (south of highway 20; USDI-FWS 2011c).

Red tree vole populations in this watershed appear to be abundant and widely distributed (Forsman *et al*. 2004, USDI-FWS 20011c) and voles are often found in younger forest stands in this watershed, especially if there are nearby patches of LSOG forests (USDI-FWS 2011c). Vole use of younger stands may be temporary or intermittent (USDI-FWS 2011c). The proposed tower location falls within a young, mid-seral stand (65 years old) that is not likely to provide sufficient canopy structure to support population vole persistence (Huff *et al*. 2012) and therefore does not trigger survey requirements. Further, the felling of less than 10 live trees would not affect forest stand conditions and would not impede potential dispersal if any red tree voles are present in this stand.

Migratory Birds and Bats

All of western Oregon, including this project area, falls within the Northern Pacific Forests Bird Conservation Region (USDI-FWS 2008). Within this region there are several migratory land birds which are considered Birds of Conservation Concern (BCC) because they appear to be exhibiting downward population trends for several years (Altman and Alexander 2012, USDI-FWS 2008). Thirty-three of the 89 land bird species that may occur within Upper Alsea 5th Field Watershed are considered BCC species (see Table 4). Twenty-two BCC species have a high or moderate likelihood of occurring within the planned harvest area. Incidental observations obtained during wildlife related field work within the project vicinity have confirmed the presence of 14 BCC species during the breeding season.

Table 4: Bird Species Groups Likelihood of Occurrence within the Project Area

Bird Species Grouping	Within MPRA	Likelihood of occurrence in Project Areas [1]			
		High	Moderate	Low	Not Present
Bird of Conservation Concern	33	14	8	8	3
Other Regularly Occurring Landbirds	56	15	14	18	9
Total bird species	89	29	22	26	12

[1] The likelihood that bird species occur in the project areas based on current literature review and recent field observations (see Appendix B).

Within 100 meters (328 feet) of the proposed meteorological tower location, the tallest dominant trees average 129 feet with a maximum height of 158 feet. The top of the tower (220 feet) would protrude about 90 feet above the surrounding forest canopy. Over the next 20 years, the forest canopy should ascend about 30-40 feet higher. Thus, the proposed meteorological tower would extend from 90 to 50 feet above the forest canopy over the 20 year duration of the project. Forests of the Oregon Coast Ranges are within a known migration pathway for many migratory bird species.

Yet the project site is located in a relatively flat area within an interior valley and away from topographical features (like ridgeline, or river corridor) that might funnel migrating birds.

In western Oregon, there are ten bat species. Three of these species (Yuma myotis, hoary bat, silver-haired bat) are known to be migratory. Roost sites and maternity sites are often in late-seral forest stands or in stands that have large snags or older legacy trees. The mid-seral forest stand surrounding the proposed meteorological tower location is generally lacking in potential roost sites. Yet several of these bat species are likely to fly within or over the project area while traveling between roost sites and foraging areas.

3.6.2 Environmental Effects

Alternative 1 – No Action

Not installing the meteorological tower and associated infrastructure would cause no change to the mid-seral conifer forest conditions at this location. Forest stand development processes would continue unaltered at this location. There would be no impacts to any current level of wildlife use at this location. This alternative would have no effect to any federally listed wildlife species or their designated critical habitat.

Alternative 2 – Proposed Action

General Habitat

The very small footprint of the installation site (about ½ acre) would have no measurable impact on forest stands at the landscape level, therefore no further consideration of landscape habitat conditions is necessary. The minimal tree felling(less than 10 trees) and small footprint of the tower site would have a negligible effect on the forest canopy and forest floor such that no further consideration of stand level conditions is necessary.

Special Status Wildlife Species

Table 5 provides a summary of effects of the Proposed Action on Federally Listed Wildlife Species and their Critical Habitat

Table 5: Effects of Proposed Action on Federally Listed Wildlife Species and their Critical Habitat

Affected Component	Determination [1]	Notes
Northern Spotted Owl		
Noise Disturbance	No Effect	No known sites within 0.25 miles noise disturbance threshold. Current survey efforts have not detected northern spotted owls in vicinity of the project area.
Habitat Modification	No Effect	The minimal footprint and minor tree felling (<10 trees) would have a negligible effect on dispersal habitat function. No suitable habitat would be affected, and there is no known use of site.

Affected Component	Determination [1]	Notes
Spotted owl Collision Risk	No Effect	Project area is located in dispersal habitat with no known history of spotted owl use. Owls are likely well adapted to sub-canopy flights that avoid obstacles like trees and branches, or tower and guy-lines.
Critical Habitat	NLAA	Within Critical Habitat Unit (ORC-2) within dispersal habitat, but would have negligible effect on dispersal habitat function.
Marbled Murrelet		
Noise Disturbance	No Effect	No known sites within 0.25 miles noise disturbance threshold.
Habitat Modification	No Effect	No suitable nesting structure would be affected by this action.
Murrelet Collision Risk	NLAA	Low numbers of murrelets may fly along the South Fork Alsea River corridor. The low profile of tower (projecting <=90ft above canopy) and location away from ridgeline and river suggest very low risk. Murrelets are likely well adapted to flying in forested environments where tall isolated structures similar old-growth trees are present.
Critical Habitat	No Effect	There is no designated Critical Habitat on BLM lands in this project area.

[1] Endangered Species Act consultation requires the following effect determinations: LAA= Likely to adversely affect; NLAA= not likely to adversely affect; and No Effect.

Northern Spotted Owl

No suitable habitat for northern spotted owls would be affected by the proposed action. The minimal footprint of the tower facility and the felling of less than 10 live trees would have a negligible effect on dispersal habit conditions within the project area. No resident spotted owls are likely to occur within the project area. Since there are no known nest sites within 0.25 miles, the noise generated by construction and installation would not affect spotted owls. The potential for flight collisions with tower or guy-lines is considered negligible, since spotted owls are well adapted to sub-canopy flights that avoid similar obstacles like trees and branches. This proposed tower would be located within a spotted owl critical habitat unit, but construction and operation is not likely to adversely affect the constituent element of concern (dispersal habitat).

Marbled Murrelet

A brief summary of potential impacts to marbled murrelets is provided in Table 2. There is no suitable marbled murrelet habitat affected by the Proposed Action. There are no known occupied marbled murrelet sites within 4 miles of the project area, and the nearest survey detection was 2 miles south. Because marbled murrelets may pass by the proposed meteorological tower location when traveling to suitable habitat patches farther inland along the South Fork Alsea River, there is concern that they might pass close enough to the tower location to risk collision. For this reason, the ESA section 7 call for the Proposed Action is a may affect, but not likely adversely affect marbled murrelets in this project area.

In a small study in Washington, Stumpf, *et al*. (2011) found that only about 0.5 percent of observed inland flight patterns of marbled murrelets were at or below the height of typical communication towers (90 meters or 295 feet). In coastal California, Sanzenbacher, *et al*. (2014) found relatively low flight altitudes when marbled murrelets were flying close to the coast, but higher flight altitudes (similar to findings of Stumpf, *et al*. 2011) when marbled murrelets were flying inland along river corridors.

The risk of marbled murrelets colliding with the proposed meteorological tower (67 meters or 220 feet tall) is considered negligible for the following reasons:

- Very low detection rates during surveys (only 2 of 79 surveys had detections) suggest that few marbled murrelets are likely to fly through this project area;
- Very few marbled murrelets (0.5%) are likely to fly below 90 meters (295 feet) where they may risk collision (Stumpf *et al*. 2011);
- The proposed meteorological tower location lies in a flat area away from the river, away from suitable habitat patches (>0.3miles), and away from ridgelines that might funnel marbled murrelet flight patterns;
- The proposed meteorological tower and guy-lines have a very low exposure profile with less than 90 feet extending above the tree tops, and a total height below 220 feet; and
- The marbled murrelet is likely well adapted to avoiding collision when flying over forested landscapes that have tall, isolated structures similar in height to old-growth trees.

<u>Migratory Birds and Bats</u>

Due to the ubiquitous nature of numerous breeding bird species within the project vicinity, it is reasonable to expect that nesting birds, including some BCC species, may be present in the forest that surround the project location at the time of construction. However, the , the felling of less than 10 live trees is unlikely to affect any nesting birds, and even if some birds are nesting in trees selected for felling, it would have no measurable effect on breeding bird populations in this vicinity.

Since the vertical profile of the tower and guylines would extend about 90 feet above the forest canopy, there is some risk that migrating birds could be killed due to collision with the tower or guylines when flying at night or during periods of low visibility. In central California, Kerlinger, *et al*. (2012) found an average of about 7 bird fatalities per meteorological tower, per year. That study sampled 18 meteorological towers, 50-60 meters tall (164-197 feet), in open habitats with little or no tree cover. Kerlinger, *et al*. (2012) concluded that such a low level of mortality, affecting a variety of species (but mainly the most abundant migrants) would not be expected to result in population effects.

It is likely that any collision mortality at this proposed meteorological tower site would be lower than that reported by Kerlinger *et al*. (2012) because within the forested landscape of the Oregon Coast Ranges, there are hundreds of small patches of old-growth and at least several thousand individual old-growth trees that extend well above the surround canopy of younger forests (up to 290 feet), such that migrating birds likely compensate to avoid collision by flying higher than they would over areas with little or no tree cover.

Additionally, this proposed meteorological tower is unlikely to present any significant collision risk because:

- This site is located in a relatively flat area within an interior valley, and away from topographical features (like ridgeline, or river corridor) that might funnel migrating birds;
- The proposed meteorological tower and guylines have a very low exposure profile with less than 90 feet extending above the tree tops, and a total height below 220 feet; and
- Over the 20 year project timeline, the meteorological tower's exposure profile would decrease to about 50 feet as the canopy level of the surrounding forest grows upward.

For the same reasons described above, the collision risk to resident and migratory bat species is expected to be negligible.

3.6.3 Cumulative Effects

There are two other meteorological tower installation sites on BLM-administered lands within the Upper Alsea 5th Field Watershed (Prairie Peak and Prairie Mountain). Because this Proposed Action would have no measurable effect on forest stand conditions and a negligible effect to wildlife species, there would be no discernable cumulative effect to habitat conditions or special status wildlife species, or migratory birds and bats.

4.0 COMPLIANCE WITH THE AQUATIC CONSERVATION STRATEGY

Based on the environmental analysis described in the previous sections of the EA, Marys Peak Field Office Staff have determined that the project complies with the Aquatic Conservation Strategy (ACS) on the project (site) scale. The project complies with the four components of the ACS, as follows:

- **ACS Component 1 – Riparian Reserves:** The project would comply with Component 1 by not negatively affecting the integrity of Riparian Reserves.
- **ACS Component 2 – Key Watershed:** The project would comply with Component 2 by establishing that the project is not within a Key watershed (RMP p. 7).
- **ACS Component 3 – Watershed Analysis:** The project would comply with Component 3 by following direction set forth in the South Fork Alsea Watershed Analysis, October 1995.

- **ACS Component 4 – Watershed Restoration:** The project would comply with Component 4 through following PDFs (EA section 2.4) that limit disturbance within the watershed.

Marys Peak Field Office Staff have reviewed this project against the ACS objectives at the project or site scale with the following results.

The No Action alternative does not retard or prevent the attainment of any of the nine ACS objectives (ACSO) because this alternative would maintain current conditions. The Proposed Action does not retard or prevent the attainment of any of the nine ACSO for the following reasons.

ACSO 1: Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

In the Proposed Action, existing vegetation and stand structure within the project area would develop at its current rate. Vegetation removal associated with the project is so minimal that there would be no change in stand structure (EA section 3.5).

ACSO 2: Maintain and restore spatial and temporal connectivity within and between watersheds.

The Proposed Action does not retard or prevent the attainment of spatial and temporal connectivity within and between watersheds because there would be no change in connectivity. The Proposed Action would retain forest stand structure (EA sections 3.2 and 3.5).

ACSO 3: Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

The Proposed Action would maintain the current condition of the physical integrity of the aquatic system within the project area because the project would not affect any stream channels. The project area is 150 feet away from the closest stream channel (EA section 3.2).

ACSO 4: Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.

The Proposed Action would maintain the current condition of water quality within the project area. See ACSO 3.

ACSO 5: Maintain and restore the sediment regime under which aquatic ecosystems evolved.

Under the Proposed Action, the current level of sediment into streams would continue within the project area.

The project would not increase the current level of sediment into streams because the project area is not connected to any waterbodies and the closest stream channel is 150 feet from the project area (EA section 3.2). See ACSO 3 and 4.

ACSO 6: Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing.

Under the Proposed Action, there would be no change in stream flows within the project area for the reasons described in EA section 3.2.

ACSO 7: Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

In summary, there would be no change between the No Action alternative and the Proposed Action. Under the Proposed Action, the current flood plain conditions and their ability to sustain inundation and the water table elevations in meadows and wetlands is expected to be maintained because the Proposed Action would not affect these features (EA section 2.4 and 3.2).

ACSO 8: Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

Under the Proposed Action, the current species composition and structural diversity of plant communities would continue along the current trajectory because the project would remove a minimal amount of vegetation (EA section 3.5). The Proposed Action also prescribes PDFs which require the re-vegetation of disturbance areas (EA section 2.4, PDFs 2-4). Diversification would occur over a longer period of time as the project area naturally recovers.

ACSO 9: Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species (EA section 4.7).

In summary, there would be no change between the No Action alternative and the Proposed Action. Under the Proposed Action, habitats would be maintained over the short-term and continue to develop over the long-term with no known impacts on species currently present (EA sections 2.5 and 3.6).

5.0 CONTACTS AND CONSULTATION

5.1 Endangered Species Act Section 7 Consultation

United States Fish and Wildlife Service (USFWS)

Due to concerns for listed wildlife species and their critical habitat, as outlined in EA section 3.6, Table 5, consultation is required in accordance with Section 7(a) of the Endangered Species Act (ESA). The Section 7 Consultation for the Proposed Action has been addressed by inclusion within a Biological Assessment (BA) that analyzed all projects that may adversely affect listed wildlife species on federal lands within the Northern Oregon Coast Range during fiscal years 2016 and 2017. This Proposed Action was evaluated in the ROW project category and has been designed to incorporate all appropriate design standards that were included in the BA. A Biological Opinion (Tracking number: 01EOFW00-2016-F-0136) was received from the Service on 2/29/2016. The Service concluded that this type of action, when implemented with applicable PDFs, would not adversely affect the northern spotted owl, marbled murrelet, or their designated critical habitat.

National Marine Fisheries Service (NMFS)

No effects are anticipated to Upper Willamette River (UWR) Spring Chinook salmon, UWR steelhead, Oregon chub, and OC coho salmon in either watershed due to distance to occupied habitat; therefore, no ESA consultation is warranted.

Protection of essential fish habitat (EFH) as described by the Magnuson/Stevens Fisheries Conservation and Management Act and consultation with NOAA National Marine Fisheries Service (NMF) is required for all projects which may adversely affect EFH of Chinook and coho salmon. The project area is more than 0.5 miles from Alsea Falls, which is the upstream limit of Oregon Coast coho salmon in the South Fork Alsea River Basin and 26 miles from nearest habitat utilized by Chinook and coho in the Marys River (Streamnet 2009). Tower construction would not deliver sediment to streams because of the distance of the project site (150 feet) to the nearest stream channel. Based on distance of the project site from the nearest stream channel and the distance from occupied habitat, the Proposed Action would have no effects on EFH. Consultation with NOAA NMFS on EFH is not required for these projects.

5.2 Cultural Resources – Section 106 Consultation

Survey techniques are based on those described in Appendix D of the *Protocol for Managing Cultural Resource on Lands Administered by the Bureau of Land Management in Oregon*. Post-project survey would be conducted according to standards based on slope defined in the Protocol Appendix. Ground disturbing work would be suspended if cultural material is discovered during project work until an archaeologist assesses the significance of the discovery.

5.2.1 Research and Findings

Previously Recorded Properties: Background research included reviewing Geographic Information System data, District Culture Resource files, Government Land Office Maps from the mid to late 1800's and the draft Environmental Analysis for the Timber Sale.

Findings: No cultural recorded properties were located within the Area of Projected Effects (APE) during the records check that would be impacted by planned treatments. The project area falls in an area considered to be high probability for historic properties and the APE location relative to the Alsea Falls Recreational survey was conducted in accordance with 2015 Oregon Bureau of Land Management – Oregon State Historic Preservation Office Protocol, Appendix A, *Survey Techniques for Densely Vegetated Areas of Western Oregon, Plan*, Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management in Oregon.

5.2.2 Monitoring Requirements

If any cultural and/or paleontological resource (historic or prehistoric site or object) is discovered during project activities all operations in the immediate area of such discovery shall be suspended until an evaluation of the discovery can be made by a professional archaeologist to determine appropriate actions to prevent the loss of significant cultural or scientific values.

5.3 PUBLIC SCOPING AND NOTIFICATION

Public Scoping

EA section 1.6 describes the public scoping completed for this project. EA section 7.0 addresses the substantive comments received during the scoping period.

EA Review Period

The EA and FONSI will be made available for public review from June 1st to June 30th, 2016 and posted on the ePlanning website at https://eplanning.blm.gov/epl-front-office/. The notice for public comment will be published in a legal notice in the Gazette-Times newspaper. Written comments may be addressed to Paul Tigan, Field Manager, Marys Peak Field Office, 1717 Fabry Road SE, Salem, Oregon, 97306. Comments may also be e-mailed to pdtigan@blm.gov.

6.0 MAJOR SOURCES

6.1 List of Preparers

Resource	Name
Botany	Ron Exeter
Botany	Charity Glade
Cultural Resources	Fred Greatorex
Engineering	Mellissa Rutkowski
Fisheries	Scott Snedaker, Bruce Zoellick
GIS	Calvin Jones
Hydrology and Soils	Douglass Fitting
NEPA	Stefanie Larew
NEPA Review	Carolyn Sands, Whitney Wirthlin
Recreation	Traci Meredith
Team Lead	Janet Myers
Visual Resources	David Moore
Wildlife	Scott Hopkins

6.2 Interdisciplinary Team Reports

The reports listed below are incorporated by reference into this EA. The figures utilized in this EA are based on the best available information at the time of publishing.

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Greatorex, F. 2016. Alsea Meteorological Tower Culture Resource Report. Marys Peak Field Office, Salem District, Bureau of Land Management, Salem, OR.

Hopkins, S. 2016. Alsea Meteorological Tower Wildlife Biological Evaluation. Marys Peak Field Office, Salem District, Bureau of Land Management, Salem, OR.

Moore, D. 2016. Lands with Wilderness Characteristics, Recreation, Rural Interface, Wild and Scenic Rivers, and Visual Resources Report. Marys Peak Field Office, Salem District, Bureau of Land Management, Salem, OR.

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7.0 RESPONSE TO SCOPING COMMENTS

This section addresses the substantive comments received during the scoping period.

7.1 Scoping Comments

How many trees will be removed and what size and age? How many trees will need to be removed over the life of the ROW Grant?

BLM Response**:** Addressed in text, EA section 2.3 .

How will the trench impact old growth trees and their roots?

BLM Response: Addressed in text, EA section 1.7.2.

Can the site be located elsewhere?

BLM Response: Addressed in text, EA section 2.5.

How much noise will the tower generate? How will noise impact species of concern or listed species?

BLM Response: Addressed in text, EA sections 1.7.1, 2.3, 3.3, and 3.6.

How will smoke from the Alsea Falls Campground impact the data being collected?

BLM Response: The Alsea Falls Campground is approximately one-half mile from the project site. OSU researchers proposed the current project site and did not indicate they had concerns about smoke from the campground affecting their data collection or results.

Will noise impact recreational uses at the Alsea Falls Campground?

BLM Response: Addressed in text, EA sections 3.3.2 and 3.3.3.

What are the visual impacts to Alsea Falls Recreation Area, Alsea River, Fall Creek Bike Trail, and the town of Alsea?

BLM Response: Addressed in text, EA section 3.3.2 and 3.3.3.

Will the area in and around the tower be sprayed?

BLM Response: No spraying is proposed. See EA section 2.3.

How will weeds be monitored and controlled? How will this project impact soil, water, and the spread of noxious weeds?

BLM Response: There would be no specific weed monitoring for this project. Because this tower is intended to collect data on carbon uptake and energy exchange of the local forest, maintaining static vegetation is important to the study. Project activities would be designed to minimize vegetation disturbance. In addition Project design features have been incorporated into this project to keep the amount of exposed mineral soil minimized (EA section 2.4, Table 1). See also EA section 3.5. With regard to impacts to soil, water, and noxious weeds, these effects are addressed in text, EA sections 3.2 – 3.5.

How will the site be reclaimed by OSU?

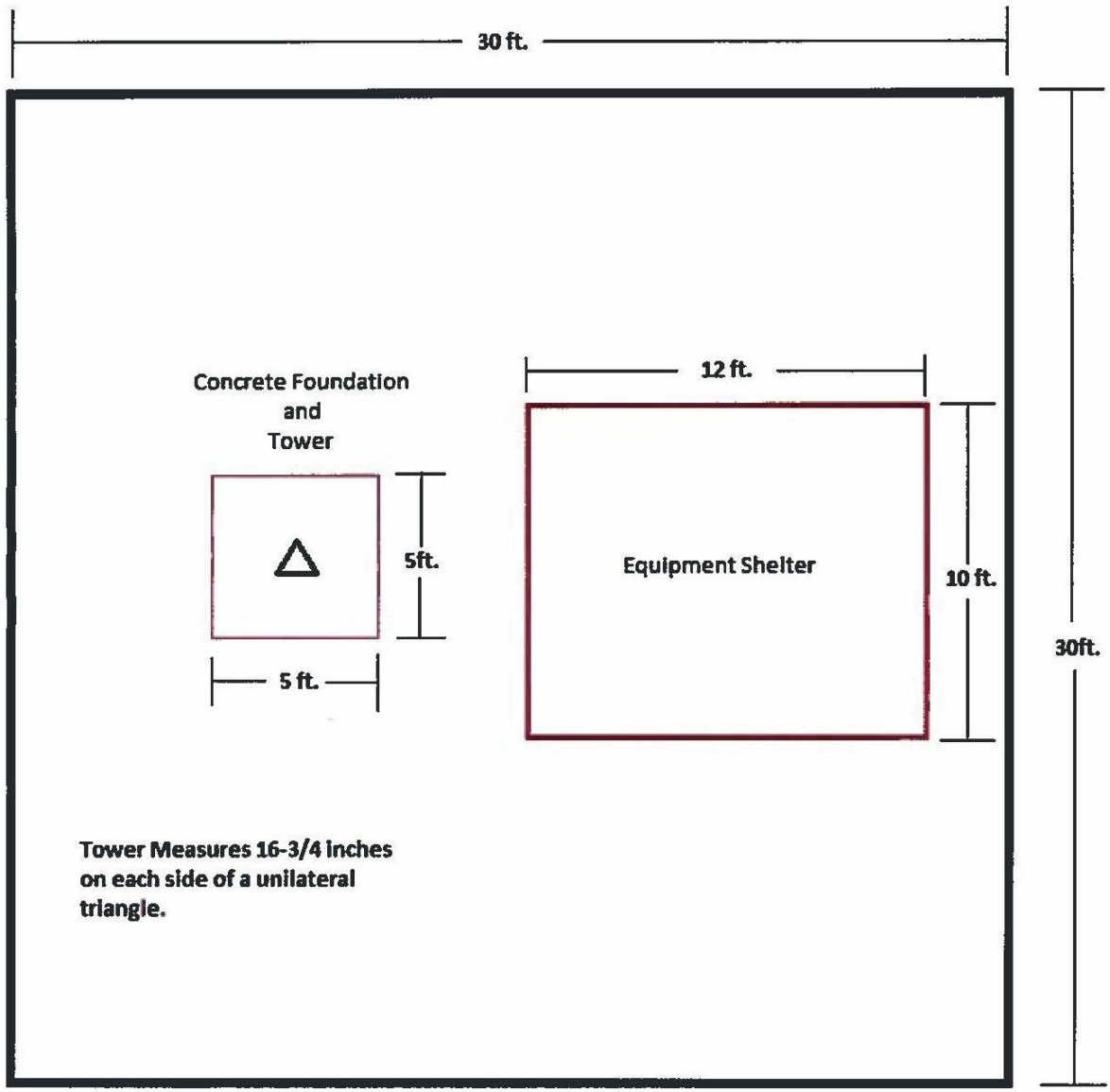
BLM Response: The proposed PDFs require OSU to reseed any surface disturbance created during construction activities (EA section 2.4, PDF 2-4). OSU has no additional plans to reclaim the meteorological site. As described in EA section 2.3, OSU will leave the constructed access trail to reclaim naturally.

How will the tower impact migratory birds? Will the tower and guylines present a risk of bird collisions/mortality?

BLM Response: Addressed in text, EA section 3.6.2.

8.0 SITE DIAGRAM

Figure 4: Site Diagram



9.0 GLOSSARY OF TERMS AND ACRONYMS

ACS – Aquatic Conservation Strategy.

Alternative – Proposed project (plan, option, or choice).

Anadromous fish – Fish that are born and reared in freshwater, move to the ocean to grow and mature, and return to freshwater to reproduce.

Beneficial use – In water use law, reasonable use of water for a purpose consistent with the laws and best interest of the people of the state. Such uses include, but are not limited to, the following: instream, out of stream, and ground water uses, domestic, municipal, industrial water supply, mining, irrigation, livestock watering, fish and aquatic life, wildlife, fishing, water contact recreation, aesthetics and scenic attraction, hydropower, and commercial navigation.

Biological Opinion (BO) – The document resulting from formal consultation that states the opinion of the U.S. Fish and Wildlife Service or National Marine Fisheries Service as to whether or not a federal action is likely to jeopardize the continued existence of a listed species or results in destruction or adverse modification of critical habitat.

BLM – Bureau of Land Management. Federal agency within the Department of the Interior responsible for the management of 275 million acres.

Bureau Sensitive Species – Plant or animal species eligible for federal listed, federal candidate, state listed, or state candidate (plant) status, or on list 1 in the Oregon Natural Heritage Data Base, or approved for this category by the BLM State Director. Species included under agency species conservation policies.

Consultation – A formal interaction between the U.S. Fish and Wildlife Service and another federal agency when it is determined that the agency's action may affect a species that has been listed as threatened or endangered or its critical habitat.

Council on Environmental Quality (CEQ) – Established by the National Environmental Policy Act of 1969 (NEPA) to guide the implementation of NEPA.

Cumulative effects – The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

Environmental assessment (EA) – A systematic analysis of site-specific activities used to determine whether such activities have a significant effect on the quality of the human environment.

Endangered species – Any species of plant or animal defined through the Endangered Species Act as being in danger of extinction throughout all or a significant part of its range, and published in the Federal Register.

5th field watershed – Individual watershed within a Hydrologic Unit as defined by the U.S. Geological Survey; it typically averages 87,000 acres in size.

Fish-bearing stream – Any stream containing any species of fish for any period of time.

Interdisciplinary Team (IDT) – A group of individuals of various disciplines assembled to solve a problem or perform a task.
Invasive species – A non-native species whose introduction does, or is likely to, cause economic or environmental harm or harm to human health.

Key Watershed – A land use allocation used in the Northwest Forest Plan. A watershed containing: (1) habitat for potentially threatened species or stocks of anadromous salmonids or other potentially threatened fish, or (2) greater than 6 square miles with high-quality water and fish habitat.

Late-successional forest – A forest that is in its mature stage and contains a diversity of structural characteristics, such as live trees, snags, woody debris, and a patchy, multi-layered canopy.

Land use allocation – Uses that are allowed, restricted, or prohibited for a particular area of land, as designated in the Northwest Forest Plan.

Monitoring – The review on a sample basis, of management practices to determine how well objectives are being met, as well as the effects of those management practices on the land and environment.

National Marine Fisheries Service (NMFS) – Federal agency within NOAA which is responsible for the regulation of anadromous fisheries in the United States.

Non-Native Plant – Any plant species that historically does not occur in a particular ecosystem.

Non-Point – No specific site.

Noxious Weed – Plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage, parasitic, a carrier or host of serious insects or diseases, or non-native, new, or not common to the United States.

ODEQ – Oregon Department of Environmental Quality.

Off-Highway Vehicle (OHV) – Any motorized track or wheeled vehicle designed for cross-country travel over any type of natural terrain.
Off-highway vehicle designation – Designation of lands made in a land use plan for use of off-highway vehicles:

- Open: All types of vehicle use is permitted at all times, anywhere in the area subject to certain operating regulations and vehicle standards.
- Limited: Restricted at certain times, in certain areas, and/or to certain vehicular use.
- Closed: Off-road vehicle use is prohibited.

PDF- Project Design Features.

Perennial Stream – A stream that typically has running water on a year-round basis.

Riparian area – A geographic area containing an aquatic ecosystem and adjacent upland areas that directly affect it.

Road Decommissioning – Road is closed to vehicular traffic. Road is waterbarred to reestablish hillslope drainage patterns. May include removal of culverts, ripping, and seeding of roadbed.

Road Renovation – Renovation includes work to be done that will bring a road back to its original design standard. Renovation covers a large array of low to high disturbance activities performed on existing roads. It may include blading and shaping, cutting brush from slopes, ditches and shoulders, cleaning out ditches and catch basins, cleaning out or replacing culverts, replacing aggregate surfacing, and compaction of sub-grade and/or surfacing material.

Rural Interface – BLM-administered lands within one-half mile of private lands zone for 1 to 20 acre lots. Areas zone for 40 acres and larger with homes adjacent to or near BLM-managed lands.

Seral stages – The series of relatively transitory plan communities that develop during ecological succession from bare ground to the climax stage.

Snag – Any standing dead, partially dead, or defective (cull) tree at least 10 inches diameter at breast height and at least 6 feet tall. A hard snag is composed primarily of sound wood, generally merchantable. A soft snag is composed primarily of wood in advanced stages of decay and deterioration, generally not merchantable.

Soil compaction – An increase in bulk density (weight per unit volume) and a decrease in soil porosity (particularly macropores) resulting from applied loads, vibration, or pressure.

Soil productivity – Capacity or suitability of a soil, for establishment and growth of a specified crop or place species.

Special status species – Plan or animal species in any of the following categories:

- Threatened or endangered species
- Proposed threatened or endangered species
- Candidate species
- State-listed species
- Bureau sensitive species

Stand – A contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality to be a distinguishable unit.

Stream protection zone (SPZ) – A buffer along streams and identified wet areas where no material would be removed and heavy machinery would not be allowed. The SPZ is measured to the slope break, change in vegetation, or 55 feet from the channel edge, whatever is greatest.

Succession – Stages a forest stand makes over time as vegetation competes and natural disturbances occur. The different stages in succession are often referred to as seral stages.

Visual Resource Management (VRM) – The inventory and planning action to identify values and establish objectives for managing those values and the management actions to achieve those objectives.

Visual resource management classes – Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective that prescribes the amount of change allowed in the characteristic landscape.

Waterbars – A ridge of compacted soil or loose rock or gravel constructed across disturbed rights-of-way and similar sloping areas.

Watershed – The drainage basin contributing water, organic matter, dissolved nutrients, and sediments to an identified outlet location, usually a stream or lake.

Weed – A plant considered undesirable and that interferes with management objectives for a given area at a given point in time.