United States
Department of
Agriculture

Forest
Service

January
2010

ENVIRONMENTAL ASSESSMENT DRAFT

CASCADE LAKES NATIONAL SCENIC BYWAY WELCOME STATION

Bend-Ft. Rock Ranger District
Deschutes National Forest

For Information Contact
Robin Gyorgyfalvy
Bend-Ft. Rock Ranger District
1230 NE Third St., Suite A-262
Bend, Oregon
(541) 383-4786

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Table of Contents

SUMMARY 1

DOCUMENT STRUCTURE 2

CHAPTER 1 – PURPOSE AND NEED 4
- INTRODUCTION 4
- DESIRED CONDITION 4
- EXISTING CONDITION 4
- PURPOSE AND NEED 4
- PROPOSED ACTION 6
- MANAGEMENT DIRECTION 6
- PUBLIC INVOLVEMENT/SCOPING PROCESS USED 7
- CURRENT LAWS 8
- PROJECT RECORD 9
- SCOPE OF PROJECT AND DECISION FRAMEWORK 10

CHAPTER 2 – ALTERNATIVES 12
- INTRODUCTION 12
  - Precision of Information and Adjustments 12
- ALTERNATIVE DESCRIPTIONS 12
  - Alternative 1 (No Action) 12
  - Alternative 2 (Proposed Action) 12
- CONNECTED ACTIONS 13
- COMPARISON OF THE ALTERNATIVES 17
- RESOURCE PROTECTION MEASURES (MITIGATIONS) 17

CHAPTER 3 – ENVIRONMENTAL CONSEQUENCES 20
- INTRODUCTION 20
- PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS 20
- SCENIC VIEWS 21
- RECREATION 23
- FISH AND HYDROLOGY 25
- SOILS 27
- FORESTED VEGETATION 32
- WILDLIFE: Threatened, Endangered, and Sensitive Species 33
- WILDLIFE: Management Indicator Species and Other Species and Habitat of Interest 38
  - Indicator Species and Habitats 39
  - Elk 40
  - Mule Deer 42
  - Special or Unique Associated Habitats 44
  - Snags and Down Wood/Green Tree Replacements 44
  - Late and Old Structural Stands and Connectivity 46
  - Focal Landbird Species 47
- BOTANY: Invasive Plants 50
- BOTANY: Threatened, Endangered, and Sensitive Species 53
- HERITAGE 54
- OTHER EFFECTS 55
- LITERATURE CITED 57

CHAPTER 4 – COORDINATION AND CONSULTATION 61
- INTERDISCIPLINARY TEAM MEMBERS 61
- PUBLIC INVOLVEMENT 62

Table of Figures

Figure 1: Vicinity Map – Proposed Cascade Lakes National Scenic Byway Welcome Station 5
Figure 2: Proposed Location - Cascade Lakes National Scenic Byway Welcome Station .....**Error! Bookmark not defined.**
Figure 3: Proposed Cascade Lakes Scenic Byway Welcome Station Site (Looking Northeast from Forest Road 41 Junction)..... 14
Figure 4: Proposed Cascade Lake Scenic Byway Welcome Station Site (Looking Northwest from Forest Road 41 Junction)..... 15
Figure 5: Alternative 2 (Proposed Action) Scenic Byway Welcome Station 16

Table of Tables

Table 1: Alternative 2 (Proposed Action) - Proposed Actions for the Cascade Lakes Scenic Byway Welcome Station..... 12
Table 2: Comparison of Alternatives 17
Table 3: Threatened, Endangered, and Sensitive (TES) Fish Species Considered in Analysis25
Table 4: Federally Listed and Proposed Species Occurring or Potentially Occurring on the Deschutes National Forest and Effects from the Project 34
Table 5: Regional Forester Sensitive Species Occurring or Potentially Occurring on the Deschutes National Forest and Effects from the Project 35
Table 6: Impact Conclusions for LRMP Management Indicator Species and Habitats, Birds of Conservation Concern, Landbird Focal Species, and High Priority Shorebirds..... 38
Table 7: Woodpeckers Found on the Deschutes National Forest 44
Table 8: Priority Habitat Features and Associated Focal Landbird Species for Central Oregon 47
Table 9: Deschutes National Forest Invasive Plant Species 50

SUMMARY

This Environmental Assessment (EA) has been prepared to assess and document the environmental impacts of the proposed action for the construction of a Scenic Byway Welcome Station (Welcome Station) and associated parking area for the Cascade Lakes National Scenic Byway. The Welcome Station would provide Scenic Byway recreation, conservation, and interpretive messages. The parking area would provide parking for visitors to the Welcome Station. One other alternative to the proposed action, Alternative 1 (No Action), was analyzed, and compared to the proposed action.

One of the primary goals in the Corridor Management and Interpretive Plan for the Cascade Lakes National Scenic Byway is to provide information and interpretation at key locations. This project would be consistent with that Plan. The proposed location and development of a facility for this purpose is strategically located in an area of high use and at the northern end of the scenic byway, near the Forest boundary.

Based on the information contained in this EA, the responsible official will decide to select Alternative 2 (Proposed Action) and the associated proposed developments or Alternative 1 (No Action) with no development of a Welcome Station.

DOCUMENT STRUCTURE

The Bend-Fort Rock Ranger District of the Deschutes National Forest has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This environmental assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and any other alternative, including a no action alternative. The document is organized into four parts:

Purpose and Need: The section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.

Comparison of Alternatives, including the Proposed Action: This section provides a more detailed description of the agency's proposed action. This section also includes resource protection measures.

Environmental Consequences: This section describes the environmental effects of implementing the proposed action and any other alternatives that are analyzed. This analysis is organized by resource area. Within each section, the affected environment is described first, followed by the effects of the No Action Alternative that provides a baseline for evaluation and comparison of the other alternative.

Agencies and Persons Consulted: This section provides a list the agencies consulted and of those involved in the preparation and development of the environmental assessment (EA).

Appendices: The appendices provide additional information to support the analyses presented in the environmental assessment.

CHAPTER 1

PURPOSE AND NEED

CHAPTER 1 – PURPOSE AND NEED

INTRODUCTION

The proposed project location for the Cascade Lakes National Scenic Byway (Scenic Byway) Welcome Station is approximately five miles southwest of Bend, Oregon (Figures 1 and 2). The project area is located adjacent to the Scenic Byway (Highway 46, Century Drive) and directly across the highway from the junction with Forest Road 41. The legal location is in Township 18 South, Range 11 East, Section 21. Refer to the general vicinity map (Figure 1, page 5).

The location is within Scenic Views management area as designated by the Deschutes National Forest Land and Resource Management Plan (LRMP). It is also within the Ryan Ranch Key Elk Area. It is east of the Northwest Forest Plan boundary. There are no water sources or threatened and endangered species of plants, animals, or fish. There are no archaeological sites. It is an area that has been heavily impacted by previous use.

DESIRED CONDITION

It is important the Welcome Station to be highly visible and easily accessible to a large number of byway travelers and residents. The location should at the gateway to the Scenic Byway. The structure should be visible and compliment the surrounding landscape character.

EXISTING CONDITION

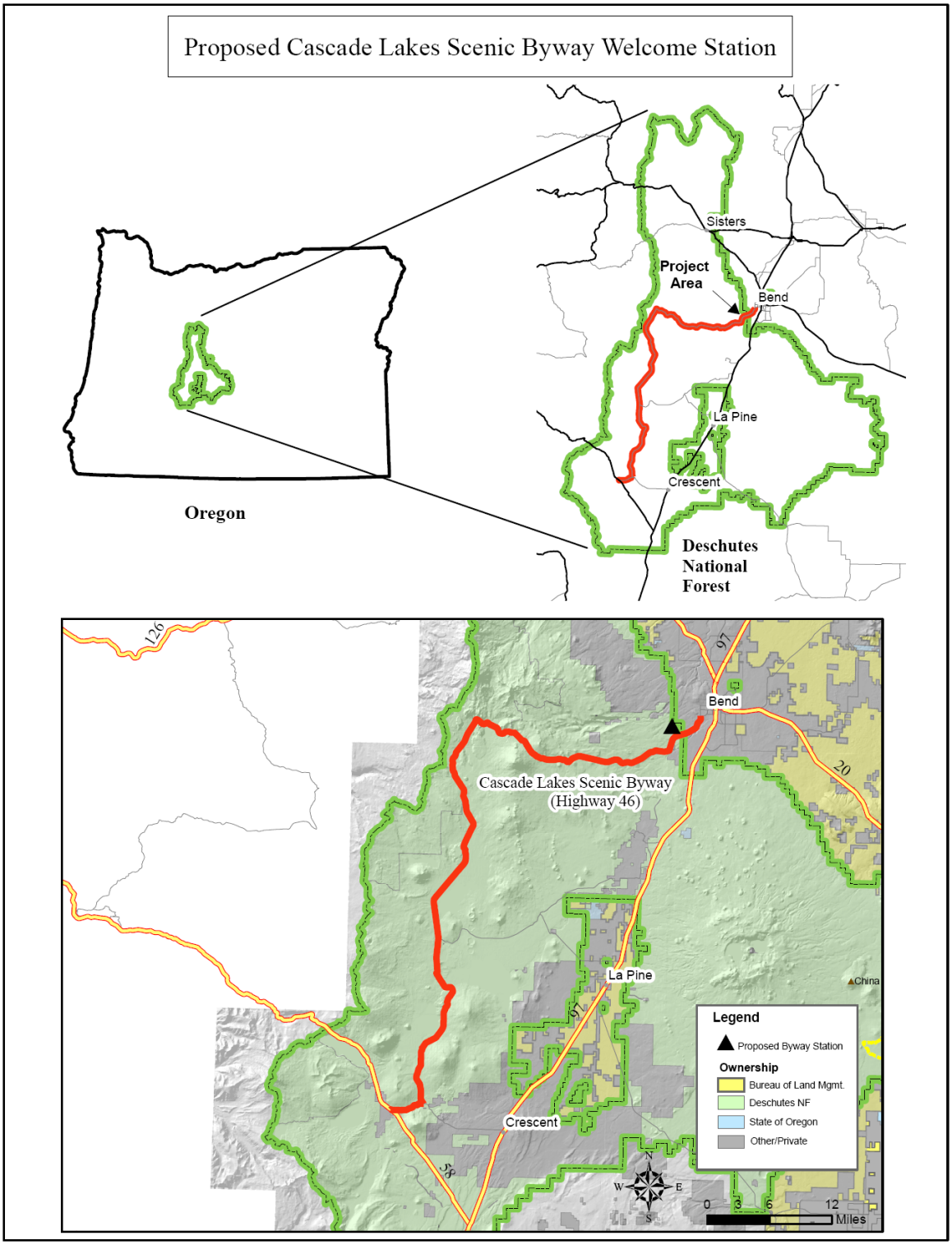
Central Oregon is well known for its year-round recreational opportunities. Recreation demands have increased as Central Oregon's population has grown. The popularity and use of the Scenic Byway corridor continues to grow. The Scenic Byway is accessed by Highway 58, its southern gateway, and from U.S. Highway 97 via Forest roads 40, 42, 43, and 61 from the east.

PURPOSE AND NEED

One of the primary goals in the Corridor Management and Interpretive Plan is to provide information and interpretation at key locations. The Cascade Lakes Scenic Byway Corridor Management Plan was originally developed in 1996 for the Travel Information Council and the Oregon Department of Transportation. This plan was updated in 2009. The vision is to have "The convenience and quality of facilities and the interpretive centers, visitor centers and museums that provide environmental and historical background are renown." One of the goals and objectives of the Plan is "To provide information and interpretation at key locations."

As a major gateway to the Deschutes National Forest via the Cascade Lakes National Scenic Byway, the Welcome Station would benefit the byway traveler and central Oregon communities. With over 2.5 million annual visitors to the Deschutes National Forest, it would be a place for Forest Service staff and community volunteers to engage byway travelers information and conservation and interpretive messages. This facility would serve as an important visitor contact point for the Forest Service and would also provide for the sale of maps, permits, and Forest passes.

Figure 1: Vicinity Map – Proposed Cascade Lakes National Scenic Byway Welcome Station



PROPOSED ACTION

Because of the high use that occurs in the Cascade Lakes Recreation Area and along the Deschutes River, this site provides a strategic location for the construction of a Scenic Byway Welcome Station (Figure 5). The following actions are being proposed:

- Construction of a rustic Cascadian style, one-story building, approximately 1,500 square feet.
- Construction of a drive-through parking area that would accommodate 25 cars and 2 to 5 recreational vehicles (RVs). The parking area would be intended for facility visitation only.
- Construction of an interpretive kiosk.
- A gate would be located at the entrance to prohibit parking for activities other than what the Welcome Station is intended for.
- The proposed building site would be located at an intersection and accessed by turn lanes coming from both directions; therefore, a speed reduction/turn lane would likely be constructed for safety concerns by the Oregon Department of Transportation (ODOT).

The facility would be Americans with Disabilities Act of 1990 (ADA) compliant, energy-efficient, and designed to have a low impact footprint on the site. Power would be supplied on-site or from a private utility source. For detailed information on the proposed action, refer to Chapter 2.

MANAGEMENT DIRECTION

Deschutes National Forest Land and Resource Management Plan (LRMP)

The Deschutes National Forest Land and Resource Management Plan (LRMP), 1990, provides management direction for the Forest. The project area is included within the Scenic View management area (MA9). The project area is also within the Ryan Ranch Key Elk Area (KEA), which overlaps MA9 at this location.

Scenic Views (Management Area 9)

Provide high quality scenery representing the natural character of central Oregon. Landscapes seen from selected travel routes and use areas are to be managed to maintain or enhance their appearance. To the casual observer, results of activities either will not be evident, or will be visually subordinate to the natural landscape (LRMP, page 4-121). Foreground and midground scenic views are present.

M9-2: *"Parking facilities, structures and other recreational facilities will normally be placed where they are not visible from significant viewer locations. Where it is not possible to screen recreational facilities, they will be designed to blend with the elements found in the natural landscape and will remain subordinate to the overall visual strength of the surrounding landscape.*

Ryan Ranch Key Elk Area (KEA)

WL-43: *Elk are found in certain key habitat areas. Within these areas, conditions will be provided to support… summering elk…wintering elk. Refer to Appendix 16-2 in the LRMP for the Ryan Ranch Key Elk Area.*

WL-45*: Facilities will not be developed nor activities promoted which would encourage public use during the winter.*

PUBLIC INVOLVEMENT/SCOPING PROCESS USED

This project was made available for initial public comment on June 10, 2009 during a three week scoping period. A letter requesting public involvement was mailed to approximately 98 individuals, businesses, and organizations. Included in this mailing were the Confederated Tribes of Warm Springs, Burns Paiute Tribe, and The Klamath Tribes. Also included in the mailing was *The Bulletin*, the local newspaper of record that reported on the proposed project area. Announcement of the proposed action was included in the Schedule of Projects (Located on the Deschutes National Forest website) starting in the spring of 2009 issue.

Comments were received from 1 individual, one State and one local agency, and one privateorganizationin response to this scoping effort. Comments received during scoping are a part of the Project Record. All comments received during the scoping period were read to ensure consideration during the analysis process. No written or verbal communication regarding the project was received from any of the three mentioned tribes. Comments received are supportive of this project.

Identification of Issues

Issues are points of discussion, debate, or dispute about environmental or social effects that may occur as a result of the proposed action. Issues provide focus and influence alternative development, including development of mitigation measures to address potential adverse effects. Issues are also used to compare the effects between the proposed action and the alternatives regarding a specific resource element. Issues are generally divided into Key Issues and Analysis Issues.
Key issues: Issues used to develop alternatives or specific activities of the action alternatives. These are issues that respond to the Purpose and Need that cannot be resolved without some consideration of the trade-offs involved. Trade-offs can be more clearly understood by developing alternatives and displaying the relative impacts of these alternatives.

No key issues were identified during the scoping process. As a result, no additional alternatives were identified that would result in the development of another action alternative.

Analysis issues: Environmental components (resources) are considered in the Chapter 3 analysis. These issues: 1) are generally less focused on the elements of Purpose and Need, than Key Issues would be and 2) reflect the discussions of the effects of the proposed activities.

Although the various environmental components did not result in the full development and analysis of another action alternative, they are important for providing the Responsible Official with complete information about the effects of the project.

Wildlife: The following items were analyzed and compared by alternative:
- Threatened, Endangered, Candidate and Sensitive Species
- Management Indicator Species and Habitats

Botany and Invasive Plants: Potential effects to Proposed, Endangered, Threatened, and Sensitive (PETS) plant species were considered and no PETS plants were found in the project area. Proposed

management activities have the potential to introduce or spread existing populations of invasive plants and invader species. Potential spread of invasive plants is a concern across the project area. Other resources that are analyzed for effects are Scenery, Cultural Resources, Soils, Silviculture, Fish and Hydrology, and Recreation. Discussions of surveys and potential effects are presented in Chapter

CURRENT LAWS

Analysis and documentation has been done according to direction contained in the National Forest Management Act, the National Environmental Policy Act, the Council on Environmental Quality regulations, Forest Service NEPA regulations, The Endangered Species Act, Magnuson-Stevens Fishery Conservation And Management Act of 2000, the National Historic Preservation Act, the Clean Air Act, and the Clean Water Act, and the Rescissions act, Public Law 104-19, Section 504.

The following is a brief explanation of each of these laws and their relation to the current project planning effort.

The American Antiquities Act of 1906: The American Antiquities makes it illegal to appropriate, excavate, injure, or destroy any historic, prehistoric ruin or monument, or any object of antiquity, situated on lands owned by the Government of the United States, without permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated.

The National Historic Preservation Act of 1966, as amended: The National Historic Preservation Act requires Federal agencies to consult with American Indian Tribes, State and local groups before nonrenewable cultural resources, such as archaeological and historic structures, are damaged or destroyed. Section 106 of this Act requires Federal agencies to review the effects project proposals may have on the cultural resources in the Analysis Area.

The Endangered Species Act of 1973, as amended: The Endangered Species Act is to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such tests as may be appropriate to achieve the purpose of the treaties and conventions set forth in subsection (a) of this section." The Act also states "It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act."

The National Environmental Policy Act (NEPA) of 1969, as amended: The National Environmental Policy Act is "To declare a national policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damaged to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nations; and to establish a Council on Environmental Quality" (42 U.S.C. Sec. 4321). The law further states "it is the continuing policy of the Federal Government, in cooperation, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the present and future generations of Americans. This law essentially pertains to public participation, environmental analysis, and documentation.

The Council on Environmental Quality (CEQ) promulgated the regulations for implementing NEPA (40 CFR parts 1500-1508). The CEQ has recently provided guidance on considering past actions in cumulative effects analysis (Memo to Heads of Federal Agencies, June 24, 2005).

The National Forest Management Act (NFMA) of 1976: The National Forest Management Act guides development and revision of National Forest Land Management Plans and has several sections to it ranging from required reporting that the Secretary must submit annually to Congress to preparation requirements for timber sale contracts. There are several important sections within the act, including Section 1 (purpose and principles), Section 19 (fish and wildlife resources), Section 23 (water and soil resources), and Section 27 (management requirements).

Multiple-Use Sustained-Yield Act of 1960: The Multiple Use – Sustained Yield Act of 1960 requires the Forest Service to manage National Forest System lands for multiple uses (including timber, recreation, fish and wildlife, range, and watershed). All renewable resources are to be managed in such a way that they are available for future generations. The harvesting and use of standing timber can be considered a short-term use of a renewable resource. As a renewable resource, trees can be re-established and grown in again if the productivity of the land is not impaired.

Migratory Bird E.O. 13186: On January 10, 2001, President Clinton signed an Executive Order (E.O. 13186) titled "Responsibilities of Federal Agencies to Protect Migratory Birds." This E.O. requires the *"environmental analysis of Federal actions, required by NEPA or other established environmental review processes, evaluates the effects of actions and agency plans on migratory birds, with emphasis on species of concern."*

Executive Order 13112 (invasive species): This 1999 order requires Federal agencies whose actions may affect the status of invasive species to identify those actions and within budgetary limits, "(i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species… (iii) monitor invasive species populations… (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded;…(vi) promote public education on invasive species… and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species… unless, pursuant to guidelines that it has prescribed, the agency had determined and made public… that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."

PROJECT RECORD

This EA hereby incorporates by reference the Project Record (40 CFR 1502.21). The Project Record contains Specialist Reports and other technical documentation used to support the analysis and conclusions in this EA. Chapter 3 provides a summary of the Specialist Reports in adequate detail to support the decision rationale; appendices provide supporting documentation.

Incorporating these Specialist Reports and the Project Record help implement the Council on Environmental Quality (CEQ) Regulations provision that agencies should reduce NEPA paperwork (40 CFR 1500.4), that the document shall be "analytic rather than encyclopedic," and that the document "shall be kept concise and no longer than absolutely necessary" (40 CFR 1502.0). The objective is to furnish adequate site-specific information to demonstrate a reasoned consideration of the environment impacts of the alternative and how these impacts can be mitigated, without repeating detailed analysis and background information available elsewhere. The Project Record is available for

review at the Bend-Fort Rock District Office, 1230 NE Third Street, Suite A-242, Bend, Oregon, Monday through Friday 7:45 a.m. to 4:30 p.m.

SCOPE OF PROJECT AND DECISION FRAMEWORK

The scope of the project and the decision to make are limited to: the construction of a Welcome Station and the associated development of a parking area and picnic area for the Welcome Station. Chapter 2 details the design of these actions. The project is limited to National Forest System land.

The Responsible Official for this proposal is the District Ranger of the Bend-Fort rock Ranger District of the Deschutes National Forest. Based on response from the 30-day comment period, any changes made for the Final EA, and the disclosed analysis with mitigation, the Responsible Official will make a decision and document it in a Decision Notice and Finding of No Significant Impact. The Responsible Official can decide to:

- Select Alternative 2 (Proposed Action), the action alternative that has been considered in detail, or
- Modify the action alternative, or
- Select the no-action alternative, and
- Identify what mitigation measures would apply.

The decision regarding which alternative to implement will be determined by comparing how each factor of the project purpose and need is met and the manner in which each alternative responds to the analysis issues.

CHAPTER 2

ALTERNATIVES

CHAPTER 2 – ALTERNATIVES

INTRODUCTION

This chapter describes and compares the alternatives that were considered for the Cascade Lakes Scenic Byway Welcome Station project. A description of each of the actions, or design elements of those actions, that are proposed in varying degrees in the fully developed action alternative is provided. This relationship is further discussed under each resource in Chapter 3, "Environmental Consequences."

Precision of Information and Adjustments

Quantifiable measurements, such as feet and acres used to describe the alternatives and effects are based on the best available information. The analysis presented in this EA is based on consideration of the full extent of the measurements depicted in the action alternative. Information used in designing the action alternative was generated from a mix of field reconnaissance, use of aerial photos, and various resource-specific databases.

ALTERNATIVE DESCRIPTIONS

Alternatives were developed by the Interdisciplinary Team to address the Purpose and Need. Two alternatives are analyzed in detail. The action alternative meets the purpose and need for action.

Alternative 1 (No Action)

Alternative 1 is the No Action alternative. This alternative is required by law and serves as a baseline for comparison of the effects of the alternatives. here would be no new Welcome Station constructed. The same level of interpretation and information would remain.

No change would occur in current management direction or in the level of ongoing management activities, such as thinning and hazard tree removal.

Alternative 2 (Proposed Action)

Alternative 2 is the proposed action. This alternative was developed to address the purpose and need for the projectTable 1 displays the need for action and how that need would be addressed. **Error! Reference source not found.**, page **Error! Bookmark not defined.** provides a display of the proposal for the project.

Table 1: Alternative 2 (Proposed Action) - Proposed Actions for the Cascade Lakes Scenic Byway Welcome Station

Need for Action	Proposal for Action
To provide a facility for the dissemination Scenic Byway recreation, conservation, and interpretive messages	An approximate 1,500 foot facility that promotes sustainable site practices and compliments the landscape character of the surrounding area (Refer to **Error! Reference source not found.**, page **Error! Bookmark not defined.**)
To accommodate visitors to the Welcome Station, there is a need to provide designated parking.	Designate parking for approximately 25 cars and 3-5 recreational vehicles (RVs). Approximately 0.5 acres would be affected (Refer to **Error! Reference source not found.**, page **Error! Bookmark not**

Need for Action	Proposal for Action
	defined.).
To provide maps and general information, there is a need to construct an informational and interpretive kiosk.	Roofed signboard adjacent to parking area

The facility and associated parking would be designed to leave trees in all areas that would not have disturbance activities.

CONNECTED ACTIONS

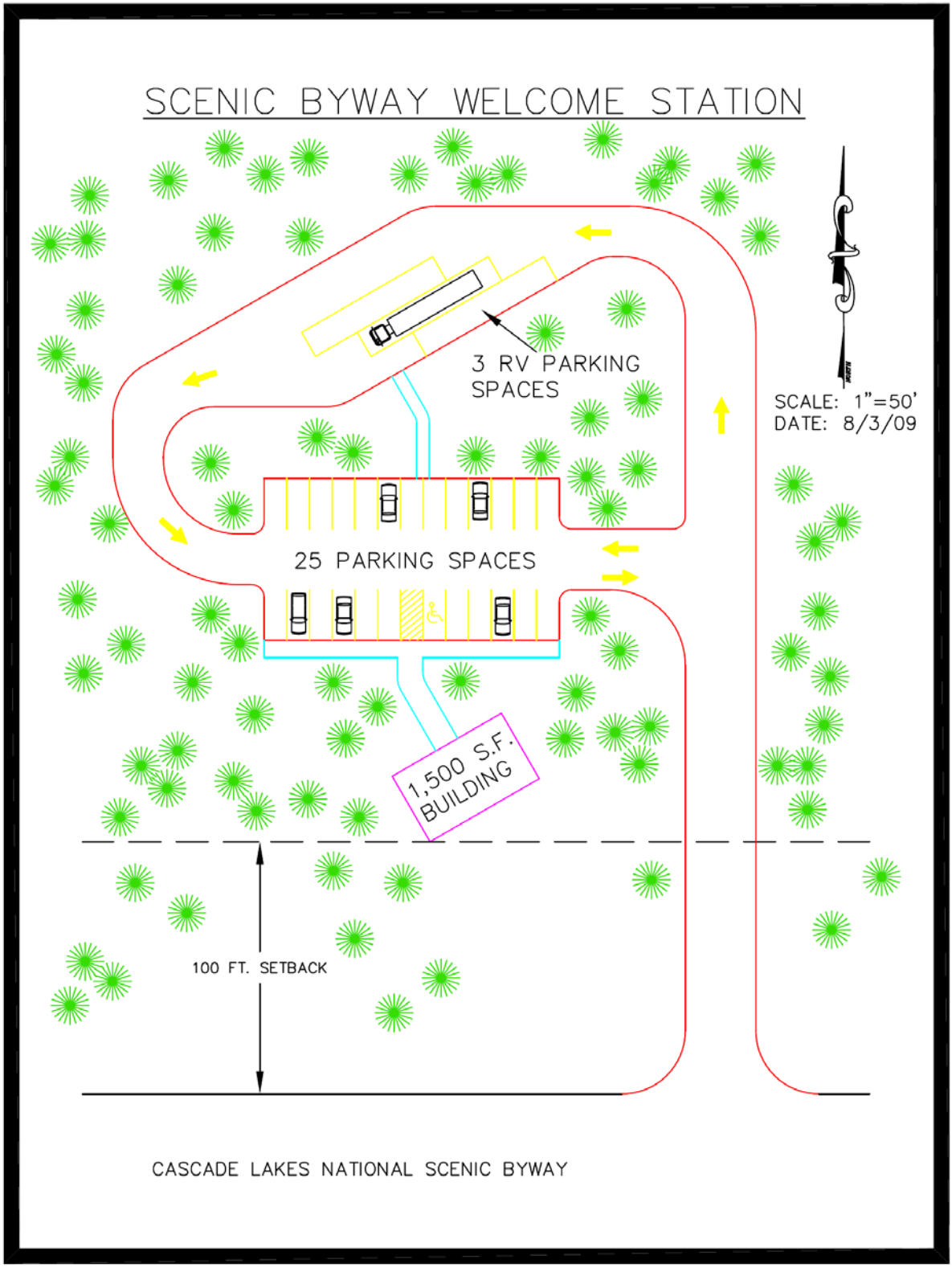
Connected actions are actions associated with other proposed activities. These activities would not occur unless the activities proposed in Alternative 2 (Proposed Action) occur. These connected actions are to discourage casual and recreational use within the Ryan Ranch Key Elk Area.

- **Split Rail Fence:** To Delineate the facility and parking area from the surrounding area. The fence would provide visitors to the facility a specific area for use. A fence would also discourage recreationists from using the parking area for staging activities that would utilize the Key Elk Area, such as mountain biking, cross country skiing, or hiking. A fence would also discourage the development of additional user created mountain bike trails.
- **Gate:** A gate would be installed at the entrance to the Welcome Station from Highway 46. The gate would be closed and locked during non-operational hours throughout the year. This reduces the potential for visitors to use the parking lot to access the trails during evenings and early mornings and discourages potential winter recreational use from the facility

Figure 2: Proposed Cascade Lakes Scenic Byway Welcome Station Site (Looking Northeast from Forest Road 41 Junction)

Figure 3: Proposed Cascade Lake Scenic Byway Welcome Station Site (Looking Northwest from Forest Road 41 Junction)

Figure 4: Alternative 2 (Proposed Action) Scenic Byway Welcome Station



COMPARISON OF THE ALTERNATIVES

Table 2 compares Alternative 2 (Proposed Action) in relation to Alternative 1 (No Action), Measurements are approximate.

Table 2: Comparison of Alternatives

Proposed Activity	Alternative 1 Existing	Alternative 2 Proposed
Entrance/Exit Road	None	200 feet
Parking Lot	None	28-30 spaces
Welcome Station	None	1,500 square feet
Informational Kiosk	None	Kiosk
Entrance Road Gate	None	Yes
Split Rail Fence	None	3 feet high, 1,400 feet in length
Trees Per Acre	100-120 Trees	25-45 Trees

RESOURCE PROTECTION MEASURES (MITIGATIONS)

Alternatives are designed to be consistent with the desired condition specified in the LRMP and the standards and guidelines contained therein. Mitigation measures are an integral part of the action alternative. The following would be applied to reduce potential adverse impacts of Alternative 2 (Proposed Action). Mitigation measures are considered in the effects discussions of Chapter 3.

Wildlife

1. If exterior lights are required for human safety at the welcome station, motion detector lights that stay on the minimum time needed are required and are directed away from ungulate habitat.
2. The welcome station will include interpretive information on maintaining ungulate winter habitat security, use of migration corridors, and mitigation of negative effects from recreational use (i.e., keeping dogs on leash, staying on trails, observing or reducing vehicle speeds, observing area closures).
3. From December 1-March 31, signs will be installed at the parking lot prohibiting parking to access the trails for dog walking, hiking, mountain biking, and cross-country skiing.
4. Design parking lot and facility so that outdoor public use, including dog walking, will occur away from the northern edge of the site to reduce potential disturbance to wildlife, primarily elk.
5. Signs in the parking lot will limit visitor parking time to approximately one half hour.
6. The following seasonal restrictions will be implemented within ¼ mile of newly discovered nest sites or activity centers for MIS Raptors during welcome station construction related activities:
   Northern Goshawk and Red-tailed hawk: March 1 through August 31
   Cooper's hawk and Sharp-shinned hawk: April 15 through August 31

Soils

1. Include Best Management Practices as part of the project design. Apply appropriate erosion-control measures to all ground disturbing activities associated with the construction and development of new facilities, as described in General Water Quality Best Management Practices (Pacific Northwest Region, 1988).
2. Provision should be made for surface drainage from new management facilities. The amount of maintenance can be reduced if drainage structures are properly installed during new construction.

Botany – Invasive Species

1. Use clean-equipment contract clauses (local and regional) to minimize risk of introduction and spread of invasive plant species by contractors.
2. Any fill materials will be gathered only at weed-free quarries or other weed-free source sites.
3. Minimize soil disturbance and retain native vegetation, in and around project activity areas, to the extent possible consistent with project objectives.
4. To the extent feasible, manually remove all invasive plant species from the project site immediately prior to initiation of project-related ground-disturbing activities. As necessary, give priority to plants likely to flower and fruit during project implementation.

Scenic

1. The parking area would be screened from Highway 46 with existing or new vegetation, such as planting where necessary for screening.

ALTERNATIVES CONSIDERED BUT NOT FULLY ANALYZED

Three other alternatives were considered and the following discussion provides rationale for why they were not analyzed further.

An alternative was considered that would have provided additional parking and a trailhead for connecting to a nearby mountain bike trail. There is currently no trailhead parking or existing trails that begin or end at the proposed site. The proposed development for parking at the Welcome Station would be short-term parking for byway visitors seeking interpretation and information for the Cascade Lakes National Scenic Byway and the Deschutes National Forest. The LRMP explicitly states for recreation management in the Ryan Ranch Key Elk Area (WL-45, page 4-56) that *"Facilities will not be developed nor activities promoted which would encourage public use during the winter."* A trailhead would encourage dispersed recreational use that would originate from this site during the winter, primarily mountain biking and cross country skiing. Because that use would not be consistent with LRMP direction, it was not analyzed in detail.

An alternative was considered that would have developed a Welcome Station at the existing North Gateway interpretive site and viewpoint. This site is located two miles to the west past the junction of Highway 46 and Forest Road 41 on the south side of Highway 46. This site was not selected because 1) most cars that are accessing the scenic byway from Bend would need to turn across traffic, 2) it is located at a higher elevation with the likelihood of more snow, and 3) if power from an existing power source is utilized, the cost to install power would be too expensive.

An alternative was considered that would have developed a Welcome Station on National Forest System land at the urban interface, which is closer to Bend. This site would have had a more urban setting, rather than a desired remote forest setting. Additional traffic could cause congestion in areas that already have more traffic use than the site for the Proposed Action. Therefore, it was not analyzed in detail.

CHAPTER 3

ENVIRONMENTAL CONSEQUENCES

CHAPTER 3 – ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This section summarizes the physical, biological, social, and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternative. It also presents the scientific and analytical basis for comparison of the alternatives. For the cumulative effects analysis, consideration of past actions followed guidance provided by the Council of Environmental Quality (June 24, 2005 Memorandum from James L. Connaughton, Project Record). Where pertinent, analysis is tiered to the FEIS of the LRMP. Probable effects are discussed in terms of environmental changes from the existing condition and include qualitative and quantitative assessments of direct, indirect, and cumulative effects.

Direct effects: Those effects that occur at the same time and in the same general location as the activity causing the effects.
Indirect effects: Those effects that occur at a different time or different location than the activity to which the effects are related.
Cumulative effects: Those effects that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.

PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

The following is a summary of past, ongoing, or reasonably foreseeable actions that, when relevant to the environmental analysis of each resource, were considered during the cumulative effects analysis.

- Ongoing road maintenance
- Ongoing roadside danger tree removal
- Ongoing recreational use on nearby trails
- Personal Use Firewood CE: Roadkill sale, approximately 3 miles west of project area.
- Ryan Ranch Aspen and Willow Enhancement CE: 5 acres remaining on east side of Deschutes River. Expected completion 2010.
- Ryan Ranch Wetland Restoration CE: Expected implementation 2010.
- Sunriver to Bend paved trail system: Expected implementation 2010

Specialist reports, prepared for this project, are located in the Project Record (40 CFR 1502.21). The project record is available at the Bend-Ft. Rock Ranger District office in Bend, Oregon.

SCENIC VIEWS

MANAGEMENT DIRECTION

The Forest Plan for the Deschutes National Forest provides standards and guidelines for management areas. The Scenic Views management areas are used to describe the desired future conditions of various settings and how these are to be met by various activities or actions. In addition, there is scenic resource direction and protection for nationally designated areas such as Scenic Byways.

The Forest Service implementing regulations currently establish a variety of Scenic Integrity Levels for Scenic Views – MA9. Scenery Management Objectives are defined in terms of Scenic Integrity Levels which describe existing conditions and whether the landscape is visually perceived to be "complete" or not. The most complete rating, or highest rating, for Scenic Integrity Levels means having little or no deviation from the landscape character that makes it appealing and attractive to visitors and local residents. In addition to describing existing conditions, Scenic Integrity Levels also describe the level of development allowed and ways to mitigate deviations from the area's landscape character. The standard for this project is: Natural Appearing Landscape with High Scenic Integrity Level (formerly Retention, MA 9, SV-1 Foreground, SV-3 Middleground) along both sides of Highway 46.

ANALYSIS METHODS

Methodology used for analyzing impacts to scenic resources is the Scenery Management System which uses "Landscape Aesthetics: A Handbook for Scenery Management" (1995). The Scenery Management System incorporates both the natural and human processes into the ideas of managing for ecosystems.

EXISTING CONDITION

The proposed scenic byway welcome station, access drive, and parking area would be located on approximately 2 acres. It is adjacent to the Scenic Byway (Highway 46) at the junction with Forest Road 41 that accesses Deschutes River recreation sites and Sunriver.

The existing views from Highway 46 to the project area are a recently thinned forest of blackbark ponderosa pine, planted approximately 40 years ago. The topography of the site is fairly level and there are no dramatic features visible from the road.

Views from the site are:

- To the east, the highway or across the highway to Forest Road 41. The intersection is a two-lane highway with a turning lane that provides access to Forest Road 41 from Bend.
- To the north, thinned black-bark pine plantation.
- To the west, unthinned ponderosa pine sloping down and away from the project area.
- To the south, thinned ponderosa black-bark pine that ends at larger, unthinned ponderosa pine.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Under this alternative, the project area would remain undeveloped. There would be no direct, indirect, or cumulative effects on scenic views. The byway traveler would need to proceed into Bend to obtain scenic byway and recreation information. Interpretive information would be limited to established areas along the scenic byway.

Alternative 2 (Proposed Action)

The project area would be developed with the construction of a Cascadian rustic style, one-story, approximate 1,500 square foot building. This facility would setback at least 100 feet from Cascade Lakes Highway. An informational kiosk would be constructed between the parking area and the welcome station facility. Short-term visitor parking would allow for an expected 25 cars and 2 to 5 recreational vehicles (RVs). The facility and associated parking would be designed to leave trees in all areas that would not have disturbance activities. The facility would be compliant with the Americans with Disabilities Act (ADA, 1990) and would be energy efficient with a low impact footprint on the site. A deceleration (turn) lane would be constructed on the highway for those exiting to the welcome station from Bend.

The architecture and elevation of the building would blend in with the surrounding landscape as much as possible. It would have some visibility from the highway with advance warning signing. The parking area would be screened from the highway with existing or new vegetation. A split rail fence would be constructed around the facility and parking area to provide a rustic feel, define the site, and limit visitor use to the areas within the fenced area.

This project would be consistent with LRMP standards and guides M9-1 and M9-2 (LRMP page 4-121.

- M9-1: New recreational developments and changes to existing developments are permitted as long as they are consistent with the desired visual condition. When viewed from significant viewer locations, recreational facilities will meet the established visual quality standards. For viewer locations within the recreational development being viewed, established visual quality standards may not always be met.
- M9-2: Parking facilities, structures, and other recreational facilities will normally be placed where they are not visible from significant viewer locations. Where it is not possible to screen recreational facilities, they will be designed to blend with the elements found in the natural landscape and will remain subordinate to the overall visual strength of the surrounding landscape.

There would be no negative direct or indirect effects on scenic views. Therefore, there would be no cumulative effects.

RECREATION

INTRODUCTION

This report specifically addresses the effects of the proposed Byway Welcome Station on the existing social character as well as on recreation opportunities and experiences for the project area.

EXISTING CONDITION

A developed and signed mountain bike trail is located within sight of the proposed Welcome Station. Across the highway from the southeast corner of the site, at the of the junction of Highway 46 and Forest road 41, is a graveled parking area that is used as a starting/ending point, primarily by mountain bikers, cross country skiers, and runners. This is also a recreation self-service pass outlet where fees are collected in a fee tube. Road 41 accesses many day use areas along the Deschutes River, including waterfalls and hiking, biking, and horse trails that parallel the river.

Highway 46 provides the main access to Mt. Bachelor, campgrounds, the many lakes and associated day use areas, as well as many Wilderness and non-Wilderness trailheads. Recreation use along all points of the Cascade Lakes Byway has increased since the early-1980s, when Bend and central Oregon became destination points for a variety of year-round outdoor pursuits. With over 2.5 million annual visitors to the Deschutes National Forest, this site would serve as a gateway for recreation and scenic byway information and interpretation to byway travelers. With abundant water, and the Cascade Mountains creating a spectacular backdrop, the greater Wickiup and Crane Prairie areas provide opportunities for camping (developed and dispersed), motorized and non-motorized boating, angling, and wildlife viewing. These are only a handful of the more popular activities that thousands of people come to experience and enjoy every year.

ENVIRONMENTAL CONSEQUEENCES

Alternative 1 (No Action)

Direct and Indirect Effects: A Welcome Station would not be constructed. With the Deschutes Supervisor's Office and Bend-Fort Rock Ranger District office being relocated from their current locations to northeast Bend (old Bend-Pine Nursery site), most of the visiting public would need to obtain information, maps or other items at this location. Depending on which way visitors enter Bend, it is estimated that the public would add an additional 30 to 45 minutes to their travel time if required to go to the new office location.

Alternative 2 (Proposed Action)

Direct, Indirect, and Cumulative Effects: This location would serve the public that utilize Highway 46 as the main destination route to the high lakes area of the Bend-Fort Rock Ranger District. Even though the primary purpose of the facility would be to serve those that utilize the Scenic Byway, those that recreate along or access Bend from Forest Road 41 would also benefit from the Welcome Station as a facility for obtaining Scenic Byway or other Forest information and permits. For the visiting public utilizing the Cascade Lakes Scenic Byway to access Forest roads, resorts, lakes, trails or other destinations, this facility would better serve the public.

The Welcome Station would not provide other than short-term parking of approximately 30 minutes and only for those using the facility. Parking for the Welcome Station's intended use is for those

visitors that stop for a brief visit and continue on their way. It is not intended for uses other than the facility.

A mountain bike trail that is adjacent to the proposed site connects with a trail across Highway 46 that also crosses Road 41 very near this location. It is unlikely that a new facility would detract from their recreation experience.

FISH AND HYDROLOGY

SUMMARY OF FINDINGS FOR PROPOSED, THREATENED, ENDANGERED, AND SENSITIVE FISH SPECIES

Table 3 displays the species considered in the biological evaluation (BE) of this project. There are no threatened or endangered aquatic species or habitat present within the project area.

Table 3: Threatened, Endangered, and Sensitive (TES) Fish Species Considered in Analysis

Species	Scientific Name	Status [1]	Occurrence	Effects Determination [2]
Columbia Basin Redband Trout	*Oncorhynchus mykiss gairdneri*	S	None	Alternative 1 – NI Alternative 2 – NI

1. S = Sensitive species from Regional Forester's list
2. NI = No Impact

Alternative 1 – NI – No Impact
Alternative 2 – NI – No Impact

EXISTING CONDITION

The proposed project area is approximately one mile northwest of the Deschutes River, a Wild and Scenic River and State Scenic Waterway. The project area is outside of the Wild and Scenic River corridor. The project area is within the 147,978 acre Pilot Butte watershed.

The project area lies within lands to be managed in accordance with the Inland Native Fish Strategy (INFISH), which amended the Deschutes National Forest Land and Resource Management Plan (LRMP) in 1995. Management direction within INFISH requires RHCAs to be delineated for watersheds. RHCAs are portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. The project area is outside of any RHCAs. There are no perennial or intermittent streams, wetlands or riparian areas within the project area.

MANAGEMENT DIRECTION

DESCHUTES NATIONAL FOREST LRMP

Applicable Standard and Guideline: RP-8: Evaluate the cumulative effects of proposed projects on water quality, runoff, stream channel conditions, and fish habitat and adopt measures to avoid adverse effects to these resources.

ENVIRONMENTAL CONSEQUENCES:

Alternative 1 (No Action)

No activity would take place. There would be no change in the direct, indirect, or cumulative effects to water or fisheries resources by taking no action. This alternative would have **No Impact** to redband trout.

Alternative 2 (Proposed Action)

The nearest water resource or riparian area is approximately one mile away from the proposed project area. There would be no direct or indirect effects to water resources, fisheries, or riparian areas because of the distance from ground disturbance and the relatively flat topography to water. The small size of the project (less than 2 acres impacted, 0.001% of the watershed) would have no measurable effect to evapotranspiration of water within the watershed; there would be no cumulative effects to river flows in the Deschutes River. There would be no effects to Essential Fish Habitat (EFH), **No Impact** to redband trout and **No Effect** to threatened, endangered, proposed, or candidate fish species.

The Deschutes River is listed as a water quality impaired river (Oregon Department of Environmental Quality 303(d) list). This alternative would have no effects to the parameters for which it is listed. There would be no effects to any other 303(d) listed water body. There would be no effects to the INFISH Riparian Management Objectives, which for a forested system are pool frequency, water temperature, large woody debris, and stream width/depth ratio.

This alternative meets INFISH standards and guidelines as it maintains the Riparian Management Objectives. There would be no effects to Executive Order 11988 (Floodplains) and Executive Order 11990 (Wetlands). The effects analysis was done at the 5th field watershed scale.

SOILS

Project design would include appropriate Best Management Practices (BMPs) and resource protection measures to control soil erosion during the construction phase activities. The Forest Service would monitor and maintain these management facilities to avoid or minimize erosion problems where surface runoff from disturbed sites may occur in adjacent delivery areas.

MANAGEMENT DIRECTION

The Pacific Northwest Region developed soil quality standards and guidelines that limit detrimental soil disturbances associated with management activities (FSM 2520, R-6 Supplement No. 2500-98-1). This Regional guidance supplements the Deschutes Land and Resource Management Plan (LRMP) standards and guidelines and provides policy for planning and implementing management practices which maintain or improve soil quality. It is consistent with LRMP interpretations for standards and guidelines SL-3 and SL-4 that limit the extent of detrimental soil conditions within activity areas. Standard and Guideline (SL-4) directs the use of rehabilitation measures when the cumulative impacts of management activities are expected to cause damage exceeding soil quality standards and guidelines on more than 20% of an activity area. Standard and Guideline (SL-5) limits the use of mechanical equipment in sensitive soil areas.

The primary objective of this management direction is to ensure that management activities are planned and conducted so that on-site loss of soil productivity is minimized on lands which are not officially dedicated to permanent facilities necessary to achieve other land management objectives. Soil quality standards and guidelines do not apply to intensively developed sites, such as recreation facilities and administrative sites, because they could not be constructed to result in limited disturbance below specific thresholds. Soils dedicated to these land uses remove land from production and preclude other uses of the soil for as long as these facilities remain in use.

SCOPE OF THE ANALYSIS

The discussion of soil effects will be focused on the proposed location of the welcome station building and parking area facilities. A qualitative assessment of potential soil impacts was conducted to ensure that acceptable soil productivity is maintained for the growth of desired vegetation on undeveloped portions of the proposed site.

The analysis also considered the effectiveness and probable success in project design that includes Best Management Practices (BMPs) to control surface erosion during and following construction activities.

LANDSCAPE CHARACTERISTICS AND EXISTING CONDITION OF THE SOIL RESOURCE

The proposed development site is located on Soil Map Unit Code MK (Soil Resource Inventory, Deschutes National Forest, 1976). The landscape is characterized by gentle-to-moderately sloping glacial uplands and uneven lava plains which lie below cinder cones and buttes in surrounding areas. Mean annual precipitation averages between 12 to 15 inches. The proposed five acre parcel is located on flat to nearly level ground.

A moderately thick layer (20 to 40 inches) of volcanic ash and pumice deposits have covered glacial till and older soils derived from basaltic lavas. Soil surface layers consist of non-cohesive (loose),

loamy sands with very little structural development due to the young geologic age of the volcanic parent materials. The underlying glacial deposits consist of sands and gravels that have been reworked by running water. These glacial materials influence water transport and the growth of vegetation. Dominant soils are moderately deep (20 to 40 inches) and deep (greater than 40 inches) with moderate productivity potential. There are no steep slopes (greater than 30%) or sensitive soils with high ratings for surface erosion or potentially wet soils that would require site-specific mitigation. Soils on the proposed site meet criteria for land suitability that would allow them to be regenerated or resist irreversible resource damage.

These volcanic ash-influenced soils have sandy textures with high infiltration and percolation rates that account for low amounts of overland flow. Most of the water yielded from these lands is delivered to streams as deep seepage and subsurface flows that emerge at lower elevations. Surface erosion by water is generally not a concern because representative soils have low-to-moderate erosion hazards on gentle to moderately sloping terrain which is naturally stable. At the present time, soils are adequately protected by vegetation and organic litter layers to control erosion rates within tolerable limits. Dominant soil types are sufficiently resistant to erosion to permit limited and temporary exposure of bare soil. Soils derived from volcanic ash are easily eroded where water becomes channeled on or adjacent to previously compacted sites such as road surfaces and logging facilities.

The existing condition of the soil resource has mainly been influenced by existing logging facilities which were used for past timber harvest and biomass thinning activities. Most project-related impacts to soils occurred on and adjacent to temporary roads, log landings and primary skid trails where mechanical disturbances removed vegetative cover, displaced organic surface layers, or compacted soil surface layers. Research studies and local soil monitoring have shown that soil compaction and soil displacement account for the majority of detrimental soil conditions resulting from ground-based logging operations (Page-Dumroese, 1993; Geist, 1989; Powers, 1999; USDA, Deschutes Soil Monitoring Reports). Much of the random disturbance between main skid trails and away from log landings has decreased naturally over time. Frost heaving and freeze-thaw cycles have gradually restored soil porosity in areas with slight to moderately compacted layers near the ground surface. The establishment of vegetative ground cover and the accumulation of litter and organic matter continue to improve areas of displaced surface soil.

No classified system roads or recreation trails are currently located within the boundaries of the five-acre parcel proposed for this project.

Adequate amounts of coarse woody debris and surface organic matter currently exist to protect mineral soil from erosion and maintain the soils ability to retain moisture and provide both short and long-term nutrient supplies for the growth of vegetation on undeveloped portions of the project area.

SOIL PRODUCTIVITY ISSUES OR CONCERNS

There were no scoping comments received from the public or other agencies regarding soil productivity issues associated with the development of the welcome station facilities. There are no soil-related issues or extraordinary circumstances because the construction of a new building and parking area preclude other uses of the soil for as long as these management facilities remain in use. None of the proposed activities would occur on landtypes that contain sensitive soils with a high hazard for surface erosion or potentially wet soils with high water tables that would require site-specific mitigation. Project design includes Best Management Practices (BMPs) to control surface erosion during and following ground disturbing activities.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct and Indirect Effects: No additional land would be removed from production to develop a welcome station building and parking area facilities. No trees or other vegetation would be cleared to accommodate the welcome station facilities. The extent of exposed mineral soil would not increase from construction activities, so erosion control measures would not be necessary.

Soil productivity would not change appreciably unless a stand-replacing wildfire causes intense ground-level heating long enough to detrimentally alter soil physical, chemical and biological properties.

Alternative 2 (Proposed Action)

Direct and Indirect Effects: There are no soil-related extraordinary circumstances associated with the proposed actions because construction activities would not disturb sensitive soils with a high erosion hazard or potentially wet soils that would require special mitigation. The proposed site is located on nearly level and very stable ground that is well suited for development. Surface erosion by water is not a primary concern because dominant soils have a low erosion hazard rating. Some loss of surface materials can be expected, but soils are sufficiently resistant to erosion to permit limited and temporary exposure of bare mineral soil during the initial construction phase.

Soil quality standards and guidelines do not apply to intensively developed sites, such as recreation facilities and administrative sites, because they could not be constructed to result in limited disturbance below specific thresholds. Soils dedicated to these land uses remove land from production and preclude other uses of the soil for as long as these facilities remain in use.

Construction activities inevitably disturb soil properties and alter soil-hydrologic function by removing the natural vegetation, displacing the organic topsoil, and compacting subsoil materials. Excavation work exposes subsoil that is often used for backfill around the foundation perimeter and for grading the terrain around new facilities. These physical disturbances increase the potential for surface runoff and accelerated erosion. The greatest potential for accelerated soil erosion occurs during the construction phase when the largest area of disturbed soil is exposed to precipitation events. Once completed, the area of the footprint covered by the structure is no longer susceptible to erosion. The surrounding perimeter of exposed soil would require temporary or permanent erosion control measures to provide surface cover and prevent off-site impacts to soils in adjacent areas. The parking lot would be paved, so there is no potential for long-term erosion problems following the completion of this facility.

Best Management Practices (BMPs) are included as part of the project design to control surface runoff and soil erosion during the initial construction phase activities (General Water Quality Best Management Practices, Pacific Northwest Region, 1988). Application of these erosion-control BMPs are considered to be routine practices that have been used on numerous similar projects. They are tiered to the Soil and Water Conservation Practices Handbook (FSH 2509.22) which contains erosion control measures that have proven effective in protecting and maintaining soil and water resource values. The types and locations of soil disturbance are not expected to cause any indirect, off-site impacts to soils in adjacent areas, such as loss or burial of productive surface soils.

Cumulative Effects: The above discussion describes why there are no extraordinary circumstances associated with the combined effects of past and current disturbances and those anticipated from implementing the proposed construction activities.

No other ground-disturbing management activities are currently scheduled within the boundaries of the five-acre parcel proposed for this project.

The Noxious Weed Control EIS would likely implement various treatments to control invasive plants in site-specific areas. These future activities are not expected to cause any detrimental changes in soil properties. Hand removal of individual plants would result in small areas of soil displacement or the mixing of soil and organic matter which would not meet criteria considered detrimental to soil productivity. It is also unlikely that herbicide treatments would cause any adverse direct or indirect effects to soil productivity (18 Fire Herbicide Treatment Environmental Assessment, Soils Report, 2005).

The Forest Access Management Plan will address travel management issues and the need to change current policy and management direction. The proposed new direction would identify a system of roads and trails for motorized travel and eliminate cross-country motorized travel except on designated routes. Future implementation of this new direction would have a beneficial effect on the soil resource because it would help prevent cumulative increases in the extent of detrimental soil conditions in random locations off authorized roads and trails.

Other foreseeable future activities include continued recreation use and standard road maintenance. Impacts from dispersed recreation activities are usually found along existing roads and trails where vegetation has been cleared on or adjacent to old logging facilities in past harvest areas. Future impacts from dispersed camping and incidental use by hikers and mountain bikers are expected to occur in similar locations. Soil disturbances from future recreation use are not expected to have a measurable effect on site productivity. Road maintenance activities would reduce accelerated erosion rates where improvements are necessary to correct road drainage problems.

The cumulative effects from the proposed actions combined with all past, present, and reasonably foreseeable future activities would maintain acceptable soil productivity for the growth of desired vegetation on undeveloped portions of the project area.

MANAGEMENT CONSISTENCY

Management allocation areas MA-9 and MA-11 do not contain specific standards and guidelines for the soil resource in this area.

The primary objective for the soil resource is to plan and conduct management activities so that on-site loss of soil productivity is minimized on lands which are not officially dedicated to permanent facilities necessary to achieve other land management objectives. Management direction for the soil resource applies to lands where vegetation and water resource management are the principle objectives. Soil quality standards and guidelines do not apply to intensively developed sites such as recreation facilities and administrative sites (FSM 2520, R-6 Supplement No. 2500-98-1).

Construction activities would not disturb sensitive soils with a high erosion hazard or potentially wet soils that would require special mitigation. Soils are sufficiently resistant to erosion to permit limited and temporary exposure of bare soil during development. The types and locations of soil disturbance are not expected to cause any indirect, off-site impacts to soils in adjacent areas, such as loss or burial of productive surface soils. Project design would include appropriate Best Management Practices (BMPs) to control surface erosion during and following construction activities. The parking lot would

be paved, so there is no potential for long-term erosion problems following the completion of this facility.

The proposed actions are not expected to create any impacts that would cause irreversible damage to soil productivity. There is low risk for the proposed activities to cause soil mass failures (landslides) due to the inherent stability of dominant landtypes and the lack of seasonally wet soils on steep slopes. Careful planning and the application of erosion-control Best Management practices would be used to minimize surface erosion problems and prevent irreversible losses of the soil resource.

The development and use of management facilities is considered an irretrievable loss of soil productivity until their functions have been served and disturbed sites are returned back to a productive capacity.

FORESTED VEGETATION

INTRODUCTION

There are no large, old trees on the project area. The site was planted with ponderosa pine seedlings approximately 40 years ago. In 2007 it was thinned from below to 125 to 150 trees per acre and brush on the site was mowed in 2007 to reduce the fire hazard. Residual tree size ranges from 10 to 14 inches diameter at breast height (dbh) with an average diameter of approximately 12 inches dbh. While many of the trees meet minimum merchantable diameter specifications, most of the trees do not meet the minimum merchantable height to consider selling them as sawtimber. There is presently an estimated 1,000 merchantable board feet per acre. Most trees on the site would meet both minimum merchantable diameter and height criteria in an estimated 10 to 15 years.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct and/or Indirect Effects: Management would continue to allow trees to grow for potential timber and wood fiber production. It is likely that trees would not be thinned to reduce stand density for approximately 10 years, maintaining the conditions that currently exist along this portion of the Cascade Lakes National Scenic Byway. The current stand condition of relatively uniform size, immature trees would remain unchanged.

Alternative 2 (Proposed Action)

Direct and Indirect Effects: The proposed action would remove approximately 2 acres of nearly 160,000 acres from timber production in Management Area 9. This is an insignificant number of acres that are considered suitable for timber production. Trees would be retained for aesthetic reasons where feasible to reduce the visual impact of the new parking facilities and building. Site productivity would be reduced once the building and parking facilities are constructed and would change the emphasis at the immediate site from timber production.

The proposed action would remove approximately 1,500 board feet of volume. Trees would be left in portions of the 2 acres that would not be impacted by the Welcome Station, parking area or access road. Much of the material could currently be sold as non-sawtimber. If a market exists when the project is implemented, trees not meeting merchantability specifications could be utilized as firewood or biomass.

Cumulative Effects: With the exception of the previous planting and the non-commercial thinning and mowing in 2007, there are no records of prior vegetation activities within the five acre site. Brush in the area to the east was mowed in 1997.

A 115 acre stand of trees to the south of Highway 46 is scheduled to be non-commercially thinned, handpiled, and mowed under the East Tumbull Environmental Assessment. This activity would open the stand up, with tree densities similar to the densities that are currently in the proposed project area. This would allow the trees to develop into large ponderosa pine and provide a desired condition as provided by the LRMP. Thinning stands adjacent to the Welcome Station could have a beneficial visual effect for the Welcome Station project. Removing 2 acres of trees would have no significant cumulative effect on the amount of forested area.

WILDLIFE: Threatened, Endangered, and Sensitive Species

SUMMARY

There would be no effects to any species listed or proposed for listing under the ESA from the proposed project due to a lack of habitat.

INTRODUCTION

This biological evaluation (BE), analyzes effects to federally listed or proposed species and Regional Forester Sensitive Species (USDA FS 2008) from implementation of the Cascade Lakes Scenic Byway Welcome Station on the Bend-Ft. Rock Ranger District (District) of the Deschutes National Forest (Forest). The BE meets the direction of the Forest Service Manual 2600, the Deschutes National Forest Land and Resource Plan (*LRMP*, USDA FS 1990) and amended Regional Forester's Forest Plan Amendment # 2 (*Eastside Screens*, USDA FS 1995), and the Endangered Species Act of 1973.

The Deschutes LRMP and amended Eastside Screens present standards and guidelines (S&Gs) for the maintenance of wildlife habitat. Short-term impacts are for 5 years while long-term project impacts are greater than 5 years.

A Forest Programmatic Biological Assessment (BA) for Section 7 informal consultation under the Endangered Species Act was completed in 2006 for projects proposed from 2006 to 2009 (USDA FS 2006). The BA established project design criteria (PDC) to streamline consultation with the U.S. Fish and Wildlife Service (FWS). Project design criteria focus on habitat alteration and disturbance effects. The northern spotted owl, bald eagle, and Oregon spotted frog were included in the BA. The bald eagle was de-listed in 2007 but is under a five-year monitoring plan and managed according to the 2007 National Bald Eagle Management Guidelines. The Pacific fisher is a federal candidate species but was not included in the BA.

FEDERALLY LISTED OR PROPOSED SPECIES CONSIDERED

Northern Spotted Owl: *Federal Threatened, MIS*

The Northern spotted owl inhabits mature to old-growth mixed coniferous habitats. Functional nesting, roosting, and foraging (NRF) habitat for the spotted owl occurs in multi-storied canopies in mixed conifer stands and in riparian areas. The canopy cover is typically greater than or equal to 40% with an overstory comprised of at least 5% of trees greater than 21 inches dbh. Loss of large trees and fragmentation of habitat due to previous timber harvest, large-scale wildfires, and insect and disease mortality, along with competition with the barred owl (*Strix varia*) have reduced the habitat quantity and quality for the spotted owl on the Forest. The proposed project occurs outside of the range of the northern spotted owl.

Direct and Indirect Effects: Implementation of the proposed project would have "No Effect" on the Northern spotted owl or its habitat including NRF, designated critical habitat, or dispersal/connectivity due to the lack of habitat in or near the project area.

Pacific Fisher: *Federal Candidate, Sensitive*

Fisher populations are considered to be extremely low in Oregon, Washington, and parts of the Rocky Mountains. They occur in landscapes dominated by late-successional and mature forests. Fishers appear to use riparian areas disproportionately to what exists. Critical features of fisher habitat include forest physical structure and associated prey. Major prey species include small to medium sized mammals, birds, and carrion. There are only two known populations of fisher in Oregon—one on the Rogue River National Forest and the other in southwestern Oregon along the Oregon-California border. Winter surveys using Trailmaster baited cameras were conducted along the wilderness boundary in the Sisters Ranger District of the Deschutes during the winters of 1997, 1998, and 1999 according to the Ruggerio et al. (1994) protocol. No fishers were detected.

The project area consists of lower elevation ponderosa pine habitat which does not provide the complex structure in mixed coniferous forests needed by the fisher.

Direct and Indirect Effects: Implementation of the proposed project would have "No Effect" on the Pacific fisher due to the lack of habitat in or near the project area.

Oregon Spotted Frog: *Federal Candidate, Sensitive*

The Oregon potted frog inhabits small ponds, lake shorelines, and streams and is most often found in non-woody wetland plant communities of sedges, rushes and grasses. In Central Oregon, spotted frogs are found in lakes and marshes up to 5,200 feet in elevation, where snow and ice cover their habitat for four to six months out of the year (Pearl and Hayes 2004).

This species has declined 70-90% from its historic range due to wetland loss and degradation from development, predation by non-native fish and American bullfrogs, drought, exotic wetland plant invasion, woody vegetation encroachment, livestock grazing, and disease (Hayes 1997, Cushman and Pearl 2007). The project area is comprised of blackbark ponderosa pine and does not contain any wetland habitat.

Direct and Indirect Effects: Implementation of either alternative would have "No Effect" on the spotted frog due to the lack of habitat in or near the project area.

Table 4: Federally Listed and Proposed Species Occurring or Potentially Occurring on the Deschutes National Forest and Effects from the Project

Federally Listed and Proposed Species	Status	Effects	Rationale
Northern spotted owl (*Strix occidentalis caurina*)	Federal threatened, MIS	No effect due to lack of habitat.	Late-successional mixed conifer forests with multi-storied structure and downed wood. The project is east of the spotted owl line.
Oregon spotted frog (*Rana pretiosa*)	Federal Candidate, Regional Forester Sensitive	No effect due to lack of habitat.	Inhabits shallow edges of lakes and ponds and riparian areas
Pacific fisher (*Martes pennanti*)	Federal Candidate, Regional Forester Sensitive	No effect due to lack of habitat.	High elevation mixed coniferous forests.

REGIONAL FORESTER SENSITIVE SPECIES CONSIDERED

Regional Forester Sensitive Species were considered and effects to two species are analyzed: Lewis's woodpecker and white-headed woodpecker. The bald eagle, bufflehead, harlequin duck, horned grebe,

red-necked grebe, tricolored blackbird, yellow rail, northern waterthrush, Greater sage grouse, American peregrine falcon, Townsend's big-eared bat, pygmy rabbit, Pacific fisher, California wolverine, Crater Lake tightcoil, silver-bordered fritillary, and Johnson's hairstreak, are all Sensitive Species that are known to occur or potentially occur on the Forest. However, there is no suitable habitat for any of these species in or near the project area. Therefore, these species have been given the determination of "No Impact" from implementation of the proposed project.

Table 5: Regional Forester Sensitive Species Occurring or Potentially Occurring on the Deschutes National Forest and Effects from the Project

Regional Forester Sensitive Species	Status	Effects	Rationale
BIRDS			
Bald eagle (*Haliaeetus leucocephalus*)	Regional Forester Sensitive, MIS	No impact due to lack of habitat.	Lakes, large rivers with nearby large diameter trees, usually ponderosa pine
Lewis's woodpecker (*Melanerpes lewisi*)	Regional Forester Sensitive, MIS	May affect but would not lead to a trend towards Federal listing.	Large diameter snags in open ponderosa pine, burned forests
White-headed woodpecker (*Picoides albolarvatus*)	Regional Forester Sensitive, MIS	May affect but would not lead to a trend towards Federal listing.	Large diameter snags in open ponderosa pine forests
Bufflehead (*Bucephala albeola*)	Regional Forester Sensitive, MIS	No impact due to lack of habitat.	Snags associated with lakes
Harlequin duck (*Histrionicus histrionicus*)	Regional Forester Sensitive	No impact due to lack of habitat.	Rapid streams, large trees
Horned grebe (*Podiceps auritus*)	Regional Forester Sensitive	No impact due to lack of habitat.	Lakes
Red-necked grebe (*Podiceps gisegena*)	Regional Forester Sensitive	No impact due to lack of habitat.	Lakes
Tricolored blackbird (*Agelaius tricolor*)	Regional Forester Sensitive	No impact due to lack of habitat.	Lakeside, bullrush
Yellow rail (*Coturnicops noveboracensis*)	Regional Forester Sensitive	No impact due to lack of habitat.	Marsh
Northern waterthrush (*Seiurus noveboracensis*)	Regional Forester Sensitive	No impact due to lack of habitat.	Riparian habitat with dense willows along streambanks
Greater sage grouse (*Centrocercus urophasianus phaeios*)	Regional Forester Sensitive	No impact due to lack of habitat.	Sagebrush flats
American peregrine falcon (*Falco peregrinus anatum*)	Regional Forester Sensitive, MIS	No impact due to lack of habitat.	Riparian and cliff habitat
MAMMALS			
Townsend's big-eared bat (*Corynorhinus townsendii*)	Regional Forester Sensitive, MIS	No impact.	Caves, mines, bridges, rock crevices, ponderosa pine and juniper forests. Very low foraging potential and no known roosts
Pygmy rabbit (*Brachylagus idahoensis*)	Regional Forester Sensitive	No impact due to lack of habitat.	Sagebrush flats
Pacific Fisher (*Martes pennanti*)	Regional Forester Sensitive, MIS	No impact due to lack of habitat.	Mixed conifer, riparian, complex physical structure
California Wolverine (*Gulo gulo*)	Regional Forester Sensitive, MIS	No impact due to lack of habitat.	Mixed conifer high elevation forests
INVERTEBRATES			
Crater Lake tightcoil (*Pristiloma arcticum crateris*)	Regional Forester Sensitive	No impact due to lack of habitat.	Perennial wet areas along streams
Silver-bordered fritillary (*Boloria selene atrocostalis*)	Regional Forester Sensitive	No impact due to lack of habitat.	Late-successional mixed conifer forests with dwarf mistletoe
Johnson's hairstreak (*Callophyrys johnsoni*)	Regional Forester Sensitive	No impact due to lack of habitat.	Meadows and bogs

Lewis's woodpecker and White-headed woodpecker

Lewis's woodpecker

Habitat for the Lewis's woodpecker, a migrant in this part of its range, includes old-forest, single-storied ponderosa pine and to a lesser degree, cottonwoods. Lewis's woodpeckers feed on flying insects and are not strong cavity excavators. They require large snags in an advanced state of decay that are easy to excavate or they use old cavities created by other woodpeckers. Nest trees generally average 17 inches to 44 inches (Saab and Dudley 1998). Lewis's are an unusual woodpecker as they hawk aerially for insects or "flycatch" rather than probing their bills into trees. They nest in already excavated woodpecker holes, particularly from northern flicker and hairy woodpeckers. Non-overlapping home ranges for Lewis's woodpecker in eastern Oregon are approximately 2 to 12 acres (Thomas et al. 1979).

The Lewis's woodpecker is identified in the *Conservation Strategy for Landbirds of the East-Slope of the Cascades Mountains in Oregon and Washington* as a landbird focal species for ponderosa pine forests with patches of burned old forest (Altman 2000). In unburned forests, biological objectives include maintaining or providing the following conditions where ecologically appropriate: (1) 24 trees per acre greater than 9 inches dbh, and of these, approximately six per acre should be greater than 20 inches dbh; (2) provide recruitment snags (e.g., fungal inoculation, topping, girdling), particularly in areas with high risk of stand-replacement fires; and (3) provide shrub understory with greater than 13% cover.

White-headed woodpecker

The white-headed woodpecker uses both live and dead ponderosa pines, often selecting the larger diameter pines because they have more seeds and make more suitable nesting habitat. However, having large ponderosa pine does not assure this species' presence as well-developed understory of trees and shrubs may encourage mammalian predation on woodpecker nests (Frenzel 1998). White-headed woodpeckers are usually absent from early seral ponderosa pine stands. These woodpeckers are poor excavators and generally select for a more moderately decayed or softer snag for nesting (Dixon 1995). Home ranges for the white-headed woodpecker are large, ranging from 257 to 793 acres (Dixon 1995).

The white-headed woodpecker is identified in the *Conservation Strategy for Landbirds of the East-Slope of the Cascades Mountains in Oregon and Washington* as a landbird focal species of large patches of old ponderosa pine forest with large snags (Altman 2000). Conservation issues include loss of large diameter ponderosa pine trees from timber harvest, grazing, and understory fir encroachment from previous fire suppression, and habitat fragmentation Biological objectives include providing the following in ponderosa pine stands to promote late-seral conditions: (1) a mean of greater than 10 trees per acre greater than 21 inches dbh with at least two of the 10 trees greater than 31 inches dbh for foraging and replacement snags; (2) a mean of 1.4 snags per acres greater than 8 inches dbh with greater than 50% of the snags larger than 25 inches dbh in a moderate to advanced state of decay; and (3) a mean canopy closure of 10-40%.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct and Indirect Effects: The project area consists of five acres of blackbark ponderosa pine that currently do not provide habitat for either Lewis's or white-headed woodpeckers. Long-term, this

stand could provide large-diameter trees and snags suitable for both of these species as it matures. Due to the proximity of the stand to Highway 46 and the ongoing recreational use of the Cody mountain bike trail, foraging would be the primary use.

Alternative 2 (Proposed Action)

Direct and Indirect Effects: Alternative 2 would remove approximately 150-200 blackbark ponderosa pine trees from the 2 acre project site due to construction of a new entrance road, welcome station and parking lot. Approximately 40-90 trees will remain on site. Less than 1% of one home range for the white-headed woodpecker and potentially half of one home range for the Lewis's woodpecker would be affected. However, it is likely that only a portion of this habitat at most would be used by either species due to noise and disturbance effects from the site proximity to Highway 46 and recreational trail use. Use of the project area would likely be primarily foraging.

Cumulative Effects*:* Habitat is often limited in watersheds due to the lack of climax ponderosa pine associations as a result of previous timber harvest and encroachment of firs from wildfire suppression. District wide, nesting habitat has declined due to loss of large-diameter nest trees and competition for nest holes. Approximately five acres of blackbark ponderosa pine would be removed under Alternative 2 removing these acres from maturing into later-seral ponderosa pine. Cumulatively, when adding this area to nearby areas that have been either thinned or had danger trees removed, there would be less than a 1% additive reduction of suitable habitat for either the Lewis's or white-headed woodpecker under Alternative 2.

The project does not meet the biological objectives of the Focal Landbird Strategy on the project site as 2 acres of potential late-seral ponderosa pine habitat would be removed. Population biological objectives are met on a watershed level.

Conclusion: Implementation of Alternative 2 (Proposed Action) may minimally affect Lewis's and white-headed woodpecker due to the removal of approximately 150-200 ponderosa pine trees. The project would not lead to a trend towards federal listing.

WILDLIFE: Management Indicator Species and Other Species and Habitat of Interest

INTRODUCTION

This wildlife report analyzes effects from implementation of the Cascade Lakes Scenic Byway Welcome Station on the Bend-Ft. Rock Ranger District (District) of the Deschutes National Forest (Forest). The wildlife report meets the direction of the Forest Service Manual 2600, the Deschutes National Forest Land and Resource Plan (*LRMP*, USDA FS 1990) and amended Regional Forester's Forest Plan Amendment # 2 (*Eastside Screens*, USDA FS 1995), and the Endangered Species Act of 1973.

The wildlife report analyzes effects to LRMP Management Indicator Species (MIS) and habitats, Landbird Focal Species, Birds of Conservation Concern, and High Priority Shorebirds. Analyses incorporated field reconnaissance, GIS data, current literature, and staff knowledge. The Deschutes LRMP and amended Eastside Screens present standards and guidelines (S&Gs) for the maintenance of wildlife habitat. Short-term impacts are for 5 years while long-term impacts project are greater than 5 years.

Table 6Table 6 lists these species and whether potential habitat exists in the project area. Species and habitats analyzed are in bold. Management Indicator Species analyzed in this wildlife report include elk and mule deer. Woodpeckers (cavity-nesters) are listed as MIS but are analyzed under the *Snags and Down Wood* section. Table 7, page 44, lists woodpecker species that occur on the Forest.

Table 6: Impact Conclusions for LRMP Management Indicator Species and Habitats, Birds of Conservation Concern, Landbird Focal Species, and High Priority Shorebirds

Species or Habitat	Impacts under Alternative 2 (Proposed action)	Rationale for Impacts Conclusions
Management Indicator Species		
Northern spotted owl (*Strix occidentalis caurina*)	No effect due to a lack of habitat.	Habitat is mature and old-growth mixed coniferous forest. The project is east of the spotted owl line.
Bald eagle (*Haliaeetus leucocephalus*)	No impact due to lack of habitat	Lakes and large rivers with nearby large diameter trees, usually ponderosa pine.
Golden eagle (*Aquila chrysaetos*)	No impact due to lack of habitat.	Elevated nest sites in open ponderosa pine or mixed conifer
American peregrine falcon (*Falco peregrinus anatum*)	No impact due to lack of habitat	Riparian and cliff habitat
Great gray owl (*Strix nebulosa*)	No impact due to lack of habitat	Mature and old growth forests with meadows and openings
Cooper's hawk (*Accipiter cooperi*)	No impact due to lack of habitat	Mature forests with high canopy closure/tree density
Sharp-shinned hawk (*Accipter striatus*)	No impact due to lack of habitat	Mature and old-growth forests, especially in high canopy closure with large trees in addition to young, dense, even-aged stands
Red-tailed hawk (*Buteo jamaicensis*)	No impact due to lack of habitat	Large snags, open country interspersed with forests
Northern goshawk (*Accipiter gentiles*)	No impact due to lack of habitat	Mature and old-growth forests, especially with high canopy closure and large trees
Woodpeckers/cavity nesters	May impact Lewis's woodpecker, white-headed woodpeckers, and northern flicker but would not lead to a trend towards federal listing.	Large-diameter trees and snags in ponderosa pine and mixed conifer forests.

Species or Habitat	Impacts under Alternative 2 (Proposed action)	Rationale for Impacts Conclusions
Management Indicator Species		
Waterfowl	No impact due to lack of habitat	Lakes, ponds, and streams
Osprey (*Pandion haliaetus*)	No impact due to lack of habitat	Large snags associated with fish bearing water bodies
Great blue heron (*Ardea herodias*)	No impact due to lack of habitat	Riparian edge habitats (lakes, streams, marshes, estuaries)
American marten (*Martes americana*)	No impact due to lack of habitat	Mixed conifer of high elevation late successional forests with abundant down woody material.
Townsend's big-eared bat (*Corynorhinus townsendii*)	No impact due to lack of habitat	Caves, buildings, bridges, ponderosa pine and juniper habitats. No known roosts in or near project site. Low potential for foraging in area.
California wolverine (*Gulo gulo*)	No impact due to lack of habitat	Mixed conifer high elevation forests
Elk (*Cervus elaphus*)	May impact.	Project is in Ryan Ranch Key Elk Area.
Mule Deer (*Odocoileus hemionus*)	May impact.	Project is in mule deer biological winter range and in Tumalo Deer Winter Closure area.
Special or Unique Associated Habitats	No impact due to lack of habitat.	None in or near project area.
Snags/Green Tree Replacements/Down Wood and Log Associated Species	May impact due to removal of five acres of blackbark ponderosa pine.	Green trees or snags > 21" dbh would not be removed. There would be no green tree replacements.
Late and Old Structural Stage Stands and Connectivity	No impact due to lack of habitat.	No LOS stands in project area. Project activities would not degrade connectivity between LOS stands.
Landbird Focal Species	May impact Lewis's and white-headed woodpecker, pygmy nuthatch and chipping sparrow.	Project is consistent with Forest LRMP for woodpeckers and the Landbird Conservation Strategy.
Birds of Conservation Concern	May impact Lewis's and white-headed woodpecker habitat minimally.	Project is consistent with Forest LRMP for woodpeckers.
High Priority Shorebirds	No impact due to lack of habitat	No wetland, wet meadow, or shrub/grass habitat occurs in or near project area.

The project site was not surveyed for raptor species and future surveys in the area are not planned. It is possible that the project site could be included in the overall home range for a raptor pair. If any nests or activity centers for the below species should be found during construction, seasonal restrictions would be implemented, as described in Chapter 2, Resource Protection Measures.

Indicator Species and Habitats

The Deschutes LRMP identified management indicator species (MIS) and habitats to assess effects of management activities for a wide range of wildlife species with similar habitat needs. LRMP habitat categories include Special or Unique Associated Habitats, Snags and Down Wood, and Late and Old Structural Stage (LOS) stands and Connectivity.

Elk

The Deschutes LRMP established eleven Key Elk Areas (KEAs) to provide conditions needed to support at least 1,500 summering elk and 240 wintering elk. The project area is located in the Ryan Ranch KEA, which totals 21,462 acres.

Elk inhabit semi-open forest, mountain meadows, foothills, plains, and valleys on the Forest. They graze on grasses and forbs and browse woody vegetation shrubs and twigs. Under the Deschutes LRMP, elk management objectives are developed jointly with the Oregon Department of Fish and Wildlife.

EXISTING CONDITION

Bitterbrush provides winter forage for elk. Due to the proximity of the project area to Highway 46, ungulate use is likely primarily on the western half of the project area, close to a small east-west draw that provides hiding cover. Construction of the facilities would occur within the Ryan Ranch KEA, along the western boundary in the northern 10% of the KEA.

Hiding Cover

LRMP S&G WL-47: "Hiding areas must be present over at least 30% of National Forest lands in each KEA." Hiding cover is defined as an area of at least 6 acres in size capable of hiding 90% of an adult animal from human view at a distance of 200 ft (Thomas et al. 1979).

The entire project area is within 400 feet of Highway 46, including a 100 foot setback from the highway, excluding the entrance road. The area just beyond the northern edge of the project site and into the small east-west draw behind the project site provides hiding cover for elk. This draw also contains a portion of the east-west Cody mountain bike trail, which is not part of the project area.

Due to the small size of the project area and the lack of trees along Highway 46 (100-120 black bark ponderosa pine trees per acre), and small cleared areas, the project area does not contain hiding cover. The existing hiding areas are present in 31-32% of the KEA.

Thermal Cover

LRMP WL-50 defines thermal cover for elk as an area of at least 10 acres with an average height of at least 40 feet and a canopy closure of 40%. The Deschutes LRMP S&G WL-50 states that: "Thermal cover must be present over at least 20% of National Forest land in each KEA."

The LRMP S&G states that for thermal "to be suitable, a stand must be at least 10 acres, and have an average height of at least 40 feet." The LRMP threshold minimum for thermal cover is 20% in the Ryan Ranch KEA. Existing thermal cover in the KEA is approximately 40%. Due to the small size of the project area (five acres), the lack of trees along Highway 46, and small cleared areas within the project area, thermal cover is not provided.

Open Road Density

LRMP S&G Wl-46 states that: "Open road densities should not exceed an overall average between 0.5 – 1.5 miles per square mile within each key are, unless impacts to elk can be avoided or the proposed project would result in a net benefit to elk habitat."

The Ryan Ranch KEA overall average road density is 3.8 miles per square mile, which exceeds the LRMP open road density S&G of 0.5 to 1.5 miles per square mile. When road closures are completed in association with the 2006 East Tumbull Hazardous Fuels Reduction EA and the 2007 Sunriver Healthy Hazardous Fuels EA, the open road density in the KEA would be 2.7 miles per square mile.

The proposed welcome station would add approximately 0.15 miles of new road with the entrance road and parking area, within approximately 250 feet of Highway 46. The addition of 0.15 miles would not change the overall open road density in the KEA.

Recreational Activities

LRMP S&G WL-45 states that for the Ryan Ranch KEA: "Facilities will not be developed nor activities promoted which would encourage public use during the winter."

The project area is nearly adjacent to the north-south Cody mountain bike connector trail that begins at the parking area across Highway 46 at the junction of Forest road 41. This trail connects with the east-west Cody mountain trail, which is 7.8 miles long; with approximately 4 miles in the KEA. These trails are primarily used for mountain biking. Other less frequent use is hiking and, depending on snow levels, cross country skiing,.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct and Indirect Effects: The existing blackbark pine and forage (sagebrush and bitterbrush) would remain and likely develop into climax ponderosa pine over time. Shrubs currently provide winter forage habitat for elk.

Alternative 2 (Proposed Action)

Direct and Indirect Effects: Approximately 150-200 blackbark ponderosa pine trees would be removed from approximately 2 acres that would be utilized for the construction of the proposed facility and associated parking area and entrance road. Hiding and thermal cover would not be reduced because the project area has none. The bitterbrush that provides winter forage opportunities for elk would also be removed from the impacted areas.

There would be increased traffic congestion on Highway 46 due to the construction of the welcome station across from Forest Road 41, which connects Bend and Highway 46 with the town of Sunriver. Ungulates that attempt to cross Highway 46 may seek to avoid an area larger than the five-acre project site to also include the increased traffic congestion (two new turn lanes and cross-highway traffic) and the existing adjacent recreational trails. This increased traffic congestion would be greater during the summer season, when deer and elk are less likely to use this area.

Recreational trail use including hiking and mountain biking has been demonstrated to decrease ungulate feeding and resting times and increase flushing and travel time, thereby increasing energy expenditures and stress levels (Taylor and Knight 2003, Wisdom et al. 2004, Naylor et al. 2009). Energy expenditures are of higher concern for elk during winter when foraging opportunities are reduced and thermoregulation needs increase. Even though this project is not to promote recreation use within the KEA, due to the close proximity of the proposed facility to the existing and visible mountain bike trails, an increase in recreational use on these trails could occur throughout the year, including during the winter. Visitors may use these trails for hiking or walking their dogs. Use of the parking lot by mountain bikers to access the trail may occur sporadically. The degree of increase on

these trails is likely to be small each year but is anticipated to occur annually throughout the lifetime of the permanent facility. Mitigation measures (EA page 17) would be implemented to reduce the potential for an increase in recreational use during winter in this KEA. The proposed gate would prevent users from parking in the parking area after hours and utilizing the surrounding forested area for mountain biking, cross country skiing and other recreation activities. The proposed split rail fence that would delineate the Welcome Station grounds would discourage visitors from utilizing the forested area for dog walking and other such uses. It would also discourage those that would prefer to utilize the Welcome Station as a starting-ending point for uses such as biking and cross country skiing.

***Cumulative Effects**:* Several projects are occurring within the Ryan Ranch KEA or near the KEA. These projects (past, present, reasonably foreseeable, Draft EA page 21) would likely have either a small or no cumulative effect when considering the Welcome Station and include ongoing recreational use on the nearby trails and other trails in the KEA, ongoing highway and road maintenance, ongoing danger tree removal, and the potential vehicle-strike mortality along Highway 46 and other roads.

The ongoing Ryan Ranch Aspen and Willow Enhancement project is occurring within the Ryan Ranch KEA several miles south of the project and will benefit elk habitat long-term by reducing conifer encroachment.

The proposed Ryan Ranch Wetland Restoration CE will occur in the Ryan Ranch KEA along the Deschutes River, approximately three miles south of the proposed welcome station facility site. Under this project, approximately 214 acres of meadow habitat would be converted to emergent wetland habitat during the irrigation season (April 15-October 15), precluding elk from utilizing it for resting and foraging and displacing elk during winter from 75 to 80 acres of winter habitat. The meadow restoration is anticipated to improve summer hiding cover due to screening from anticipated increase in hardwoods and shrubs and to provide additional forage.

The 2009 Personal Use Firewood CE will allow firewood removal on 5,700 acres in the Ryan Ranch KEA within 150 feet of existing open roads. The project is not anticipated to impact hiding areas or thermal cover for elk. Use of roads for felling and collecting road may result in disturbance to elk, particularly during winter.

Less than 1% (0.0002) additive reduction in suitable elk habitat is anticipated from project implementation of the welcome station.

CONSISTENCY WITH THE DESCHUTES LRMP

The project is consistent with the Deschutes LRMP S&Gs WL-43 through WL-51 for elk. Mitigation measures are designed to reduce the potential for encouraging recreational use outside of the Welcome Station boundary during winter.

Mule Deer

The mule deer forages on grasses and forbs (non-woody, broad-leaved plants) and browse (leaves and twigs of woody shrubs) primarily in shrub habitats. Unlike elk, they select the most nutritious vegetative parts which means they have more specific foraging needs and a higher-quality diet (Hayden et al. 2008). Shrubs occur mostly in early successional habitats—those recently disturbed and those maturing to climax state. Disturbance events in forested areas including wildfire, prescribed fire, wind storms, insect infestation, tree disease, and timber harvest are key elements in maintaining these shrub components. Inadequate foraging habitats in or adjacent to summer range can be a limiting factor for winter conditioning and survival. Mule deer are migratory and move from high-elevation summer ranges to low-elevation winter ranges where foraging is easier under reduced snow

depths. Where deer winter in forests with deep snow conditions, removal of forest canopy may have deleterious effects on deer survival due to increased snow depth.

Management direction regarding shrubs is provided by the LRMP. Recommendations for the management of shrubs are also provided by the Integrated Natural Fuels Management Strategy (IFMS 1998). The IFMS identified interim management goals of managing shrubs in shrub dominated landscapes (Deer Habitat) to have 33% of shrubs in an early seral condition, 33% in a mid seral condition, and 33% in a late seral condition. Bitterbrush is a major component of the potential natural vegetation, which is an important food source for deer during winter months. The project area is in biological winter range for mule deer and provides bitterbrush in early seral ponderosa pine.

The project area is within the Tumalo Deer Winter Closure area. This closure restricts motorized vehicles and equipment to specified roads from December 1-March 31 to reduce disturbance to mule deer on biological winter range.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct and Indirect Effects: The existing blackbark pine and forage (sagebrush and bitterbrush) would remain and likely develop into climax ponderosa pine over time (100-150 years), without further disturbance (fire, insects, management actions).

Alternative 2 (Proposed Action)

Direct and Indirect Effects: Impacts to mule deer would be similar to those for elk. Five acres of biological winter range would be removed due to the construction facility. Due to the proximity of the project area to Highway 46, ungulate use is probably limited to the western half of the project area, close to a small east-west draw that provides hiding cover.

There will likely be some increased traffic congestion on Highway 46 due to the construction of the welcome station across from Forest Road 41, which connects Bend and Highway 46 with the town of Sunriver. Mule deer that attempt to cross Highway 46 may seek to avoid an area larger than the 2-acre project site to also include the increased traffic congestion (additional turn-lane and cross-highway traffic) and the existing recreational trails. This increased traffic congestion will be greater during the summer season, when deer and elk are less likely to use this area.

Due to the close proximity of the proposed facility to the existing and visible mountain bike trails, an indirect effect may be to increase recreational use on these trails throughout the year, including during the winter. Visitors may use these trails for walks. Use of the parking lot by mountain bikers to access the trail may occur sporadically. The degree of increase is likely to be small each year but is anticipated to occur annually throughout the lifetime of the permanent facility.

Recreational trail use including hiking and mountain biking has been demonstrated to decrease ungulate feeding and resting times and increase flushing and travel time, thereby increasing energy expenditures and stress levels (Taylor and Knight 2003, Wisdom et al. 2004, Naylor et al. 2009). Energy expenditures are of higher concern for ungulates during winter when foraging opportunities are reduced and thermoregulation needs increase.

The project site is within the Tumalo Deer Winter Closure area. This area is closed to motor-propelled vehicles from December 1 to March 31. This area will be excluded from the winter closure area by

ODFW during the closure boundary update in 2010 (pers. comm., Steve George, ODFW, September 9, 2009).

***Cumulative Effects**:* Cumulative impacts include ongoing recreational use on the nearby Cody mountain bike/connector trails and other recreational trails in the KEA, ongoing road maintenance, ongoing danger tree removal, poaching, habitat loss from private development, and vehicle-strike mortality along Highway 46 and other roads. Cumulatively, there would be less than a 1% (0.0002) additive reduction of suitable habitat from implementation of Alternative 2.

Consistency: The project is consistent with S&G WL-52 through WL-57 and WL-59. The project area is not presently consistent with WL-58 because a narrow strip of trees is not currently along Highway 46. Of the trees that are present, some would be removed for the entrance road. Other vegetation would be planted in areas that do not have vegetation for screening the parking area from Highway 46 (Mitigation, EA page 19).

Conclusion: The project will have minor negative impacts to mule deer habitat through the removal of five acres of blackbark ponderosa pine within biological winter range that provides winter forage. Indirect recreational disturbance may increase in winter range due to proximity of the project site to existing mountain bike trails.

Special or Unique Associated Habitats

There are no Special or Unique Associated Habitats in or near the project area. No impacts are anticipated for any species associated with these habitats from implementation of the proposed project.

Snags and Down Wood/Green Tree Replacements

A snag is defined as a dead tree that is over 10 inches dbh and taller than 10 feet. Coarse woody material (CWM) is considered to be dead and down material that is greater than 5 inches in diameter (Mellen et. al 2006). The most notable species using snags and CWM are the primary cavity nesters (e.g. woodpeckers and nuthatches) that excavate nest cavities in decayed wood in standing trees. Lists woodpecker species on the Deschutes National Forest. Vacated cavities are subsequently used by many other birds, bats, American marten, and small mammals (i.e., secondary cavity users).

Table 7: Woodpeckers Found on the Deschutes National Forest

Species	Habitat	Habitat and Presence in the Project Area
Lewis's Woodpecker	Ponderosa pine forests, burned forests	Potential habitat. Analyzed under Regional Forester Sensitive Species
Williamson's Sapsucker	Mature or old growth conifer forests with open canopy cover; weak excavator	No habitat
Red-naped Sapsucker	Riparian hardwood forests	No habitat
Downy Woodpecker	Riparian hardwood forests	No habitat
Hairy Woodpecker	Mixed conifer and ponderosa pine forests	Potential habitat. Analyzed under Snags and Down Wood.
White-headed Woodpecker	Mature ponderosa pine forests; weak excavator	Potential habitat. Analyzed under Regional Forester Sensitive Species
Three-toed Woodpecker	High elevation and lodgepole pine forests	No habitat
Black-backed Woodpecker	Lodgepole pine forests, burned forests	No habitat
Northern Flicker	Variety of forest types but more associated	Potential habitat. Analyzed

Species	Habitat	Habitat and Presence in the Project Area
	with forest edges	under Snags and Down Wood
Pileated Woodpecker	Mature to old growth mixed conifer forests	No habitat

Lewis's and White-headed woodpeckers are discussed on Draft EA page 37 under Wildlife BE discussion.

Logs provide organic and inorganic nutrients in soil development, provide microhabitats for invertebrates, plants, amphibians, and other small vertebrates, and provide structure for riparian associated species in streams and ponds. Size, distribution, and orientation may be more important than tonnage or volume. Small logs provide escape cover or shelter for small species. It is still unknown what levels of down woody material are needed to provide quality habitat for associated species.

Too much down material may impede travel by big game and present a fire hazard. Increased levels also provide cover for small invertebrates and may protect seedlings from browse and scorching. Orientation has also been shown to be important, where logs that lie along a contour are used more than those lying across contours. Larger sized logs are also used more and by more species than smaller logs (Bull et al. 1997).

The Forest lies on the eastside of the Cascades where there is limited availability of water and nutrients as compared to the west side of the Cascades. This, combined with overcrowded stand conditions due to fire suppression, has led to tree mortality above historic levels especially in smaller size classes. In particular, PAGs that tend to be drier (i.e., ponderosa pine and mixed conifer dry) may recruit a higher level of down wood today than did historically. It is also assumed that fire suppression in the watershed has decreased the consumption rate of down wood; while other human practices such as firewood gathering has removed down wood.

Sales planned west of the spotted owl line after 1994 utilized the Northwest Forest Plan standards and guidelines and followed Late-Successional Reserve Assessment guidelines by PAG, which ranged from 4 to 13 snags per acre depending on the PAG and 120 linear feet of down wood at least 16 inches dbh and 16 feet long. Sales planned after 1995 east of the owl line utilized the Eastside Screens, which calls for 2.25 snags greater than or equal to 20 inches dbh per acre and 20 to 40 lineal feet per acre in ponderosa pine and 100 to 140 lineal feet per acre in mixed conifer.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct and Indirect Effects: The project area contains five acres of blackbark ponderosa pine, shrubs, and a small amount of downed wood. The area was recently thinned in 2007 to improve conditions for future large-diameter that would provide potential for snag and down wood recruitment over time. Long-term, the stand is anticipated to develop late-seral conditions that would provide more snags, green tree replacements, and downed wood.

Alternative 2 (Proposed Action)

Direct and Indirect Effects: Currently snags do not exist on the project site and a small amount of downed wood exists. An estimated 150-200 trees on the 2-acre project site would be removed to construct a permanent welcome station, entrance road and parking lot, preventing these acres from providing snag, down wood, or green tree replacements in the future.

Cumulative Effects: Danger tree removal activities occur annually along Highway 46, other roads, high use recreation areas, and facilities. This activity occurs approximately 160 feet (one site potential tree height) from either side of roads and from high use areas. Snags that pose a danger to the public or facilities are removed, contributing to a decline in snag levels around these roads and facilities. Small-sized snags are not limited on watershed level due to high levels of insect and disease mortality. However, large-diameter snags are limited due to previous fire suppression and white-fir encroachment that have suppressed the growth of large trees that provide large snags.

Under Alternative 2, recruitment for potential snags and downed wood on the five-acre project site would not exist due to the facility construction. Cumulatively, less than 1% additive reduction in suitable habitat for snags and down wood would occur under Alternative 2.

Consistency with the Deschutes LRMP: The project is consistent with the Deschutes LRMP S&Gs WL-37 and WL-38.

Conclusion: The project would impact snags, downed wood, and green tree replacements on 2 acres due to the removal of 150-200 blackbark ponderosa pine trees that could provide future snag and down wood habitat but would not lead to a trend towards Federal listing for any species associated with snags or downed wood.

Late and Old Structural Stands and Connectivity

Currently, the project site does not include any LOS stands. The goal of late and old structural stage (LOS) stands is to provide representation of landscape ecology and habitat for plants and animal species associated with old growth forest ecosystems.

Late and old structural stages are defined by the Eastside Screens as multi-strata stands with large trees and single strata stands with large trees. Multi-stratum stands are comprised of two or more tree canopy layers and two or more cohorts of trees. Medium and large sized trees dominate the overstory but trees of all size classes may be present. Stand structure and tree sizes are diverse. Single stratum stands are comprised of a single dominant canopy stratum consisting of medium or large sized trees. Large trees are common. Young trees are absent or few in the understory. The stand may appear "park-like." Multi-stratum LOS conditions are favorable to those species that require or prefer more complex forested structure, e.g. northern goshawk, while the single stratum LOS habitats are preferred by species such as the white-headed woodpecker and pygmy nuthatch.

Maintaining connectivity between habitats, particularly late and old structured habitat, is believed to be important for numerous wildlife species to allow free movement and interaction of adults and dispersal of young.

Management direction pertaining to maintaining connectivity between late and old structured stands, as well as allocated old growth management areas is provided by the Eastside Screens.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct and Indirect Effects: Two acres of blackbark ponderosa pine exist on the project site. Thinning in and around the site in 2007 favored the long-term growth of larger diameter trees. It is anticipated this site would develop LOS conditions over time (100-150 years).

Alternative 2 (Proposed Action)

Direct and Indirect Effects: There would be no direct impacts to LOS as the existing habitat is blackbark ponderosa pine. Implementation of the project would preclude the development of 2 acres into LOS due to the construction of a permanent building, entrance road, and parking lot. Connectivity would not be affected due to the small amount of habitat that would be removed.

Cumulative Effects: Prior to the late 1980s, loss of suitable old growth and connectivity occurred due to timber harvest. Previous and ongoing fire suppression and mortality from insects and disease have affected connectivity and old growth stands by decreasing canopy cover and suppressing growth of large-diameter trees (from white fir encroachment). Recent harvest activities are aimed at reducing risk to existing habitat and promoting desired species composition to develop and maintain habitat. Cumulatively, 0% additive reduction in suitable habitat would occur from project implementation, as no LOS would be removed. As there are no direct impacts to LOS, there are no cumulative effects.

Conclusion: There is no LOS within the project area. Two acres would be precluded from potentially developing into LOS. Connectivity would not be affected.

Focal Landbird Species

The biological objectives of the Forest Service Landbird Strategic Plan (January 2000) are to maintain, restore, and protect habitats necessary to sustain healthy migratory and resident bird populations. Biological objectives are all based on "where ecologically appropriate," meaning actions must occur in the proper habitat addressed to be consistent. The purpose of the strategic plan is to provide guidance for the Landbird Conservation Program and to focus efforts in a common direction.

On a more local level, the Conservation Strategy for Landbirds of the East-Slope of the Cascade Mountains in Oregon and Washington (Altman 2000) outlines conservation measures, goals and objectives for specific habitat types found on the east-slope of the Cascades and the focal species associated with each habitat type. The Forest is in the Central Oregon subprovince. Table 8 lists specific habitat types, habitat feature needed and conservation focus, and the focal bird species for each. There is no meadow habitat, lodgepole pine, mixed conifer, or subalpine fir plant associations in the project area; therefore, brown creeper, Williamson's sapsucker, flammulated owl, hermit thrush, olive-sided flycatcher, black-backed woodpecker, sandhill crane, and blue grouse are not analyzed.

The focal landbird species that have potential habitat in the project area are Lewis's woodpecker, white-headed woodpecker, pygmy nuthatch, and chipping sparrow. Impacts to Lewis's and white-headed woodpeckers were previously analyzed under *Regional Forester Sensitive Species* in the BE.

Table 8: Priority Habitat Features and Associated Focal Landbird Species for Central Oregon

Habitat	Habitat Feature	Focal Species for Central Oregon
Ponderosa Pine	Large patches of old forest with large snags	**White-headed woodpecker**
	Large trees of old forest with large snags	**Pygmy nuthatch**
	Open understory with regenerating pines	**Chipping sparrow**
	Large trees of old forest with large snags patches of burned old forest, cottonwoods	**Lewis's woodpecker**
Mixed Conifer (Late-Successional)	Large trees	Brown creeper
	Large snags	Williamson's sapsucker
	Interspersion grassy openings and dense thickets	Flammulated owl
	Multi-layered/dense canopy	Hermit thrush
	Edges and openings created by wildfire	Olive-sided flycatcher

Habitat	Habitat Feature	Focal Species for Central Oregon
Lodgepole Pine	Old growth	Black-backed woodpecker
Meadows	Wet/dry	Sandhill Crane
Aspen	Large trees with regeneration	Red-naped sapsucker
Subalpine fir	Patchy presence	Blue grouse

Lewis's and White-headed woodpeckers are discussed on Draft EA page 37 under Wildlife BE discussion.

Pygmy nuthatch

The pygmy nuthatch (*Sitta pygmaea*) inhabits ponderosa pine forests and mixed conifer forest with a significant component of ponderosa pine. It is a focal species for large trees in open ponderosa pine forests and mixed conifer forests that have a significant ponderosa pine component (Altman 2000). It is a secondary cavity nester and uses large trees greater than 21 inches dbh for nesting and for foraging. Pygmy nuthatches will use snags greater than 10 inches dbh in a range of stand structural classes provided larger nest trees are available (Mellen et al. 2006). Nesting territory sizes range from one to three acres.

Conservation issues include loss of large diameter ponderosa pine trees to logging, lack of recruitment of young ponderosa pine due to wildfire suppression that has allowed understory encroachment of firs, increased fuel loads that predisposes ponderosa pine stands to stand-replacement wildfires, and habitat fragmentation that increases energy expenditure and risk of predation to individual nuthatches (Altman 2000). Biological objectives under the landbird conservation strategy include initiating actions in ponderosa pine forests to provide the following conditions: (1) a mean of greater than 10 trees per acre greater than or equal to 21 inches dbh, and at least 2 of the trees greater than 31 inches dbh for foraging trees and replacement snags and (2) a mean of greater than 1.4 snags per acre greater than 8 inches dbh with 50% greater than 25 inches dbh in a moderate to advanced state of decay.

Chipping sparrow

The chipping sparrow (*Spizella passerina*) nest in young ponderosa pine trees four to eight feet tall. Nesting territory size ranges from less than one acre to eight acres. It is a focal species for open understory forests with regenerating ponderosa pine (Altman 2000). Conservation issues are understory shrub and herbaceous cover removal from prescribed fire and grazing and brown-headed cowbird parasitism (Altman 2000). Biological objectives under the landbird conservation strategy are to provide the following conditions in ponderosa pine forests: (1) interspersion of herbaceous ground cover with shrub and regenerating pine patches; (2) 20 to 60% cover in the shrub layer; (3) greater than 20% of the shrub layer in regenerating sapling conifers (especially pines); and (4) a mean canopy cover 10 to 30%.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Pygmy nuthatch

Direct and Indirect Effects: Existing blackbark pine trees and shrubs on the project site do not currently provide habitat for pygmy nuthatch due to the lack of large-diameter ponderosa pine trees and snags. Long-term, this stand is anticipated to develop late-seral stand conditions that provide large-diameter trees and snags suitable for the pygmy nuthatch. Recent thinning implemented in 2007 favored future large diameter trees and potentially snag habitat for these species.

Chipping sparrow

Direct and Indirect Effects: Existing habitat on the project site may currently provide conditions suitable for the chipping sparrow due to the interspersion of early seral ponderosa pine and shrub habitat. Due to the proximity of the project site to Highway 46, chipping sparrows that use this site for nesting may be at increased risk of nest failure due to brown-headed cowbird parasitism.

Alternative 2 (Proposed Action)

Pygmy nuthatch and Chipping Sparrow

Direct and Indirect Effects: Alternative 2 would remove 150-200 blackbark ponderosa pine trees from 2 acres of the 5 acre project site, potential habitat loss for both of these species.

Cumulative Effects: Loss of large-diameter open ponderosa pine forests has declined on a watershed level due to previous fire suppression and encroachment of white fir that has suppressed growth of large diameter ponderosa pine trees. The proposed project would remove two acres of ponderosa pine habitat. Cumulatively, less than 1% additive reduction in suitable habitat is expected from project implementation.

Consistency: The project is not consistent with the Focal Landbird Strategy biological objectives at the project site due to the removal of the existing ponderosa pine and shrubs but is consistent at the population level.

Conclusion: Alternative 2 may impact chipping sparrow and pygmy nuthatch nesting and foraging due to the permanent removal of habitat (ponderosa pine and shrubs) on the project site.

Birds of Conservation Concern

The Birds of Conservation Concern (*BCC*, USDI FWS 2008; Refer to Project Record Wildlife Report, Appendix 3, page 30) identifies species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the ESA. The goal is to prevent or remove the need for additional ESA bird listings by implementing proactive management and conservations actions. Bird Conservation Regions (BCRs) were developed based on similar geographic parameters. BCR 9 (Great Basin) encompasses the District. Lewis's woodpecker and white-headed woodpecker are listed as BCC and were previously analyzed under *Regional Forester Sensitive Species*.

High Priority Shorebirds

The U.S. Shorebird Conservation Plan (USDI FWS 2004) identifies the conservation status of U.S. and Canadian shorebird populations (Refer to Project Record Wildlife Report, Appendix 2, page 29). The proposed project would not affect any of these species due to a lack of habitat.

BOTANY: Invasive Plants

SUMMARY OF FINDING

The project poses a HIGH risk of localized introduction or spread of invasive plant species.

The project area is relatively weed-free. A risk ranking of HIGH is appropriate for this project because heavy equipment would be brought into the area to construct the welcome station, access drive, and parking lot. Mitigations (Chapter 2) would address this issue and reduce, but not eliminate, the risk.

NOXIOUS WEED RISK ASSESSMENT

Forest Service Manual (FSM) direction requires that Noxious Weed Risk Assessments be prepared for all projects involving ground-disturbing activities. For projects that have a moderate to high risk of introducing or spreading noxious weeds, Forest Service policy requires that decision documents must identify noxious weed control measures that will be undertaken during project implementation (FSM 2081.03, 29 November 1995).

INVASIVE PLANT SPECIES

Invasive plant species include all non-native plant species currently causing, or capable of causing, local economic and/or ecological damage, regardless of their status on any particular state, county or federal agency list. Aggressive, non-native, invasive plant species can displace native plant communities causing long-lasting management problems. In displacing native vegetation, invasive plant species can increase fire hazards, reduce the quality of recreational experiences, poison livestock, and replace wildlife forage. By simplifying complex plant communities, weeds reduce biological diversity and threaten rare habitats.

DESCHUTES NATIONAL FOREST INVASIVE PLANT SPECIES

The following species are listed by the Oregon Department of Agriculture as noxious weeds (Updated 9/28/05). These are species designated by the Oregon State Weed Board as injurious to public health, agriculture, recreation, wildlife, or any public or private property.

Table 9: Deschutes National Forest Invasive Plant Species

Scientific Name	Common Name	Presence
Cardaria pubescens	hairy whitetop	Documented
Centaurea biebersteinii	spotted knapweed	Potential
Centaurea diffusa	diffuse knapweed	Potential
Centaurea solstitialis	yellow star-thistle	Potential
Cirsium arvense	Canada thistle	Potential
Cirsium vulgare	bull thistle	Documented
Convolvulus arvensis	field bindweed	Documented
Cynoglossum officinale	hound's tongue	Potential
Cytisus scoparius	Scotch broom	Potential
Elymus repens	quackgrass	Documented
Euphorbia esula	leafy spurge	Potential
Hypericum perforatum	St. Johnswort	Documented
Iris pseudacorus	yellow flag iris	Documented
Kochia scoparia	kochia	Potential
Linaria dalmatica	Dalmatian toadflax	Documented

Scientific Name	Common Name	Presence
Linaria vulgaris	butter & eggs	Documented
Melilotus officinale	yellow sweetclover	Documented
Onopordum acanthium	Scotch thistle	Potential
Phalaris arundinacea	reed canarygrass	Documented
Phalaris arundinacea var. picta	ribbongrass	Potential
Salsola kali	Russian thistle	Documented
Senecio jacobaea	tansy ragwort	Potential
Taeniatherum caput-medusae	medusahead	Documented

EXISTING CONDITION

No sites of invasive plant species had been mapped within the proposed project area from previous surveys. A survey conducted on August 19, 2009 detected spotted knapweed (*Centaurea biebersteinii*) and cheat grass (*Bromus tectorum*) within the site.

Mapped sites of spotted knapweed, Dalmatian toadflax (*Linaria dalmatica*), medusahead (*Taeniatherum caput-medusae*) and oxeye daisy (*Leucanthemum vulgare*) occur within an approximate radius of 500 to 1,650 feet of the project boundary. A small population of St. Johnswort (*Hypericum perforatum*) was detected on the southern shoulder of Highway 46 that is adjacent to the proposed project area.

INVASIVE PLANT SPECIES RISK RANKING

Deschutes National Forest has developed a standardized invasive plant species risk assessment process to be conducted as a part of the project planning process. Risk rankings are based on the following sets of criteria.

Vectors ranked in order of weed introduction/spread risk:

1. Heavy equipment (implied ground disturbance).
2. Importing soil/cinders/gravel.
3. Use by OHVs.
4. Grazing (long-term disturbance).
5. Pack animals (short-term disturbance)
6. Plant restoration.
7. Use by recreationists.
8. Presence of USFS project vehicles.

- High Risk results if each of the following applies:
  - Known invasive species in or adjacent to project area.
  - Any of vector numbers 1 through 8 in project area.
  - Project operations in or adjacent to invasive species sites.
- Moderate Risk results if:
  - Any of vector numbers 1 through 5 are present in project area.
- Low Risk results if:
  - Any of vector numbers 6 through 8 present in project area,

  OR
  - Known invasive species present in or adjacent to project area, even if vectors lacking.

DISCUSSION OF RANKING

This project has been given a HIGH risk ranking for the introduction and spread of invasive plant species because known invasive plant species sites occur both adjacent to and within the proposed project area, and project activities include the use of heavy equipment within and adjacent to known sites of invasive plant species. Because of the small size of the proposed project area, this HIGH risk is anticipated to be very local in nature.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action)

Direct and Indirect Effects: No effects have been identified, because no new activity would occur.

Alternative 2 (Proposed Action)

Direct, Indirect and Cumulative Effects: It is possible that equipment brought to the site will carry in noxious weed seeds or parts and introduce them to the site. Making sure that the equipment is cleaned prior to project entry (Botany mitigation #1, Chapter 2) reduces this concern, but does not eliminate the risk.

To help educate the public regarding concerns of invasive species, information should be posted at the Welcome Station as a part of the information presentation for visitors. This information would raise the awareness of the general public that may use various sites along the Scenic Byway and Forest Road 41

BOTANY: Threatened, Endangered, and Sensitive Species

SUMMARY OF FINDINGS

Alternative 1 (No Action)and Alternative 2 (Proposed Action): There would be no negative impact to Proposed, Endangered, Threatened, or Sensitive plant species.

EXISTING CONDITION

The five-acre proposed project site has a vegetative cover dominated by ponderosa pine second growth, bitterbrush and/or greenleaf manzanita and Idaho fescue. During a survey of the site on August 19, 2009, a total of eight shrub/sub shrub species and 12 native herbaceous species were noted. The site has been recently thinned. The site is dry, and includes no perennial or intermittent water courses. The topography of the site is largely flat or slightly convex. Soils in the area are mapped as excessively to well drained sandy, pumiceous volcanic ash over buried soils.

No Threatened or Endangered plant species are documented on Deschutes National Forest. No Region 6 (R6) Sensitive species sites are mapped, or were observed during the site survey, within or adjacent to the proposed project site. Of the 58 R6 Sensitive plant species currently documented or suspected to occur on Deschutes National Forest (Refer to Project Record, Botany BE, pages 5-16), 56 are unlikely to have even marginally suitable habitat within the proposed project site. The known range of tall agoseris (*Agoseris elata*) does not extend south of the Metolius basin, some 25 miles to the north of the proposed project site. Habitat quality within the proposed project site for both tall agoseris and green tinge Indian paintbrush (*Castilleja chlorotica*) is low.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action) and Alternative 2 (Proposed Action)

Direct and Indirect Effects: No TES plant species, or at least moderately suitable habitat, has been located within or adjacent to the proposed project area. No effects have been identified.

HERITAGE

It has been determined that this project complies with Section 106 of the National Historic Preservation Act, under the terms of the 2004 Programmatic Agreement (PA) for the State of Oregon. This project meets the criteria in the PA for a **No Historic Properties Affected** determination because there are no heritage sites located within project boundaries.

SCALE OF ANALYSIS

Analysis for cultural resources was conducted within the proposed project area, which is approximately five acres.

EXISTING CONDITION

There are no cultural properties within the project activity areas as determined by surveys.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (No Action) and Alternative 2 (Proposed Action)

Direct, Indirect and Cumulative Effects: Because there are no cultural properties within the project activity areas, there would be no effect to cultural resources.

OTHER EFFECTS

MUNICIPAL WATERSHEDS

There is no de-facto or designated municipal watersheds in the project area.

PRIME FARMLAND, RANGELAND, AND FORESTLAND;;

There are no lands within the project area that are classified as prime farm or rangelands. Prime forestland is not applicable to lands within the National Forest System.

CIVIL RIGHTS AND ENVIRONMENTAL JUSTICE

Civil Rights legislation and Executive Order 12898 direct an analysis of the proposed alternatives as they relate to specific subsets of the American population. The subsets of the general population include ethnic minorities, people with disabilities, and low-income groups.

There would be no effect to civil rights, including those of minorities and women. Activities associated with the action alternatives would possibly be governed by Forest Service permits, which are awarded to qualified permittees regardless of race, color, sex, religion, or other such factor. Forest Service permits contain nondiscrimination requirements. The identified activities would not affect employment, would not provide consumer goods, and would not affect the civil rights, privileges, or status quo of consumers, minority groups, and women.

With implementation of either alternative, there would be no disproportionately high and adverse human health or environmental effects on minority or low-income populations. Nearby communities would mainly be affected by economic impacts as related to visitors that may use the services provided within those communities.

The effects of the proposal on the social context of the protected groups are within those described in the Deschutes National Forest LRMP. The benefits and risks associated with implementation of the alternatives are provided to all members of the public. The action alternatives provide opportunities for all groups, regardless of racial and economic composition.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time, such as the temporary loss of timber productivity in forested areas that are kept clear for use as a power line right of way or road.

The action alternatives would not be expected to create any impacts that would cause irreversible damage to soil productivity. There is low risk for the proposed actions to cause soil mass failures (landslides) due to the inherent stability of dominant landtypes and the lack of seasonally wet soils on steep slopes.

Soils dedicated to management facilities, the parking area and the proposed Welcome Station, are considered an irretrievable loss of soil productivity until their functions have been served and disturbed sites are returned back to a productive capacity. Under the action alternative, the cumulative

amount of detrimentally disturbed soil from the management facilities would remain within allowable Forest Plan standards and guidelines.

WILDERNESS

The project area does not contain any Wilderness. The nearest Wilderness Area is the Three Sisters Wilderness, approximately 14 miles to the west-northwest. There would be no impacts from any alternative to wilderness

.

LITERATURE CITED

Altman, B. 2000. Conservation Strategy for Landbirds of the East-Slope of the Cascade Mountains in Oregon and Washington. Version 1.0. Oregon-Washington Partners in Flight. 81 pp.

Bull, E.L., Parks, C.G., and Torgersen, T.R. 1997. Trees and logs important to wildlife in the interior Columbia River basin. Gen. Tech. Report PNW-GTR-391. Portland, OR. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 55pp.

Cushman, K.A. and C.A. Pearl. 2007. A Conservation Assessment for the Oregon Spotted Frog (*Rana pretiosa*). USDA Forest Service Region 6 and USDI Bureau of Land Management, Oregon and Washington. 46 pages.

Dixon, R.D. 1995. Density, nest-site and roost-site characteristics, home-range, habitat-use, and behavior of white-headed woodpeckers: Deschutes and Winema National Forests, Oregon. Oregon Department of Wildlife Nongame Project No. 93-3-01. 71 pp and appendices.

Frenzel, Richard W. 1998. Nest-Sites and Nesting Success of White-headed Woodpeckers on the Winema and Deschutes National Forests, Oregon. Oregon Natural Heritage Program, The Nature Conservancy of Oregon.

Geist, Michael J., J.W. Hazard, and K.W. Seidel; 1989. Assessing Physical Conditions of Some Pacific Northwest Volcanic Ash Soils After Forest Harvest. 5 pages.

Hayes, M.P. 1997. Status of the Oregon spotted frog (*Rana pretiosa* sensu stricto) in the Deschutes Basin and selected other systems in Oregon and northeastern California with a rangewide synopsis of the species' status. Final report prepared for The Nature Conservancy under contract to the US Fish and Wildlife Service, 26000 SE 98th Avenue, Suite 100, Portland Oregon, 97266. 57 pp. + appendices.

Mellen, K., B.G. Marcot, J.L. Ohmann, K.L. Waddell, S.A. Livingston, E.A. Willhite, B.B. Hostetler, C. Ogden, and T. Dreisbach. 2006. DecAID, the decayed wood advisor for managing snags, partially dead trees, and down wood for biodiversity in forests of Washington and Oregon. Version 1.10. USDA Forest Service, Pacific Northwest Region and Pacific Northwest Research Station; USDI Fish and Wildlife Service, Oregon State Office; Portland, Oregon.
http//wwwnotes.fs.fed.us:81/pnw/DecAID/DecAID.nsf

Naylor, L.M., M.J. Wisdon, and R.G. Anthony. 2009. Behavioral responses of North American Elk to Recreational Activity. The Journal of Wildlife Management 73(3): 328-338.

Oregon Department of Environmental Quality, 2004-2006. Database of Waterbodies considered for 303(d) Listing in Oregon.

Oregon Department of Fish and Wildlife. 2008. Field Report. November 14, 2008.
http://www.dfw.state.or.us/agency/commission/minutes/08/11_november/Nov%202008%20Field%20Reports%20_2_.pdf

Page-Dumroese, D.S. 1993. Susceptibility of Volcanic Ash-Influenced Soil in Northern Idaho to Mechanical Compaction. USDA Forest Service Research Note INT-409, Ogden, Utah. 5 pages.

Pearl, C.A, and M.P. Hayes. 2004. Habitat associations of the Oregon spotted frog (*Rana pretiosa*): A literature review. Final Report. Washington Department of Fish and Wildlife, Olympia, Washington, USA.

Powers, R.F., T.M Alves, T.H. Spear. 1999. Soil Compaction: Can it be Mitigated? Reporting a Work in Progress. Proceedings, Twentieth Annual Forest Vegetation Management Conference, Redding, CA.

Saab, V.A. and J. Dudley. 1998. Responses of cavity-nesting birds to stand-replacement fire and salvage logging in ponderosa pine/Douglas-fir forests of southwestern Idaho. Res. Pap. RMRS_RP_11. Ogden, UT. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 17pp.

Sussmann, P. 2005. 18 Fire Herbicide Treatment Environmental Assessment, Soil Specialist Report, Deschutes National Forest, Pacific Northwest Region.

Thomas, J.W., R.G. Anderson, C. Maser, and E.L. Bull. 1979. Snags. Pages 60-77 *in* Wildlife habitats in managed forests: the Blue Mountains of Oregon and Washington. (Thomas, J. W., Ed.) U.S. Dept. Agric. For. Serv. Agric. Handbook 553.

Wisdom, M.J., A.A. Ager, H.K. Preisler, N.J. Cimon, and B.K. Johnson. 2004. Effects of Off-road recreation on mule deer and elk. Pages 531-550 In Transactions of the Sixty-ninth North American Wildlife and Natural Resources Conference, Ed. J. Rahm. Wildlife Management Institute, Washington, D.C.

USDA Forest Service. 1976. Soil Resource Inventory, Deschutes National Forest, Pacific Northwest Region.

USDA Forest Service. 1988. General Water Quality Best Management Practices, Pacific Northwest Region.

USDA Forest Service. 1990. Land and Resource Management Plan, Deschutes National Forest, Pacific Northwest Region.

USDA, Forest Service, 1995. Inland Native Fish Strategy, Decision Notice and Finding of No Significant Impact. Interim Environmental Assessment.

USDA Forest Service. 1995. Pacific Northwest Region. Letter from John E. Lowe, Regional Forester, Decision Notice for the Revised Continuation of Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales; June, 1995. Portland, OR.

USDA Forest Service. 1995, 1996, 1997 and 1999. Soil Monitoring Reports. Deschutes National Forest, Pacific Northwest Region.

USDA Forest Service, 1996. Landscape Aesthetics, A Handbook for Scenery Management

USDA Forest Service. 1998. FSM 2520, Forest Service Soil Quality Standards, Region 6, R-6 Supplement No. 2500-98-1.

USDA FS. 1998. Integrated Natural Fuels Management Strategy. Deschutes National Forest. Bend, OR.

USDA FS. 2000. Forest Service Landbird Strategic Plan. Washington Office. Washington, DC.

USDA FS. 2006. Joint Aquatic and Terrestrial Programmatic Biological Assessment August 2006 – April 2009 for Federal Lands within the Deschutes Basin Administered by the Bureau of Land Management Prineville Office and for Federal Lands Administered by the Deschutes and Ochoco National Forests.

USDA FS. 2008. Update of the Regional Forester's Sensitive Species Lists and Transmittal of Strategic Species List. January 1, 2008. Pacific Northwest Region. Portland, OR.

USDI FWS. 2004. Shorebird Conservation Plan. High priority shorebirds—2004. Unpublished report, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, MBSP, 4107, Arlington, VA22203, U.S.A., 5 pages.

USDI FWS. 2008. Birds of conservation concern. Division of Migratory Bird Management, Arlington, Virginia. U.S. Fish and Wildlife Service.

CHAPTER 4

COORDINATION AND CONSULTATION

CHAPTER 4 – COORDINATION AND CONSULTATION

INTERDISCIPLINARY TEAM MEMBERS

The following Forest Service individuals were involved in the preparation of this Environmental Assessment.

Robin Gyorgyfalvy	ID Team Leader, Scenic Views, Scenic Byway Specialist
Julie York	Wildlife Biologist
Rick Dewey	Botanist
Rod Jorgensen	Soil Scientist
Janine McFarland	Cultural Resource Specialist
Tom Walker	Fisheries Biologist
Les Moscoso	Recreation Specialist
Paul Brna	Silviculturist
David Frantz	Writer/Editor

PUBLIC INVOLVEMENT

PUBLIC SCOPING (June 10 – July 1, 2009)

In response to the scoping notification, four written comments were received. Comments were used to help develop project design criteria. Those who contacted us include:

Deschutes County Planning Division, Community Development Department, Nick Lelack
Oregon Forest Resources Institute, Mike Cloughsey
American Forest Resource Council, Charles H. Burley
Les Joslin

The following is a list of agencies, organizations, and individuals that were sent notification of the proposed action.

Tribes

Confederated Tribes of the Warm Springs
Burns Paiute Tribe
The Klamath Tribes

Federal, State, and Local Agencies

Senator Ron Wyden
Senator Jeff Merkley
Congressman Greg Walden
US Fish & Wildlife Service, Nancy Gilbert
Bureau of Land Management, Deborah Norton
Oregon Department of Fish and Wildlife - Glen Ardt
Oregon Department of Forestry, Stuart Otto
Oregon Department of Transportation, Rick Williams
Oregon Department of Transportation, Bob Bryant
Oregon Department of Transportation, Gary Farnsworth
Oregon Parks and Recreation Department, Jan Houck
Deschutes County Department of Public Works, Tom Blust
Deschutes County Community Development, Nick Lelack
Deschutes County Sheriff's Department, Jon Sholes
City of Bend, Roger Prowell
City of Bend, Wendy Robinson
City of Bend, Tyler Deke
Bend Metro Parks and Recreation, Don Horton
Bend Chamber of Commerce, Tim Casey
Visit Bend, Doug La Placa
Bend 2030, Ruth Williamson

Interest Groups

Oregon Wild, Chandra LaGue, Eugene, OR
Oregon Wild, Tim Lillebo, Eastern Oregon Field Representative
Sierra Club, Asante Riverwind
Sierra Club, Marilyn Miller
Upper Deschutes Watershed Council, Ryan Houston

Upper Deschutes River Natural Resources Coalition, Don Mercer
Deschutes River Conservancy, Scott McCaulou
Northwest Environmental Defense Center
Friends of the Upper Deschutes, Lynda O'Neill
Deschutes Basin Land Trust, Brad Chalfant
Blue Mountains Biodiversity Project, Karen Coulter
Cascadia Wildlands Project, Josh Laughlin
Wanderlust Tours, David Nissan
Bigfoot Guide Service, Craig Vaage
Mickey Finn Guide Service, Pat Schatz
Crane Prairie Resort, Mr. and Mrs. Pat Schatz
Eastern Oregon Forest Protection Association, Lynne Breese
American Forest Resource Council, Chuck Burley
Upper Deschutes River Coalition, Jim Larson
Deschutes County 4-Wheelers
Bozarth's Offroad Service Specialties, Rick Bozarth
Wild Wilderness, Scott Silver
Sun Country Tours, Dennis Oliphant
Central Oregon Audubon Society, Larry Pecenka
Midstate Power Products
Central Oregon Running Club
Moon Country Snowmobilers, Bruce Cunningham
Mt. Bachelor, David Rathburn
Entrada lodge, Brad Everet
Cultus Lake Resort, Mr. and Mrs. Dan Campbell
Lava Lake Resort and Twin Lake Resort, Mr. and Mrs. Jim Frazee
Inn of the Seventh Mountain
Elk Lake Resort, Jim Bruce
Widgi Creek Homeowners Association
Tetherow Golf Club, Don Bauhaufer
Qwest Corporation, Virginia Callister
Pine Mountain Observatory, Mark Dunaway

Individuals

Susan Jane Brown
Dr. Stuart Garrett
Paul Dewey
Les Joslin
Larry Ulrich
David Pitts
Wade Foss
Dyarle Sharkey
Mr. and Mrs. Scott O'Neill
Scott Odgers
Robert Speik
Fred Tanis
Robert Mullong
Patricia Moore
Billy Toman
Scott Walley
Jim Anderson
Vic Russel

News Organizations

The Bend Bulletin, Kate Ramsayer
KTVZ