

CHAPTER III - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

A. CHANGES BETWEEN FINAL EIS AND DRAFT SUPPLEMENTAL EIS

ADDED: The following edits and changes were made to this chapter to supplement information previously presented, or include additional analyses regarding the effects of motorized vehicle use. All modifications, clarifications, deletions or additions for each section will be framed within a box. Other minor corrections, explanations and edits have also been made.

Changes within this chapter include:

- Clarified Assumptions for Analysis (III-3,4)
- Clarified Cumulative Effects Assumptions (III-5,6)
- Clarified Purpose and Need Statement (III-6,7)
- Revised Water Quality section to clarify effects analysis (III-9 thru 25)
- Revised Botanical Areas, Research Natural Areas and Special Plant Habitats section to clarify effects analysis (III-26 thru 29)
- Added road and trail development standards (III-32)
- Added Mixed Use Analysis and public safety (III-33)
- Recreation Facilities Analysis conformance (III-39)
- Clarified Cumulative Effects for Motorized Opportunities (III-49)
- Potential Wilderness and Other Undeveloped Areas (III-53,54)
- Revised Soils section to clarify effects analysis (III-56 thru 68)
- The relationship between ACS Objectives and POC Management (III-70,71,104,105)
- Revised Air Quality section to clarify effects analysis regarding Asbestos (III-78 thru 86)
- Added effects analysis on Northwest Forest Plan Survey and Manage vascular plants, bryophytes, lichens, and fungi to the section about Federally listed and FS Sensitive Plants (III-89 thru 97)
- Clarified Port-Orford Cedar (POC) and *Phytophthora lateralis* (PL) spread (III-101,103,104,105,107,109,110,111,112)
- Clarified Effects of Motorized Use to Owl Cores (III-122)
- Revised Fisheries section to clarify effects analysis (III-138 thru 160)
- Clarified laws related to mining entry and use of NFS roads (III-176,177)
- Added Wild and Scenic Rivers analysis (III-187 thru 201)
- Revised Environmental Justice and Civil Rights Disclosure (III-202 thru 205)

B. INTRODUCTION

Changes in this section between FEIS and DSEIS:

- Clarified Assumptions for Analysis
- Clarified Cumulative Effects Assumptions

This Chapter describes consequences and environmental effects linked with implementing the alternatives considered and analyzed in detail. The following sections portray affected environments and outcomes for each alternative in terms of attainment of Purpose and Need, and predicted physical, biological, economic, and social direct, indirect and cumulative effects on the environment, in regard to the Significant Issues and Other Issues identified in Chapter I. In presenting consequence discussions, the following terms are used to describe relevant spatial and temporal effects:

Short-term effects *address environmental consequences, which could occur at the time or and/or that arise within two-years of motorized use designation.*

Long-term effects *address environmental consequences, which are delayed, periodic, and/or arise more than two-years after motorized use designation.*

Direct effects *refer to consequences caused by the activities or events themselves, occurring concurrently and in the same location.*

Indirect effects *include consequences, occurring later in time or farther removed in distance from the point of contact, but are still reasonably foreseeable.*

Cumulative effects *address incremental environmental consequences resultant of multiple, past, present, and reasonably foreseeable future actions, regardless of land ownership, or which agency, or person initiated the action (40 CFR 1508.7).*

This analysis of environmental effects for each alternative is based on the recognition of Federal laws, National policies, regional Standards and Guidelines, and compliance with the Rogue River and Siskiyou National Forest LRMPs, as amended by the Northwest Forest Plan. The Forest Service Interdisciplinary Team has conducted analyses and has disclosed environmental consequences for all alternatives considered in detail.

1. Analysis Framework

The baseline for the affected environments and environmental consequences described in the sections below is the existing condition as described in Alternative 1 (No Action). In general, this baseline includes existing National Forest System (NFS) roads and trails identified in the Forest route inventory, combined with isolated cross-country motor vehicle travel, existing seasonal closures, restrictions on wheeled over-the-snow travel, and no specific prohibitions on the use of public wheeled motor vehicles for parking and dispersed camping.

For the RRSNF, this project and its analysis has focused on the change from the current condition.

The depiction of effects varies, based on the context in which they are analyzed. Therefore, pertinent, environmental consequences are presented in context of multiple scales, over various time frames. For the purpose of this Draft Supplemental EIS, the analysis was focused at the scale of the entire Rogue River-Siskiyou National Forest and specifically where actions are proposed with resulting direct consequences. These areas are unique to the Action Alternatives and vary according to the area where potential actions would occur.

Data

The primary data source used for this analysis was existing Geographic Information System (GIS) data collected from past field surveys and inventories. The RRSNF has numerous GIS layers that contributed to conducting an effective analysis, such as: spotted owl activity centers, hydrologic watersheds, travel routes, vegetation, sensitive plant occurrences, Botanical Areas, and recorded cultural resource sites.

The second data source used for this analysis was collected in the field by the Forest resource specialists for this project. Field assessments on specific routes of concern were conducted by project specialists.

Assumptions for Analysis

For this analysis, the following assumptions apply to all analysis as documented in all sections below:

- The existing level of use of NFS roads and trails is part of the current condition. Maintaining the current level of use does not constitute a measurable change to the current condition and therefore does not constitute a new effect. This also applies to roads which are designated as Maintenance Level (ML) 1, which a barrier device has not yet been installed or access around the barrier can occur with certain motorized vehicles without damage to Forest Service property, lands, wildlife, or vegetation, thus appearing open to motorized use and currently receiving such use.
- A NFS road is managed as a road and a NFS trail is managed as a trail and for this analysis, both are managed as part of the Forest infrastructure. Though species of plants or animals may occupy roads or trails, their presence does not convert the management of that road or trail to habitat management. Effects analysis acknowledges the presence of those species and thus effects on those species when any road or trail is put to its intended use.
- Public education and enforcement of regulations are assumed to be effective and would generally limit public travel to designated routes. Though illegal use at some level is expected to continue, unless site-specific documented information is available, the exact location and extent cannot be predicted.
- Reduction in the amount of available motorized trail may concentrate use on other trails that remain open to motorized use. However, because there is little information on the amount of use, it is assumed that additional use would not reach a threshold that would result in adverse resource effects.

ADDED: If adverse resource effects occur, they will be mitigated through additional trail maintenance or seasonal closures.

- Routes with fixed barriers are closed and are expected to re-vegetate. The effects analysis assumes re-vegetation over time. Differences in time frame and ultimate composition of that re-vegetation may vary based on soil types and site conditions (aspect, rainfall, elevation, etc.).

- **CHANGED:** NFS roads and trails were originally constructed to an appropriate standard for the intended use based on an engineering design and are assumed to be in an acceptable condition, unless information is documented to the contrary.

- NFS roads and trails designated for public wheeled motor vehicle use are and will continue to be maintained (brushing, ditch cleaning, etc.) as needed. Effects analysis assumes this ongoing maintenance.
- Hazard trees will be treated on NFS roads designated as open for motorized vehicle use. Hazard trees will not be treated on trails (only at trailheads).
- Unauthorized or user-created routes may not be in an acceptable condition, unless information is documented to the contrary. This is based on the fact that unauthorized routes were generally created without engineering design.

ADDED: These routes are not considered part of the National Forest System of roads and are not considered part of the baseline conditions.

- The alternatives differ in terms of the miles of routes open to public motor vehicle travel; there is no difference in the number of miles of routes that currently exist.
- Cross-country (or off-road) travel is currently allowed on approximately 275,000 acres of the Rogue River-Siskiyou National Forest. Of those acres, the majority are not utilized due to topography and heavy vegetation. Based on analysis of the current condition, it is estimated that approximately 5% (13,750 acres) actually receive cross-country use.

Cumulative Effects Assumptions

The cumulative effects analysis area is described under each resource, and in most cases includes the entire Rogue River-Siskiyou National Forest, including private and other public lands that lie within the Forest boundary.

Past activities are considered part of the existing condition. To understand the contribution of past actions to the cumulative effects of the Proposed Action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment, and might contribute to future cumulative effects.

Cumulative effects analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and costly to obtain at the scale of the entire Forest. Current conditions have been impacted by many actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the Proposed Action or alternatives. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one cannot reasonably identify each action over the last century that has contributed to current conditions.

ADDED/CHANGED:

By looking at current conditions, the residual effects of past human actions and natural events can be recognized, regardless of which particular action or event contributed those effects. Finally, the Council on Environmental Quality issued an interpretive memorandum on June 24, 2005 regarding analysis of past actions, which states, “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” The cumulative effects analysis in this EIS is also consistent with Forest Service National Environmental Policy Act (NEPA) Regulations (36 CFR 220.4(f)) (July 24, 2008), which state, in part:

“CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions. Once the agency has identified those present effects of past actions that warrant consideration, the agency assesses the extent that the effects of the proposal for agency action or its alternatives will add to, modify, or mitigate those effects. The final analysis documents an agency assessment of the cumulative effects of the actions considered (including past, present, and reasonably foreseeable future actions) on the affected environment. With respect to past actions, during the scoping process and subsequent preparation of the analysis, the agency must determine what information regarding past actions is useful and relevant to the required analysis of cumulative effects. Cataloging past actions and specific information about the direct and indirect effects of their design and implementation could in some contexts be useful to predict the cumulative effects of the proposal. The CEQ regulations, however, do not require agencies to catalogue or exhaustively list and analyze all individual past actions. Simply because information about past actions may be available or obtained with reasonable effort does not mean that it is relevant and necessary to inform decision making.” (40 CFR 1508.7)

The direct and indirect physical and biological effects of prohibiting motorized access off designated routes, limiting dispersed camping, and changing the mixed use on existing designated routes are generally beneficial. Therefore, there would be no adverse cumulative effects of implementing these proposed actions on any of the physical or biological resources. The combined physical and biological effects of other past, present, or reasonably foreseeable future actions that also affect motorized access may reduce the level of benefits realized to the physical and biological resources from the proposed actions in this EIS. The cumulative actions that were primarily considered include vegetation management actions that may create conditions more conducive to motorized access, road management activities, mining and range management access, proposed motorized trail projects, recreation projects and access, timber harvest and vegetation treatments, reforestation, restoration projects, road and right-of-way management, state and county easements, special uses, and road construction and decommissioning.

ADDED/CHANGED:

Vegetative conditions created by wildfires – although not federal actions under the National Environmental Quality Act – were also considered because wildfire areas can also create vegetative conditions that may be more conducive to motorized access compared to untreated. However, for the most part, the actual degree to which other past, present, or reasonably future actions would reduce the potential benefits of the proposed actions cannot be analyzed in a meaningful way due to the small-scale localized nature of these actions when compared to the proposed actions or because of the uncertain nature of the predicted time and actual impacts of these activities. Ongoing programs and permitted activities are so numerous and ubiquitous across the forest that accumulating extensive site-specific data on activities is neither reasonable nor warranted in order to understand the potential cumulative effects of the actions considered in this EIS.

The primary potential adverse cumulative effects of these proposed actions, when considered with other past, present, and reasonably foreseeable future action are the reduction or elimination of certain kinds of motorized recreational or access opportunities on an extended area across the Pacific NW Region. The greatest potential cumulative effect is the loss of general motorized access off of designated routes (roads and trails) or outside of designated areas (cross-country travel), given the local, regional, and national application of the Travel Management Rule. There appears to be a trend for limiting motorized access to designated routes on public lands (proposed actions and decisions for implementing the Travel Management Rule on the Willamette, Umpqua, Klamath, Six Rivers, and Fremont-Winema Forests); as well as private forest and ranchlands and county lands in the local area. Given the national scope of the Travel Management Rule, there is a potentially significant adverse effect to off-road motorized access and recreation across the Pacific Northwest region. The degree to which the Rogue River-Siskiyou National Forest is likely to contribute to this cumulative effect cannot be reasonably predicted. However, the development of proposed motorized trail systems may somewhat offset this adverse effect by providing additional designated motorized trail opportunities. This adverse effect may be considerably lessened when combined with the designated motorized road and trail systems on public lands in the northern California and southwest Oregon area. There are potential cumulative effects to people's motorized access for dispersed camping as well, although not likely to be as widespread as the effects of limitations on motorized access off designated routes and outside of designated areas.

C. ATTAINMENT OF PURPOSE AND NEED

As introduced in Chapter I, the content of the Purpose and Need statement is:

CLARIFIED: The *purpose* for action is to implement Subpart B of the Travel Management Rule. Motorized use is popular and an important form of recreation for many individuals, families, and groups. A designated and managed system is required by the Travel Management Rule to provide this use. Increased demand for motorized use, lack of designated areas/routes, has led to resource damage and social impacts, user conflicts, and safety concerns. In order to meet these objectives the following changes are *needed*:

CLARIFIED: (continued)

- eliminate general cross-country travel by prohibiting all motorized access off existing, previously designated routes, and outside existing, previously designated areas where such use is not currently prohibited or otherwise restricted by past actions;
- improve public safety, by implementing Forest Service Regional policy to determine the suitability of continuing to allow for motorized “mixed” use (e.g. analyze those roads which currently allow for motorized “mixed” use under State Law);
- amend the Rogue River and Siskiyou National Forest Plans to restrict motorized access to designated routes consistent with the Travel Management Rule and to provide consistent direction for conflicting plan allocations that will allow, to the maximum extent practicable, historical use of travel routes;
- make minor, limited changes to the National Forest Transportation System to preserve a diversity of unique motorized recreation opportunities (4X4 vehicles, motorcycles, ATVs, passenger vehicles, etc.) because implementation of Subpart B of the Travel Management Rule will reduce motorized recreation opportunities relative to current levels; and establish conditions or provisions to allow motorized access for dispersed camping that are consistent with Subpart B of the Travel Management Rule.

This Section is designed to take a closer look at the overall attainment of the Purpose and Need and establish indicators to compare the Action Alternatives in relation to the No Action Alternative. While components of Purpose and Need are related to the Significant Issues, either directly or indirectly, this Section is not designed to assess consequences (effects) in terms of Significant Issues. It is designed to assess the overall attainment of the stated Purpose and Need. The three key elements of the Purpose and Need Statement are discussed below.

1. Implement the Travel Management Rule

The Action Alternatives (i.e., Alternatives 2, 3, 4, and 5) would lead to the publication of a Motorized Vehicle Use Map (MVUM) which would enact the Travel Management Rule. This would be accomplished via Forest-wide Plan Amendments that allow the MVUM to be the basis of allowable motorized use for roads, trails and areas, and to authorize the issuance of citations for use not in accordance with the MVUM.

The No Action Alternative (Alternative 1), as a status-quo alternative, would not result in the publication of an MVUM and thus would not enact the Travel Management Rule.

2. Provide a Designated and Managed System for Motorized Use

To varying degrees, all alternatives provide for a managed system of motorized use. The Action Alternatives provide for a more succinct and easily understood system for motorized use than does the No Action Alternative. The Action Alternatives authorize the issuance of citations for use not in accordance with the MVUM.

The degree that the Action Alternatives provide for motorized use varies by alternative and is the subject of the Motorized Opportunities Significant Issue, discussed in the next section. Generally, for the purpose of perspective, Alternatives 1 and 2 generally provide about the same extent of motorized use as the current situation, Alternative 3 is the Proposed Action, and provides a more managed and slightly reduced system, and Alternative 4 provides a more managed and more reduced system over Alternative 3. Alternative 5 provides a slightly reduced system compared with Alternative 3, but provides more motorized opportunities than Alternative 4.

3. Provide Consistent Direction in the Forest Plans

Forest-wide Plan Amendments proposed under the Action Alternatives would allow the MVUM to be the basis to display the allowable motorized use for roads, trails and areas, and to authorize the issuance of citations for use not in accordance with the MVUM.

Alternatives 2, 3 and 5 also enact specific Plan Amendments as necessary, to provide for clear and consistent direction in the Forest Plans. These site-specific amendments are associated with the Lawson Creek, Game Lake, Lower Illinois, and Silver Peak Hobson Horn Trails and with the Boundary Trail and associated connecting trails, along the ridge associated with the boundary of the Rogue River and Siskiyou National Forests. These amendments are needed for Alternatives 2, 3, and 5, to allow the Forest Plans to provide consistent direction so that this trail would continue to be authorized for motorized use. Alternative 4 does not provide for motorized use on the Lawson Creek, Game Lake, Lower Illinois, Silver Peak Hobson Horn, or Boundary Trails and therefore does not need these specific amendments.

The No Action Alternative, as a status-quo alternative, does not enact the Travel Management Rule, does not enact specific Plan Amendments for the Boundary Trail, and portions of the Lawson, Game Lake, Lower Illinois, and Silver Peak Hobson Horn Trails, and therefore does not provide consistent direction via the Forest Plans.

D. ENVIRONMENT AND CONSEQUENCES ASSOCIATED WITH SIGNIFICANT ISSUES

Significant Issues were used to design specific elements of the alternatives and proposals, mitigation measures, and/or facilitate the display of important (and/or variable) environmental consequences. NEPA requires Federal agencies to focus analysis and documentation on the Significant Issues related to an action.

These issues (presented in Chapter I) have been determined to be significant because of the extent of their geographic distribution, the context of associated consequences, the duration of the effects, or the intensity of interest or resource conflict. Under the No Action Alternative, there would be no change from the current conditions (unless otherwise noted).

1. Water Quality and Erosion

Changes in this section between the FEIS and this DSEIS:

- Revised section to clarify effects analysis

Effects of motorized vehicle use on water quality and erosion

Motorized vehicle use generally requires a road or travelway for vehicle passage. In the case of cross country travel, a rough travelway is developed as a direct result of repetitive use. Roads and trails disrupt natural runoff and water flow by capturing and concentrating both surface and subsurface drainage. Concentrated water flows typically increase both erosion and deposition since they are able to move larger quantities and particle sizes of sediment. As road density in the watershed increases, so does the magnitude of the effect. Ultimately, in mountainous areas, elevated runoff with its increased sediment load will increase channel width and reduce channel depth at some point downstream, causing increased bank erosion, generating even more sediment. Stream temperature naturally increases as water flows downstream into wider channels that have more solar exposure. Accelerated erosion and deposition can add to heat gain by increasing the water surface exposed to direct sun through channel widening (bank erosion/loss of shading vegetation) and channel filling (deposition of sediment). Roads and trails in proximity to perennial streams can increase water temperature more directly by removal of the vegetation that shades the water.

Rates of erosion due to roads and trails have been extensively studied and documented in published literature (Coe and MacDonald, 2001). Exposure of native material on the travelway, cut banks, and fill slopes associated with roads and trails provides a continuous source of loose material that can be moved to streams by road drainage. Vehicle use of roads and trails generally increases surface erosion through substrate displacement, rutting, and dust generation. Roads and trails are often surfaced with rock or pavement and drainage is managed by ditches and culverts to reduce weathering and deterioration of the road as well as to reduce accelerated erosion and deposition in streams.

a. Background and Analysis Framework

Water quality in Oregon is managed in compliance with Section 303(d) of the 1972 Federal Clean Water Act by the Oregon Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA). DEQ is responsible for designating streams and water bodies that require effluent limitations, and, for developing Total Maximum Daily Load (TMDL) allocations that will ensure water quality standards are met. The most recent listing of impaired waters is available on a DEQ website as “Oregon’s 2004/2006 Integrated Report Database” (www.deq.state.or.us/wq/assessment/rpt0406).

Most of the Rogue River-Siskiyou National Forest is within the Rogue River Basin. This 5,156 square mile drainage extends 215 miles westward from the crest of the High Cascades near Crater Lake to the Pacific Ocean at the town of Gold Beach. The basin includes the major valleys of southwestern Oregon such as the Rogue River Valley, Applegate Valley, and Illinois Valley and includes a small area of northern California. There are no listed streams in the basin on the California side. The Rogue River-Siskiyou N.F. contains portions of two other smaller basins: the South Coast and Coquille River Basins, located immediately south and north of the Rogue River Basin. DEQ has completed TMDL allocations for the Rogue River Basin and for selected watersheds as shown below. The Coquille Subbasin has a completed TMDL that covers most of the Rogue River-Siskiyou N.F. occurring in that Subbasin.

Table III-1: Basin, Sub-basin or Watershed Listed Pollutants

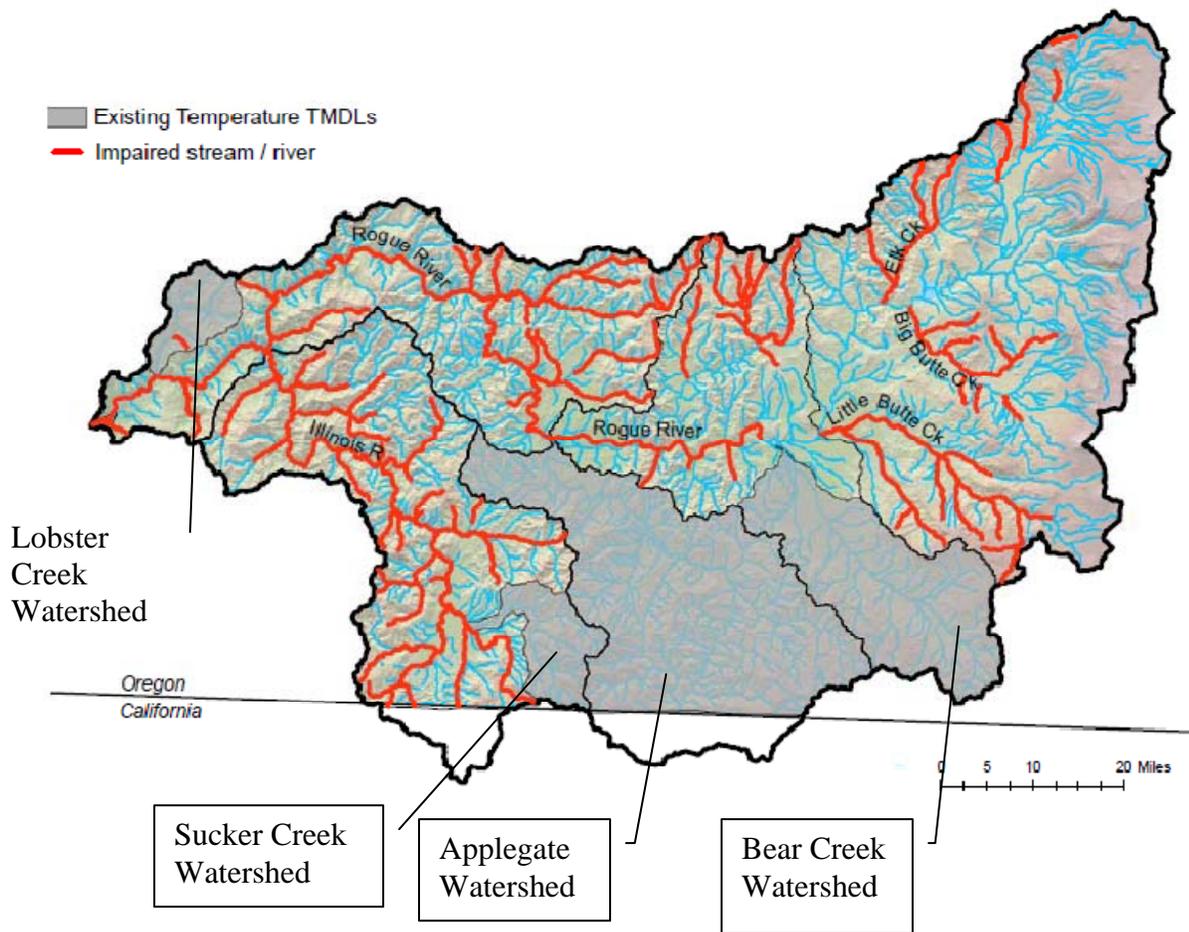
BASIN, SUB-BASIN or WATERSHED, date approved by EPA	Pollutant addressed
Rogue River Basin, 2008	Temperature, Bacteria
Middle Rogue Subbasin, Bear Creek Watershed, 2007	Temperature, Bacteria, Sedimentation
Middle Rogue Subbasin, Bear Creek Watershed, 1992	pH, aquatic weeds and algae, dissolved oxygen
Illinois Subbasin, Upper Sucker Creek Watershed, 1999	Temperature
Lower Rogue Subbasin, Lobster Creek Watershed, 2002	Temperature
Applegate Subbasin, 2004	Temperature, biological criteria, sedimentation
South Coast Basin, Coquille Subbasin, Upper South Fork Coquille Watershed, 2001	Temperature

In order to implement the State’s waste load allocations, federal land management agencies develop Water Quality Management Plans (WQMP) in cooperation with DEQ. Plans have been developed for many areas of the Rogue River-Siskiyou National Forest that contain or may affect listed streams or water bodies. These plans are listed in Appendix D.

Water temperature exceeding state standards is the water quality parameter of greatest concern on the Forest as a whole. The figure below shows the distribution of streams listed for temperature in the Rogue Basin. All Water Quality Management Plans on the Rogue River-Siskiyou National Forest address water temperature in terms of stream shading provided by forest canopy. Shade prevents surface water heating as a result of solar exposure, and is especially critical during the summer when stream flows are at their lowest levels, day length is the longest, and air temperatures are high.

TMDLs may address pollutants for very specific locations. In Table III-1, the biological criteria (macroinvertebrate populations) and sedimentation issues for the Applegate Subbasin are specific to Beaver Creek. Those for the Bear Creek Watershed are associated with Reeder Reservoir, the City of Ashland’s domestic water supply source. Bacteria (*Escherichia coli*) is a primary indicator of contamination resulting from waste water treatment plants or inadequate septic systems associated with human populations. The Rogue River Basin TMDL focuses on bacteria resulting from these “point sources” and does not address non point contributions from animal sources or transient human use that occur on the National Forest.

Figure III-1: Rogue River Basin 303(d) Listed Streams for Temperature (red)



Land management activities such as grazing, timber harvest, and road construction and maintenance are considered “non-point sources” of pollutants and physical changes that can reduce water quality. The Forest Service and DEQ maintain a Memorandum of Understanding that recognizes the use of standardized “Best Management Practices” (BMPs; USDA Forest Service, 1988) for a variety of common land management activities. Consistent use of BMPs ensures that water quality is protected from routine activities on NFS lands. All applicable BMPs contained within the Memorandum of Understanding related to road systems, watershed management and management of off-road vehicles are incorporated herein by reference.

The Northwest Forest Plan provides stream buffers as part of its Aquatic Conservation Strategy (ACS). Buffers are designed to protect all aquatic resources, including high levels of shade provided by mature forests. On the Rogue River-Siskiyou N.F., studies have shown that effective stream shading is provided by mature forest canopy growing within 60 feet of the stream (Park, 1993). For this reason, forest management activities generally avoid surface disturbance that would reduce effective shade to perennial streams. Surface disturbance is generally prohibited within riparian buffers unless it would benefit or maintain riparian function/resource. Site specific elements of the alternatives have been evaluated at the site scale based on their disturbance of the riparian reserve. Riparian reserve buffers are defined as the distance equal to one site potential tree height to either side of the stream channel for perennial and ephemeral channels. For fish-bearing streams this distance is doubled.

On the Siskiyou side of the Forest, a distance of 175 feet is used for site potential tree height; on the Rogue River side a distance of 156 feet is used. For this analysis site scale indicators for sensitive aquatic resources are the distance a road or trail is located within the riparian reserve, and the number of stream crossings. Cumulative watershed effects (CWE) include changes in water flow, timing and duration (especially elevated peak flows), and, elevated temperatures. These effects generally appear at larger scales and are expressed in terms of risk thresholds of watershed disturbance. For this analysis, CWE have been evaluated at the subwatershed, or 6th field hydrologic unit level. Risk Indicators considered are increased road density in miles/square mile and current level of CWE risk. This information has been developed through GIS analysis of the alternatives.

The Northwest Forest Plan (1994) requires public lands in the Pacific Northwest to conduct and document watershed analyses prior to conducting timber management activities. Watershed analyses have been completed for all areas of the Rogue River-Siskiyou National Forest and are listed in Appendix D. These documents describe existing watershed condition, the level of deviation from known historic conditions, as well as the human and natural disturbance mechanisms operating within the watershed. Although these documents do not make land management decisions, they provide recommendations for management at the watershed scale that are designed to meet the goals and objectives of the Northwest Forest Plan. Information from the Forest's watershed analyses was used to provide current CWE condition, road density data, stream temperature information, and site specific descriptions.

Alternatives contain proposals that close, authorize or change the vehicle use on specific roads or trails. Some of these proposals are administrative in nature, or result in little surface disturbance/change in surface disturbance within riparian reserves; therefore presenting no effect to water quality or erosion. The following assumptions recognize these situations (see the assumption section at the beginning of Chapter III for a general list of assumptions):

- Proposals to make existing LRMPs consistent with known existing travel uses are administrative in nature and present no change from the existing condition. There is no effect to aquatic resources as a result of this action.
- None of the **action alternatives** propose road removal, restoration, or decommissioning, except by naturally occurring revegetation. Although roads would be closed to public motorized travel, they would continue to be Forest System roads that are open for administrative use (typically timber harvest). For this reason, road density at the watershed scale would remain the same as a result of closing these roads to public motorized travel.
- Proposals to eliminate or designate mixed use on existing roads would present no change to current hydrologic conditions. As long as the road is designed to carry cars and trucks, the addition or elimination of off highway vehicles has no effect on the road's hydrologic impact.
- Proposals to convert ML-1 roads to motorized trails that are accepted as part of the final decision will meet Forest Service manual/handbook trail requirements. Once this step is accomplished, the trail would be included in the MVUM and designated open for use.

- Dispersed motorized camping prohibits development of new routes, avoids use near potable water sources and municipal watersheds, and prohibits crossing of any stream, wetland, or water body (unless on a designated route). Given these resource protections motorized camping described in this document would have no detrimental impact to aquatic resources or water quality.
- Ongoing monitoring would identify any roads or trails presenting a potential sediment source. Mitigation of impacts due to road alignment, slope instability, or poor drainage would occur through the Forest's standard road maintenance schedule.

b. Effects Mechanisms

Water Temperature

Roads and trails may affect water temperature directly by removing forest canopy that provides shade and thermal buffering to perennial streams and water bodies. At larger watershed scales, dense networks of roads and trails can alter natural drainage pathways, sediment loads, and flow volumes to the point that stream channels respond with morphological changes in channel form and flow characteristics. These changes typically occur downstream in lower gradient channels and include widening and shallowing of the channel, loss of sinuosity, and loss of shading vegetation along the banks. These changes typically result in elevated water temperatures. Elevated water temperatures are common during the summer low-flow stream conditions and are the result of a variety of natural and human-caused factors.

Sediment

Numerous researchers have established that roads are the primary source of fine sediment delivered to streams in otherwise relatively undisturbed watersheds, such as forests and rangelands. In addition, research has concluded that fine sediment from roads can result in adverse effects to streams and aquatic habitat (MacDonald and Stednick 2003; Gucinski et al. 2001; Dissmeyer 2000; Meehan 1991). Road related sedimentation is a result of road-induced hydrologic changes. The hydrology of road networks has important implications for both road surface sediment production (Coe and McDonald 2001) and mass-wasting (Montgomery 1994; Veldhuisen and Russell, 1999; Wemple et al. 2001).

Erosion of the road travelway, cutbanks, ditches, and fill slopes results in increased sediment loading to streams. Roads also present a relatively impermeable surface to rain and snow (Luce, 1997) resulting in additional runoff that increases erosion and sediment delivery to streams. Roads and trails on steep slopes intercept infiltrated water that would otherwise flow more gradually through subsurface soils and weathered rock. Intercepted subsurface slope flow is converted to concentrated surface flow that will contribute to erosion and sediment transport, as well as to increased peak flows for any storm event or snow melt (Ziegler et al. 1997). Studies have shown that interception of subsurface stormflow is responsible for over 90% of the runoff from roads in the Pacific Northwest (LaMarche and Lettenmaier, 2001; Wemple and Jones 2003). Roads with deep road cuts and roads constructed on shallow soils are especially prone to intercepting subsurface stormflow. Road cuts that do not expose the entire soil profile and roads constructed on benches are less likely to intercept subsurface stormflow (Wemple and Jones, 2003).

Although landslides and earthflows are natural features on the Rogue River-Siskiyou N.F., mass wasting may be triggered by poor road drainage on unstable slopes. Road generated failures are a common result of saturated and overtopped road fills resulting from culvert and drainage ditch failures.

Change in Flow Timing, Volume, or Duration

Overland flow occurs whenever rainfall intensity exceeds the infiltration capacity of the soil. In humid, forested landscapes rainfall intensity rarely exceeds infiltration capacity, and overland flow occurs infrequently (except where heavily compacted). In contrast, road surfaces are highly compacted, have high bulk densities, and have little or no pore space (Luce 1997). Although roads occupy a very small percentage of most watersheds, they can be responsible for the majority of overland flow in forested basins. Road surfaces can also produce runoff in the majority of storm events (Ziegler et al. 1997).

Hillslope runoff processes in the Pacific Northwest are dominated by subsurface stormflow. Subsurface stormflow occurs when permeable soil overlies relatively impermeable bedrock. Since roads are typically cut into the soil profile, and sometimes into underlying decomposed and solid bedrock, roads are capable of intercepting, concentrating, and rerouting subsurface stormflow from upslope contributing areas.

Studies have shown that interception of subsurface stormflow is responsible for over 90% of the runoff from roads in the Pacific Northwest (LaMarche and Lettenmaier, 2001; Wemple and Jones 2003). Roads with deep road cuts and roads constructed on shallow soils are especially prone to intercepting subsurface stormflow. Road cuts that do not expose the entire soil profile and roads constructed on benches are less likely to intercept subsurface stormflow (Wemple and Jones, 2003).

Published research has not established consistent numerical criteria for determining when roads are likely to contribute sediment to streams and other aquatic features such that the water quality of those features is adversely affected. Direct, quantitative, cause-and-effect links between roads and trails and aquatic conditions have been difficult to document (Gucinski et al. 2001). As a result of these limitations, the analysis of the alternatives in this section is a relative risk assessment of the likelihood of adverse effects to water quality and from erosion on the RRSNF.

c. Direct and Indirect Effects of Alternatives

Alternative 1-No Action

Under **Alternative 1 – No Action**, the current motorized route system would remain on the landscape and vehicle use designations would not change. This would allow existing cross country motorized use to continue on 275,000 acres including ML-1 roads. Currently the levels of this use are not well inventoried or quantified, but are estimated to be low where vegetation is dense and the terrain is remote, steep and rugged.

Much of the Powers and Gold Beach Ranger Districts are dominated by the coastal ranges which fit this description. The inland districts of Wild Rivers and Siskiyou Mountains are less well vegetated both in the understory and forest canopy. Steep and rugged slopes are still dominant; however travel corridors in the form of stream valleys and ridgelines are open and typically accessible. Alpine areas on these districts are also susceptible to cross country travel since they are poorly vegetated and often have more gentle topography that follows ridgelines and glacial deposits.

The most accessible Ranger District on the Forest is the High Cascades. Much of this district is relatively flat or gently sloping with a sparse understory. Off road vehicle use is already a widespread and popular recreational activity on the High Cascades Ranger District; however, it is also a recognized use of NFS lands on all of the Forest's ranger districts.

Timber harvest road networks provide vehicle access to most of the Forest. Most of this network is in use; however, the ML-1 roads present a substantial opportunity for public vehicle travel where use and maintenance are infrequent. It is reasonably foreseeable that OHV use will continue and expand along with human populations in southwestern Oregon. It is also reasonable to assume that off highway vehicle technology will improve the ability of these vehicles to handle more challenging terrain. Under the No Action alternative it is likely that, over time, cross country travel would increasingly contribute to increasing cumulative watershed impacts as "user trails" developed and proliferated. Since the Forest does not maintain ML-1 roads except when reopened for administrative use, continued utilization of these roads under an open cross country travel policy would allow impacts to develop that are unlikely to be monitored or detected for extended periods. Impacts would be a consequence of effects mechanisms already described. It would be speculative to attempt to quantify the location, magnitude, and duration of these future effects.

The No Action alternative causes the highest effect to water quality standards developed under the Clean Water Act. Land management that allows cross country motorized vehicle use without evaluation of site specific environmental consequences could result in resource damage on ML-1 roads and, resource damage as a result of trail development in riparian reserves. Although cross country vehicle use is currently restricted to that which avoids resource damage, it cannot be enforced until the damage has occurred and is identified. This approach would be reactive rather than proactive. Review of existing TMDL and BMP documentation indicate that vehicle use and road/trail networks require a planned approach to avoid degradation of water quality.

Alternative 2

Alternative 2 was developed to meet the minimum requirements of the Travel Management Rule (36 CFR Part 212), with minimal alterations to the current motorized use on the Forest. This alternative would prevent the development of increasing networks of user-created routes within areas open to cross-country travel (approximately 275,000 acres). Inconsistencies of unregulated cross country vehicle use with current water quality protection practices are discussed under the No Action alternative. Alternative 2 removes these inconsistencies by implementing the Travel Management Rule; the cross country travel closure would be consistent with current water quality laws, direction, and management practices.

Alternative 2 would make Forest LRMPs consistent with known existing motorized trail use. Since these trails currently exist, environmental consequences for water quality and erosion/sedimentation would remain the same as for the No Action alternative.

The following discussion presents effects by specific Ranger Districts, with a focus on the action elements as associated with Alternative 3 (Proposed Action), Alternative 4, and Alternative 5. Hydrologic indicators and information associated with each road or trail segment is provided in Table D-1 located in Appendix D.

Powers Ranger District

There are no specific elements for the Powers Ranger District under Alternative 3.

Under **Alternatives 4 and 5**, motorized use on the 1-mile Big Tree Trail (#1150) near the South Fork Coquille River would be prohibited. This trail is mainly outside the riparian reserve, has a gentle gradient, and has no stream crossings. The trail serves a botanical and day use area, and would be primarily used by hikers. Trail-generated sediment levels would be small and localized to the immediate area of the trail. Therefore, this action will have little or no effect. In addition, prohibiting motorized use would not substantially reduce trail generated sediment because of trail location and continued use by non-motorized users.

Gold Beach Ranger District

Close trails to motorized use

Alternatives 3, 4, and 5 propose the following actions:

Lawson Creek Trail #1173

This trail has few ephemeral stream crossings since the trail drops directly down the canyon slope to cross Lawson Creek, a perennial, fish-bearing stream with critical fish habitat in a Key Watershed. Lawson Creek is also listed for temperature. The trail gradient averages 16-18% at elevations that are rain-dominated and experience unusually high rainfall intensities. Trail related erosion would be expected to be high under these climate conditions. Motorized use of this trail segment would be prohibited under Alternatives 3, 4, and 5 leaving mainly pedestrian use (the trail is too steep for typical equestrian use). Motorized use does not currently occur on this trail segment because of steep slopes and vegetation that has grown into the trail.

Eliminating motorized use for this trail is consistent with current use, management direction and Best Management Practices. This action will have little or no effect since motorized use is already low or non-existent.

Game Lake Trail #1169

This trail segment extends from the Illinois River southward along the sub-watershed divide. Although the trail has multiple ephemeral stream crossings, they are at or near the point of initiation of these channels. The slope position of this trail is benign in that it follows the contour, does not intercept more than one perennial stream, and is located very near the sub-watershed divide. Trail-generated sediment would be limited to the immediate area of the trail and would be small in quantity. Sediment would not be expected to reach Horse Sign Creek beyond natural levels of erosion, nor would sediment reach critical habitat at the Illinois River. Elimination of motorized use on this trail segment would not be expected to have any detectable environmental effect since use of the trail by motorized vehicles is already low or non-existent.

Under **Alternative 4** additional segments of Trail #1169 and 1173 that form a loop are proposed for closure to motorized use. Total additional mileage would be 4.13 miles. The trail segment follows the sub-watershed divide and descends into the Lawson Creek sub-watershed to a mid-slope position. Six first and second order ephemeral channel crossings occur in the Lawson Creek sub-watershed. The trail traverses slopes that are generally less than 30%.

Closure to motorized use would be consistent with the management direction for this Key Watershed and with ACS objectives to protect stream channel integrity and vegetation; however, the trail does not appear to traverse exceptionally sensitive areas. It is possible that problem spots detected at the ground level (if any) could be acceptably mitigated. Closure of the route could eliminate small and localized sediment sources from ephemeral channel crossings. Sediment from these sources is likely to be trapped within the same downstream tributary prior to reaching Lawson Creek, which is approximately two miles distant.

Alternative 4 proposes the following additional trail closures:

Nancy Creek Trail, Illinois River Trail #1161

These trails form a loop and extend north and south along the Illinois River. Alternative 4 proposes to prohibit motorized use on these trails. This is an area of sensitive aquatic resources because the Illinois River is listed for temperature and the area is within Key Watersheds. The Nancy Creek segment climbs to the sub-watershed divide and has only two ephemeral stream crossings. The rest of the trail follows the Illinois River and Indigo Creek, generally on contour, crossing about a dozen ephemeral tributaries within 1500 or less of either Indigo Creek or the Illinois River. The route includes a crossing on Indigo Creek.

Prohibition of motorized use on this trail network is consistent with management objectives that protect water quality and aquatic resources; however, the primary threat of sedimentation is from the crossings. Elimination of motorized use would reduce sediment generated by bank erosion on crossings. Only one crossing (at Indigo Creek) is within 1000' of critical fish habitat; small portions of the trail are within the Illinois River riparian reserve. Most of the crossing locations would generate localized sediment that would be within the range of the sediment load naturally accumulated by steep, ephemeral tributaries. Crossing of perennial streams are more problematic since bank erosion contributes sediment directly into flowing water and degrades riparian vegetation and possibly water quality. However, these effects can be mitigated by BMPs (see Appendix D for list of applicable BMPs) instead of prohibiting motorized use over eleven miles of existing trail.

Shasta Costa Creek Trail

This trail connects two existing roads and runs upslope on gradients of 20-50%. It crosses no riparian reserve, however, due to its moderately steep gradient, is likely to capture and channel water/sediment into Shasta Costa Creek. Elimination of motorized use on this trail would be consistent with aquatic management objectives and BMPs. The trail is likely to be a sediment source, but even with elimination of motorized use, channeling of water and sediment would continue.

Red Flat Trail

This trail connects two existing roads and runs along a minor drainage divide on gradients of 20-50%. It crosses no riparian reserve, but, because of its moderately steep gradient, is likely to capture and channel water/sediment onto the 3680 road below. Elimination of motorized use on this trail would be consistent with BMPs that control road drainage and sediment sources that could cause culvert failures. The trail is likely to be a localized sediment source, but even with elimination of motorized use, channeling of water and sediment would continue. Sediment is likely to be handled by maintenance of the 3680 road and would not be discharged into nearby Hunter Creek, which is 303(d) listed for temperature.

Mineral Hill Trail #1103

This trail segment is located on a sub-watershed divide and crosses no riparian reserve; there is little risk of road related sediment entering a stream course. Elimination of motorized use would have no effect on aquatic resources or water quality.

Hobson Horn Trail #1166

This trail closely follows the watershed divide, has no perennial stream crossings, and crosses mainly first order ephemeral streams. The risk of trail-generated sediment reaching a perennial stream is very low. Elimination of motorized use on this trail is unlikely to have any detectable environmental effect on water quality or riparian reserves.

Trail #1180 Fish Hook Peak area

This trail is on the watershed divide and outside of riparian reserve. The risk of trail-generated sediment reaching a perennial stream is very low. Elimination of motorized use on this trail is unlikely to have any detectable environmental effect on water quality or riparian reserves.

Convert Maintenance Level 1 roads to motorized trails

Alternative 3 proposes the following action:

Game Lake area, Road 3680409

Forest Road 3680409 follows the divide between Lawson Creek and Collier Creek watersheds. This road has a very low potential for erosion due to its position along the divide and corresponding isolation from riparian area or to streams. Conversion of Forest Road 3680409 under Alternative 3 to a motorized trail would have a very low potential for erosion due to its position along the divide and corresponding isolation from Riparian Reserves.

Alternatives 3 and 5 propose the following actions:

Fairview Mountain area, Roads 3680351 and 3680353

These alternatives propose authorizing conversion from ML-1 roads to motorized trails. Forest Road 3680351 and 3680353 were evaluated in the Lawson Creek Watershed Assessment (1997). These roads were rated as a low to moderate sediment source and a low risk of increasing peak flows. This ML-1 road segment intercepts no riparian reserve allocation, is more than 1000' from the nearest perennial channel, and runs along the contour around a hilltop. Conversion of these roads to a motorized trail would generate no sediment likely to reach a stream channel.

Signal Butte area, Roads 3313103, 3680190, 3680195, 3680220

Alternatives 3 and 5 would convert Maintenance Level 1 roads to motorized trails located along the shared watershed divide between the Upper Hunter Creek, Lower Rogue River-Gold Beach and Quosatana sub-watersheds. These roads descend gradually from the ridgeline about 500 feet in elevation, generally along the slope contour. Channel crossings are few and are near the uppermost extent of ephemeral streams. Small amounts of sediment transport could occur at these stream crossings but are unlikely to be detectable at downstream perennial channels. Trail implementation would be able to avoid or minimize these small sediment sources. Direct and indirect effects of road to trail conversion would be limited to the immediate area and would not contribute sediment to perennial streams.

Kimball Hill area, Road 3313110 and 3313117

Alternative 3 converts existing road to motorized trail and proposes trail construction to make a connection to the 1164 trail. About 0.8 mile of the existing road is within an ephemeral riparian reserve buffer and overlaps the channel. Alternative 3 would aggravate existing vehicle use in a riparian reserve by providing a connector that would facilitate additional use. This proposed concentration of motorized use would cause adverse impacts to ACS objectives designed to protect the integrity of stream channels and aquatic vegetation. Long term use could result in degradation of the ephemeral channel to a gullied and de-vegetated condition. This would expose the substrate to intense rainfall typical of the coastal ranges and generate sediment capable of travelling downstream to Quosatana Creek, roughly 0.5 mile away.

This scenario is an indirect and potentially long-term impact that is avoided by modifications included in Alternative 5. The section of ML-1 road within the riparian reserve would be closed to motorized use (except administrative), and the connecting trail would not be constructed. Alternative 5 would include conversion of ML-1 roads to a motorized trail that are near the ridgeline and have only one ephemeral stream crossing. Under Alternative 5, no sediment would escape the immediate area to reach perennial streams.

New trail construction

Alternative 3: new trail construction to Woodruff Trail (0.30 mile)

This action would occur within the Rogue River watershed, west of Quosatana Creek. This action would create a source of sediment within the Quosatana Creek drainage, with potential to impact water quality within a tributary to Quosatana Creek. Alternative 3 would aggravate existing vehicle use in a riparian reserve by providing a connector that would facilitate additional use. This proposed concentration of motorized use could cause impacts to ACS objectives designed to protect the integrity of stream channels and aquatic vegetation.

Wild Rivers Ranger District

Close roads to motorized use

Alternatives 3, 4, and 5 propose the following actions:

Botanical Area Roads near Eight Dollar Mountain, 4201016 and roads near Josephine Ck; 4300910, 4300920, 4300925, 4300011

Road 4201016 would be closed to public use under Alternatives 3, 4, and 5. It is within a botanical area containing sensitive vegetation associated with wetlands, fens, and bogs. Portions of the road are within the riparian reserve of the Illinois River and cross small tributaries near their confluence with the Illinois River. These provide a direct route for road generated sediment to a river which is listed for temperature.

Reduction of stray OHV use in the botanical area would directly benefit wetland areas therein. These areas contain shallow water and easily disturbed saturated soils. Even small amounts of OHV use degrade this aquatic resource by churning up wetland soil and destroying fragile plants. Closure of the road would be consistent with ACS goals to protect wetlands. Some indirect benefit may occur to water quality by closure of the 4201016 and 4300910 network of roads since traffic levels would be reduced, resulting in reduced wear and tear to the travelway that contributes to road generated sediment. The road itself would remain in its current condition since it is a Level 2 road subject to frequent administrative and permitted traffic (including mineral exploration/development) and maintenance. The road's larger hydrologic impacts would remain since it would continue to intercept and concentrate water on unvegetated, unpaved travelways, cutbanks, and ditches. It is unlikely that any measurable direct beneficial effect to water quality in the Illinois River would result from closing the road to public traffic alone.

Roads affecting wetlands/botanical areas: Roads 4300910, 4300920 and -011, 4201029, 4201881

All of these roads are in the Josephine/Canyon Creek area. They travel through areas of isolated wetlands, bogs, and fens that can be damaged by OHV use. Reduction of stray OHV use in these areas would directly benefit wetland areas therein. These areas contain shallow water and easily disturbed saturated soils. Even small amounts of OHV use degrade this aquatic resource by churning up wetland soil and destroying fragile plants. Closure of the road would be consistent with ACS goals to protect wetlands.

Roads 4400445, 4400460, 4400480, 4400485

This road network follows sub-watershed divides throughout its length with very small overlap in riparian reserve. Closure to public motorized use of this network would have no impact on riparian resources or water quality.

Forest Road 2600050

This road would remain as a Level 2 road, subject to frequent administrative and permitted use and maintenance. The current hydrologic impacts from these roads would remain on the landscape. Closure to public use alone, is not expected to result in effects to water quality within the Silver Creek watershed.

Alternative 4 proposes the following additional road closures:

Roads 4201844, 4201846, 4201847, and 4103087, 2524048

Closure of these roads would have no impact on riparian resources or water quality since they include only a minor portion of one ephemeral stream buffer.

Roads 4402019, 4402112, 4402450, 4402172, 4402206, 4402259A, 4402550

This road network would be closed to public motorized use under Alternative 4. The network closely follows sub-watershed divides and secondary ridgelines, managing to avoid riparian reserves throughout all but the western end of the network. These roads are distant from both Coho critical habitat and listed streams except at the west end. Closure of this road network would have little, if any, effect on aquatic resources or water quality.

Close trails to motorized use

Alternatives 3, 4, and 5 propose the following actions:

Taylor Creek Trail #1142, Big Pine Spur Trail #1142A, Trail #1157, Onion Way Trail #1281, Secret Way Trail/Spur #1282/A

This trail system generally follows minor ridgelines and crosses the heads of 6 ephemeral streams. Alternatives 3, 4, and 5 propose prohibiting motorized use although it presents a low risk for sediment/erosion to perennial streams from vehicle traffic.

Swede Creek #1135 Trail

This trail crosses Swede Creek and three ephemeral channels at the location of an inventoried landslide. Prohibiting motorized use of this trail would be consistent with protection of unstable slopes and riparian areas sensitive to disturbance.

Bolan Lake Trail #1245, Kings Saddle Trail #1245a, and Mt. Elijah Trail #1206

Bolan Lake, Kings Saddle, and Mt. Elijah trails would have a localized beneficial effect resulting from a reduction in the small amount of erosion generated by motorized use. No long or short-term effects at the subwatershed scale would be detectable. Closure of the trails would have an indirect beneficial effect on wetland integrity by preventing damage associated with vehicle use on saturated soils. This closure would be consistent with ACS objectives for wetland areas. Due to these trails' location on ridgelines, the motorized closure would have no effect on water quality in distant listed streams.

Alternative 4 proposes the following additional trail closures:

Hobson Horn Trail #1166 Refer to the Gold Beach District analysis above for effects concerning proposed closure of this trail segment to motorized use.

Trails #1132 Briggs Creek, 1135 Swede, 1143 Red Dog

These trails closely follow Briggs Creek and Red Dog Creek. Out of 11.5 miles of trail 10 miles is within the riparian reserve of these channels. These trails cross 20 ephemeral channels and 10 perennial streams. The ephemeral crossings are all near the confluence of a tributary with a perennial channel. The trail presents a continuous threat of sediment displaced by vehicle use entering a perennial stream. In addition, Trail #1143 travels through inventoried landslides along Red Dog Creek. Prohibiting motorized use would be consistent with ACS goals and objectives for protecting riparian reserves and channel integrity and vegetation. BMPs would also be served by removing vehicle travel from an area with unstable slopes. Water quality protection would be promoted since vehicle traffic would not be causing erosion within the riparian reserve of Briggs Creek.

Trail #1146 Dutchy Creek and #1132 Briggs/Chance Creek areas

These trails parallel Dutchy and Chance Creeks, and are outside of the riparian reserve of these streams except where they connect to Road 2600050. Motorized use would be prohibited on the trails; the road would be closed except for administrative use. This network effects a small number of ephemeral stream crossings except near the confluence of Silver and Chance Creeks. Trail #1146 hugs Chance Creek for about a third of a mile.

Elk Creek Trail #1230 and Boundary Trail #1207, 903, 907

Trail #1230 follows an ephemeral channel within the riparian reserve for more than half its length. Prohibiting motorized use would be consistent with ACS goals for protecting streambank integrity. The Boundary Trail follows the sub-watershed divide closely, traversing the riparian reserve of first and second order ephemeral channels on two spurs (O'Brien Creek and Sturgis Fork Carberry Creek). Prohibiting motorized use on these spurs would be consistent with ACS goals for protecting streambank integrity. Given the trail's position on or near major ridgelines for most of its length, prohibiting motorized use would have no effect on water quality in perennial channels.

Convert Maintenance Level 1 road to motorized trail

Alternative 3 proposes conversion of, Road 4402494 to a motorized trail. This trail would follow a ridgeline and does not cross riparian reserve. Conversion of the road to a motorized trail would have no impact on riparian resources or water quality.

Siskiyou Mountains Ranger District

Close trails to motorized use

Alternatives 3, 4, and 5 propose the following action:

Horse Camp Trail #958

This trail crosses four ephemeral channels and is within the riparian reserve of both Echo Creek and Cook and Green Creek. Closure to motorized use would be consistent with ACS goals for protecting riparian reserves. Closure is unlikely to affect water quality since the area is covered by snow much of the year and channels are dry when use occurs.

Alternative 4 proposes the following additional trail closures:

Cook and Green Trail #959

This trail closely follows the main stem of Cook and Green Creek within the riparian reserve buffer, crossing 20 closely spaced ephemeral channels near their confluence with the main channel. The drainage density along Cook and Green Creek is unusually high. The Middle Fork Applegate River Watershed Analysis states that Cook and Green Creek is “a very active downcutting stream which has steepened slopes creating an extremely steep topography.” Processes associated with steep slopes, such as rockfall, creep, and ravel, are very active. Closure to motorized use would be consistent with ACS objectives for streambank protection. However, because the trail would remain and receive non-motorized use, closure to motorized use would not be expected to have a detectable impact on water quality.

Mule Mountain Trail #918,919, 920

Trail #918 and #919 follow the sub-watershed divide and secondary ridgelines. These two trails are benign in terms of riparian or water quality impacts since they avoid riparian areas. Trail #920 follows the majority of the main channel of Mule Creek up to the headwaters. This results in abundant tributary crossings near their confluence with the mainstem. The trail also intercepts many first order tributaries on its way to join Trail #919 at the ridge. The Squaw-Elliott Watershed Analysis states that Mule Creek typically becomes dry by June of most years and remains so until the autumn rains. This would tend to reduce the level of effect of motorized impact. Prohibiting motorized use would alleviate some stream channel degradation, even if pedestrian use continues. However, because the trail would remain and receive non-motorized use, closure to motorized use would not be expected to have a detectable impact on water quality. Water temperature is of no concern in Mule Creek since it is typically dry during the summer.

Little Grayback Trail #921

Motorized use would be prohibited on this trail under Alternative 4. This trail is half a mile or less from the sub-watershed divide and intercepts well spaced first order ephemeral channels. Exclusion of motorized use would not be expected to have detectable effects to water quality. Channel integrity may be locally compromised at crossings, but could be alleviated through use of BMPs (see Appendix D for list of applicable BMPs) for and trail maintenance.

New trail construction

Alternatives 3 and 5: new motorized trail construction and realignment of #927 Penn Sled Trail

The existing Penn Sled trail alignment would remain. Few hydrologic issues are associated with the current alignment. The trail is in a low precipitation area where there are no State-listed streams. The trail’s contribution to sediment in Squaw Creek is likely to be undetectable. Under Alternatives 3 and 5, a new motorized trail segment would be constructed. The new alignment does not cross riparian reserve and would be expected to have no impact on water quality.

High Cascades Ranger District

The proposed play area is located within the Big Butte Springs municipal watershed in Jackson County. The Medford Water Commission has supplied water from this basin since 1927 to the city of Medford as well as a number of other towns and water districts surrounding Medford. Water obtained from the municipal watershed is of exceptionally high quality, requiring minimal treatment.

The existing sand pit proposed for the play area is located in the high hazard zone, and is identified as a potential entry point for pollution through infiltration as described in the Big Butte Springs Geohydrologic Report. The high hazard zone is an area in which surface water drains directly into the groundwater system and those areas associated with the infiltration and transmittal of precipitation into the groundwater system. A core hole (CH8) drilled across the highway from the sand pit documents deposits of alluvial material of about 10 feet overlying andesite volcanic flow deposits of 178 feet deep. Currently, the sand pit is informally used as an OHV play area, but has not been developed or sanctioned by the Forest Service for this use. The development of a play area is only included under **Alternative 3**. **Alternatives 1, 2, 4, and 5** do not propose the development of a new play area on the High Cascades Ranger District.

Because allowing mixed use on portions of paved roads (under **Alternative 3**) would merely designate portions of a paved road for mixed use, there would likely be no effect. Any change would be undetectable. The proposed activity would merely redefine the type of vehicle that is permitted to drive on portions of Forest Roads 34, 37, 3705, and 3720. **Alternatives 1, 2, 4, and 5** do not propose the designation of mixed use on paved roads on the High Cascades Ranger District.

d. Cumulative Effects

At the 6th field sub-watershed scale, the risk for cumulative effects would not change as a result of limiting public access or converting roads to motorized trails under any of the alternatives in the DSEIS. The reasons for this conclusion include:

- The Action Alternatives involve only minor amounts of new ground-disturbing activities and there would be no creation of new impervious areas. On the watershed scale, these changes would be immeasurable.
- Under all of the Action Alternatives, the closure of roads does not involve the physical removal of those roads and rehabilitation of the ground surface that those roads occupied.
- At the 6th field sub-watershed scale, the acres of roads that would be closed to the public under all of the Action Alternatives - even assuming complete re-vegetation of the roads at some point in the future - is not enough to change the risk of cumulative effects.

The elimination of cross-country travel in Alternatives 2, 3, 4, and 5 would improve sub-watershed conditions in those areas where cross-country travel is occurring and thus reduce the risk for adverse cumulative effects.

Other actions and activities that have the potential to have cumulative effects to the hydrologic resource include fuel treatments and fire, range management, minerals management, recreation, timber harvest and vegetation treatments, road and right-of-way management, special uses and state and county easements.

Fuels reduction projects and prescribed fire are on-going across the Forest. Project designs to protect water resources greatly minimize or avoid direct effects, and they are typically short-term. Adverse effects on water resources from motorized use activities would remain at current levels with Alternative 1 and, in large part Alternative 2. There is a potential decrease with Alternatives 2, 3, 4, and 5 through elimination of cross-country travel and establishment of designated routes. Therefore, there are no foreseeable adverse cumulative effects.

Livestock grazing is a use that is managed under special use guidelines. The actions proposed in this project would not alter the grazing pattern or management of the livestock, and would therefore not include adverse cumulative effects.

Mining activities typically cause disturbance to the soil resource through the removal and/or displacement of vegetation and soil, and long-term commitments for access. Adverse cumulative effects to water resources from future minerals development have the potential to increase at the Forest-level in all alternatives.

However at this scale, these effects would be immeasurable. Alternative 4 would offset any effects the most through the beneficial consequences of eliminating motorized trails through Botanical Areas and areas with serpentine soils, in addition to the elimination of cross-country travel in Alternatives 2, 3, 4, and 5.

The greatest recreation effects to water resources are typically tied to activities involving roads, trails, campgrounds, and dispersed sites. These are areas that result in varying levels of hydrologic impacts from those activities. Varying levels of hydrologic impacts can also occur from motorized recreation activities off-roads and trails. Impacts on water resources from motorized use activities would remain at current levels with Alternatives 1 and 2, and potentially decrease with Alternatives 3, 4, and 5 through elimination of cross-country travel and establishment of designated routes. Therefore there are no foreseeable adverse cumulative effects. Additional effects would be offset by the elimination of motorized trails through Botanical Areas and areas with serpentine soils in Alternative 4. Cumulative effects would also potentially be offset by eliminating off-road parking for dispersed camping and day use beyond 300 feet from designated roads in Alternatives 2, 3, 4, and 5.

Vegetation and timber harvest projects across the Forest are ongoing. Implementations of these projects require adherence to BMPs and Standards and Guidelines designed to protect and maintain the hydrologic resource. Detrimental effects to water resources from motorized use activities would remain at current levels with Alternative 1 and potentially decrease with Alternatives 2, 3, 4, and 5 through elimination of cross-country travel and establishment of designated routes. Therefore there are no foreseeable adverse cumulative effects.

Proposals for special use permits and the action of granting an easement typically do not directly affect hydrology. Detrimental effects to water resources from motorized use activities would remain at current levels with Alternative 1 and potentially decrease with Alternatives 2, 3, 4, and 5 through elimination of cross-country travel and establishment of designated routes. Therefore there are no foreseeable adverse cumulative effects.

2. Botanical Areas, Research Natural Areas and Special Plant Habitats

Changes in this section between the FEIS and this DSEIS:

- Revised section to clarify effects analysis

Effects of Motorized vehicle use on Botanical Areas, Research Natural Areas and/or special botanical habitats

Botanical Areas, Research Natural Areas, and/or special botanical habitats such as serpentine terrain, meadows, fens, and bogs are identified as a Significant Issue for motorized vehicle use designation on the Rogue River-Siskiyou National Forest. Of special concern are motorized trails and the effects that current and/or proposed use may have on these resources.

a. Background

Botanical Areas and Research Natural Areas

Many of the Botanical Areas on the Forest currently have roads and trails going through them. The Siskiyou NF LRMP confines vehicle use to roads and trails. Some of the Siskiyou NF trails in Botanical Areas have been closed to motorized use and some have not.

The Rogue River NF LRMP confines vehicle use in Botanical Areas to roads only; motorized use of trails in Botanical Areas is not allowed. However, no Forest Order¹ has ever been issued to prohibit this use in all Botanical Areas covered by the RRNF LRMP. Consequently, some trails within these Botanical Areas are used by OHVs, specifically the Boundary Trail, the O'Brien Creek Trail, and the Cook and Green Trail.

No roads go through any of the Forest's Research Natural Areas (RNAs). However, a number of RNAs have trails going through them. Neither LRMP allows motorized use of trails in RNAs and off-trail use is also prohibited. However, since no Forest Order has ever been issued to prohibit it, motorized use of the Boundary Trail currently occurs where it passes through the west end of the (proposed) Oliver Matthews RNA.

Botanical Areas are shown on the alternative maps. Research Natural Areas are not shown on maps.

¹ Forest Supervisors may issue orders which close or restrict use of a described area(s) within the area over which they have jurisdiction. An order may close an area to entry or may restrict the use of an area.

Special Plant Habitats

Habitats such as meadows, wetlands, riparian areas, serpentine savannah, high mountain slopes, etc. often support rare or unusual plant species, easily disturbed bryophyte and lichen floras, or plant communities with high species richness. Where these habitats occur outside of Botanical Areas, or Research Natural Areas (RNA) or Wilderness Areas (where no motorized use is allowed) they can experience deleterious effects of off-road and off-trail OHV use if they are in areas that are accessible to these vehicles.

Serpentine (peridotite) habitats have a particularly high proportion of endemic plants (species whose distribution is restricted to limited geographic areas) and rare plants. Because they are often relatively open, serpentine areas may be more accessible to off-road/off-trail motorized use than areas on other soil types which are typically more heavily vegetated. Although serpentine soils are not particularly sensitive to surface erosion, the slow rate of re-vegetation on serpentine soils means disturbed areas may recover slower than elsewhere. For these reasons, and in response to public comments received during scoping, a proposal to restrict motorized use in serpentine areas to roads only (no trails, no cross-country) is included as part of Alternative 4.

Serpentine areas are mapped on page III-58. The other special plant habitats are not mapped.

b. Effects Mechanisms and Analysis Framework

For a list of general assumptions with regard to this analysis, refer to the beginning pages of Chapter III. The following list is specific to the analysis for Botanical Areas, Research Natural Areas, and special plant habitats.

- Motorized vehicle use on and off established roads and trails has affected or has the potential to affect Botanical Areas, Research Natural Areas, and special plant habitats, either directly by damage or death to individual plants from wheel-traffic (stem breaking, crushing, etc.), or indirectly by altering the habitat through soil disturbance, changes in hydrologic functioning, or by the introduction of non-native, invasive plant species that can out-compete native species for water, sunlight, and nutrients.
- Unauthorized off-road and off-trail motor vehicle use is more likely to occur in special plant habitats where these areas have gentle terrain with little or no natural barriers to motor vehicles.
- Impacts to Botanical Areas and special plant habitats vary across all alternatives; no alternative completely eliminates the potential for adverse affects. In general, alternatives with fewer miles of routes open for public wheeled motor vehicle use should have reduced effects to special plant habitats.

c. Direct and Indirect Effects of Alternatives

Botanical Areas and Research Natural Areas

Siskiyou Portion of the RRSNF

On the area covered by the Siskiyou NF LRMP, there would be no change in the status of trails in Botanical Areas under **Alternatives 1 and 2**. Effects would continue to be the same.

In the Bigelow Lakes Botanical area and vicinity, **Alternatives 3 and 5** would close the Bigelow Lakes Trail (#1214) and Mt. Elijah trail (#1206) to motorized use. In the Bolan Lake Botanical Area and vicinity, Alternatives 3 and 5 would also close the Bolan Lake Trail (#1245) and Kings Saddle Trail (#1245a) to public motorized use. Alternatives 3 and 5 would also close two connected primitive roads (Maintenance Level 2) around the west and northwest sides of the Eight Dollar Mountain Botanical Area (Forest Roads 4103011 and 4201016) to public use. Further, these alternatives would disallow mixed use on two roads in the Days Gulch Botanical Area (4201881 and 4201029).

Alternative 4 would accomplish the same road and trail closures and mixed use restrictions as described above for Alternatives 3 and 5 within Botanical Areas. Alternative 4 would also close a primitive road in the Oregon Mountain Botanical Area (4402-019). Also under Alternative 4, additional trails that are currently open to motorized use in other Botanical Areas would become non-motorized.

The road closures and restrictions in the Eight Dollar Mountain Botanical Area and Day's Creek Botanical Area under **Alternatives 3 and 5** are expected to reduce illegal off-road and off-trail OHV use and lead to recovery of some native plant populations and native plant communities at Star Flat and some meadow and serpentine savannah locations in these Botanical Areas.

The Bigelow Lakes Trail closure under Alternatives 3 and 5 may enhance the recreational experience of some Botanical Area visitors and further discourage any illegal off-road and off-trail OHV use that could affect meadows and wetlands in several areas adjacent to the trail. The Bolan Lake and Kings Saddle Trail closures under Alternatives 3 and 5 may enhance the recreational experience of some Botanical Area visitors.

Alternative 4 would be expected to have the same beneficial effects to botanical resources and recreation experience of some Botanical Area visitors as Alternatives 3 and 5. Alternative 4 also prohibits OHV use along additional trails in additional Botanical Areas so these benefits to botanical resources and botanical area visitors would occur there as well.

None of the Research Natural Areas are open to off-road or off-trail vehicle use under any alternative. No change is proposed from the current designated motorized or non-motorized designation of trails passing through RNAs except as follows: Under Alternatives 1, 2, 3, and 5, motorized use of the Boundary Trail where it passes through the west end of the proposed Oliver Matthews RNA would continue. There is some open gentle ground and wetlands in the Horse Springs vicinity where the Boundary trail passes through this proposed RNA that could be vulnerable to resource damage should OHV users go off-trail; therefore, unauthorized off-trail motorized entry and potential resource damage would be less likely to occur under Alternative 4 since motorized use would not be allowed in this area. Since no resource damage from OHV use has occurred at this location to date, any potential benefits are speculative.

Rogue River Portion of the RRSNF

Current OHV use within Botanical Areas would continue under **Alternatives 1, 2, 3, and 5**.

Though it currently occurs in isolated areas, under these alternatives, there is potential for OHV operators to venture off-trail and consequently cause damage to some rare plants or their habitat, or cause other resource damage.

Off-trail use by OHVs would not have effects on areas adjacent to the Cook and Green Trail, because surveys indicate there are no vulnerable special status plant populations along this trail and no real opportunities to get off the trail exist. However, off-trail use could cause adverse effects in the Grayback Botanical Area, both in the wet Krause Meadow where *Gentiana plurisetosa* (a FS Sensitive species) grows, and in the Sugarloaf/Windy Gap area where the soil is easily erodible and has required gully stabilization in the past. The continued risk of direct adverse effects to plant habitat is relatively high due to the ease of leaving the trail at the latter location under alternatives 2, 3, and 5. Since no resource damage from OHV use is currently occurring at these locations, any potential adverse effects are too speculative to quantify.

Motorized use of trails in Botanical Areas would not be allowed under **Alternative 4**. For this reason, OHVs are not likely to be present (given the assumptions on page III-3), so there is less likelihood they would go off-trail and damage Botanical Area resources.

Effects to RNAs are the same as described for the Siskiyou portion of the RRSNF.

Special Plant Habitats

Under **Alternative 1**, approximately 275,000 acres of Forest System land is available for off-road/off-trail motorized use, though in reality only a fraction (approximately 5%) of that is actually accessible.

Under **Alternatives 2, 3, 4, and 5**, uncontrolled off-road/off-trail OHV use would not be allowed on the Forest and, to the extent that OHV operators obey the rules, damage to these habitats from off-road/off-trail use is not expected to occur.

Also, under **Alternative 4**, motorized use would be prohibited on trails within serpentine areas and Inventoried Roadless Areas, further reducing the potential for unauthorized off-trail motorized use.

d. Cumulative Effects

Botanical Areas and/or special botanical habitats such as serpentine terrain, meadows, fens, and bogs are not likely to have been adversely impacted from major ground-disturbing actions in the past, nor are any major actions anticipated or identified in the future.

The Action Alternatives for this project are expected to maintain or reduce effects from motorized use. The prohibition of cross-country travel included in all Action Alternatives is expected to reduce or enhance Botanical resources. In addition, Alternatives 3, 4, and 5 would include a reduction in miles of routes open for public wheeled motor vehicle use adjacent to habitat. Therefore, at the scale of these special areas (site-scale), there would be no additional or foreseeable risk from adverse cumulative effects.

3. Public Safety

Motorized vehicle use conflicts and public safety

Changes in this section between FEIS and DSEIS:

- Clarification of road and trail development standards
- Clarification of mixed use analysis and public safety

This issue concerns the safe use of Forest roads and trails by the recreating public. Public safety is a high priority on the RRSNF.

a. Background and Analysis Framework

Public safety on Forest roads and trails is achieved by three basic means: 1) maintaining facilities in good condition, 2) managing the mixture of user types on the same facility, and 3) expecting reasonable user behavior.

Facility condition is an aggregation of design, construction and maintenance of a transportation facility: Design and construction dictate the geometric parameters of the facility; the sharpness of the curves, the travel surface widths, the surface type, the climbing and descending gradients, the stopping site distances, signing needs, etc. Maintenance of drainage, surfacing, vegetation, signing is an attempt to preserve the original design and construction standards of the facility.

Mixed use on the same facility can create safety conflicts. Some motorized and non-motorized examples include:

- 1) *Mountain bikes on stock trails:* Mountain bikes traveling downhill tend to be fairly quiet and can move at a high rate of speed which can surprise and spook stock into unsafe behaviors.
- 2) *Unlicensed OHV riders on roads:* OHVs can travel roads at a higher rate of speed than highway vehicles. When the OHV user is unlicensed and/or inexperienced, meeting on-coming traffic is hazardous and can be disastrous. Vehicle accidents on this Forest involving OHVs have been low. Law enforcement personnel have had very few problems with OHV riders on roads and trails and citations issued to OHV operators are no greater than those issued to licensed vehicle operators (Ross, pers. com.).

3) *'Freeride' mountain bikes on trails:* 'Freeride' is a relatively new discipline of mountain biking, combining different aspects of the sport such as high downhill speed and obstacle jumping which has progressed rapidly in recent years, and is now recognized as one of the most popular disciplines within mountain biking. The original concept of freeriding was that there was no set course, goals or rules by which to abide. The result, within a small portion of the freeride community, is that irresponsible riders attain very high speeds in areas with short sight distances and can be a hazard to hikers, runners, and their dogs. On the RRSNF, this hazard is most acute on the highly-used trails within the Ashland Watershed.

4) *Motorcycles on trails:* Motorcycles can attain high rates of speed on both downhill and uphill sections of a trail. This can pose a hazard to hikers, equestrians, and mountain bikers if sight distance is limited. However, unlike mountain bikes, motorcycles are not silent and other users can generally hear an approaching motorcyclist. Also, many portions of single track trails used by motorcyclists are not conducive to high speed due to steep and rocky terrain.

User expectation and behavior can be characterized by the reasonable and responsible use of Forest roads and trails. Reasonable users will assess the type and condition of road or trail and modify their driving or traveling techniques accordingly.

Expectations and behavior may vary based on the type of facility. Passenger car roads (Maintenance Level 3, 4, and 5) are identified on the Forest visitor maps as paved, graveled, or improved roads and are typically roads that have been designed and constructed to carry commercial truck and recreational highway vehicles. Safe and reasonable users should expect conditions including: slow to moderate driving speeds, low to high traffic volumes, a variety of road surfaces, routinely maintained road surfaces, and navigational signing.

Roads not suitable for passenger car use (Maintenance Level 2) are displayed on the Forest visitor maps as unimproved roads and can be characterized as narrow single-lane, native surfaced roads with few passing turnouts, minimal direction signing, and minimal surface or vegetation maintenance. Safe and reasonable users should expect conditions including: very slow-speed driving and minimal sight distance, native road surfaces, narrow, rough, and high-clearance road surfaces, steeper road gradients and tight curves, low to moderate traffic volume, and navigating using maps without a lot of signing aids.

Motorized trails offer a variety of standards and challenges. Safe and reasonable users should expect conditions including: varying widths, gradients, surface types and challenges, obstacles like downed logs or protruding rocks and roots, one-lane trails where passing is a challenge, a variety of other types of users. Reasonable users will stop and turn around when the challenge of the trail exceeds their ability.

Although there are many examples of non-motorized mixed use (as described above), this analysis focuses on motorized mixed use, particularly on roads.

ADDED:

Title 36, Code of Federal Regulations, Part 212 (36 CFR 212) is the implementing regulation for the Federal Roads and Trails Act (FRTA) and includes portions of the Travel Management Rule published in the Federal Register on November 9, 2005. Part 212 provides criteria for designation of roads and trails. Providing safe transportation facilities and considering the affordability of maintaining the transportation facilities are two of the criteria. **36 CFR 212.55** requires public safety be considered when designating roads, trails and areas for motor vehicle use. **36 CFR 212.55** requires consideration of the need for maintenance and administration of the designated National Forest Transportation System (NFTS).

Forest Service Manuals 2350 and 7700 contain agency policy for management of the NFTS. The policy requires the development of trail management objectives (TMOs) and road management objectives (RMOs). The TMOs and RMOs document the purpose of each trail or road. The purpose for the trail or road sets the parameters for maintenance standards needed to meet user needs, resource protection and public safety.

Forest Service Handbook **7709.59** describes the maintenance management system the Forest Service uses and the maintenance standards needed to meet RMOs for the road system including considerations for public safety.

Under Oregon State Law, paved roads and two-lane gravel roads are closed to non-highway legal vehicles unless posted open by the road authority with jurisdiction over the road as described in ORS 821.010. [1983 c.338 §711; 1999 c.565 §4]. Gravel roads that are one and one-half lanes or less are open to OHVs unless posted closed (Oregon OHV Laws and Rules Handbook 2008). In general, operation of quads on pavement is not considered a safe practice. “ATVs are not designed to be used on paved surfaces because pavement may seriously affect handling and control” (Specialty Vehicle Institute of America, 2008). Experienced riders understand that handling characteristics vary depending upon the quads basic design and how they are equipped and in limited cases a quad can be operated safely on pavement (slow speed, light traffic, good sight distance, etc.).

The designation of a road for mixed-use may preempt State law (by allowing motorized mixed use where it would otherwise be prohibited) but may do so only after consideration of safety, liability, and enforcement issues, and only after coordination with State and local governmental and law enforcement agencies.

CHANGED:

Analysis of mixed use is guided by Forest Service Handbook 7709.55, Chapter 30 Engineering Analysis (effective January 8, 2009). A mixed use analysis was conducted for all Forest Development Roads. The risk was evaluated based on the probability of an accident occurring and the severity if an accident did occur for each road being considered for mixed use traffic. For roads where the average user speed was less than 20 miles per hour the probability and severity was evaluated as low to moderate and generally of low risk for mixed use.

For all roads where risks (either probability or severity) approaches high, mitigation measures that will reduce probability and/or severity to moderate or lower will be implemented before the road is open for mixed-use traffic. Some roads or segments of roads were identified as having high risk to allow mixed use. This change has been incorporated into the map displaying the current condition and is the same for all alternatives.

b. Direct and Indirect Effects

Identification of motorized routes would not change the Forest's public safety priority under any of the alternatives. The effects to user safety are similar for all alternatives. Three factors influence the safety of the road and trail system: 1) the condition of the facilities, 2) the mixture of uses on a particular facility (mixed use) and 3) user behavior. Safety is enhanced if Forest roads and trails are routinely maintained and unexpected damage or unsafe conditions are identified and corrected in a reasonable amount of time. Regardless of the final decision, public safety issues would be addressed as identified.

Facility Condition

All alternatives provide for user safety. It is expected that, as part of the forthcoming decision, the Forest would continue to maintain a program of inspecting the transportation system on a regular basis and identifying safety issues needing correction. It is also expected that the Forest would continue to fund and maintain any transportation system in order to correct safety issues in a reasonable amount of time.

Motorized Mixed Use

Under all alternatives it is expected that safety in general would increase due to Oregon's new OHV safety laws that are being phased in at the current time. These new laws require youth supervision and safety education for all riders. See Chapter II; section B, 4 for a more detailed discussion of the new requirements.

ADDED:

In addition, mitigation planned for those "high risk" roads in conjunction with prohibiting mixed use on roads where mitigation would not be effective would also increase safety.

Under **Alternative 1 (No Action)** unauthorized mixed use would continue to occur on paved roads and on non-paved roads greater than one and a half lanes. This use would increase through time due to expected population growth.

User guides and signing would be planned under all of the **Action Alternatives** to educate users about mixed use on roads and trails. In combination with Oregon's new safety laws it is expected that overall safety will increase on the Forest's roads and trails. See Chapter II; section K, 1 for a listing of public safety mitigation measures.

In **Alternative 2**, traffic density would remain the same as Alternative 1. Traffic density on open roads would increase slightly in **Alternatives 3, 4, and 5** due to closure of some roads; this change would not likely be noticeable to the public and would not have a measurable increase in risk because the proposed road closures are less than one percent of currently open roads. Though unauthorized mixed use currently occurs on many paved roads on the Forest, the prohibition of mixed use on paved roads under Alternatives 3, 4, and 5 would improve public safety.

Effects would be similar on trails as for roads except that a greater amount of trails would be closed to motorized use in Alternative 4 than in Alternatives 3 and 5. This may result in increased use (higher density) on those motorized trails that remain open, thereby possibly decreasing safety on those trails. However, since motorized use is very light on most of the trails proposed for closure in Alternatives 3, 4, and 5, it is anticipated that responsible riders could still expect a safe experience on all remaining motorized trails.

User Expectation and Behavior

Safety would be achieved under all alternatives if users act reasonably and responsibly on Forest roads and trails. Reasonable behavior by users any road or trail improves the overall safety of the transportation system. The potential effects on public safety do not vary substantially by the Action Alternatives. The safety of the road and trail system is more influenced by the condition of the facilities and user behavior.

c. Cumulative Effects

This project is analyzing motorized use on the entire Forest. There are not likely to be any predictable effects for motorized use other than those being considered. There are no conditions that could be reasonably foreseen that would add to the conditions being proposed and analyzed that would create a cumulative adverse effect.

Activities described under all of the Action Alternatives would not increase threats to public safety because the RRSNF would follow State law and engineering analysis of mixed use. Though the volume of traffic may increase slightly in the foreseeable future, the change in composition of the traffic and the distribution of these vehicles is not expected to be noticeable. The majority of NFS roads on the RRSNF (Maintenance Level 2) are designed for low speed and have low traffic levels. The implementation under any of the Action Alternatives is not anticipated to increase to levels that would cumulatively affect public safety.

Although safety of the national forest users is always a concern, motorized vehicle use designation will not eliminate all hazards, either on roads, trails, or within areas. Designation of routes may reduce those available for motor vehicle travel, thereby reducing the risk of having an accident. However, many users utilize motor vehicle routes for access to the RRSNF and then travel by foot or horseback to their final destination. It is not uncommon for hazards to exist outside of the motor vehicle travel-way. Therefore, a safe experience for all users cannot be guaranteed.

4. Motorized Opportunities

Changes to motorized recreation opportunities

Changes in this section between FEIS and DSEIS:

- Recreation Facilities Analysis conformance
- Cumulative Effects Updated

The existing motorized system provides motorized access and recreation driving opportunities to most areas of the Forest. Motorized recreation activities include driving for pleasure and providing access to recreational activities. Off-highway vehicles are also used to access many activities in remote areas on rough roads or trails that could not be otherwise accessed by passenger vehicles. This issue considers the change in motorized opportunities over current conditions.

a. Background

The Rogue River-Siskiyou National Forest is located in Southwest Oregon and Northwest California. The Forest is less than an hour drive from most locations in Jackson, Josephine, Curry, and Coos counties. The Forest offers high mountain scenery, attractive reservoirs and lakes, beautiful river canyons, and a wide range of campgrounds and trails for forest visitors.

The Siskiyou Land and Resource Management Plan (1989) and the Rogue River Land and Resource Management Plan (1990) were completed and implemented prior to the consolidation of the two Forests. Both Management Plans outline Standards and Guidelines for providing recreation experiences across the range of the Recreation Opportunity Spectrum being provided by the Forests. The Recreation Information Management System was utilized to monitor the supply and demand to meet the needs of all recreation opportunities including motorized recreation. Motorized Recreation opportunities and use was projected to increase slightly during the planning period. Both road/trail and off-road motorized recreation opportunities are permitted throughout the Forest in Management Areas designated for such use, and, as needed, with appropriate restrictions. When the two Forests were consolidated into the Rogue River-Siskiyou National Forest, the programmatic direction of the two separate Forest Management Plans still control land allocations, where applicable.

In 2005, the Recreation Facility Analysis process and evaluation was implemented and completed in 2008. The purpose of the analysis was to display tasks needed overtime to bring the Forest's recreation infrastructure into alignment with the resources available to operate and maintain developed sites to standard and sustainable with an emphasis of maintaining customer satisfaction and recreation experiences. The primary focus of this analysis was the developed recreation program which included; campgrounds, picnic sites, interpretive sites, trailheads, rental cabins, snow parks, boat ramps and observation sites.

Part of this analysis developed a recreation niche statement "Cascades to the Coast." The niche provides the vision of what the Forest is most capable of providing in the form of recreation settings and experiences. To establish niche, the Forest identified its unique attributes (both physical and social), special places, and potential experiences. To determine what outdoor recreation experiences people desire and expect, Forest managers focused on community connections and user satisfaction to help understand public preferences.

Some of the unique attributes within this niche are:

- The Cascade, Siskiyou, and Coastal Mountain Ranges converge in SW Oregon and are the backbone of the special setting for the Forest.
- The rivers flowing from these mountains are valued for their clean water, outstanding fisheries and recreational boating. Waterfalls and rock palisades accent the rivers and streams.
- Botanical species, including ice-age plants and large trees, are the most diverse in the western U.S.
- Climatic diversity allows year-round recreation and escape from the valley heat and coastal fog.
- The largest expanse of Wilderness and roadless areas in the Pacific Northwest region provides solitude seldom found on the west side of Interstate 5.
- Mt. Ashland and Mt. McLoughlin provide a snow-capped scenic backdrop to the valley communities.
- The Forest provides a "refuge" quality of life for local residents and, by contrast, enriches the experiences of visitors drawn to the area by the art and culture of valley communities.

Four niche setting descriptions were created from the niche development process:

- River Corridors - This setting includes the largest concentration of designated Wild and Scenic Rivers on the Pacific Coast; Rogue, Illinois, Chetco, Elk, and North Fork Smith. Scenic Byways parallel segments of the Rogue, South Fork Coquille and North Fork Smith Rivers. Other rivers are also included in this setting. High quality fish habitat draws international visitation.
- Concentrated Use Nodes - are associated with rivers, lakes, or winter sports.
- Rugged Remote - Offers solitude in a wild and primitive setting. Includes the highest elevations and rugged back country as well as the unique botanical diversity.
- Roaded Forest - Lower elevation, mixed conifer forest, accessed by roads from easy to difficult. Includes many trailheads and access points to back country. (USDA- 2006)

These attractive recreation opportunities result in high visitation levels. Based on the National Visitor Use Monitoring Results, the Forest received an estimated 1, 406,000 visits in 2002 (National Visitor Use Monitoring Results, Nov. 2008). A visit is defined as the entry of one person upon a national forest to participate in recreation activities for an unspecified period of time. A visit could be one hour or several days.

Based on this survey, approximately 70% of Forest visitors live within 75 miles, 22% within 200 miles, and the remaining 8% more than 200 miles. As can be expected, the variety of activities are broad and include camping, backpacking, viewing scenery, fishing, hunting, skiing, driving for pleasure, nature viewing, bicycling, OHV riding, and a number of other activities.

Most access to the Forest requires motor vehicle travel (an exception being the community of Ashland, which borders the Forest and where a network of non-motorized trails provides access to NFS Lands).

Congressionally appropriated funds for both road and trail maintenance have steadily declined in recent years and the Forest no longer has the traditional trail and road crew resources. A portion of the maintenance program is funded under the Secure Rural Schools and Community Self-Determination Act of 2000 (Public Law 106-393). Road and trail maintenance funding is a year to year issue. Under the current administration, funds received under the American Recovery and Reinvestment Act (ARRA) for projects that will help maintain the existing road system and to fund work on the Pacific Crest National Scenic Trail. OHV grants are occasionally obtained from Oregon State Parks and Recreation Department for maintenance and law enforcement purposes on motorized trails (primarily on the Prospect OHV system). These grants are also available for construction of new motorized trails.

b. Effects Mechanisms and Analysis Framework

This analysis will focus on motorized use on the Forest's roads and trails and the changes associated with the alternatives. It is acknowledged that Forest visitors take part in many recreational activities so there is a great amount of overlap of activities. For example, some people will use a four wheel drive vehicle to access dispersed camping sites and to go fishing while others may travel to a developed campground with a passenger vehicle to hike or explore the Forest on a motorcycle or mountain bike.

The existing Forest Service road system provides motorized access and recreation driving opportunities to most areas of the Forest. Motorized recreation activities include driving for pleasure and providing access to hiking and walking, fishing, bicycling, skiing, viewing natural features, hunting, boating, developed and primitive camping, picnicking, viewing wildlife, backpacking, resort use, visiting historic sites, nature study, gathering forest products, horseback riding, and interpretive site activities. Many 4WD vehicles that are capable of OHV use never get off of Forest System roads and the driver uses them as passenger vehicles or high clearance vehicles but never actually needs to put the vehicle into 4WD mode.

On the other hand, off-highway vehicles are also used to access many of the above activities in remote areas on rough roads that could not be accessed by regular passenger vehicles. Based on the National Visitor Use Monitoring Results for the Forest, one can infer that about two thirds of Forest visits are at least partly tied to general motorized recreation to the extent that they use motor vehicles to access all the recreation opportunities described above including non-motorized activities. The survey also shows that approximately 5% of visitors indicated that driving for pleasure was their primary activity.

Approximately 4,512 miles of National Forest Transportation System (NFTS) roads are open to the public and provide access for all of the above recreation activities. Most roads above 4,000 feet in elevation are closed to wheeled motorized use during the winter months due to snow.² Mixed use is allowed on approximately 3,183 miles (70%) of the existing 4,540-mile road system.

Approximately 1,199 miles of trail are located on the Forest. Motorized use is allowed on 246 miles (20%) while non-motorized users have access to the entire system. Motorized trails are located on all Ranger Districts and provide opportunities for Class I (quads), Class II (jeeps), and Class III (motorcycles) vehicles.

² Many of these higher elevation roads are designated snowmobile trails, particularly on the High Cascades Ranger District. This analysis focuses solely on wheeled vehicles and does not include snowmobiles or other tracked vehicles. Most designated snowmobile trails on the Forest prohibit wheeled motorized use.

The Prospect OHV System on the north end of the High Cascades Ranger District provides opportunities for all three vehicle classes. The Prospect System is very popular for OHV enthusiasts. Unlike the rest of the Forest, the northern third of the High Cascades Ranger District (former Prospect Ranger District) only allows mixed use on those roads and trails that are designated as part of the Prospect OHV System.³ The system is closed from December 1 through June 30 for the protection of Big Game (deer and elk) Winter Range habitat.

Most other motorized trails on the Forest are single track⁴ and suitable for motorcycles only. Well-liked routes include the Mule Mountain/Elliot Ridge complex on the Siskiyou Mountains Ranger District, the Boundary Trail and connectors on the Siskiyou Mountains and Wild Rivers Ranger Districts, and a complex of trails in the Briggs Valley area on Wild Rivers. The nationally known “McGrew Trail,” located at the south end of the Wild Rivers Ranger District, is actually a road. It is an extremely rough, narrow and rocky road that requires a minimum of 6 hours to drive by highly experienced operators.

Unauthorized cross-country travel occurs on the Forest. This use continues since it is not prohibited by a specific Forest Order. According to LRMP direction, approximately 275,000 acres are open to OHV cross-country travel. However, approximately 95% of these acres are not actually available due to steep terrain and dense vegetation.

Most unauthorized cross-country travel occurs in open areas with sparse vegetation such as the Siskiyou Crest on the Siskiyou Mountains RD and the serpentine soil areas on the Wild Rivers RD. Unauthorized user-created trails are often a result of this cross-country travel. Mileage figures for user-created motorized trails on the Forest are unknown, although most are located on the Wild Rivers Ranger District.

Trespass onto private property is an issue on one area of the Forest. The lowest section of the Pine Grove Trail (#1160) abuts private land near the junction of the Rogue and Illinois rivers. Motorized users are avoiding the steep lower section by crossing private property in order to access a less steep section further upslope. Resource damage is occurring on the private property.

OHV use is widely recognized as one of the fastest growing recreation activities in the United States. The total number of Class I and Class III vehicles increased from an estimated 2.9 million in 1993 to 8.0 million in 2003. Off-highway motorcycles account for approximately 30% of the total, 2.4 million (Cordell et al. 2005).

³ The Prospect OHV System was developed in the 1990s on the former Prospect Ranger District. The decision to allow mixed use only on roads associated with the System was made at that time. This decision only applied to those roads located on the former District, which extended south to the Middle Fork of the Rogue River.

⁴ “Single track” refers to a trail that is sized for hikers, equestrians, bicycles, and motorcycles. Tread with is not sufficiently wide for use by quads or jeeps with a trail so narrow that users must generally travel in single file.

Growth in OHV use showed a 32% increase from 1994 to 1999 (27.3 million to 36.0 million). An estimated 18.6 % of the U.S. population age 16 and older participated in some form of OHV recreation from 1999-2004. The Pacific region⁵ rate was nearly identical at 18.4% while Oregon's rate was 22.0% (Cordell et al. 2005). An estimated 2% (28,000) of Rogue River-Siskiyou NF visitors participated in OHV use each year between 2002 and 2007 (USDA Forest Service 2008).

User Conflicts

Conflict happens when a person's expectations for his or her recreational experience are not met. This can occur as result of contact with another user or through disturbance from the sound or physical evidence left by another user. Examples might include gunshots or horse manure on a trail. Some hunters that hike into or ride into hunting areas on stock express that OHVs users ruin their hunting opportunities when they drive into hunting areas that others have worked hard to walk or ride stock into. Some non-motorized use hunting proponents have raised questions of fair chase and unfair advantage when others use OHVs for hunting access. The potential for conflict exists among all user groups, and even among the members of the same user group, when personal expectations of the desired experience are not being met. Not all user conflicts on the national forest are entirely recreation-based. In addition to recreation, the NFS provides a wide array of resource-based opportunities, such as timber harvest, livestock grazing, and mining. Some complain about cow manure on hiking trails as well as complaints about OHVs on closed roads and within closure areas.

Non-motorized users may use designated motor vehicle routes and would expect to encounter motor vehicle use, thus, not affecting the expectation and experience. In areas where the non-motorized user does not expect to encounter motor vehicles is where user conflict occurs. It is within these areas and under these situations that user conflicts are often exacerbated due to noise, presence, emissions associated with motor vehicle use, and lack of awareness of motor vehicle use in the area.

c. Direct and Indirect Effects of Alternatives

For environmental consequences the alternatives are compared in general for all motorized recreation opportunities and then where appropriate, specific opportunities or areas are compared by alternative. The alternatives are listed in order.

ADDED:

All alternatives were designed to conform to the five-year program of work resulting from the Recreation Facilities Analysis completed in June 2008.

User Conflict

As the number of users and differing types of use continue to increase, there is a potential that user conflicts will also increase. However, motorized roads and trails, would be administratively defined and published on a Motor Vehicle Use Map (MVUM) in Alternatives 2-5. Recreationists would be able to better plan recreational pursuits based on an individual's unique expectations and desires. As a result, the frequency of user conflicts between non-motorized and motorized recreation users would likely decrease in the short and long terms.

⁵ The Pacific region includes the following states: Alaska, California, Hawaii, Oregon, and Washington.

Alternative 1 has the greatest potential for user conflict because cross country travel would still be allowed and there would be no MVUM published. Alternative 2 would have slightly less potential for user conflict with publication of the MVUM. Alternatives 3 and 5 would further lessen user conflict because of less road and motorized trail mileage along with MVUM publication. Finally, Alternative 4 would have the least potential for conflict between non-motorized and motorized recreation users primarily because of a substantial reduction in motorized trails along with MVUM publication.

Alternatives 1 and 2

Current motorized recreation opportunities under **Alternative 1** would continue on the Forest and no roads or trails would be closed or constructed on the Forest unless future site-specific NEPA analysis is conducted.

Cross-country travel would continue to occur and most likely increase with a growing local population. There would be no loss or gain of current motorized opportunities for loops, connecting routes, and destinations on motorized trails and roads.

Consequences for **Alternative 2** would be nearly identical to Alternative 1 but would differ in three respects. First, a Forest Plan Amendment would provide consistency between the Rogue River LRMP and the Siskiyou LRMP in the Boundary Trail area. Another amendment would provide consistency with Standards and Guidelines for the Siskiyou LRMP in the lower Illinois River area for a system of existing motorized trails. (It is important to note that LRMPs provide “guidelines” for how an area is managed. A Forest Order is required to enforce those guidelines.) Second, implementation of the Travel Management Rule via a Forest-wide Plan Amendment would require publication of an MVUM that would clearly show where motorized use is allowed. Current District and Forest maps do not distinguish between motorized and non-motorized roads, trails, and areas. Third, cross-country travel would be closed except for the existing play area on the High Cascades Ranger District. All of these changes would make it easier for the public to more clearly understand where motorized use is allowed.

Alternative 3

This alternative attempts to balance motorized recreation with other public land uses, such as hiking, backpacking, horseback riding, mountain biking, hunting, fishing and camping. In some cases motorized opportunities are increased, while in others those opportunities are decreased.

Cross-country travel would be prohibited across the Forest, thereby eliminating a recreation pursuit that is important to a segment of the OHV community. It is difficult to measure or predict, but in the short term (prior to nationwide implementation of the Travel Management Rule) this off-road prohibition may cause some users to travel to other forests, BLM lands, or private property in order to pursue cross-country travel opportunities. In the long term, cross country travel on most National Forests will most likely be reduced or prohibited due to implementation of the Travel Management Rule, thereby lessening this opportunity. BLM may also be applying tighter restrictions on cross-country motorized travel in the future, but at present there is no BLM national direction that would prohibit cross-country motorized travel.

Most roads that are currently open to the public would remain open. There would be a very slight loss (less than 1/10 of 1%) of current motorized opportunities for loops, connecting routes, and destinations on Forest roads.

The current motorized 255-mile trail system would be reduced by 19 miles, including 2 miles of new construction and 12 miles of conversion of roads to motorized trails. Some loops and destinations would be lost while others would be gained (see the District-specific analysis below).

Powers Ranger District

Designated mixed use on the paved Eden Valley Road (#3348) would provide loop and destination opportunities in this area, particularly during elk season when hunters use Class I vehicles.

Gold Beach Ranger District

No road use would be prohibited on the District. Approximately 12.6 miles of the 1376 road system just north of the Chetco River on the west edge of the District would be closed to mixed use. This would limit the potential of OHVs to illegally cross onto private lands in this area. Loop opportunities and connecting routes do not currently exist on this 12-mile road system, so effects to OHV riders would be minimal, especially when all other District mixed use roads would remain open.

Approximately 9.3 miles of Maintenance Level 1 roads would be converted to motorized trails. These conversions would provide more recreation opportunities for OHV riders in the following areas: Quosatana Creek, Game Lake, and Signal Butte. All of the conversions provide for expanded loop opportunities because of their connection with other roads.

The proposed 0.5 miles of trail construction would connect the Woodruff Trail (#1164) to the 3313110 Road that is being converted to a motorized trail. It is acknowledge that this “new” trail construction occurs on a user-created trail that already receives use by quad and motorcycle riders. This alternative would authorize that use and bring the trail up to standard in order to minimize resource impacts and provide for user safety. This authorization would provide a loop opportunity for motorized users.

Approximately 11 miles of the lower portions of the Game Lake (#1169) and Lawson Creek (#1173) Trails would be closed to motorized use. As stated in Chapter II, both of these trails are impassable for motorized users due to steep slopes and overgrown vegetation. Formal closure of these single-track sections of trail under the Travel Management Rule is more of a “bookkeeping” change than an actual motorized use closure. There would be no effect to motorized use because these trail segments are not currently used (although they have received use in previous years).

Wild Rivers Ranger District

Approximately 7 miles of portions of the 4300 and 4400 road systems would be closed to motorized use. These road systems currently provide a challenge to experienced OHV operators in the Rock Creek, Josephine Creek, and Canyon Creek areas southwest and northwest of Cave Junction. They are generally rough, rocky, and steep. They provide loop opportunities and connecting routes for all three OHV vehicle classes and are popular destinations for Illinois and Rogue Valley residents. From a motorized user’s point of view, prohibiting motorized use on these two primitive road systems would eliminate a highly-valued OHV opportunity.

An additional 11.8 miles on the 4300 and 4201 road systems in the Canyon Creek/Josephine Creek/Fiddler Gulch areas would be closed to mixed use, so this would also contribute to a loss of opportunity for OHV riders.

Approximately 3.3 miles of the 4201016 and 4103011 road systems would also prohibit motorized use. These roads are located slightly north of the Canyon Creek and Josephine Creek areas discussed in the previous paragraph. The roads parallel the Illinois River west of Eight Dollar Mountain and serve as a connecting route between the 4201 and 4103 Roads. Closure of this road would eliminate motorized dispersed camping and picnicking opportunities along this stretch of the Illinois River. It would also eliminate a short loop opportunity from Highway 199 between the Eight Dollar Road (4201) and the Illinois River Road (4103).

One other short segment of road would also prohibit motorized use. Approximately 0.6 miles of the 2600050 Road near Silver Creek would be closed due to issues associated with private land near its terminus. This closure would have minimal effect on motorized opportunities as most of the road would remain open and the motorized Dutchy Creek Trail (#1146) would still be accessible.

Approximately 3 miles of two road segments would be converted to motorized trails. Conversion of the 4402494 Road would provide access to Biscuit Hill from the popular McGrew Trail on the south end of the District while conversion of the 2509640 Road would provide a connector to the existing Shan Creek Trail. Both would enhance the recreation experience for motorized users.

Approximately 17.2 miles of trail would prohibit motorized use where it is currently allowed. The single-track Mt Elijah (#1206) and Bigelow Lake (#1214) Trails provide access to the Boundary Trail and serve as a connection between the Illinois River and Applegate River drainages. Closure of these two trails would require motorcyclists to use the much steeper and technical Elk Creek Trail (#1230) to the north as a connection between the two watersheds. In addition, riders would not have motorized access to the alpine scenery surrounding Bigelow Lake. Bolan Lake (#1245) and Kings Saddle (#1245A), located near the California border, also provide single track motorized access to alpine scenery and vistas and this opportunity would be lost.

Motorized use would be prohibited on a complex of trails located in and around Briggs Valley: a portion of Taylor Creek (#1142), Big Pine Spur (#1142A), Onion Way (#1181), Secret Way (#1182), and Secret Way Spur (#1182A). This would eliminate a number of loop opportunities and connecting routes in this area although some remain to the north (lower Taylor Creek) and south (Briggs Creek). Motorized prohibition on the 1-mile Swede Creek Trail (#1135), located south of Briggs Valley, and would not limit connecting routes or loops since the trail does not connect to other routes. Likewise, the Little Silver Lake Trail (#1184), located in the Silver Creek drainage, is an “out and back” trail and is seldom used by motorcyclists due to steep slopes and exposure to cliffs on a “razor-back” ridge.

Seasonal closure of the McGrew Trail would result in a loss of opportunity for those who use the trail during the “wet months” of mid October through mid May. Sections of the trail are open almost year-round and the highest elevations are generally not snow-covered for more than 2-3 months because the trail is at a relatively low elevation (1,660-3,940 feet). Seasonal closure would limit use, especially in the spring and fall.

Siskiyou Mountains Ranger District

No road use would be prohibited on the District and mixed use would continue on all existing non-paved roads.

Motorized use would be prohibited on 4 miles of the Horse Camp Trail (#958). This trail is an “out and back” trail that terminates on the Pacific Crest National Scenic Trail (PCNST) where motorized use is prohibited. Motorized prohibition would lessen the likelihood of motorcyclists using the PCNST as part of a loop system that would connect with the nearby Cook and Green Trail (#959). Prohibition of motorcycle use on this single track trail would prevent motorized users from accessing the alpine scenery and Echo Lake on the upper portions of the trail.

Approximately 1.2 miles of the Penn Sled Trail (#957) would be reconstructed and partially relocated. The trail has not been maintained for a number of years. This trail would connect two existing single track motorized trail systems (Mule Mountain and Elliot Ridge) that are highly valued by motorcyclists. Relocation of the lower portion of the trail would lessen or eliminate the likelihood of trespass on private property located along Squaw Creek.

High Cascades Ranger District

No road use would be prohibited on the District and mixed use would continue on all existing roads where it is currently allowed. Mixed use is currently not allowed on roads located on the Prospect/Union Creek portion of the District except for those associated with the 250-mile Prospect OHV system. The only change proposed for roads and trails is to allow mixed use on approximately 31.5 miles of paved road on portions of Roads 34 and 37 (east of Butte Falls) and 3705 and 3720 (south of Fish Lake). Designation of mixed use on these roads would expand loop and destination opportunities in these areas, particularly during the deer and elk seasons when the greatest use occurs.

A new play area, in addition to the existing Woodruff Play Area, would be established in the Willow Lake vicinity. This area (approximately 10 acres) is currently used by OHVs. Formal designation would allow for this use to continue. The area is relatively flat and provides opportunities for beginning OHV riders to increase their skills. It is not a challenging area for experienced riders. There is a potential for riders to leave the proposed play area and create user-created trails. Based on patterns at the Woodruff Play Area where there have been no user-created trails, it is expected that there would not be an increase in un-authorized trails near Willow Lake.

Alternative 4

This alternative would limit motorized use across the Forest relative to the other alternatives. Motorized opportunities would decrease (primarily on trails).

Cross-country travel would be prohibited across the Forest, thereby eliminating a recreation pursuit that is important to a segment of the OHV community. It is difficult to measure or predict, but in the short term (prior to nationwide implementation of the Travel Management Rule) this off-road prohibition may cause some users to travel to other forests, BLM lands, or private property in order to pursue cross-country travel opportunities. In the long term, cross country travel on most National Forests would most likely be reduced or prohibited, thereby lessening this opportunity. BLM may also be applying tighter restrictions on cross-country motorized travel in the future, but at present there is no BLM national direction that would prohibit cross-country motorized travel.

Most roads that are currently open to the public would remain open. There would be a 43-mile reduction of open roads out of the Forest total of 4,512 miles. Mixed use would continue to occur on most non-paved roads and would be prohibited on all paved roads except the Prospect OHV system.

This would be a 75-mile reduction out of a total of 3,183 miles where mixed use is currently allowed. There would be a loss (approximately 3%) of current motorized opportunities for loops, connecting routes, and destinations on Forest roads.

The current motorized 246-mile trail system would be reduced by 114 miles (45%) and there would be no new trail construction or conversion of roads to trails. There would be a decrease in motorized opportunities for loops, connecting routes and destinations (see the District-specific analysis below). Five high quality trail systems/complexes would be closed to motorized use: (1) the Boundary Trail and all connecting trails, (2) the majority of the Briggs Valley system, (3) the McGrew Trail, (4) the Mule Mountain system, and (4) the Hobson Horn/Silver Peak Trail to the Illinois River.

Two high quality motorized trail systems would remain open to motorized use: the Prospect OHV network (High Cascades RD) and the Elliot Ridge system (Siskiyou Mountains RD). It is expected that these two systems would receive increased use due to the aforementioned closures on the Boundary, Briggs Valley, McGrew, Mule Mountain, and Hobson Horn/Silver Peak Trail systems.

Powers Ranger District

Motorized use would be prohibited on the 1 mile Big Tree Trail (#1150) south of Powers near the South Fork Coquille River and on the 2.7 mile “Russian Mike” Trail (unnumbered) near Russian Mike Creek on the South Fork Sixes River. Both of these trails are “out and back” so loop opportunities would not be lost. However, the prohibition would not allow motorized access to these two areas.

Unlike Alternative 3, no mixed use would be designated on the paved Eden Valley Road (#3348), which would limit loop and destination opportunities in this area, particularly during elk season. Although currently prohibited by State law, this road is currently used by OHVs.

Gold Beach Ranger District

Motorized use prohibitions would be the same as Alternative 3 with the following additions. Motorized use would also be prohibited on the entire length of the Game Lake (#1169) and Lawson Creek (#1173) trails, the lower portion of the Illinois River Trail (#1161), Lower Rogue River Trail (#1168)⁶, “Nancy Creek” (Unnumbered), “Red Flat” (Unnumbered), the Silver Peak-Hobson Horn Trail (#1166) located on both the Gold Beach and Wild Rivers Ranger Districts, and the Fish Hook Trail (#1180) also located on both Ranger Districts. This represents a decrease of miles available to motorized use on the District. All of these trails provide outstanding opportunities for motorized loops and connections and all provide outstanding views along portions of their routes. These opportunities would not be available for motorized users in this alternative.

⁶ There are three “Rogue River” trails on the Forest: the 48-miles Upper Rogue River Trail #1034 on the High Cascades RD; the 42-mile Upper Rogue River Trail # 1160 on the Gold Beach RD and Medford BLM; and the 13-mile Lower Rogue River Trail #1168 on the Gold Beach RD below Agness.

Unlike Alternative 3, there would be motorized use prohibitions on approximately 6 miles of road in the Basin Creek, Coon Creek, and East Fork Winchuck River drainages. All of these roads are dead end spurs so loop opportunities on roads would not be lost in this alternative.

Wild Rivers Ranger District

Motorized use prohibitions would be the same as Alternative 3 with the following additions. Motorized use would also be prohibited on Dutchy Creek Trail (#1146) northwest of Road 2402, the Briggs Valley Complex that includes a portion of Briggs Creek (#1132), Red Dog (#1143) and Phone (#1153) trails, and the Silver Peak-Hobson Horn Trail (#1166) located on both the Gold Beach and Wild Rivers Ranger Districts. The Fish Hook Trail (#1180), also located on both Ranger Districts, would also be closed to motorized use.

The entire Boundary complex of trails would be closed to motorized use in this alternative: Boundary (#1207), Elk Creek (#1230), Bigelow Lake (#1214), and Mt. Elijah (#1206), O'Brien Creek (#900), and Sturgis Fork (#903). The latter two trails are located on the Siskiyou Mountains Ranger District and tie into the Boundary Trail.

All of these trails provide outstanding opportunities for motorized loops, connections, and destinations and most provide outstanding alpine views along portions of their routes. These opportunities would not be available for motorized users under this alternative.

Under Alternative 4, motorized use of the McGrew Trail would be prohibited. This would result in a loss of opportunity for those who use the trail. There would be an overall decrease of motorized road miles on the District. All of the additional prohibitions in this alternative are on roads located east of Highway 199 in the following areas: Squaw Mountain, Pearsoll Peak, Pockett Knoll, Tennessee Mountain, and the system of roads leading westward from Rough and Ready Creek to the North Fork of the Smith River. Elimination of motorized access to a point near Pearsoll Peak would result accessing this scenic destination by foot or horse. The closures near Squaw Mountain and Pockett Knoll would be less impactful than the loss of Pearsoll Peak since these destinations are not as important to most users. There would be no loss of loop opportunities in these areas. On the contrary, there would be a loss of highly valued destination and loop opportunities between Rough and Ready Creek and the North Fork of the Smith River, which includes the McGrew Trail.

Siskiyou Mountains Ranger District

Motorized use prohibitions would be the same as Alternative 3 with the following additions. Motorized use would also be prohibited on the 8-mile Cook and Green Trail (#959), the Mule Mountain complex of trails, and on the two connector trails to the Boundary Trail: Sturgis Fork (#903) and O'Brien Creek (#900) (see Boundary Trail discussion above in the Wild Rivers RD section). Closure of the Cook and Green Trail would result in the elimination of a popular loop opportunity that incorporates the 1040 and 1055 roads north and west of the trail. Closure of the Mule Mountain system would result in the loss of a high-valued opportunity for motorcyclists in this area as well as limiting the connection to the nearby Elliot Ridge system of trails on and near the California border.

All of these trails provide outstanding opportunities for motorized loops, connections, and destinations and most provide outstanding views along portions of their routes. These opportunities would not be available for motorized users under this alternative.

High Cascades Ranger District

There would be no changes on the High Cascades Ranger District. No mixed use would be designated on paved roads east of Butte Falls (Roads 34 and 37) and south of Fish Lake (Roads 3720 and 3705). This would limit loop and destination opportunities in these areas, particularly during the deer and elk seasons. Although currently prohibited by State law, these roads are currently used by OHVs. There would be no additional prohibitions on motorized trails. The Prospect OHV system would remain the same (as it does in all Action Alternatives).

Alternative 5

This alternative attempts to balance motorized recreation with other public land uses, such as hiking, backpacking, horseback riding, mountain biking, hunting, fishing and camping. In some cases motorized opportunities are increased, while in others those opportunities are decreased.

Cross-country travel would be prohibited across the Forest, thereby eliminating a recreation pursuit that is important to a segment of the OHV community. It is difficult to measure or predict, but in the short term (prior to nationwide implementation of the Travel Management Rule) this off-road prohibition may cause some users to travel to other forests, BLM lands, or private property in order to pursue cross-country travel opportunities.

In the long term, cross country travel on most National Forests would most likely be reduced or prohibited, thereby lessening this opportunity. BLM may also be applying tighter restrictions on cross-country motorized travel in the future, but at present there is no BLM national direction that would prohibit cross-country motorized travel.

Most roads that are currently open to the public would remain open. There would be a very slight loss (less than 1/10 of 1%) of current motorized opportunities for loops, connecting routes, and destinations on Forest roads. The current motorized 246-mile trail system would overall be reduced by 10 miles, including 1.5 miles of new construction and 12 miles of conversion of roads to motorized trails. Some loops and destinations would be lost while others would be gained (see the District-specific analysis below).

Powers Ranger District

There would be one change on the Powers Ranger District. Motorized use would be prohibited on the 1 mile Big Tree Trail (#1150) south of Powers near the South Fork Coquille River. This trail is an “out and back” (very lightly used by motorcyclists) so loop opportunities would not be lost. However, the prohibition would not allow motorized access to the Big Tree Botanical Area.

Unlike Alternative 3, no mixed use would be designated on the paved Eden Valley Road (#3348), which would limit loop and destination opportunities in this area, particularly during elk season. Although currently prohibited by State law, this road is currently used by OHVs.

Gold Beach Ranger District

Approximately 12.6 miles of the Road 1376 system just north of the Chetco River on the west edge of the District would be closed to mixed use. This would limit the potential of OHVs to illegally cross onto private lands in this area. Loop opportunities and connecting routes do not currently exist on this 12-mile road system, so effects to OHV riders would be minimal, especially when most other District mixed use roads would remain open.

Approximately 12 miles of Maintenance Level 1 roads would be converted to motorized trails. These conversions would provide more recreation opportunities for OHV riders in the following areas: Quosatana Creek, Game Lake, and Signal Butte. All of the conversions provide for expanded loop opportunities because of their connection with other roads.

The 0.5 miles of new construction that would connect the Woodruff Trail (#1164) and Road 3313110 would not take place in this alternative. In addition, motorized use would be prohibited on the 1 mile Woodruff Trail and Road 3313110 would not be converted to a trail. Unlike Alternative 3, there would be no loop opportunities for motorized users that would connect from Woodruff Meadow to Wagontire Prairie.

Like Alternative 3, approximately 11 miles of the lower portions of the Game Lake (# 1169) and Lawson Creek (#1173) Trails would be closed to motorized use. As stated in Chapter II, both of these trails are impassable for motorized users due to steep slopes and overgrown vegetation. Formal closure of these single-track sections of trail under the Travel Management Rule is more of a “bookkeeping” change than an actual motorized use closure. There would be no effect to motorized use because these trail segments are not currently used (although they have received use in previous years).

Unlike either Alternative 3 or 4, one portion of the Lower Illinois River Trail (#1161) would remain open to motorized use and another portion would prohibit motorized use. Motorized use would be prohibited from the Silver Peak/Hobson Horn (#1166) junction (just south of Indigo Creek) upriver to Conners Place at the Kalmiopsis Wilderness Boundary. Although this 3.2-mile prohibition would result in some loss of opportunity, motorcyclists could still have loop and destination opportunities that connect to Silver Peak /Hobson Horn and Nancy Creek Trails.

Wild Rivers Ranger District

Conversion of Road 4402494 to a motorized trail in the Biscuit Hill area would not occur in Alternative 5. Since this Maintenance Level 1 road is currently closed to motorized use, there would be no loss of current motorized opportunities on this road.

Motorized use would be prohibited on approximately 13.1 miles of portions of the 4300 and 4400 road systems. These road systems currently provide a challenge to experienced OHV operators in the Rock Creek, Josephine Creek, and Canyon Creek areas southwest and northwest of Cave Junction. They are generally rough, rocky, and steep. They provide loop opportunities and connecting routes for all three OHV vehicle classes and are popular destinations for Illinois and Rogue Valley residents. From a motorized user’s point of view, prohibiting motorized use on these two primitive road systems would eliminate a highly-valued OHV opportunity.

An additional 11.8 miles on the 4300 and 4201 road systems in the Canyon Creek/Josephine Creek/Fiddler Gulch areas would be closed to mixed use, so this would also contribute to a loss of opportunity for OHV riders.

Approximately 3.3 miles of the 4201016 and 4103011 road systems would also prohibit motorized use. These roads are located slightly north of the Canyon Creek and Josephine Creek areas discussed in the previous paragraph. The roads parallel the Illinois River west of Eight Dollar Mountain and serve as a connecting route between the 4201 and 4103 Roads. Closure of this road would eliminate motorized dispersed camping and picnicking opportunities along this stretch of the Illinois River. It would also eliminate a short loop opportunity from Highway 199 between the Eight Dollar Road (4201) and the Illinois River Road (4103).

One other short segment of road would also prohibit motorized use. Approximately 0.6 miles of Road 2600050 near Silver Creek would be closed due to issues associated with private land near its terminus. This closure would have minimal effect on motorized opportunities as most of the road would remain open and the motorized Dutchy Creek Trail (#1146) would still be accessible.

Approximately 0.3 miles of one road segment would be converted to motorized trail. Conversion of Road 2509640 would provide a connector to the existing Shan Creek Trail. This would enhance the recreation experience for motorized users by providing both a connection and loop opportunity in the Taylor Creek drainage.

Approximately 17.2 miles of trail would prohibit motorized use where it is currently allowed. The single-track Mt. Elijah (#1206) and Bigelow Lake (#1214) Trails provide access to the Boundary Trail and serve as a connection between the Illinois River and Applegate River drainages.

Closure of these two trails would require motorcyclists to use the much steeper and technical Elk Creek Trail (#1230) to the north in order to have a connection between the two watersheds. In addition, riders would not have motorized access to the alpine scenery surrounding Bigelow Lake. Bolan Lake (#1245) and Kings Saddle (#1245A), located near the California border, also provide single track motorized access to alpine scenery and vistas and this opportunity would be lost.

Motorized use would be prohibited on a complex of trails located in and around Briggs Valley: a portion of Taylor Creek (#1142), Big Pine Spur (#1142A), Onion Way (#1181), Secret Way (#1182), and Secret Way Spur (#1182A). This would eliminate a number of loop opportunities and connecting routes in this area although some remain to the north (lower Taylor Creek) and south (Briggs Creek). Motorized prohibition on the 1-mile Swede Creek Trail (#1135), located south of Briggs Valley, would not limit connecting routes or loops since the trail does not connect to other routes. Likewise, the Little Silver Lake Trail (#1184), located in the Silver Creek drainage, is an “out and back” trail and is seldom used by motorcyclists due to steep slopes and exposure to cliffs on a “razor-back” ridge.

Seasonal closure of the McGrew Trail would result in a loss of opportunity for those who use the trail during the “wet months” of mid October through mid May. Sections of the trail are open almost year-round and the highest elevations are generally not snow-covered for more than 2-3 months because the trail is at a relatively low elevation (1,660-3,940 feet). Seasonal closure for Port-Orford-cedar (POC) root disease would limit use, especially in the spring and fall.

Siskiyou Mountains Ranger District

No road use would be prohibited on the District and mixed use would continue on all existing non-paved roads, except for a portion of road #1000.

Motorized use would be prohibited on 4 miles of the Horse Camp Trail (#958). This trail is an “out and back” trail that terminates on the Pacific Crest National Scenic Trail (PCNST) where motorized use is prohibited. Motorized prohibition would lessen the likelihood of motorcyclists using the PCNST as part of a loop system that would connect with the nearby Cook and Green Trail (#959). Prohibition of motorcycle use on this single track trail would prevent motorized users from accessing the alpine scenery and Echo Lake on the upper portions of the trail.

Approximately 1.2 miles of the Penn Sled Trail (#957) would be reconstructed and partially relocated. The trail has not been maintained for a number of years. This trail would connect two existing single track motorized trail systems (Mule Mountain and Elliot Ridge) that are highly valued by motorcyclists. Relocation of the lower portion of the trail would lessen or eliminate the likelihood of trespass on private property located along Squaw Creek.

High Cascades Ranger District

Unlike Alternative 3, no mixed use would be designated on paved roads east of Butte Falls (Roads 34 and 37) and south of Fish Lake (Roads 3720 and 3705). This would limit loop and destination opportunities in these areas, particularly during the deer and elk seasons. Although currently prohibited by State law at the present time, these roads are currently used by OHVs. There would be no additional prohibitions on motorized trails.

d. Cumulative Effects

CHANGED:

At Forest scale, no past, present or reasonably foreseeable future actions were identified with activities or projects would result in cumulative reduction of motorized recreation opportunities, especially loops, connecting routes, and destinations, or create a loss of current opportunities. There is one project on the Forest that may limit road travel on a portion of the Siskiyou Mountains Ranger District. A decision has been reached on the Applegate McKee Legacy Roads project. A total of 5.87 miles of Maintenance Level 2 roads were closed and 24.02 miles of Maintenance Level 2 roads were decommissioned during implementation of the Applegate McKee Legacy Roads Decision Notice. Other roads were storm-proofed and have stream crossing upgrades to further reduce potential resource damage. On the High Cascades Ranger District, there is a proposal to relocate portions of the Prospect OHV system off of Roads and on to trails, but total mileage would be unchanged or may increase slightly.

In addition to the McKee project, there are many miles of currently open roads Forest-wide that have an Objective Maintenance Level of 1. As funding becomes available, some of these roads may be closed in the future to meet road management and resource objectives. At the present time it is not possible to quantify miles of roads that would be closed to motorized use, however any changes would be reflected in the updated MVUM.

Adjacent National Forests and BLM districts are also analyzing motorized route designation. Based on preliminary proposals, it is expected that adjacent National Forests will eliminate most cross country travel yet keep most roads and motorized trails open. On the Smith River National Recreation Area on the Six Rivers NF, an MVUM was published in August 2009. Most roads remain open, but cross country travel is prohibited. On the Klamath NF, 61 miles of currently unauthorized routes would become authorized and open to the public. On the Fremont-Winema NF approximately 7,000 miles of road and trails are open to the public. Their Proposed Action would close six miles of this system. On the Umpqua NF, approximately 4,700 miles of road and 154 miles of trail are open to the public. Their Proposed Action would close approximately 100 miles of the road system. Limitations on cross country travel may encourage some motorized users to use adjacent BLM lands and private property.

On the Medford District of the BLM, there are two projects that relate to motorized opportunities. Under the Timber Mountain Recreation Management Plan DEIS (USDI, BLM 2009) near Jacksonville, Oregon, approximately 31 to 140 miles of roads and trails would be opened to OHVs instead of the 376 miles of roads and trails on public and private land that are currently used. The BLM is also considering designation of the Quartz Creek OHV Area near Merlin, Oregon. The system would cover about 9,000 acres with a potential of 144 miles of designated routes (roads and trails) for Class I & III with 55 miles of actual trails. A decision is expected within about six months (April 2010). Since no decision has been made on either of these projects it is speculative to predict cumulative effects for motorized opportunities. It is expected that there might be a slight reduction in opportunities on designated routes.

From a State perspective on BLM lands in western Oregon, comprehensive planning for all access needs (public, administrative, commercial, recreational - motorized/non-motorized, etc.) has been put on hold for an undetermined amount of time (Dent, Pers. Com. 2009). It is not possible to predict when that planning will resume and what the decision(s) will be relative to motorized opportunities.

5. Roadless Character within Inventoried Roadless Areas

Effects of motorized vehicle use on roadless character within Inventoried Roadless Areas

Changes in this section between FEIS and DSEIS:

- Discussion of Potential Wilderness and Other Undeveloped Areas

There are 26 Inventoried Roadless Areas (IRAs) within the RRSNF, comprising a total of approximately 368,000 acres, as mapped in the RRSNF Geographic Information System (GIS).

The original inventory of roadless lands took place in the early 1970s during the RARE I (Roadless Area Evaluation and Review) evaluations, and then again in the late 1970s during RARE II. The inventory is displayed in the current Forest Plan FEIS and is an output of the RARE II inventory. Complete descriptions of these areas can be found in Appendix C of the FEIS for the Forest Plans (USDA 1989 and USDA 1990).

a. Background

All IRAs, identified in Appendix C of the Land and Resource Management Plans (LRMP), are managed according to the direction provided in the LRMP for their underlying land allocations. Some allocations permit motorized use within an IRA while others limit or prohibit motorized opportunities.

Map III-1 shows the IRAs on the Rogue River-Siskiyou National Forest. Within the RRSNF, there are approximately 48 miles of open roads (Maintenance Level 2) within IRAs identified in Appendix C in the LRMPs. The majority of these roads are within the South Kalmiopsis IRA on the Wild Rivers Ranger District.

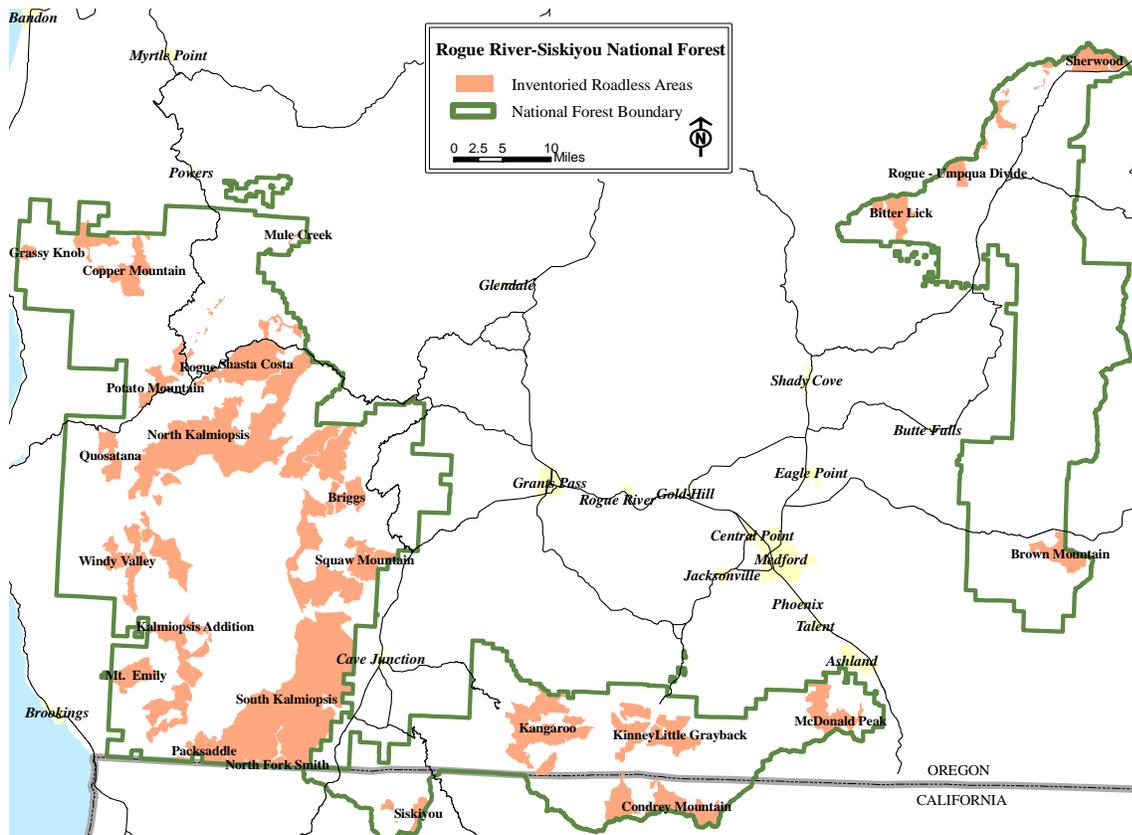
In addition, there are approximately 236 miles of NFS trails within IRAs on the Forest. Of this total, approximately 94 miles allow motorized use. Cross-country (or off-road) travel is currently allowed on approximately 30,170 acres of the area within the IRAs.

Roadless characteristics include natural resource values or features often present on other, non-roadless, lands but are perhaps more highly valued because of their greater extent or higher quality in IRAs and are thus often used to characterize Inventoried Roadless Areas. The following sections discuss such resource values and features:

High quality or undisturbed soil, water, and air: These three key resources are the foundation upon which other resource values and outputs depend. Healthy watersheds catch, store, and release water over time, protecting downstream communities from flooding. They provide clean water for domestic, agricultural, and industrial uses and help maintain abundant and healthy fish and wildlife populations. They are also the basis for many forms of outdoor recreation. Water quality is discussed in Section D, 1, this Chapter. Soil or site productivity is discussed in Section E, 1 and air quality is discussed in Sections E, 3 and 4, this Chapter.

Sources of public drinking water: National Forest System lands contain several watersheds that are important sources of public drinking water. Roadless areas within the entire National Forest System contain all or portions of 354 municipal watersheds that contribute drinking water to millions of citizens. Maintaining these areas in a relatively undisturbed condition saves downstream communities millions of dollars in water filtration costs. Careful management of these watersheds is crucial in maintaining the flow and affordability of clean water to a growing population.

Map III-1. Inventoried Roadless Areas on the Rogue River-Siskiyou NF



Diversity of plant and animal communities: Roadless areas are more likely than roaded areas to support greater ecosystem health, including the diversity of native and desired nonnative plant and animal communities due to the absence of disturbances caused by roads and accompanying activities. Inventoried Roadless Areas also conserve native biodiversity by serving as a buffer against the spread of nonnative invasive species. These effects are discussed in various sections including D, 2; E, 6 and 7; and E, 10 and 11.

Habitat for Threatened, Endangered, Proposed, Candidate, and Sensitive species and for those species dependent on large, undisturbed areas of land: Roadless areas function as biological strongholds and refuges for many species because of their lack of fragmentation and development. They support a diversity of aquatic habitats and communities. Threatened, Endangered, and Sensitive species are discussed in Section E, 9, this Chapter.

Primitive, Semi-Primitive Non- Motorized, and Semi-Primitive Motorized classes of dispersed recreation: Roadless areas often provide outstanding dispersed recreation opportunities such as hiking, camping, picnicking, wildlife viewing, hunting, fishing, cross-country skiing, and canoeing. While they may have many Wilderness-like attributes, unlike Wilderness the use mechanized means of travel is often allowed. These areas can also take pressure off heavily used wilderness areas by providing solitude and quiet, and dispersed recreation opportunities. Motorized opportunities are discussed in Section D, 4, this Chapter.

Reference landscapes: The body of knowledge regarding the effects of management activities over long periods of time and on large landscapes is very limited. Reference landscapes of relatively undisturbed areas serve as a barometer to measure the effects of development on other parts of the landscape.

Natural appearing landscapes with high scenic quality: High quality scenery, especially scenery with natural-appearing landscapes, is a primary reason that many people choose to recreate. Visual quality is discussed in Section E, 13, this chapter

Traditional cultural properties and sacred sites: Traditional cultural properties are places, sites, structures, art, or objects that have played an important role in the cultural history of a group. Traditional cultural properties and sacred sites may be eligible for protection under the National Historic Preservation Act. Cultural resources are discussed in Section E, 17, this chapter.

Other locally identified unique characteristics: Inventoried roadless areas may offer other locally identified unique characteristics and values. Unique social, cultural, or historical characteristics sometimes depend on the roadless character of the landscape.

b. Effects Mechanisms and Analysis Framework

It is not the purpose of this planning effort to decide whether motorized use within any IRA is appropriate. Those overarching decisions on the allowance of motorized uses within IRAs were made in the LRMPs and are not being revisited here. As discussed above, IRAs will continue to be managed according to the direction provided in the LRMP for their underlying land allocations.

The only exception to this is within the Kangaroo IRA on the Rogue River National Forest where the underlying land use allocations provide motorized trail-use direction inconsistent with that of the adjacent Siskiyou National Forest LRMP. The inconsistency affects use of a trail that weaves between the two Forests. Motorized use of this trail had been ongoing since before each LRMP was signed, and the Proposed Action seeks simply to accommodate existing use and bring consistency to the direction in the LRMPs. In this case, the issue addressed is not the propriety of motorized use within an IRA, but rather the consistency of underlying land use allocations between adjacent Forests to accommodate long-standing use patterns.

CHANGED:

Here, the analysis focuses on effects to roadless character, social values unique to these areas, such as their use as natural-appearing reference landscapes, opportunities for solitude, and suitability for future designation as Wilderness.

Many of the values listed in the prior section may be affected by motorized use of roads and trails within IRAs. Effects on those natural resources are discussed in the site-specific evaluations of environmental effects elsewhere in this Chapter and resolved in alternatives or through mitigations on a site-specific, case-by-case, basis.

Generally, foot, horse, and mountain bike travel in Inventoried Roadless Areas is considered compatible with roadless area characteristics. That type of use is therefore not further analyzed in this section. If new or continued motorized trail use is authorized in the Selected Alternative, a short-term impact on the roadless characteristics of solitude and remoteness is expected. An increase in the number of miles of motorized trail use would generally have an inverse relationship with solitude and remoteness qualities.

c. Direct and Indirect Effects

Under all alternatives, varying levels of motorized use of existing NFS roads and trails within IRAs would continue.

Reference and Natural Appearing Landscapes

Cross-country travel allowed under the No Action (**Alternative 1**) would have impacts that may diminish the affected IRAs ability to serve as reference landscapes of relatively undisturbed forests. Under these alternatives, approximately 30,170 acres would remain available for cross-country travel. However, due to steep topography and heavy vegetation associated with these areas, it is estimated that less than 3% (900 acres) is actually capable of supporting this use. Based on the analysis assumptions, it is not anticipated that this use would measurably change under any of the alternatives.

Due to the elimination of cross country travel **Alternatives 2, 3, 4, and 5** would have a slight ability to reduce impacts to landscapes serving as a reference for research study or interpretation. The reduction in trails open for motorized use in **Alternatives 3, 4, and 5** would further reduce the current level of impact and have less effect than Alternative 1 concerning the ability of the landscape to serve as a reference for research study or interpretation. The difference is slight, however, since there is little, if any, cross-country travel in most areas to begin with. The physical impact is primarily on the trails where the use is, not across the un-trailed or un-roaded forest affecting its use for reference or study. Eleven trails would be retained (would continue to exist) in all alternatives, the only difference would be the amount of motorized use allowed.

Unique Characteristics: Solitude and Remoteness

Cross-country motorized travel under **Alternative 1** would maintain the current likelihood of encountering other recreationists, perhaps adversely affecting each user's sense of solitude and distance from the sights, sounds, and evidence of other human use. Under these alternatives, there is expected to be no change to the use levels along those routes currently used. Continued allowance of cross-country travel would not result in permanent improvements such as structures, construction, habitations, and other evidence of modern human presence or occupation, other than the presence of tracks.

Alternatives 3 and 5, and to a greater extent **Alternative 4**, would result in a lower likelihood of encountering other users along the trails open to motorized use. With the prohibition of cross-country use by all action Alternatives within the IRAs, there is more opportunity for solitude and to experience less evidence of other human use.

Effects on Suitability for Future Designation as Wilderness

Formally identified IRAs were inventoried to determine suitability for Wilderness designation when they were first established and later adopted into the LRMPs. At that time, the Forest Plans noted that roads, timber harvest, or other development in these areas could adversely affect their eligibility for Wilderness consideration. In addition, the 2001 Roadless Rule generally prohibits road construction, timber cutting, sale or removal in IRAs (36 CFR 294).

Under the action alternatives, there are no proposals to construct roads, harvest timber, or create other developments, thus their continued suitability for future inclusion in the National Wilderness Preservation System Wilderness remains unaffected.

ADDED:

Effects on Potential Wilderness and Other Undeveloped Areas

The Rogue River-Siskiyou National Forest may have areas outside of IRAs that meet the criteria for potential wilderness. These uninventoried roadless areas are analyzed at a project specific level to determine the effects to wilderness characteristics. Forest Service Handbook (FSH) 1909.12, chapter 70, sets forth the guidance on inventorying areas that may be considered as potential wilderness areas. When projects could have a likelihood to impact potential wilderness areas, the Forest Service will evaluate projects against the characteristics found in FSH 1909.12, chapter 72.1 (Capability). In addition to potential wilderness, there may be acres of other undeveloped areas. These are areas that are not IRAs and do not meet the Forest Service's definition of potential wilderness. However, these areas may have special resource values due to their undeveloped character and are most commonly identified and evaluated within project-specific NEPA.

Under all action alternatives, no proposals are made that would create additional roads, harvest timber, or create other developments. Thus, the **Action Alternatives** will not adversely affect Wilderness characteristics (i.e. the naturalness, undeveloped character, opportunities for solitude, special features or values, or manageability) of potential wilderness areas or special resource values of other undeveloped areas. Therefore, this document does not inventory or analyze those areas within the project area.

Summary

Alternative 1 would not change the current condition in relation to the roadless area characteristics discussed above. Alternative 2 would have some ability to improve these effects because of the prohibition of cross-country travel. Alternatives 3, 4, and 5 would help to improve some of these effects by reducing the miles of motorized trails in roadless areas, and prohibiting cross-country travel.

The following table summarizes the change of motorized use within IRAs.

Table III-2. Summary of Motorized Use in IRAs by Alternative

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Acres of cross-country travel	30,170	0	0	0	0
Miles of open roads	48	48	34	0	34
Miles of motorized trails	94	94	72	0	64

d. Cumulative Effects

The geographic scope of the cumulative effects analysis was limited to the IRAs within the RRSNF since the effects on reference landscapes, solitude, etc., are measured only within individual IRAs. Refer to the assumptions for cumulative effects at the beginning of this Chapter. Larger-scale cumulative effects assessments concerning the appropriate spacing, kind, and amount of areas providing these values were addressed in the LRMPs.

Effects of past road construction and development in roadless areas on the Rogue River-Siskiyou are minimal, and there is no new road or trail construction proposed in roadless areas under any Action Alternative. Since this analysis includes only existing system trails and roads, with no additional construction or allowance for increased use, there would be no additive impact that might contribute to adverse cumulative effects on the character of IRAs.

Since Alternatives 3, 4, and 5 would reduce the amount of motorized use, the overall undeveloped nature of Inventoried Roadless Areas would improve. The expected increase in recreation use within the Forest and Inventoried Roadless Areas would likely have the cumulative effect of further reducing the availability of areas providing characteristics of solitude and remoteness.

E. ENVIRONMENT AND CONSEQUENCES ASSOCIATED WITH OTHER ISSUES

Other Issues (also presented in Chapter I) were used to formulate design elements and/or mitigation measures common to Action Alternatives (as effects are predicted to be minor and/or similar between Action Alternatives), providing nominal comparison of consequences to aid in later decision-making.

Changes in this section between the FEIS and this DSEIS:

- Revised Soils – Site Productivity section to clarify effects analysis

1. Soils - Site Productivity

Effects of motorized vehicle use on soils and site productivity

The geographic scope for the assessment of the soil resource conditions and potential effects is the entire Rogue River-Siskiyou National Forest. The Rogue River-Siskiyou National Forest is divided into five districts: the analysis for the soil resource is organized, analyzed, and discussed for each of the districts. This analysis addresses changes in the type, extent, and location of designated areas open to cross-country motor vehicle use and/or limited motorized access, designated roads, and designated motorized trails by alternative. Temporary roads and trails and unauthorized roads and trails are not a part of this analysis.

EIS Appendix D (incorporated by reference) documents more detail on the soil types and characteristics that have been analyzed, organized by Ranger Districts and affected soils.

a. Background

Geology and soils information discussed in this section is summarized from the Soil Resource Inventory for the Siskiyou National Forest (Meyer and Amaranthus, 1979) and the Soil Resource Inventory for the Rogue River National Forest (Badura and Jahn, 1977), unless otherwise noted.

Klamath Mountains Geologic-Physiographic Province

The Klamath Mountains geologic-physiographic province encompasses the Powers, Gold Beach, Wild Rivers, and Siskiyou Mountains Ranger Districts.

The Klamath Mountains province is made up of rugged, mountainous terrain and narrow canyons generally with 2,000 to 5,000 feet of relief. The mountains along the coast are generally north-south trending; the province also includes the Siskiyou Mountain Range which is generally east-west trending and straddles the Oregon-California border. The mountains within the Klamath province consist predominantly of pre-tertiary sediments and volcanics (about 65 million years old or more), that have been extensively folded, faulted, and intruded by serpentinized masses of ultra-basic and granitoid rocks along fault zones. The complex geologic history of this region also includes major periods of sea floor subduction at the continental border, volcanism, erosion, mass wasting, and uplift.

The geomorphic processes most common in the Klamath Mountains province are fluviation (degradation of the land surface by running water) and mass wasting. Fluviation is most evident on the long, steep, and rugged slopes that dominate the terrain. Mass wasting is naturally widespread and commonly occurs along geologic contacts, fault zones, in highly fractured parent material, and in areas of moisture accumulation and stream channel cutting of toe slopes. Past glaciation is evident in the highest elevations of the Siskiyou Range.

Due to the complex geology of the Klamath Mountains province, soils also vary widely across the landscape, and are dominantly of mixed mineralogy. In general, most soils are shallow, medium textured, and contain high percentages of rock fragments. Very deep soils also occur but are usually limited to ancient mass wasted land surfaces, glacial deposits or toe slope positions. Soils of particular interest are those derived from peridotite and serpentinite parent material because of their unique characteristics.

Serpentine soils have low amounts of calcium and high amounts of magnesium, relatively heavy concentrations of nickel, chromium, and other heavy metals, and low levels of nitrogen and poor nitrogen uptake. They support very unique ecosystems that have evolved to tolerate and thrive in these soil conditions.

Western Cascades Geologic-Physiographic Province

The Western Cascades geologic-physiographic province includes the western portion of the High Cascades Ranger District.

The mountains of the Western Cascades province are comprised of volcanic sediments and flows associated with the initial buildup of the Cascades during the Tertiary Period. Rock formations typically include beds of volcanic ash (tuff), massive flows of andesite lava, and layers of breccia and agglomerate. Relatively soft rock types are often overlain by more resistant material. Uplift and stream erosion has produced a topography of high relief.

The geomorphic processes most common in the Western Cascades province are fluviation, mass wasting, and glaciation. Stream systems have carved generally steep-walled canyons with rocky escarpments near or at the top of many intervening ridges.

Soils for the most part are of mixed mineralogy. They generally have moderate depths, medium to fine texture, and contain a wide range of rock fragment percentages. Very deep soils occur in association with glacial and glaciofluvial deposits, colluvial toe slope and mid slope deposits and ancient mass wasted surfaces. Deep clayey soils possessing montmorillonitic minerals tend to develop in slump basins of old landslides originating from tuffaceous bedrock materials, and generally have restricted soil drainage.

High Cascades Geologic-Physiographic Province

The High Cascades geologic-physiographic province includes the eastern portion of the High Cascades Ranger District.

The High Cascades province is relatively young, related to volcanism during the Pliocene and Pleistocene Epochs that resulted in numerous flows of basalt and andesitic basalt, as well as deposits of cinder. The explosive collapse of Mount Mazama about 7,000 years ago left a thick blanket of pumice over much of the High Cascades Ranger District. This province has the character of a broad, upland plateau, with steep relief occurring in the form of prominent volcanoes or glacially-carved canyons.

The geomorphic processes most common in the High Cascades province are fluviation, glaciation, and mass wasting, with glaciation being the most dominating process.

Soils are generally of mixed mineralogy, with average soil depths much greater than might be expected in the other provinces on the Forest and with textures generally medium to coarse. Many soils are relatively free of rock, while soils forming in glacially derived materials can contain large amounts of rock fragments. Ashy and cindery soils also occur in association with ash flow deposits on the flanks of former Mount Mazama, and in association with eolian deposits of ash originating from the volcano's eruption. Soil types and arrangements within this province are by far the least complex on the Forest.

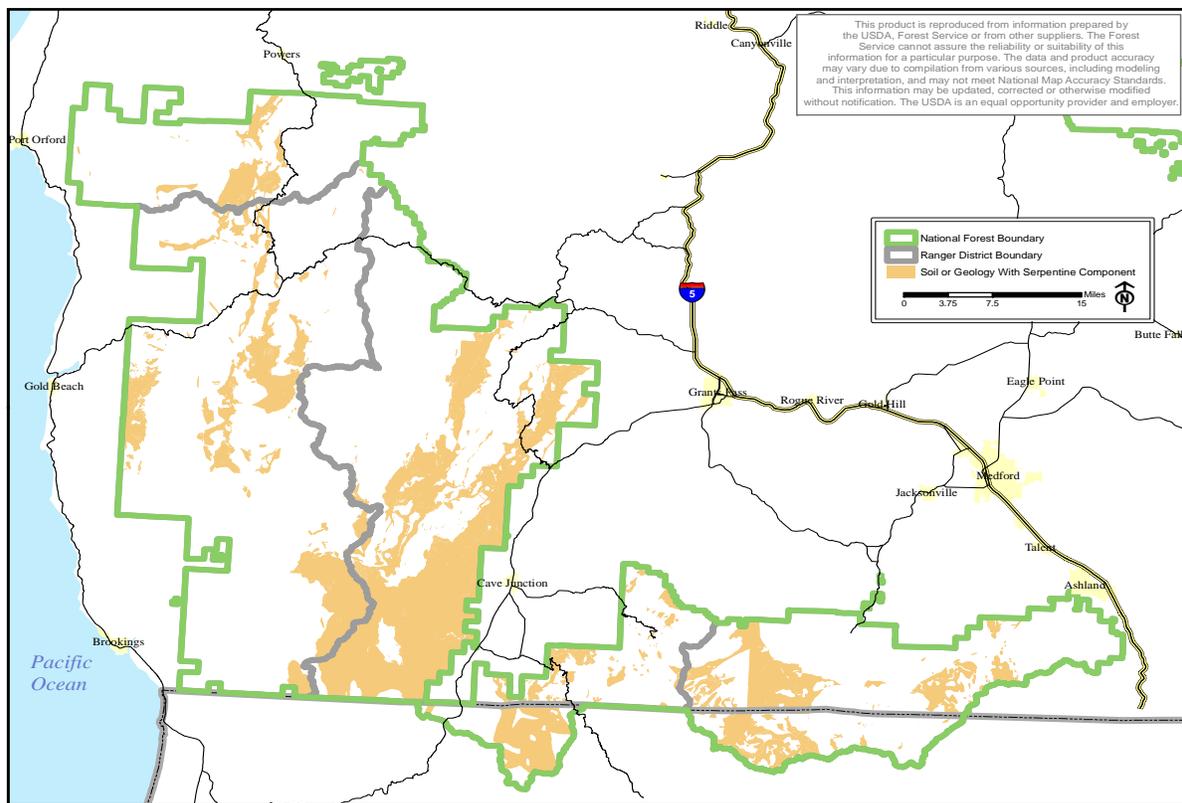
Naturally Occurring Asbestos-Influenced Geology and Soils

Asbestos is a term used for several types of fibrous minerals that occur naturally in the environment. Naturally occurring asbestos (NOA) is commonly found in serpentinite and other ultramafic rock formations, as well as the soils where these rock types are located. Not all of these rock formations, however, contain NOA; they only have the potential to contain asbestos, and require environmental testing to determine presence.

Asbestos minerals fall into two general categories – chrysotile (also known as serpentine asbestos) and amphibole. Chrysotile and two amphibole minerals, tremolite and anthophyllite, have been found in Oregon, and are associated with serpentine (Bright and Ramp, 1965; Van Gosen, 2010). The Klamath Mountains Province of the Rogue River-Siskiyou National Forest contains intrusions of serpentine along faults and geologic contacts, as well as peridotite that has been exposed through tectonic uplift and altered to serpentine minerals.

A major block of serpentine and ultramafic bedrock and associated soils extends roughly from Eight Dollar Mountain on the Wild Rivers District, south through Rough and Ready Creek to the California border, west to the north fork of the Smith River, and north extending into the Kalmiopsis Wilderness on the Gold Beach and Wild Rivers Districts.

Map III-2. Serpentine/Ultramafic Geology and Soil Areas - RRSNF



Bands also extend north into the Limpy Creek, Shan Creek, and Chrome Ridge areas. A large block of serpentine and ultramafic bedrock and associated soils is also found on the west side of the Klamath Mountains in the Iron Mountain area of the Powers and Gold Beach Ranger Districts, extending south in a band on the Gold Beach Ranger District.

There are smaller areas of serpentine and ultramafics scattered throughout the Powers, Gold Beach, Wild Rivers, and Siskiyou Mountains Ranger Districts.

Known asbestos deposits in Oregon are small, and Southern Oregon area mines have not been extensive (Bright and Ramp 1965; Van Gosen 2010). Information as to the levels of asbestiform minerals in serpentine soils on the forest is very limited. A laboratory study of two soil pedons associated with serpentine parent material, Snowcamp and Serpantano, was conducted in 1994 by the USDA Soil Conservation Service. Results for the Snowcamp pedon were negative for the presence of asbestiform minerals. The Serpantano pedon was determined to have less than one percent asbestiform minerals in the 2C2 and 2CR horizons (Burt 1994).

See Map III-2 for approximate locations of serpentine and ultramafic bedrock and soils. Locations of serpentine and ultramafic geologies were determined using the USDA Forest Service Region 5 corporate bedrock GIS layer, and the Oregon Geologic Data Compilation (OGDC) – Release 5, from the Oregon Department of Geology and Mineral Industries (Oregon DOGAMI 2009). Locations of serpentine and ultramafic influenced soils were determined using the NRCS Soil Surveys for Coos County (USDA 1989), Curry County (USDA 2005), and Josephine County (USDA 1983), and the Rogue River National Forest Soil Resource Inventory (Badura and Jahn 1977). Refer to Appendix D for a list of the geologic types and soils queried to build this map.

For a discussion on the potential for human effects from asbestiform, or fibrous asbestos from dust and disturbance to serpentine soils, see Other Issue #4, this Chapter.

b. Effect Mechanisms and Analysis Framework

See the assumption section at the beginning of Chapter III for a general list of assumptions. The following list is specific to soil productivity and naturally occurring asbestos geology and soils.

- The decision to allow or prohibit the use of public wheeled motor vehicle on routes would have no direct effects on soils. However, a route designation decision does have the potential to affect soils indirectly to the extent that it affects the concentration of use on roads and trails, the levels of maintenance needed, and the potential for damaged areas to recover. The magnitude of the indirect effects on soils will depend on (1) how effectively law enforcement can confine traffic to designated routes; (2) how effectively law enforcement can keep traffic off routes that are not designated; and (3) how well routes closed to public wheeled motor vehicle use recover on their own, without restoration treatments.
- To the extent that wheeled motor vehicle traffic is the primary cause of erosion, prohibiting public wheeled motor vehicle use of existing routes will result in less erosion. In most situations, however, erosion is the result of a combination of factors that include poor route design or location, lack of drainage, and inadequate maintenance.
- The routes being evaluated, as described in the description of Alternative 1 in Chapter II, already exist. They are compacted and generally lack vegetation, and some are eroded. From the standpoint of soil productivity, these routes are already non-productive. Therefore, the potential effects on soils are only related to sustaining route function, protecting adjacent soils from runoff and gully erosion, or restoring the routes to a productive state.

- According with its management level, roads and trails are constructed and maintained to standard, including the maintenance of drainage structures, to minimize soil erosion due to the existence of the travel bed and based on its level of use. When roads or trails are closed, they are put to bed utilizing standard practices that effectively minimize erosion.
- While aggregate can be an effective mitigation if applied and maintained appropriately for the purpose of reducing potential exposure to NOA in the underlying roadbed, it is assumed that aggregate surfaced roads on the forest are currently not an effective mitigation since source rock is not known, and current condition of aggregate is not known, for this analysis.

Soil Productivity

Soil productivity on the Rogue River-Siskiyou National Forest has been directly impacted by the type, extent, and location of designated roads, motorized trails, and cross-country motor vehicle use. These impacts have affected the existing condition of all districts to varying degrees.

Soil productivity includes the inherent capacity of a soil under management to support the growth of specified plants, plant communities, or a sequence of plant communities.

The following text describes loss or degradation of soil productivity in two aspects:

- **Total Soil Resource Commitment (TSRC)** is defined as the conversion of a productive site to an essentially non-productive site for a period of more than 50 years. In this analysis, quantifiable TSRC is associated with roads and trails. These areas are dedicated to a specific management use that precludes other uses of the land and removes the majority of the productive capability of the land. These TSRC types of disturbances also affect water quality because they often create the greatest amount of accelerated soil erosion and thus sedimentation.
- **Detrimental Soil Disturbance (DD)** is the alteration of natural soil characteristics that results in immediate or prolonged loss of soil productivity and soil-hydrologic conditions. DD can result from off-road motorized activities and can produce unacceptable levels of soil degradation by compacting, moving, eroding, or puddling the soil. Motorized vehicles can damage soils directly from impact from surface traffic and indirectly by hydrologic modifications, soil transport, and deposition.

Motorized vehicle use off-roads and trails can degrade soil productivity. Direct mechanical impacts have several components: abrasion, compaction, shearing, and displacement.

Compaction reduces soil voids and causes surface subsidence. Shearing is the destructive transfer of force through the soil. Displacement results in the mechanical movement of soil particles. Indirect impacts include hydraulic modification, such as the disruption of surface water flow, reduction in infiltration and percolation, surface ponding, and the loss of water-holding capacity.

Disturbances from roads and motorized trails can increase erosion and sediment delivery. Existing roads and trails are a primary source of long-term management-related sediment. The type, extent, and location of a designated motorized system of roads, trails, and areas contributes to the amount of accelerated erosion, and can vary widely across the landscape (Gucinski et al. 2001). Accelerated erosion and sediment delivery have been identified as a source of water quality pollution in many Rogue River-Siskiyou National Forest watersheds. Reduced soil productivity, manifested through a decline in tree growth, adjacent to roads and trails can also be expected due to changes in soil physical properties along the cut and fill slopes, as well as on road prisms that have been closed but not decommissioned (Gucinski et al. 2001).

The following text provides a summary of how and why each Soil Indicator is used to evaluate effects on the soil resource.

Soil Indicator 1: Acres of the forest designated open to cross-country motor vehicle use

The area designated open to cross-country motor vehicle use is used as a general measure of potential effects to soil productivity. Motorized cross-country travel can pioneer new trails across alpine areas, wetlands, steep slopes, and other areas with sensitive soils, such as serpentine. Degraded areas become a major environmental problem because of their direct effects on vegetation, soils, and site hydrology.

Soil Indicator 2: Miles of road surface

Roads represent a long-term commitment of the soil to a non-productive condition. This is a total resource commitment of the soil resource.

Soil Indicator 3: Miles of designated motorized trails

OHV trails can have similar effects to soil productivity as roads but the effects differ based on the width of the travel way. As with two-wheel motorized trails, OHV trails create additional problems due to steep grades, lack of designed stream crossings, and difficulty of maintaining water management features.

Table III-2 shows the current condition of soil productivity across the forest as related to the forest-wide soil indicators discussed above. This shows the amount of Total Soil Resource Commitment (TSRC) across the forest related to roads and trails, and is an indicator of the Detrimental Disturbance associated with roads, trails, and cross-country motor vehicle use.

Table III-3. Existing Condition of Soil Indicators – Rogue River-Siskiyou NF

Forest-Wide Soil Indicators	Existing Condition
Acres of forest designated open to cross-country motor vehicle use	275,000 acres
Miles of road surface	5,286 miles
Miles of motorized trails	246 miles

c. Direct and Indirect Effects of Alternatives

Under the **No Action Alternative**, the current motorized route system would remain on the landscape and vehicle use designations would not change. Therefore, current effects to the soil resource, including TSRC and current levels of DD would persist. These effects are described in general terms in the current condition discussion.

Alternative 2

Alternative 2 would implement the Travel Management Rule with no change to the NFS of roads and trails, but would eliminate cross-country travel across the forest. Therefore, effects to the soil resource with implementation of this alternative, in regards to miles of road surface and miles of motorized trails, would be the same as for Alternative 1.

Eliminating cross-country travel across the forest would reduce the amount of disturbance to soils across the forest from pioneered routes, and would be a beneficial effect in reducing the occurrence of DD, and reducing the potential for expanding TSRC, as pioneered cross-country routes would otherwise become established with loss to soil site productivity. Only approximately 15 acres would be open to cross-country use, in the existing Woodruff OHV use area on the High Cascades Ranger District.

Table III-4. Alternative 2 Forest-Wide Soil Indicators.

Forest-Wide Soil Indicators	Alt. 2
Acres of forest designated open to cross-country motor vehicle use	15 acres
Miles of road surface	5,286 miles
Miles of motorized trails	246 miles

Alternative 2 would limit off road parking for dispersed camping and day use to generally 300 feet from the centerline of all open roads except where specifically prohibited. Typically the greatest effects to soils and site productivity (i.e. loss of vegetation and surface litter, compaction) occur at the initial stage of campsite development, with effects stabilizing over time with continued use, and generally recovering at a slower rate than the initial disturbance rate once no longer used (Marion and Cole 1996).

Limiting off road access for dispersed camping and day use has the potential to reduce or prevent localized DD from dispersed sites and associated access spurs that are beyond this distance, and would maintain localized DD in sites and on access spurs within this distance. In general the effects of this action across the forest on the soil resource would be negligible, since effects are highly localized. Sites within 300 feet of open roads are predominantly already established and would not experience much change to site productivity.

Alternative 3

Under alternative 3, the Forest-wide miles of road surface would essentially remain the same as the current condition. While there are actions proposed to close roads to motorized use, the road beds would still be maintained (i.e. not recontoured/decommissioned and reclaimed for soil site productivity); therefore they would still have some effect of TSRC across the landscape.

This alternative would eliminate cross country travel across the forest, except for 25 acres in two designated OHV areas on the High Cascades Ranger District. This action would reduce the amount of disturbance to soils across the forest from pioneered routes, and would be a beneficial effect in reducing the occurrence of DD, and reducing the potential for expanding TSRC, as pioneered cross-country routes would otherwise become established with loss to soil site productivity.

The miles of motorized trails would be reduced by 17 miles. Motorized trails typically do not receive the same level of maintenance as a road, therefore they often experience higher levels of channelized flows and erosion off their surfaces, as well as a higher chance of surface failure (such as the formation of puddling and deep muck holes) (Meyer, 2002). This would result in a beneficial effect across the forest to DD related to these kinds of soil disturbances.

Table III-5 Alternative 3 Forest-Wide Soil Indicators

Forest-Wide Soil Indicators	Alt. 3
Acres of forest designated open to cross-country motor vehicle use	25 acres
Miles of road surface	5,286 miles
Miles of motorized trails	229 miles

Alternative 3 would limit off road parking for dispersed camping and day use to generally 300 feet from the centerline of all open roads except where specifically prohibited, on the Powers, Gold Beach, Siskiyou Mountains, and High Cascades Ranger Districts. No off-road motorized travel for dispersed camping would be allowed on the Wild Rivers Ranger District. Effects would be similar to Alternative 2, except that there would be a greater reduction in roads open to this dispersed use. Therefore, more dispersed camping and day use sites, and associated access spurs, would have the opportunity to recover naturally from DD associated with those impacts.

Alternative 4

Alternative 4 proposes a reduction in motorized use over current conditions, by providing increased protection to sensitive areas from motorized travel. In general, the effects to the soil resource are similar to those in Alternative 3, but with the elimination of motorized trails within Inventoried Roadless Areas, Botanical Areas, and areas with serpentine soils, and there would be an overall increase in beneficial effects to the soil resource through reduction in Detrimental Disturbance.

Under this alternative, the miles of road surface would essentially remain the same as the current condition. While there are actions proposed to close roads to motorized use, the road beds would still be maintained (i.e. not recontoured/decommissioned and reclaimed for soil site productivity); therefore they would still have some effect of TSRC across the landscape.

The conversion of Maintenance Level 1 roads to motorized trails that is proposed in Alternative 3 would not occur with this alternative, which would result in maintaining the current condition of those ML1 roads. The Boundary Trail and all connectors would also prohibit motorized use, which would have no effect to the TSRC since it would still be committed as a trail, and could have minor beneficial effect to DD if litter and vegetation encroach and narrow the active tread, and with the likely reduced amount of traffic overall that would be disturbing the trail surface making it easily erodible.

Effects to TSRC and DD regarding access for dispersed camping and day use would be similar to those described in the other alternatives.

Table III-6 Alternative 4 Forest-Wide Soil Indicators.

Forest-Wide Soil Indicators	Alt. 4
Acres of forest designated open to cross-country motor vehicle use	15 acres
Miles of road surface	5,286 miles
Miles of motorized trails	132 miles

Alternative 5

Under Alternative 5, the miles of road surface would essentially remain the same as the current condition. While there are actions proposed to close roads to motorized use, the road beds would still be maintained (i.e. not recontoured/decommissioned and reclaimed for soil site productivity); therefore they would still have some effect of TSRC across the landscape.

This alternative would eliminate cross country travel across the forest, except for 15 acres in one currently existing designated OHV area (Woodruff) on the High Cascades Ranger District. This action would reduce the amount of disturbance to soils across the forest from pioneered routes, and would be a beneficial effect in reducing the occurrence of DD, and reducing the potential for expanding TSRC, as pioneered cross-country routes would otherwise become established with loss to soil site productivity.

Alternative 5 would limit off road travel for dispersed camping and day use to generally 300 feet from the centerline of all open roads except where specifically prohibited. Effects would be similar to Alternative 2 and 3, except that there would be a greater reduction in roads open to this dispersed use. Therefore, more dispersed camping and day use sites, and associated access spurs, would have the opportunity to recover naturally from DD associated with those impacts.

Table III-7 Alternative 5 Forest-Wide Soil Indicators

Forest-Wide Soil Indicators	Alt. 5
Acres of forest designated open to cross-country motor vehicle use	15 acres
Miles of road surface	5,286 miles
Miles of motorized trails	221 miles

This alternative is composed of a combination of actions from the other alternatives. The site specific effects of each Element in Alternative 5 are previously described in the District specific discussion.

District Specific Actions

The following discussion presents effects by specific Ranger Districts, with a focus on the action elements as associated with the Alternative 3 (Proposed Action), Alternative 4, and Alternative 5.

Powers Ranger District

Designate approximately 6.2 miles of paved road for mixed use on a portion of Road 3348 (Eden Valley Road).

Under **Alternatives 3, 4, and 5**, this action would result in no change to the TSRC or in DD. The proposed activity would merely redefine the type of vehicle that is permitted to drive on Forest Road 3348.

Prohibit motorized use on the 1-mile Big Tree Trail (1150) south of Powers

Under **Alternatives 4 and 5**, this action would result in no change to the TSRC since the trail would still exist as a commitment to the soil resource. There would be no change, to a potential reduction in DD with the exclusion of motorized use disturbance. Exclusion of motorized use may allow surface litter and vegetation to encroach and narrow the active trail tread, which has the potential to reduce soil displacement.

Gold Beach Ranger District

Convert approximately 9 miles of roads (portions of roads 3313103, 3313110, 3313117, 3680190, 3680195, 3680220, 3680351, 3680409, 3680353) currently designated as Maintenance Level 1 to motorized trails.

Under **Alternatives 3 and 5**, this action would result in no change to the TSRC since the road beds would still be committed to travel routes. There would be an increase in DD since the travel bed would be going from a closed state, where organic litter and vegetation have the opportunity to collect and grow on the road surface, to an actively used state that would result in regular disturbance of the travel-bed surface from wheel action that is easily susceptible to soil displacement. Some of these routes travel over areas with serpentine soils.

Construct approximately 0.5 miles of new motorized trail that would connect to the Woodruff Trail.

Under Alternative 3, this action would result in an increase in TSRC, and an increase in DD, since soils would be newly committed to use as a motorized trail and experience the associated impacts. Approximately 95% of the proposed route is over soils with slight to moderate erosion rating, and roughly 5% have a severe erosion rating. The susceptibility of the soils to erosion processes can affect the layout and design of new routes in order to minimize erosion issues, as well as provide a travel surface that is easier to maintain over time. During design and layout this section would be reviewed by a Soil Scientist (see Mitigation Measures).

Designate approximately 0.2 miles of paved road for motorized mixed use on a portion of Road 3313.

Under **Alternatives 3, 4, and 5**, this action would result in no change to the TSRC or in DD. The proposed activity would merely redefine the type of vehicle that is permitted to drive on a portion of Forest Road 3313.

Prohibit motorized use on approximately 10 miles in the lower portions of the Lawson (#1173) and Game Lake (#1169) trails that currently allow motorized use.

Under **Alternatives 3, 4, and 5** this action would result in no change to the TSRC since the trail would still exist as a commitment to the soil resource. There would be no change, to a potential reduction in DD with the exclusion of motorized use disturbance. Exclusion of motorized use may allow surface litter and vegetation to encroach and narrow the active trail tread, which has the potential to reduce soil displacement.

Prohibit mixed use on approximately 12 miles of road where it is currently authorized on portions of Roads 1376010, 1376012, 1376013, 1376015, 1376019, 1376902, 1376903, and 1376908.

Under **Alternatives 3, 4, and 5** this action would result in no change to the TSRC or in DD. The current road network would be maintained in its existing condition, with street legal motorized use continuing.

Wild Rivers Ranger District

Convert approximately 3 miles of roads currently designated as Management Level 1 to motorized trails (portion of road 4402494; portion of road 2509640).

Under **Alternative 3 and 5**, (only the portion of the 2509640 proposed in Alternative 5) this proposed activity would have no effect to the TSRC since the road beds would still be committed to a travel route. There would be an increase in DD since the travel bed would be going from a closed state, where organic litter and vegetation have the opportunity to collect and grow on the road surface, to an actively used state that would result in regular disturbance of the travel-bed surface from wheel action that is easily susceptible to soil displacement. The ML1 roads being considered with this action are located along ridgelines in soils developed from serpentinized parent materials.

Prohibit motorized use on approximately 17 miles of trail that currently allows motorized use.

Under **Alternatives 3, 4, and 5**, this action would result in no change to the TSRC since the trail would still exist as a commitment to the soil resource. There would be no change, to a potential reduction in DD with the exclusion of motorized use disturbance. Exclusion of motorized use may allow surface litter and vegetation to encroach and narrow the active trail tread, which has the potential to reduce soil displacement.

Prohibit public motorized use on approximately 8 miles of road.

Under **Alternative 3, 4, and 5**, this action would result in no change to the TSRC since the road would still exist as a commitment to the soil resource. There would be no change, to a potential reduction in DD with the exclusion of motorized use disturbance. Exclusion of motorized use may allow surface litter and vegetation to encroach, which has the potential to reduce soil displacement.

Prohibit motorized mixed use on approximately 11 miles of road.

Under **Alternatives 3, 4, and 5**, this action would result in no change to the TSRC or in DD, since the current road network would be maintained in its existing condition, with street legal motorized use continuing.

Amend Siskiyou National Forest LRMP to make motorized use of the Boundary Trail consistent with Standards and Guidelines.

Under **Alternatives 3 and 5**, this action would result in no change to the TSRC or in DD over current condition, as this Forest Plan amendment would merely make the Forest Plan consistent with the current use.

Siskiyou Mountains Ranger District

Construct and relocate approximately 1 mile of the Penn Sled Trail (#957) east of Applegate Lake that would allow motorized use for Class III vehicles.

Under **Alternatives 3 and 5**, this action would result in an increase in TSRC, and an increase in DD, since soils would be newly committed to use as a motorized trail and experience the associated impacts. Soil land-types 68 and 69 are generally moderately to well suited for trail development; land-type 61 is considered poorly suited due to shallow soils, steep slopes, and high rock outcrop percent. Land-type 69 limitations for trails include high soil creep rates and some wet areas. The entire length is estimated to be within a Severe soil erosion rating. The susceptibility of the soils to erosion processes can affect the layout and design of new routes in order to minimize erosion issues, as well as provide a travel surface that is easier to maintain over time. During design and layout this section would be reviewed by a Soil Scientist (see Mitigation Measures).

Prohibit motorized use on approximately 4 miles of the Horse Camp Trail (#958) that currently allows motorized use.

Under **Alternatives 3, 4, and 5**, this action would result in no change to the TSRC since the trail would still exist as a commitment to the soil resource. There would be no change, to a potential reduction in DD with the exclusion of motorized use disturbance. Exclusion of motorized use may allow surface litter and vegetation to encroach and narrow the active trail tread, which has the potential to reduce soil displacement.

Amend Rogue River National Forest LRMP to make motorized use of the Boundary Trail and some connecting trails consistent with Standards and Guidelines.

Under **Alternatives 3 and 5**, this action would result in no change to the TSRC or in DD over current condition, as this Forest Plan amendment would merely make the Forest Plan consistent with the current use.

High Cascades Ranger District

Develop a motorized use play area (approximately 10 acres) near the junction of Forest Road 3050 and County Road 821.

Under **Alternative 3**, the location of the proposed activity is flat terrain within an existing borrow pit (so already heavily disturbed). The action would result in a continuation of the TSRC, and a potential increase in DD due to increased vehicular activities in the pit. Soils are sandy loams forming in cindery glaciofluvial deposits that are excessively drained. Due to the flat terrain, coarse soil texture, and high permeability, effects to soils are expected to be very localized, and mostly contained within the pit.

Designate approximately 31.5 miles of paved road for mixed use, and within developed campgrounds adjacent to routes that allow mixed use (approximately 7 miles).

Under **Alternative 3**, this action would result in no change to the TSRC or in DD. The proposed activity would merely redefine the type of vehicle that is permitted to drive on portions of Forest Roads 34, 37, 3705, and 3720, and in the Union Creek, Farewell Bend, Natural Bridge, Woodruff Bridge, Abbott Creek, and Whiskey Springs Campgrounds.

Table III-8. Summary of the Forest-Wide Soil Indicators by Alternative.

Forest-Wide Soil Indicators	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Acres of forest designated open to cross-country motor vehicle use	275,000 acres	15 acres	25 acres	15 acres	15 acres
Miles of road surface	5,286 miles				
Miles of motorized trails	246 miles	246 miles	229 miles	132 miles	221 miles

d. Cumulative Effects

The geographic scope of the cumulative effects analysis selected is the entire RRSNF, since the routes allowing public wheeled motor vehicle use occur within this area and the effects are likely to occur within this area.

Other actions and activities that have the potential to have cumulative effects to the soil resource include fuel treatments and fire, range management, minerals management, recreation, timber harvest and vegetation treatments, road and right-of-way management, special uses and state and county easements.

Fuels reduction projects and prescribed fire are on-going across the Forest. Project designs to protect the soil resource greatly minimize or avoid direct effects, and they are typically short-term. Detrimental effects to the soil resource from motorized use activities would remain at current levels with Alternatives 1 and 2, and potentially decrease with Alternatives 3, 4, and 5 through elimination of cross-country travel and establishment of designated routes. Therefore there are no foreseeable adverse cumulative effects.

Livestock grazing is a use that is managed under proper use guidelines. The actions proposed in this project would not alter the grazing pattern or management of the livestock, and would therefore not include adverse cumulative effects.

Mining activities typically cause disturbance to the soil resource through the removal and/or displacement of vegetation and soil, and long-term commitments for access. Detrimental cumulative effects to the soil resource from future minerals development have the potential to increase at the Forest-level in all alternatives. However at this scale, these effects would be immeasurable. Alternative 4 would offset any effects through the beneficial consequences of eliminating motorized trails through Botanical Areas and areas with serpentine soils, in addition to the elimination of cross-country travel in Alternatives 3, 4, and 5.

The greatest recreation effects to soil productivity are typically tied to activities involving roads, trails, campgrounds, and dispersed sites. These are areas that result in varying levels of total soil resource commitment to those activities. Varying levels of detrimental soil disturbance can also occur from motorized recreation activities off-roads and trails. Detrimental effects to the soil resource from motorized use activities would remain at current levels with Alternatives 1 and 2, and potentially decrease with Alternatives 3, 4, and 5 through elimination of cross-country travel and establishment of designated routes. Therefore there are no foreseeable adverse cumulative effects. Additional effects would be offset by the elimination of motorized trails through Botanical Areas and areas with serpentine soils in Alternative 4. Cumulative effects would also potentially be offset by eliminating off-road parking for dispersed camping beyond 300 feet from designated roads in Alternatives 2, 3, 4, and 5.

2. Aquatic Conservation Strategy

Effects of motorized vehicle use on the Aquatic Conservation Strategy Objectives associated with the Northwest Forest Plan

Changes in this section between FEIS and DSEIS:

- Discussion of the relationship between ACS Objectives and POC Management

The Aquatic Conservation Strategy (ACS) was designed to facilitate the management and restoration of aquatic ecosystems within lands covered by the Northwest Forest Plan (1994). Specifically, the strategy is intended to protect anadromous fish habitat on federal lands within the range of Pacific Ocean anadromy. It is assumed that implementation of the ACS provides protection for all aquatic species present on the Rogue River-Siskiyou National Forest.

According to the Northwest Forest Plan Standards and Guidelines, the ACS was developed to improve and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The four primary components of the ACS are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems; they include: 1) Riparian Reserves; 2) Key Watersheds; 3) Watershed Analysis; and 4) Watershed Restoration.

Riparian Reserves are established as a component of the Aquatic Conservation Strategy, designed primarily to restore and maintain the health of aquatic systems and their dependent species. Riparian Reserves also help to maintain riparian structures and functions and conserve habitat for organisms dependent on the transition zone between riparian and upland areas.

a. Background

Riparian Reserves include lands along all streams, lakes, ponds, wetlands, unstable areas, and potentially unstable areas that are subject to special Standards and Guidelines designed to conserve aquatic and riparian-dependent species. Standards and Guidelines apply to activities in Riparian Reserves that may otherwise retard or prevent attainment of Aquatic Conservation Strategy (ACS) objectives, as defined in the 1994 ROD.

Widths for Riparian Reserves necessary to ensure ACS objectives for different waterbodies are established based on ecological and geomorphic factors. Widths are typically one site potential tree height (150 feet for the Rogue River portion of the Forest (see RRNF White Paper #36), and 175 feet for the Siskiyou portion of the Forest (unless site-specially determined at the project scale), along each side of stream channels. Widths are twice this distance along fish bearing streams. These widths are designed to provide a high level of protection to fish and riparian habitats.

Key Watershed designation is an additional component of the ACS that is applied to watersheds that contain at-risk fish species or anadromous stocks and that provide high quality water and fish habitat.

b. Compliance with Riparian Reserve Standards and Guidelines

The analysis of the existing conditions of the affected sub-watersheds relative to Riparian Reserve Standards and Guidelines is presented below for all alternatives considered in detail (1994 NWFP ROD, pages C-31 through C-39). The Recreation Standards and Guidelines were reviewed as being applicable relative to the types of actions being proposed under this project.

Recreation Management

RM-1. New recreational facilities within Riparian Reserves, including trails and dispersed sites, should be designed to not prevent meeting Aquatic Conservation Strategy objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within Riparian Reserves, evaluate and mitigate impact to ensure that these do not prevent, and to the extent practicable contribute to, attainment of Aquatic Conservation Strategy objectives.

RM-2. Adjust dispersed and developed recreation practices that retard or prevent attainment of Aquatic Conservation Strategy objectives. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy.

RM-3. Wild and Scenic Rivers and Wilderness management plans will address attainment of Aquatic Conservation Strategy objectives.

Table III-9. Evaluation of Applicable NWFP Riparian Reserve Standards and Guidelines

Standard and Guideline	No Action Alternative and Alternative 2	Alternatives 3, 4, and 5
RM-1	No new trails would be constructed within Riparian Reserves	No new trails would be constructed within Riparian Reserves
RM-2	No opportunity to adjust practices would be taken at this time	Opportunities to correct problem areas within Riparian Reserves are captured by reducing motorized use in some areas
RM-3	Not Applicable	Not Applicable

ADDED:

Management of Port-Orford-cedar and *Phytophthora lateralis*

Direction for Port-Orford-cedar (POC) management on the Rogue River–Siskiyou National Forest is described in the Record of Decision (ROD) and Land Resource Management Plan (LRMP) Amendment for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI 2004). This decision is consistent with other elements of the “Siskiyou National Forest Land and Resource Management Plan” (USDA 1989) including amendments made April 13, 1994 known collectively as the Northwest Forest Plan (NWFP) (USDA and USDI 1994b). This amendment does not change any Standards and Guidelines of the Northwest Forest Plan, nor does it significantly reduce protection for late-successional or old-growth forest related species, or reduce protection for aquatic ecosystems (USDA, USDI 1994b) (USDA 2004).

c. Consistency with Aquatic Conservation Strategy for Action Alternatives

The Northwest Forest Plan requires project consistency with ACS with specific reference to nine ACS Objectives. Below, is a summation of the environmental analysis regarding consistency with the elements and components of the ACS Objectives (ACSOs). Additional discussion and rationale may be found in analysis documented under other issues in this Chapter including soils, hydrology, water quality, invasive pathogens, fisheries, and terrestrial wildlife.

ADDED:

Under the guidance of the POC ROD, the Forest Service would also be proactive in making extra efforts to prevent infestation of currently uninfected watersheds (USDA-FS USDI-BLM 2004). The analysis in the FSEIS, Management of Port-Orford-cedar in Southwest Oregon indicates all significant ecological functions for POC, including those relating to aquatic health, will be retained under the POC ROD. In short, the POC ROD provides managers with a suite of PL control measures that will provide for the continued ecological function of POC, and for meeting the goals of the ACS. (USDA, USDI 2004)

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

Hydrologic analysis of vehicle travel route changes in each of the 6th field watersheds affected shows that none of the Action Alternatives would result in measurable change over the existing condition at the watershed scale. Since effects lessen as drainage size increases, it is reasonable to conclude that effects at the landscape-scale are also undetectable. In addition, alternatives largely occur in headwater areas upstream of high value fish habitat. Thus, no measurable effects to fish populations or habitat are expected. Regardless of which alternative is selected, future land management actions would be designed to emphasize the protection or enhancement of aquatic systems in accord with ACS objectives.

Objective 2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

Proposed changes to motor vehicle travel under the Action Alternatives would have no detectable effect on spatial and temporal connectivity due to their small size compared to the subwatershed and larger scale and due to their location along small or ephemeral streams and ridgelines. Vehicle routes on gravel or native road surfaces generally do not alter connectivity. Extensive roading within a watershed may alter temporal connectivity by increasing peak flows however; hydrologic analysis for this project shows that the proposed changes are too small to have an effect that is detectable over the existing condition. From a fisheries perspective, no new passage barriers would be created, and all current passage barriers would remain following implementation of any alternative.

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

The existing condition alternative contains some roads within Riparian Reserves that are or have the potential to contribute sediment to streams and generate localized erosion. Action Alternatives provide for better administration to prevent future problems that are likely to develop as human population increases in southwestern Oregon. Alternatives 3, 4, and 5 address some known local resource problems. Mitigation measures under all Action Alternatives provide for monitoring that would identify and repair road-related damage to aquatic resources. Since none of the alternatives identify road use or construction where vehicle use is not currently occurring, the Action Alternatives represent an adaptive approach to improving existing conditions including those affecting aquatic resources.

Objective 4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

In general, all alternatives would maintain current water quality conditions on the forest, as most alternative components merely change the use (i.e., type of vehicle) designation on an existing route or routes.

Accordingly, attributable and measurable changes to water quality conditions are not expected with the implementation of any alternative. Elimination of motorized travel on Trails #1169 and #1173 may help to attenuate sediment input at low water stream crossings on Lawson Creek and the Illinois River, however, even in this case, the action would undetectably contribute to water quality improvement and the receiving waters would remain impaired for temperature. Improvement of the Forest's unpaved road system falls into the realm of "Best Management Practices"; a recognized set of management actions that collectively benefit aquatic resources if consistently applied over a large area. Action Alternatives and mitigating measures are consistent with Best Management Practices.

Objective 5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

Implementation of any alternative would not appreciably alter the sediment regime within any watershed or overall at the subwatershed scale. Watersheds within the boundaries of the Rogue River-Siskiyou National Forest tend to be heavily roaded. This characteristic is largely attributed to historical level of timber harvest that occurred on the Forest. As discussed under Objectives 1 and 4, Action Alternative proposals alone affect too small a portion of the road system to have a detectable effect on sediment at the watershed scale.

Objective 6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

None of the alternatives would alter in-stream flows on the Forest. All alternatives are largely composed of alterations to use designations on existing travel routes. As such, no measurable changes to runoff patterns or stream flows are expected.

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

See response to Objective #6. Some of the affected roads contain numerous stream crossings, occur in the vicinities of unstable areas, or are within Riparian Reserves. The existing condition of some roads may be causing localized damage in Riparian Reserves that would not be detectable at a subwatershed level. Monitoring of these areas as proposed under mitigating measures would allow road related damage to be documented and repaired.

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

While the POC Risk Key provides vegetation treatments as a recommended strategy to prevent the spread of *Phytophthora lateralis*, roadside sanitation is not a component of any alternative being analyzed as part of this project. Thus, no alteration of riparian vegetation would occur regardless of which alternative is implemented.

Objective 9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

Implementation of any alternative would result in negligible effects to aquatic biota and habitat across the forest. In general, the actions included within the alternatives are related to changes in use designation on various routes across the Forest. Adverse impacts to aquatic biota and habitats related to the existing road system would continue to occur regardless of the alternative selected. These impacts include sedimentation, alteration of runoff, fragmentation of aquatic habitats, and increased risk of chemical pollution (Gucinski et al. 2001, Trombulak and Frissell 2000).

As an overall conclusion, the effects associated with all alternatives, either directly, indirectly, or cumulatively are not likely to retard or prevent attainment of neither the Aquatic Conservation Strategy nor the nine ACS objectives, at the site, watershed, or landscape scales.

3. Air Quality - Vehicle Emissions

Effects of motorized vehicle use air quality

Will motorized vehicle use affect air quality or human health via vehicle emissions?

Designation of roads, trails, and areas could affect air quality on the Rogue River-Siskiyou National Forest. Possible contributing sources include motorized vehicle emissions or toxic air contaminants from emissions.

a. Background

Air quality is a concern for southwestern Oregon valleys where surrounding coastal, Cascade, and Siskiyou mountain ranges tend to hold in particulates produced by industrial plants, woodstoves, motor vehicles, outdoor debris burning, wildfire, windblown dust, and other sources. In particular, the air quality in the Rogue Valley has suffered largely because of winter temperature inversions trapping particulate matter and other pollutants (Jackson County 2008).

Meteorological Factors

Topography and weather patterns determine the extent that airborne particulate matter accumulates within a given area. Weather patterns strongly influence air quality through pollutant dispersion.

The primary weather conditions that affect dispersion are atmospheric stability, mixing height, and transport wind speed. Atmospheric stability refers to the tendency for air to mix vertically through the atmosphere and mixing height is the vertical distance through which air is able to mix.

The transport wind speed is a measure of the ability to carry emissions away from a source horizontally. These factors determine the ability of the atmosphere to disperse and dilute the released emissions (USDA 2008). On the RRSNF, the predominant wind direction is from a western inland flow (USDA 2008).

While air quality is an important consideration for actions occurring in southern Oregon, the issue has not proven to be a major concern along high elevation topographic features above 5,000 feet. Much of the Cascades and high elevation peaks are located above most inversion layers that form in southern Oregon and northernmost California. As an exposed feature located at high elevation where winds can be strong, air emissions are readily dispersed. Furthermore, the majority of emissions associated with these high elevation areas are unlikely to contribute to inversion related air quality in the southern Oregon (USDA 2004).

Air Quality Standards

National Ambient Air Quality Standards (NAAQS) were established by the Clean Air Act (CAA) of 1963 and subsequent amendments (42 USCA 7401 to 7671(q)). The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The CAA and its implementing regulations also establish air pollution emission standards for a variety of stationary sources. The Environmental Protection Agency (EPA) retains oversight authority, but has delegated enforcement of the CAA to the states. In Oregon, the Department of Environmental Quality (ODEQ) acts as the lead agency. The State, in turn, is required to develop and administer air pollution prevention and control programs. State standards must be either the same as, or more stringent than the CAA standards (USDA 2004).

Federal and State ambient air quality standards have been established for six common pollutants, also referred to as "criteria" pollutants.

b. Effects Mechanisms and Analysis Framework

Vehicle Emissions

The EPA has set standards for emissions of non-road engines and vehicles. The standards for emissions of oxides of nitrogen (NO_x), hydrocarbons (HC), and carbon monoxide (CO), are to ensure compliance with the Clean Air Act, and to regulate those emissions that contribute significantly to the formulation of ozone and carbon monoxide. Compliance with these standards requires manufacturers to apply existing gasoline or diesel engine technologies to varying degrees, depending on the type of engine (EPA 2002).

Before emissions controls on automobiles became significantly more effective, there was little concern about emissions from small engines; today, however, their relative contribution to air-quality is significant. This is because small engines, especially 2-stroke models (many of which are being phased out), do not burn fuels completely; thus their emissions contain the resulting by-products of incomplete combustion, including NO_x, sulfur dioxide (SO₂), CO, O₃, aldehydes, and extremely persistent polycyclic aromatic hydrocarbons (PAH) (USDI 2007). In fact, a very small, 2-stroke engine running for 2 hours emits the same amount of hydrocarbons as driving 10 cars for 250 miles (CEPA 2008).

While some pollutants, such as CO, are directly emitted, others are formed in the atmosphere from precursor emissions. Such is the case with ozone, which is formed in the atmosphere when Reactive Organic Gases (ROG) and NO_x precursor emissions react in the presence of sunlight. Particle Matter (PM), which includes PM₁₀ and PM_{2.5}, is a complex pollutant that can either be directly emitted or formed in the atmosphere from precursor emissions. PM precursors include NO_x, ROG, SO_x, and ammonia (NH₃) (USDI 2007).

OHV emissions also contain a variety of heavy metals, including zinc, copper, nickel, chromium, and lead. Concentrations of lead particles along roads have been correlated with traffic volumes. Lead concentrations have been found to diminish notably within a few hundred feet of road edges. Although heavy metals from gasoline have declined due to control policies, they persist in soils and continue to move through the environment when contaminated soils are dislodged (USDI 2007).

Pollutants emitted from exhaust can also cause a variety of impacts on vegetation. Carbon dioxide may function as a fertilizer and cause changes to in plant species composition. Nitrogen oxides also may function as fertilizers, producing similar effects along roadsides. Sulfur dioxide, which can be taken up by vegetation, may result in altered photosynthetic processes. In some species, these same pollutants can also cause leaf injury, reduced growth, and death (USDI 2007).

Vehicle emissions on the Forest are most concentrated along secondary highways (County and State). The Forest does not have jurisdiction on vehicle use levels or emissions in any of these concentrated motorized areas. Motorized vehicle use under the Forest's jurisdiction is more localized to system roads and motorized trails, which generally have less concentrated use where wind dispersion is commonly sufficient to avoid air quality concerns.

Toxic Air Contaminants

The 1990 amendment to the Clean Air Act included a list of 189 pollutants identified as hazardous to human health. These pollutants are known, or have the potential, to cause cancer, mutations, be toxic to nervous tissue, or reproductive dysfunction. Toxic air contaminant is defined as an, “air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health”. Toxic air contaminants are usually present in minute quantities in the ambient air; however, their high toxicity may pose a threat to public health even at very low concentrations. In general, for those toxic air contaminants that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and where State and federal governments have set ambient air quality standards (USDA 2008).

The Oregon Department of Environmental Quality (ODEQ) has substantially increased its knowledge about toxic air contaminants, and the data indicate that control efforts have been effective in reducing public exposures and associated health risks. In 2003, the ODEQ established the Oregon Air Toxics Program to systematically identify air toxics and set up methods to reduce risks to communities throughout the state (ODEQ Policy 2008).

In August of 2006, working with the Air Toxics Science Advisory Committee, ODEQ determined Ambient Benchmark Concentrations (ABCs) for 51 air toxics. The committee is helping the ODEQ draft guidance for using ABCs to evaluate air toxics problems, design emissions reductions efforts and measure progress. The proposed future gradual phase-in of control strategies will likely continue to result in lower exposures for Oregon’s citizens (ODEQ Analysis 2008).

The majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds. The top 12 air toxics of concern in Oregon include: acetaldehyde, acrolein, arsenic compounds, benzene, 1,3-butadiene, chromium and compounds, diesel particulate matter (PM), formaldehyde, naphthalene, polycyclic organic matter (POM), 1, 1, 2, 2, tetrachloroethane, tetrachloroethylene (Perc). These 12 compounds pose the greatest known health risks based on air quality data, or concentration estimates.

c. Direct and Indirect Effects of Alternatives

Vehicle Emissions

Although all alternatives would result in vehicle emissions and the production of pollutants such as PM₁₀ and PM_{2.5}, CO, NO_x, VOCs, and heavy metals, the direct effects of the **No Action Alternative** would be negligible. Effects of this alternative would neither increase nor decrease current levels of vehicle emissions. **Alternative 2** would have the same effects as the No Action Alternative, except that there is a potential to reduce vehicle emissions by closing cross-country travel.

The direct effects of **Alternative 3 (Proposed Action)** would be insignificant. This alternative would only construct two new miles of motorized trails. This increase in trail miles would be so minute, in comparison to the existing miles of motorized roads, trails, and areas that there would be virtually no measurable increase in vehicle emissions. Furthermore, this alternative would remove 275,000 acres of cross-country motorized use, thus reducing the amount of vehicle emission produced as a whole, as well as compensating for the added emissions created by the proposed two new miles of trails.

The direct effects of **Alternative 4** would be insignificant. Alternative 4 would also remove 275,000 acres of cross-country motorized use, thus reducing vehicle emissions. Additionally, Alternative 4 would slightly further reduce vehicle emissions by prohibiting motor vehicle use in Inventoried Roadless Areas and, except on existing roads, in Botanical and serpentine areas.

The direct effects of **Alternative 5** would be insignificant. This alternative would only construct 1.5 miles of new motorized trails. This increase in trail miles would be so minute, in comparison to the existing miles of motorized roads, trails, and areas that there would be virtually no measurable increase in vehicle emissions. Furthermore, this alternative would remove 275,000 acres of cross-country motorized use, thus reducing the amount of vehicle emission produced as a whole, as well as compensating for the added emissions created by the proposed two new miles of trails.

There are two indirect effects of all the Action Alternatives, both would be unsubstantial. The first effect is that the alternatives could indirectly impact vegetation along roads and trails. The second effect is that the alternatives could contribute to the formation of ozone in the atmosphere.

Both of these indirect effects would have no measurable difference between the No Action Alternative and Alternative 2. The Proposed Action and Alternative 5 would possess slightly less indirect effects, while Alternative 4 would hold the lowest associated indirect effects from vehicle emissions.

Contaminants

Although all alternatives would result in vehicle emissions of toxic air contaminants, the direct effects of the **No Action Alternative and Alternative 2** would be negligible. Effects of these two alternatives would neither increase nor decrease current levels of toxic air contaminants produced by vehicle emissions. **Alternative 2** would have the same effects as the No Action Alternative, except that there is a potential to reduce vehicle emissions by closing cross-country travel.

Direct effects of the **Alternative 3 (Proposed Action)** would be insignificant. This alternative would only construct two new miles of motorized trails. This increase in trail miles and would be so minute, in comparison to the existing miles of motorized roads, trails, and areas that there would be virtually no measurable increase in toxic air contaminants via vehicle emissions. Furthermore, the Proposed Action Alternative would remove 275,000 acres of cross-country motorized use, thus reducing the amount of toxic air contaminants produced as a whole, compensating for the added toxic air contaminant emissions created by vehicles operating on the proposed two new miles of trails.

As with the Proposed Action, the direct effects of **Alternative 4** would be negligible. Alternative 4 would also remove 275,000 acres of cross-country motorized use, thus reducing toxic air contaminants emitted from vehicles. Additionally, Alternative 4 would slightly further reduce vehicle emissions by prohibiting motor vehicle use in Inventoried Roadless Areas and, except on existing roads, in botanical and serpentine areas.

As with Alternatives 3 and 4, the direct effects of **Alternative 5** would be negligible. Alternative 5 would also remove 275,000 acres of cross-country motorized use, thus reducing toxic air contaminants emitted from vehicles.

The indirect effects of all the alternatives for contaminants would be unsubstantial and could indirectly impact users who come in contact with toxic air contaminants and later discover they have cancer or give birth to children with birth defects. Although, considering the very short duration of exposure to toxic air contaminants, the likelihood of users experiencing these effects later in life as a result of riding on the RRSNF is quite low. These indirect effects would have no measurable difference between the No Action Alternative and Alternative 2. Alternatives 3 and 5 would possess slightly less indirect effects, while Alternative 4 would hold the lowest associated indirect effects stemming from toxic air contaminants associated with the alternatives.

d. Cumulative Effects

Cumulative effects of motorized travel on air resources are unique in that past impacts to air quality are not usually evident. The emissions associated with motorized travel would be cumulative only with concurrent local emission sources. Since motorized emission sources on the Forest are localized and transient, actual cumulative combinations of emissions are minor and do not result in significant effects.

The cumulative effects of toxic air contaminants produced by motor vehicle emissions would result in negligible differences than those currently experienced. Toxic air contaminants emitted from motor vehicles driving on the forest transportation system combined with toxic air contaminants produced by the implementation of other projects, such as prescribed burning and harvest operations, could have cumulative effects. Implementation of prescribed burns and harvest operations on other federal, state, or private lands could contribute to toxic air contaminants, contributing to health risks. It is not possible to predict the amount of contaminants contributed by these sources, although they are not likely to be significant.

4. Air Quality - Dust and Asbestos

Changes in this section between the FEIS and this DSEIS:

- | |
|--|
| <ul style="list-style-type: none">• Revised section to clarify Asbestos effects analysis |
|--|

Effects of motorized vehicle use on air quality via dust and naturally occurring asbestos

Designation of roads, trails, and areas could affect air quality on the Rogue River-Siskiyou National Forest. Possible contributing sources include motorized vehicle disturbance to soils creating dust or effects from serpentine rocks or soils containing asbestos.

a. Background

Topography and weather patterns determine the extent that airborne particulate matter accumulates within a given area. Weather patterns strongly influence air quality through pollutant dispersion. The primary weather conditions that affect dispersion are atmospheric stability, mixing height, and transport wind speed.

Atmospheric stability refers to the tendency for air to mix vertically through the atmosphere and mixing height is the vertical distance through which air is able to mix. The transport wind speed is a measure of the ability to carry emissions away from a source horizontally. These factors determine the ability of the atmosphere to disperse and dilute the released emissions (Jackson County 2008).

The physical shape of landscapes interacts with and controls some weather patterns that influence particulate dispersion. On a local or regional basis, the air flow in southern Oregon is channeled by mountain ranges. On the RRSNF, the predominant wind direction is from a western inland flow (USDA 2008).

b. Effects Mechanisms and Analysis Framework

Fugitive Dust

Atmospheric dust arises from the mechanical disturbance of granular material exposed to the air. Dust generated from open sources is termed “fugitive” because it is not discharged to the atmosphere in a confined flow stream.

Fugitive road dust can be a result of motor vehicle use on dry road surfaces. The force of wheels moving across the native surfaces causes pulverization of surface material. Dust is lofted by the rolling wheels as well as by the turbulence caused by the vehicle itself. This air turbulence can persist for a period of time after the vehicle passes. Surfaced roads produce a relatively smaller amount of dust than do native surface roads, especially during dry weather.

The quantity of dust emissions from a given segment of native surface road varies linearly with the volume of traffic. Variables which influence the amount of dust produced include the average vehicle speed, the average vehicle weight, the average number of wheels per vehicle, the road surface texture, the fraction of road surface material which is classified as silt, and the moisture content of the road surface (EPA 2002).

The potential drift distance of particles is governed by the initial injection height of the particle, the terminal settling velocity of the particle, and the degree of atmospheric turbulence. Theoretical drift distance has been computed for fugitive dust emissions. Results indicate that for a typical mean wind speed of 10 mph, particles larger than about 100 microns in aerodynamic diameter are likely to settle out within 20 to 30 feet from the edge of the route or other point of emission. Particles that are 30 to 100 microns in diameter are likely to undergo impeded settling. These particles, depending upon the extent of atmospheric turbulence, are likely to settle within a few hundred feet of the route. Smaller particles, (particularly Inhalable Particles, PM₁₀ and PM_{2.5}), have much slower gravitational settling velocities and are much more likely to have their settling rate retarded by atmospheric turbulence and dispersed over much greater distances from the source (EPA 2002).

Fugitive dust is the primary contributor to elevated levels of particulate matter. Effects of airborne particulates depend on the size of the particle. Larger dust particles tend to settle out of the air and are not considered to have a significant health effects. However, both long-term and short-term exposure to smaller particulate matter, 10 microns in diameter or less, are inhalable and pose increased health risks associated with respiratory illnesses. These finer particles can deposit deep in the lungs, causing early death in people with existing heart and lung disease. These effects tend to be most acute in the elderly and other at risk populations (MASA FEIS 2004).

Naturally Occurring Asbestos

Asbestos is a term used for several types of fibrous minerals that occur naturally in the environment. The two general types of asbestos are chrysotile (also known as serpentine asbestos) and amphibole. Chrysotile has long, flexible fibers, and is the kind most commonly used in commercial products. Amphibole fibers are brittle, have a rod or needle shape, and are less common in commercial products. All forms of asbestos fibers can cause cancer and are classified as known human carcinogens; however it is not known with certainty how much exposure to asbestos can result in a person developing an asbestos-related disease. Specific information on the health effects of asbestos can be found in the Toxicological Profile for Asbestos by the Agency for Toxic Substances and Disease Control (2001), which can be found on their website: www.atsdr.cdc.gov/asbestos/index.html.

Naturally occurring asbestos (NOA) is commonly found in serpentinite and other ultramafic rock formations, as well as the soils where these rock types are located. Not all of these rock formations, however, contain NOA; they only have the potential to contain asbestos, and require environmental testing to determine presence.

Natural weathering and human activities may disturb NOA-bearing rock or soil and release mineral fibers into the air, where they can remain airborne or in the soil for a long time. Asbestos fibers do not dissolve or evaporate, and are resistant to heat, fire, chemicals and biological degradation (Agency for Toxic Substances and Disease Registry 2005). NOA that is not disturbed poses little, if any, health risk. Airborne asbestos fibers may pose a health hazard because of the potential risks associated with inhalation of the fibers.

Motor vehicles traveling across serpentine rock and soils have the potential to create fugitive dust containing asbestos fibers. There is no health threat if NOA remains undisturbed and does not become airborne and inhaled (EPA 2008). However, if asbestos fibers become air-borne and are inhaled, they can penetrate body tissues and remain in the tissue of the lungs and abdominal cavity. The fibers that remain in the body are thought to be responsible for asbestos-related diseases. The illnesses caused by asbestos may not be observed for twenty or more years. The most common diseases caused by inhaling asbestos are asbestosis, lung cancer, and mesothelioma.

The risk of disease depends upon the intensity and duration of exposure to asbestos. State and federal health officials consider all types of asbestos to be hazardous. Any exposure to a carcinogenic compound involves some risk; therefore, no “safe” exposure level has been established for asbestos. It is not yet known how many fibers are needed to cause cancer or other lung disease. Available evidence supports that exposure to non-asbestiform fragments is not likely to produce a significant risk of developing asbestos related disease (USGS 2001).

There are public safety concerns from routes that traverse serpentinite and other ultramafic rock formations and associated soils, which could potentially contain naturally occurring asbestos (NOA). Disturbances from motorized traffic on these geology types and soils have the potential to expose and disaggregate the mineral fibers from rock and soils and release them into the air, making it then possible to inhale.

On the Rogue River-Siskiyou National Forest there are approximately 324,000 acres of ultramafic/serpentinite bedrock and soils, across the Powers, Gold Beach, Wild Rivers, and Siskiyou Mountains Ranger Districts (see Soils Affected Environment discussion, Other Issue 1). Areas underlain by these geology and soil types were delineated and are shown in Map III-2. The location of motorized roads and trails on these areas highlight the areas of concern regarding potential naturally occurring asbestos. If there are proposed changes to routes that would increase disturbance, such as creation of new trails or changing an administratively closed road to a motorized trail, then site-specific analysis, including testing the ground surface material will be done to determine if the ground surface poses a health risk due to presence of asbestiform fibers.

The following text provides a summary of how and why each NOA Geology and Soil Indicator is used to evaluate the effects on naturally occurring asbestos.

NOA Geology & Soil Indicator 1: Acres of the forest designated open to cross-country motor vehicle use that traverse serpentine/ultramafic geology and soils that have the potential to contain NOA.

The area designated open to cross-country motor vehicle use is used as a general measure of potential effects to geology types and soils that have the potential to contain NOA. Motorized cross-country travel can pioneer new trails that can disturb and expose soils and rock and cause them to break down and become more susceptible to becoming airborne particles. Due to the sparse nature of vegetation on many serpentine areas, these areas can be particularly easy to access for cross-country travel on the forest.

NOA Geology & Soil Indicator 2: Miles of changed routes displayed by miles in areas identified as having the potential to contain naturally occurring asbestos.

Changes to the existing NFTS of roads and trails (this can include additions or deletions of travel routes and changing the vehicle class and season of use) represent where locations would experience increased or decreased disturbance that could affect exposure of fibers to the potential to become airborne.

NOA Geology & Soil Indicator 3: Miles of changed routes open to OHV use by miles in areas identified as having the potential to contain naturally occurring asbestos.

Similar to NOA Indicator 2, except this specifically breaks out the locations that allow OHV use. Users of OHV's are typically located closer to the road surface and more directly exposed to dust generated by vehicles due to open cabs.

Table III-10, on the next page, shows the current condition of the Rogue River-Siskiyou National Forest transportation system of roads and trails, in relation to the location of geology and soils that have the potential to contain naturally occurring asbestos, forest-wide. The NOA Indicators will focus on the site-specific proposed changes to this existing condition that can impact exposure of NOA based on each Alternative. A comparison of alternatives at this Forest-Wide scale can be found at the end of this report in the Comparison of Alternatives section.

Table III-10. Existing condition of the NFS roads and trails in relation to the location of geology and soils that have the potential to contain NOA – Rogue River-Siskiyou NF.

NOA Geology & Soils in relation to the current NFTS Forest-Wide	Existing Condition
Acres of forest designated open to cross-country motor vehicle use that cross through potential NOA geology and soils	127,000
Approximate miles of open, unpaved, motorized routes	509
Approximate miles of open, aggregate-surfaced, motorized routes	318
Approximate miles of open, native-surfaced, motorized routes	191
Approximate miles of open, aggregate-surfaced, motorized routes open to OHV use	310
Approximated miles of open, native-surfaced, motorized Roads open for OHV use	191
Approximate miles of open, native-surfaced, motorized Trails open for OHV use	37

c. Direct and Indirect Effects of Alternatives

Fugitive Dust

Direct effects of the **No Action Alternative and Alternative 2** would be negligible. The current condition of motorized vehicles traveling on native surfaces and gravel roads does pose a risk of stirring up fugitive dust that could pose health risks and reduce visibility. However, these two alternatives would neither exacerbate nor improve current risks associated with fugitive dust conditions. **Alternative 2** would remove 275,000 acres of cross-country motorized use, thus having a potential to reduce the health risks and visibility issues derived from fugitive dust.

Under **Alternative 3**, the direct effects would also be negligible. This alternative would only construct two new miles of motorized trails. This increase in trail miles and would be minor, in comparison to the existing miles of motorized roads, trails, and areas that there would be virtually no additional measurable risks from fugitive dust. Furthermore, Alternative 3 would remove 275,000 acres of cross-country motorized use, thus reducing the health risks and visibility issues derived from fugitive dust, as well as compensate for the added dust created by the proposed two new miles of trails.

As with the Proposed Action, the direct effects of **Alternative 4** would also be negligible. Alternative 4 would also remove 275,000 acres of cross-country motorized use, thus reducing the health risks and visibility issues derived from fugitive dust. Additionally, Alternative 4 would further reduce fugitive dust by prohibiting motor vehicle use in Inventoried Roadless Areas and, except on existing roads, in Botanical and serpentine areas.

Under **Alternative 5**, the direct effects would also be negligible. This alternative would only construct 1.5 miles of new motorized trails. This increase in trail miles and would be minor, in comparison to the existing miles of motorized roads, trails, and areas that there would be virtually no additional measurable risks from fugitive dust. Furthermore, Alternative 5 would remove 275,000 acres of cross-country motorized use, thus reducing the health risks and visibility issues derived from fugitive dust, as well as compensate for the added dust created by the proposed new trail.

There are two indirect effects of all alternatives for fugitive dust. The first indirect effect is that suspended dust particles in the air could linger in the area or drift to areas where it could be inhaled by other users. The second indirect effect is that irritation, nuisance, or health risks from fugitive dust associated with the alternatives could result in both motorized and non-motorized users choosing no longer recreate in dust prone, dry, areas where motorized vehicles create dusty conditions. Motorized and non-motorized users would likely be displaced and begin to concentrate in areas where vehicles would not stir up high concentrations fugitive dust. Both of these indirect effects have no measurable difference between the No Action Alternative and Alternative 2. Although qualitative, Alternatives 3 and 5 would possess slightly less indirect effects and Alternative 4 would have the lowest associated effects.

Naturally Occurring Asbestos

The direct/indirect effects of **Alternative 1 – No Action** would be no change in disturbance to potential NOA over current condition with selection of this alternative. These effects are described in general terms in the ‘Affected Environment’ and ‘Effect Mechanisms and Analysis Framework’ discussions in Soils, Other Issue 1, and above. This Alternative would allow cross-country travel across ultramafic/serpentine bedrock and soils to continue, where not otherwise closed, so there would be no change to possible exposure.

Driving over these areas would continue to break up serpentine rocks and stir up dust, potentially releasing NOA into the air where it could be inhaled. When conditions are dry and dust is generated from motorized activities on routes and areas with serpentine, people could be exposed to NOA. There would be no change to the NFS of roads and trails, so there would be no change to risk of exposure.

Alternative 2 would eliminate motorized cross country travel across the forest, which would decrease disturbance in ultramafic and serpentine geology and soils that have the potential to contain NOA, outside the NFS of roads and trails. The existing Woodruff OHV use area is not underlain by geology or soils with the potential to contain NOA.

Limiting off road access for dispersed camping and day use would decrease disturbance in ultramafic and serpentine geology and soils.

There would be no change to the NFS of roads and trails, so there would be no change in disturbance to potential NOA in regards to the NFS of roads and trails, with selection of this alternative.

Alternative 3 would eliminate motorized cross country travel across the forest, which would decrease disturbance in ultramafic and serpentine geology and soils that have the potential to contain NOA.

Table III-11, below, shows the changes being proposed in Alternative 3 that would affect areas overlying potential NOA geology and soils. Most proposed changes would result in a decrease of disturbance from motorized traffic. The only actions that would increase disturbance from motorized traffic involve conversion of ML 1 roads to motorized trails because use could be concentrated on select routes. Site-specific analysis that includes testing the ground surface material is planned on these routes to determine if the ground surface poses a health risk due to presence of asbestiform fibers.

Table III-11 Alternative 3 Motorized Routes Surface Type within NOA Soils.

Alt. 3 Elements on potential NOA geology and soils	Aggregate-surfaced route miles	Native-surfaced route miles
Trails that would prohibit motorized use	0 mi.	8 mi.
Non-paved roads that would prohibit mixed use	0 mi.	9 mi.
Roads that would be closed to public use yearlong	0 mi.	14 mi.
ML1 roads proposed for conversion to motorized trails	4 mi.	5 mi.

Specific ML1 Roads that would be converted to motorized trails that are located on potential NOA geology and soils are located on the Gold Beach and Wild Rivers Ranger Districts. The Gold Beach Ranger District roads total approximately 6 miles, have a mix of aggregate and native surfacing, and include portions of the 3313110, 3313103, NS3313, 3680195, 3680190, 3680220, MI3680353, and 3680351 roads. The Wild Rivers Ranger District roads total approximately 3 miles, are native surfaced, and include portions of the 2509604 and 4402494 roads.

Alternative 4 would eliminate motorized cross country travel across the forest, which would decrease disturbance in ultramafic and serpentine geology and soils that have the potential to contain NOA.

Table III-12 Alternative 4 Motorized Routes Surface Type within NOA Soils.

Alt. 4 Elements on potential NOA geology and soils	Aggregate-surfaced route miles	Native-surfaced route miles
Trails that would prohibit motorized use	0 mi.	34 mi.
Non-paved roads that would prohibit mixed use	0 mi.	6 mi.
Roads that would be closed to public use yearlong	2 mi.	35 mi.
ML1 roads proposed for conversion to motorized trails	0 mi.	0 mi.

There would be no changes to the NFS roads and trails with Alternative 4 that would result in potentially increasing disturbance to potential NOA geology and soils through increased motorized use.

Alternative 5 would eliminate motorized cross country travel across the forest, which would decrease disturbance in ultramafic and serpentine geology and soils that have the potential to contain NOA.

Table III-13, on the next page, shows the changes being proposed in Alternative 5 that would affect areas overlying potential NOA geology and soils. Most proposed changes would result in a decrease of disturbance from motorized traffic. The only actions that would increase disturbance from motorized traffic involve conversion of ML 1 roads to motorized trails because use could be concentrated on select routes. Site-specific analysis that includes testing the ground surface material is planned on these routes to determine if the ground surface poses a health risk due to presence of asbestiform fibers.

Table III-13 Alternative 5 Motorized Routes Surface Type within NOA Soils.

Alt. 5 Elements on potential NOA geology and soils	Aggregate-surfaced route approximate miles	Native-surfaced route approximate miles
Trails that would prohibit motorized use	0 mi.	9 mi.
Non-paved roads that would prohibit mixed use	0 mi.	9 mi.
Roads that would be closed to public use yearlong	0 mi.	14 mi.
ML1 roads proposed for conversion to motorized trails	4 mi.	2 mi.

Specific ML1 Roads that would be converted to motorized trails that are located on potential NOA geology and soils are located on the Gold Beach and Wild Rivers Ranger Districts. The Gold Beach Ranger District roads total approximately 6 miles, have a mix of aggregate and native surfacing, and include portions of the 3313103, NS3313, 3680195, 3680190, 3680220, 3680353, and 3680351 roads. The Wild Rivers Ranger District road totals approximately 0.3 miles, is native surfaced, and includes a portion of the 4402494 road.

Summary

Alternatives 2, 3, 4, and 5 would eliminate motorized cross country travel across the forest, which would reduce the risk of exposure to potential NOA from motorized activities in areas of ultramafic/serpentine bedrock and soils. Eliminating this activity reduces the opportunity for potential NOA to become airborne and potentially inhaled. Over time areas that have been disturbed by cross-country travel may recover, reducing air-borne dust containing serpentine minerals, but rate of recovery depends upon localized soil productivity.

Alternatives 3, 4, and 5 reduce the overall miles of open, motorized roads and trails that cross over ultramafic/serpentine bedrock and soils that have the potential to contain NOA across the forest. Table III-14 displays this difference by alternative. Of the three alternatives, **Alternative 4** poses the lowest risk of all alternatives for inhaling potential asbestos fibers, since motorized vehicles would be eliminated from most serpentine areas except on existing roads.

Table III-14. Motorized Routes that cross areas more likely to contain Naturally Occurring Asbestos across the Rogue River – Siskiyou National Forest.

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Approximate miles of open, unpaved, motorized routes	509	509	492	473	492
Approximate miles of open, aggregate-surfaced, motorized routes	318	318	318	316	318
Approximate miles of open, native-surfaced, motorized routes	191	191	174	157	174
Approximate miles of open, aggregate-surfaced, motorized routes open to OHV use	310	310	310	308	310
Approximated miles of open, native-surfaced, motorized roads open for OHV use	191	191	163	146	163
Approximate miles of open, native-surfaced, motorized Trails open for OHV use	37	37	34	2	31

Table III-15. Summary of the NOA Geology and Soils Indicators, per Alternative.

Elements on potential NOA geology & soils	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Trail – Prohibit Motorized Use	0 mi.	0 mi.	0 mi. – AGG ¹ 8 mi. – NAT ²	0 mi. – AGG 34 mi. – NAT	0 mi. – AGG 9 mi. NAT
Non-Paved Road – Prohibit Mixed Use	0 mi.	0 mi.	0 mi. – AGG 9 mi. – NAT	0 mi. – AGG 6 mi. – NAT	0 mi. – AGG 9 mi. NAT
Close to Public Use Yearlong	0 mi.	0 mi.	0 mi. – AGG 14 mi. – NAT	2 mi. – AGG 35 mi. – NAT	0 mi. AGG 14 mi. – NAT
ML1 Road – Convert to Motorized Trail	0 mi.	0 mi.	4 mi. – AGG 5 mi. – NAT	0 mi.	4 mi. – AGG 2 mi. – NAT

¹AGG: Aggregate-surfaced

²NAT: Native-surfaced.

d. Cumulative Effects

The direct effects of fugitive dust produced by motor vehicles operating on native surfaces and gravel roads would result in only negligible differences than those currently experienced. Fugitive dust particles stirred up from roads and trails, particularly PM₁₀ and PM_{2.5}, combined with other particles produced by the implementation of other projects on the Forest, such as prescribed burning and harvest operations, could have cumulative effects. Implementation of prescribed burns and harvest operations on other federal, state, or private lands, would also contribute to fugitive dust, contributing to respiratory health risks and visibility concerns. It is not possible to predict the amount of toxic air contaminants contributed by these other sources, although they are not likely to be cumulatively significant.

Motor vehicles stirring up asbestos fibers in combination with other activities creating suspended particles in the air could possibly cumulatively add to the effects of air-borne asbestos. The difference in cumulative impacts between alternatives cannot be quantified, and is not predicted to be substantially different. The motorized use designation project is not likely to adversely add to cumulative air-borne asbestos effects from this and other current and foreseeable activities, particularly since no action is being proposed in any alternative that would increase the miles of roads (and therefore possibly increase potential exposure to NOA), above the current condition.

Additionally, the risk can be reduced by actions individuals take to reduce exposure to NOA (see the Agency for Toxic Substances and Disease Registry’s Limiting Environmental Exposure to Asbestos in Areas with Naturally Occurring Asbestos (2001), US EPA’s Naturally Occurring Asbestos: Approaches for Reducing Exposure (2008), and the U.S. Forest Service, Pacific Southwest Region (Region 5) website on naturally occurring asbestos (www.fs.fed.us/r5/noa).

5. Fire Risk

Effects of motorized vehicle use on fire risk

This issue has two parts. The first concerns the potential for various forms of motorized travel that would be allowed under the alternatives to increase the risk of unplanned fire ignitions. The second part concerns the potential effects of motorized use management on the Forest’s ability to suppress a wildland fire.

a. Background

Fire risk is defined as the chance of fire starting as determined by the presence and activity of causative agents. The causative agents for this analysis are limited to motorized vehicles and whether they are legally or illegally operated.

Operating motorized vehicles off designated trails and road systems has been prohibited on many areas of public lands administered by the Rogue River-Siskiyou National Forest since implementation of the Land and Resource Management Plans. In addition, motorized vehicle use is typically restricted during times of high fire danger through the implementation of the Forest's fire restrictions and Forest Closure Order process. Unwanted fire starts from the improper use of motorized off-road vehicles off designated trails and roads are rare. According to RRSNF fire occurrence records, approximately 1% of fire starts have been attributed to equipment⁷ fires over the last twenty years.

Roads and motorized trails provide access for fire suppression and ground-based fire suppression equipment; access to and from water sources, lookouts and helicopter staging areas; fire breaks for fire suppression; and from a safety standpoint, anchor points for pre-positioning firefighting resources and fire line construction.

In planning suppression strategies for fire events lasting several days or weeks, roads and motorized trails provide alternative transportation options. These options play an important role in developing a wider range of strategies, commensurate with management area objectives that address cost-effectiveness and public and firefighter safety.

b. Effects Mechanisms and Analysis Framework

The factors related to the probability for increased fire risk include the numbers of vehicles (frequency) and the potential for ignition. There are generally two potential causes of ignition related to motorized use. These include:

Hot exhaust systems and machine parts: In a forest environment, grass and other fine fuels such as tall grass, may come into contact with exhaust systems. In some cases, this material accumulates on a heat source, either the exhaust system or the brakes. The temperature of the exhaust system can easily reach the ignition point for grass. Fine fuels on the machine may ignite and fall to the ground, initiating a surface fire. Exhaust systems on Class I and III OHVs are typically higher off the ground and do not usually come in contact with grass.

Sparks from the exhaust system: Many muffler systems can produce sparks. While these do not ignite as many fires as direct contact, they are an occasional cause. Spark arresters are an effective means to prevent this type of fire cause.

The mere presence of a vehicle on grass, for example, does not equate to a fire ignition. Environmental factors such as fuel moisture and weather conditions must also be considered.

⁷ "Equipment" fires include vehicles and other heavy equipment such as logging or road building equipment. Fires caused by OHV or standard passenger vehicles are not tracked separately.

Road and motorized trail access are important considerations for fire suppression activities. They provide for a wide array of suppression tactic options. In a wildland fire situation, response time for suppression actions can become a critical factor, especially when human lives are at stake. Roads provide access that allows pre-positioning of firefighting resources in the immediate area. Where roads are present, suppression resources such as engines and hand crews are used. Conversely, helicopter crews and smokejumpers respond to backcountry wildfire incidents where roads are not present.

c. Direct and Indirect Effects of Alternatives

Alternative 4 proposes fewer miles of roads and trails available to the public for motorized use than the current condition (**Alternatives 1 and 2**) and **Alternatives 3 (Proposed Action) and 5**. The potential for various forms of motorized travel that would be allowed under the alternatives to increase the risk of unplanned fire ignitions is currently considered very small. Due to the relatively minor change in miles of roads and trails available for motorized use under each of the alternatives, the change in risk of an ignition is very small between alternatives and is considered too small to be measurable.

All Action Alternatives would maintain the existing roaded access around wildland-urban interface areas. In addition, none of the Action Alternatives would prevent the use of aviation assets, off-road vehicles, or the use of heavy equipment as necessary to initiate the appropriate suppression response for a wildland fire. Therefore, no alternative would create inaccessible areas on the forest.

However, roads and trails not available (prohibited) for public use would still be available for administrative access (including fire suppression). Though the Forest road system may influence the type of suppression activities, it would not affect the number of acres of forest available for fire suppression activity. Regardless of alternative, the number of acres available for fire management activities would remain constant. The alternatives may vary slightly in which resources are used for a particular wildfire, but those differences are too speculative to analyze.

d. Cumulative Effects

This cumulative analysis considers historical fire data on the forest and the influence of road access. It considers the likelihood of effects of the road system on future wildland fires. It also considers the likely increase in population of the surrounding communities. Although changes in the total miles of access may occur in the future as a result of project scale planning, these changes are not foreseeable.

Statistics show that lightning naturally causes most fire ignitions in this region. The second most common fire start is human-caused. As population increases into an area, it may be assumed that there would be a higher chance of wildland fire; however, several other factors must be taken into account. Fires that are started by humans are individual instances and cannot be predicted. Factors in these circumstances also include weather conditions and fuel conditions. Implementation of any of the alternatives would not have any adverse cumulative effects on the ability to take suppression action on wildland fires.

6. Federally Listed Plants, plus FS Sensitive, and NWFP Survey and Manage (S&M) Vascular Plants, Bryophytes, Lichens, and Fungi

Effects of motorized vehicle use on rare, sensitive, S&M, and federally listed botanical species

A Biological Evaluation of the alternatives described in detail in Chapter II was conducted to evaluate potential effects on plants listed under the Federal Endangered Species Act, and on Forest Service Sensitive vascular plants, bryophytes, lichens, and fungi. This section (and its sub-sections) documents the steps, analysis, and findings of that Biological Evaluation; all information and findings are included within this section.

A recent court settlement obligates the Forest Service to consider effects to Northwest Forest Plan Survey and Manage (S&M) species during project NEPA planning. Background and effects to S&M vascular plants, bryophytes, lichens, and fungi are now included in the analysis below.

a. Background

Federally-Listed Plant Species

Two Federally-listed plant species are known to occur along roads, trails, and/or in other areas under consideration in one or more of the Action Alternatives. They are *Fritillaria gentneri* (Gentner's fritillary) and *Arabis macdonaldiana* (McDonald's rockcress). One additional species, *Lomatium cookii* (Cook's lomatium), has potential habitat, but no known occurrences, along roads, trails, and/or in other areas under consideration in one or more of the Action Alternatives. A brief discussion of each species is provided below:

Gentner's Fritillary

Fritillaria gentneri (Gentner's fritillary) is a showy tall plant in the lily family, found in oak woodland and various mixed forest, brushlands, meadow edges, etc. The single known occurrence on the Forest has only a handful of individuals in an oak stand/meadow edge in the Waters Creek area of Wild Rivers Ranger District. This occurrence is not immediately adjacent to a road or trail, and it is in an area for which a closure order exists, prohibiting vehicle use off of existing roads and trails. Though the occurrence is close to both a Forest Service road and a trail, in gentle terrain, off-road use has not been a problem in the actual population area to date. Under all alternatives, off-road use would not be allowed off designated roads and trails in this area, and assuming adherence to the rules, this Gentner's fritillary population would not be affected by this activity.

There is also potential for *Fritillaria gentneri* to occur in suitable habitat at other sites on Siskiyou Mountains and Wild Rivers Ranger Districts within the Applegate River watershed. Some of these potential sites could be immediately adjacent to roads, trails, and/or in other areas under consideration in one or more of the alternatives.

McDonald's Rockcress

Arabis macdonaldiana (McDonald's rockcress) is a perennial herbaceous plant with rose-colored flowers in the mustard family, present on the Forest in serpentine areas of southern Curry County. It is known to be immediately adjacent to a road at one site only on the Forest. This site is on a rock outcrop on the road cut slope at a corner along Forest Road 4402. Other individuals are above and below the road, outside of the road prism. Road maintenance activities, if not properly coordinated, could threaten several individuals, though this is unlikely on such a low maintenance road, on this stable rock surface. The risk to these individuals is the same under all alternatives, because road maintenance would continue to occur at this site.

All other *Arabis macdonaldiana* known sites on the RRSNF are not near roads or trails. These known sites are far enough from roads or trails, or in steep enough places, that the likelihood of them being affected by off-road use is essentially zero under all alternatives.

Potential habitat for McDonald's rockcress exists on serpentine in southern Curry County in additional locations where this species is not currently known to occur. If McDonald's rockcress were present in undiscovered locations along existing open roads, there would be some risk that individuals could be lost during road maintenance. Since road maintenance activities have been occurring on these roads for decades, it is relatively unlikely that individuals still exist at roadside in vulnerable microsites where they are likely to be disturbed in the future by these ongoing activities. Also, even if present, they may be part of a population that extends well beyond the roadside, hence the viability of the population over the surrounding area may not be at risk. This risk would be the same under all alternatives because road maintenance would continue to occur on the same roads on serpentine in southern Curry County.

Cook's Lomatium

Cook's lomatium has a small amount of potential habitat, but no known occurrences, along a few roads, trails, and off-road, off-trail areas under consideration in one or more of the alternatives, on Forest Service lands on the west edge of the Illinois Valley. This herbaceous perennial prefers sunny low-lying areas in heavy soil, or at the edge of drying vernal-wet areas.

Forest Service Sensitive Vascular Plants, Bryophytes, Lichens, and Fungi

There are 101 vascular plants, 24 bryophytes (mosses and liverworts), 11 lichens, and 29 fungi, documented or suspected to occur on the Forest, which have been designated as FS Sensitive species. As such the Forest manages these species to maintain their viability, often conducting surveys for them, analyzing project effects during NEPA planning, and developing mitigation measures to reduce or eliminate impacts to these species. A listing of all these species is too lengthy to include here.

Spreadsheets of Forest Service and Bureau of Land Management (BLM) sensitive species lists for all classes of organisms and all National Forests in the Pacific Northwest and BLM districts in Oregon are available on the web at <http://www.fs.fed.us/r6/sfpnw/issssp/agency-policy/>. A listing of Forest Service Sensitive vascular plants, bryophytes, lichens, and fungi for only the Rogue River-Siskiyou National Forest is available from the Supervisor's Office on request.

All but a handful of these species are known to occur, or could occur, immediately adjacent to roads, trails, and/or in other areas under consideration in one or more of the Action Alternatives. Field Reconnaissance specifically for this Forest-wide Travel Management Planning effort was not conducted. The information offered below was gathered during 2-3 decades of previous botanical field work by Forest Service botanists and others. Estimates of effects of the alternatives are professional opinion of the Forest Botanist, based on extensive familiarity with the Forest and its botanical resources. Where effects could not be determined for specific road or trail segments proposed to be authorized for motorized use via future trail construction or conversion from Maintenance Level 1 roads under Alternative 3 or 5, a field reconnaissance of that site, and subsequent re-routing or re-design if needed, is included as a Chapter 2 mitigation measure for Alternative 3 and 5, before ground disturbance would occur.

Where Forest Service Sensitive vascular plants, bryophytes, lichens, and fungi occur immediately adjacent to roads, they may be lost during routine road maintenance activities such as blading, ditch clearing, culvert maintenance, brushing, debris clearing, contouring, weed control, etc. This is an ongoing risk, sometimes ameliorated at known sites when properly coordinated. This risk would remain the same under all alternatives because the level of road maintenance across the Forest is the same.

Survey and Manage Vascular Plants, Bryophytes, Lichens, and Fungi

National Forests are tentatively using a regionwide March 2011 interim S&M list which is available on request from the Supervisor's Office (not posted on any website at this time). Of the 11 vascular plants on this list, 3 are known to occur on the Forest (*Cypripedium fasciculatum*, *Cypripedium montanum*, and *Aster vialis*) and could be positively or negatively affected under one or more of the alternatives. Of the 15 bryophytes on this list, only one (*Rhizomnium nudum*) occurs in a habitat that could be affected by motor vehicles on this Forest. Of the 45 lichens on this list, only one (*Peltigera pacifica*) occurs on a substrate that could be affected by motor vehicles on this Forest. Of the approximately 170 fungi on this list, perhaps one-half of them (too numerous to list, and too much uncertainty to specify which may be found here) could occur on the Forest in locations or habitats that could be affected by motor vehicles.

b. Effects Mechanisms and Analysis Framework

For a list of general assumptions with regard to this analysis refer to the beginning pages of Chapter III. The following list is specific to the analysis for Sensitive plants.

- Motorized vehicle use on and off established routes has affected or has the potential to affect Sensitive plant populations, either directly by damage or death to individual plants from wheel-traffic (stem breaking, crushing, etc.), or indirectly by altering the habitat through soil disturbance, changes in hydrologic functioning, or by the introduction of non-native, invasive plant species that can out-compete Sensitive species for water, sunlight, and nutrients.
- Motorized vehicle use is unlikely to impact certain Sensitive plant habitats due to the steep or rocky nature of the surrounding terrain.

- Motorized vehicle use is more likely to impact other Sensitive plant habitats such as meadows that exist on gentle slopes or flat terrain with little or no vegetation or natural barriers to motor vehicles.
- Impacts to Sensitive plants and their habitats vary across all alternatives and no alternative completely eliminates adverse effects to Sensitive plants. In general, alternatives with fewer miles of routes open for public wheeled motor vehicle use should have reduced effects to Sensitive plants and their habitats.

c. Direct and Indirect Effects of Alternatives

Federally-Listed Plant Species

Gentner's Fritillary

Under all alternatives there is some potential for individual Gentner's fritillary plants to occur undetected within the road prism and to be adversely affected by road maintenance activities. However road maintenance activities have occurred for many decades and the current risk to undetected Gentner's fritillary plants would not change under any of the alternatives. To date, very little of the potential and suitable habitat away from roads and trails receives any OHV use, because the steepness and forest vegetation is generally an effective barrier. However, under **Alternative 1**, OHVs would not be confined to roads and trails in this area, and the potential for Gentner's fritillary plants (if they were present) and/or habitat to be adversely affected by off-road activity still exists. Under **Alternatives 2, 3, 4, and 5**, OHVs would not be allowed off designated roads and trails, and assuming adherence to the rules, any Gentner's fritillary population present would not be affected by their activity.

McDonald's Rockcress

Alternatives 1 and 2 allow motorized use on some trails in potential McDonald's rockcress habitat, less so under **Alternatives 3 and 5**, and even less under **Alternative 4**. However, as long as OHVs stay on existing trail beds and the trail is wide enough for the vehicle, OHVs are likely to have effects on McDonald's rockcress that are no different than humans, pack stock, or wild animals walking along these trails; i.e., little possibility of harming individuals or populations.

Under **Alternative 1**, OHV use may still occur off of roads and trails. If McDonald's rockcress were present in undiscovered locations in these areas, there is some risk of physical injury to plants or habitat from off-road use. However because of the barriers of steepness, brush, trees, and rocks, there is likely to be very little off-road use away from roads and trails and hence adverse effects to more than a few individual plants are unlikely.

Under **Alternatives 3 and 5**, off-road and off-trail vehicle use would not be allowed. The administratively closed Maintenance Level 1 road from Cedar Springs to Biscuit Hill (4402494, Alternative 3 only) would be authorized for conversion to a motorized trail. There may be suitable habitat for McDonald's rockcress along this route, and there is some possibility that the species is present. The road is probably used already even though it is currently closed. But the conversion to an official motorized trail may involve new physical disturbance. If so, a botanical field reconnaissance to determine presence/absence of McDonald's rockcress would be required and protection measures implemented if the species were found in the trail bed or immediately adjacent.

Under **Alternative 4**, off-road and off-trail vehicle use would not be allowed. In serpentine areas (McDonald's rockcress habitat), motorized use on trails would also not be allowed. The closed Maintenance Level 1 road from Cedar Springs to Biscuit Hill (4402494) would be closed to public motorized use, not converted to a motorized trail.

Compared to Alternative 1, the Action Alternatives have somewhat less risk to McDonald's rockcress because off-road and off-trail use is not allowed. There is little difference in effects to McDonald's rockcress between Alternatives 2, 3, 4 and 5 because motorized trail use is not considered a threat to the species (as explained above) and a botanical survey conducted under Alternative 3 along the road to Biscuit Hill would prompt protection measures if the species were found to be present.

One area where off-road use has caused damage to McDonald's rockcress plants in the past, is nearby on Six Rivers National Forest at Sourdough Junction. The McGrew Road (4402450) coming from Oregon terminates here. There have been repeated instances of vehicles driving off-road at this location, potentially damaging McDonald's rockcress plants that are present. The McGrew Road would be closed under Alternative 4. However, since better and more frequently traveled roads also converge at Sourdough Junction, the closure of the McGrew Road under Alternative 4 would have no effect on the frequency with which MacDonald's rockcress plants are damaged by illegal off-road/off-trail use of motorized vehicles.

Cook's Lomatium

Under **Alternative 1**, OHVs would continue to be allowed access to some of the suitable habitat areas for this species. Some of this suitable habitat is actually physically accessible to OHVs also, though it is unknown what damage to suitable habitat, if any, is occurring.

Under **Alternatives 2, 3, and 5**, vehicles would not be permitted off-road or off-trail. The allowed vehicle use on roads and trails in the suitable habitat areas is no different than under Alternatives 1 and 2.

Under **Alternative 4**, in addition to the prohibition of vehicles off-road or off-trail, there may be a few trails in suitable habitat for Cook's lomatium, in Botanical Areas and serpentine areas that would no longer be accessible to OHVs. However, as long as OHVs stay on existing trail beds and the trail is wide enough for their vehicle, effects to any Cook's lomatium plants that could be present would likely be little different than effects of humans, pack stock, or wild animals walking along these trails; i.e., little possibility of harming individuals or populations. Therefore there seems to be little if any increased benefit to Cook's lomatium (if it were present) from Alternative 4 compared to Alternatives 2, 3 and 5.

Summary of Effects of the Alternatives on Federally-listed plant species

Effects (mostly potential effects to currently unknown occurrences, if present) differ by species and by alternative as explained above. For all three species, all Action Alternatives would result in a "**May Affect, but is Not Likely to Adversely Affect**" (NLAA) determination for species or critical habitat. It is assumed that there would be no measurable change in the amount of use these routes currently receive. However, at this time there is no information that would allow the FS to meaningfully measure, detect, or evaluate potential effects. Therefore, though any effects may be discountable, an NLAA determination is made for listed plant species.

Forest Service Sensitive Vascular Plants, Bryophytes, Lichens, and Fungi

Vehicle use of existing open roads is expected to have little or no effect on Forest Service Sensitive vascular plants, bryophytes, lichens, and fungi across the Forest, because these species seldom occur on roadbeds where vehicles drive. This is also more or less true for trail surfaces whether or not OHVs are allowed to operate on trails. There is little difference in the level of disturbance to the trailside flora caused by humans, pack or saddle stock, wildlife, or wheeled vehicles, as long as the OHV tread width is less than the tread width of the trail, and vehicles truly stay on the trails.

Therefore, although the alternatives differ in the number and location of motorized vs. non-motorized trails, there is little difference among the alternatives in the degree of effect this activity has on FS sensitive vascular plants, bryophytes, lichens, and fungi.

Off-road and off-trail vehicle use is permitted on 275,000 acres under **Alternative 1**. Even though very little of this acreage is actually accessible or frequently used by OHVs, this activity has the potential to adversely affect known and unknown occurrences of Forest Service Sensitive vascular plants, bryophytes, lichens, and fungi, by crushing plants or physically disturbing their substrate or habitat, or as vectors for non-native invasive species. Some local occurrences of these species could be at risk of extirpation by these off-road and off-trail activities allowed under Alternatives 1 and 2.

Except for the existing Prospect OHV system and a proposed 10 acre OHV play area near Willow Lake under Alternative 3 only, off-road/trail use is not allowed under **Alternatives 2, 3, 4, and 5** and therefore this extirpation risk from off-road/off-trail vehicle use would not exist (assuming adherence to the rules). The proposed 10 acre OHV play area near Willow Lake under Alternative 3 has been surveyed for FS sensitive species and none occur there. So far, the only known places where there is high current extirpation risk from off-road/off-trail vehicle use are some areas where they are already not allowed, and the damage is from illegal off-road use. Examples are *Carex klamathensis*, *Viola occidentalis*, and *Perideridia erythrorhiza* occurrences in the Eight Dollar Mountain Botanical Area and parts of the Days Gulch Botanical Area.

Alternatives 3 and 5 are similar and provide some additional indirect protection for Forest Service Sensitive vascular plants by closing some roads and restricting mixed use on others in the Eight Dollar Mountain, Day's Gulch, Canyon Creek, Rough and Ready/W. Fork Illinois River divide areas on Wild Rivers Ranger District. This provides additional discouragement, compared to Alternatives 1 and 2, to OHV operators that would be inclined to go off-road and off-trail and damage plants or habitat in these serpentine areas with high concentrations of rare and endemic plants.

Also under Alternatives 3, 4, and 5, the trail in the Bigelow Lakes Botanical Area, a trail system north of Briggs Valley on Wild Rivers RD, and the Echo Lake Trail on Siskiyou Mountains RD are proposed for closure to motorized vehicles. Though no damage to Forest Service Sensitive species has been observed so far in these locations, all of these trails have some trailside habitat for Forest Service Sensitive vascular plants accessible to OHVs, which could be adversely affected if OHVs left the trails. OHVs are not likely to be present on these trails if their use is not allowed there. Therefore there is less risk of any illegal off-road or trail use occurring.

Alternative 4 provides indirect protection for FS Sensitive species similar to Alternative 3, by reducing the likelihood that OHVs would be in the vicinity of sensitive species occurrences with operators that are tempted to illegally leave roads and trails, potentially damaging plants and habitat. The additional trails closed under Alternative 4 to motorized use in serpentine areas, the Boundary trail, and Botanical Areas, often have Forest Service Sensitive species occurrence and habitat which could be accessed and damaged by OHVs if their operators inclined to leave the trails.

There is specific new trail being proposed to authorize motorized use that would require future construction on Gold Beach Ranger District under **Alternative 3**; 0.5 miles of new motorized trail that would connect to the Woodruff Trail (T.36S., R.13W., section 9).

The FS Sensitive vascular plant *Trillium angustifolium* is in this immediate vicinity. A botanical field reconnaissance of this proposed trail route is included as a mitigation measure to be completed before construction begins, with re-routing to be done if needed to avoid the Trillium or other FS sensitive species.

The Forest Service Sensitive vascular plants *Carex gigas* and *Arctostaphylos hispidula* are present immediately adjacent to a Maintenance Level 1 road in the Signal Buttes area on Gold Beach Ranger District that is proposed to be converted to a motorized trail under **Alternatives 3 and 5**. Although there is a slight possibility of a few individuals being lost during this conversion, there is little new disturbance off the roadbed itself expected and the viability of the local populations of these species are not expected to be affected.

On Wild Rivers Ranger District, the Maintenance Level 1 road from Cedar Springs to Biscuit Hill is proposed to be converted to a motorized trail under **Alternative 3**. There are no known occurrences of *Lupinus tracyi* or some of the serpentine Forest Service Sensitive vascular plants, or the Federally-listed *Arabis macdonaldiana*, but the route has habitat for these species. Botanical field reconnaissance would be required along this route if there would actually be new disturbance/construction associated with the conversion. Re-routing or other design change would be made if the viability of the local populations is expected to be adversely affected. If any *Arabis macdonaldiana* individuals are found, a re-routing or design change would be made to protect individuals of that species.

On Siskiyou Mountains Ranger District, **Alternatives 3 and 5** includes the relocation and construction of approximately 1.2 miles of the Penn Sled Trail. There are no known FS sensitive vascular plants, bryophytes, lichens, or fungi in the proposed new location. Under alternatives 3 and 5, a chapter 2 mitigation measure would require the Forest Service to conduct botanical field reconnaissance along this route before ground-disturbing activities occur. Re-routing or other design change would be made if Special Status plants located and the viability of the local populations is expected to be adversely affected.

On the High Cascades Ranger District, a motorized use play area (approximately 10 acres) is proposed under **Alternative 3** near the junction of Forest Road 3050 and County Road 821 in an old Willow Lake Dam borrow area. There are no known occurrences of Forest Service Sensitive vascular plants, bryophytes, lichens, or fungi in this location and no potential habitat for them either. No botanical mitigation is proposed for this feature.

Summary of Effects on FS Sensitive vascular plants, bryophytes, lichens, and fungi

The viability of some local occurrences of Forest Service Sensitive vascular plants in the Eight Dollar Mountain and Day's Creek Botanical Areas is at risk from the adverse effects of illegal off-road and off-trail vehicle use. This is not an effect of any of the Action Alternatives, rather an effect of recreational misuse that the Forest Service has had limited ability to control.

Alternatives 3, 4, and 5 may partially alleviate this problem by restricting off-road opportunities in this general area. When considering the actual components of all alternatives, the most meaningful difference in potential effects to these organisms is whether 275,000 acres of off-road/off-trail land are "available" for motorized vehicle use as described for Alternative 1, or are closed to this activity as in Alternatives 2, 3, 4, and 5.

The alternatives differ in numerous ways as described above. However, all alternatives "**may impact individuals or habitat (MIIH), but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species.**"

Survey and Manage Vascular Plants, Bryophytes, Lichens, and Fungi

In general, Survey and Manage (S&M) organisms are associated with late successional forest, not with roads, trails, and open country that can be readily accessed by OHVs. Therefore, these organisms are most likely to remain undisturbed under all alternatives.

Only S&M organisms which occur on soil as a substrate could be considered at risk from motor vehicle activities. S&M species which occur on trees, shrubs, rocks, and in streams, are not considered to be at risk.

Under **alternative 1**, there is some possibility of occasional limited negative effects to these organisms because 274,670 acres are theoretically open to cross country travel and at least some of that is accessible to OHVs. Negative effects, if they were to occur, would be from soil disturbance where vehicles leave the established road and trail surfaces in areas where S&M organisms were present. Even under these circumstances, it would be unusual for the extent and level of disturbance to be high enough to place the viability of local populations at risk.

Compared to alternative 1, there is less threat to S&M vascular plants, bryophytes, lichens, and fungi **under alternatives 2, 3, 4, and 5** because cross-country OHV travel would not be allowed.

There are minor differences between alternatives 3, 4, and 5 regarding S&M organisms. Under alternative 3, the proposed new OHV play area near Willow Lake could lead to disturbance that may negatively affect S&M organisms. Under alternatives 3, a new 0.5 mile trail connecting to the Woodruff Trail on Gold Beach District could lead to similar disturbance. Re-routing of portions of the Penn Sled Trail on Siskiyou Mountains Ranger District under alternatives 3 and 5 could also lead to similar disturbance. Surveys for S&M category A and C species at these latter two locations are included in chapter 2 mitigation measures for "special status plants".

Converting some level 1 roads to motorized trails as proposed under alternatives 3 and 5 is not expected to affect S&M organisms because they are presumed to not be present on the roadbed of these level 1 roads.

Alternative 4 is likely to have the least negative effect on S&M organisms because there is little or no new disturbance under this alternative.

d. Cumulative Effects

Cumulative effects from other future ground disturbing activities could impact Sensitive plants, S&M organisms, and their habitat. However, project design, mitigation measures, and compliance with Forest Plan Standards and Guidelines should not allow direct adverse effects to the viability of populations.

The Action Alternatives for this project are expected to maintain or reduce effects from motorized use. Alternatives 3, 4, and 5 would include a reduction in miles of routes open for public wheeled motor vehicle use adjacent to habitat and the prohibition of cross-country travel. Therefore at the scale of these Sensitive plant and S&M habitats (site-scale), there would be no additional or foreseeable risk from adverse cumulative effects.

7. Invasive Non-native Plants

Effects of motorized vehicle use on the spread of invasive non-native plants

Invasive non-native plants have the potential to alter the composition, structure, and function of wildland ecosystems. Of special concern for this planning effort are motorized vehicles as vectors for these species, and how the alternatives may affect the potential for these species to spread to new areas.

a. Background

In October 2005, the Regional Forester signed the Record of Decision (ROD) for *Pacific Northwest Region Invasive Plant Program; Preventing and Managing Invasive Plants*. This ROD amended Land and Resource Management Plans (LRMPs) in the region to include new Standards and Guidelines (S&Gs) applicable to invasive plants.

The 2005 ROD emphasizes prevention practices; provides updated treatment options including the use of herbicides with formulations containing one or more of ten active ingredients and it emphasizes restoration and long-term site management goals. The new Standards and Guidelines now provide the management framework for invasive plant prevention and control efforts on the Forest.

The Forest also has adopted *Best Management Practices for Noxious Weed Prevention and Management, Record of Decision and Land and Resource Management Plan Amendment for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest, Sudden Oak Death Prevention and Management.--Interim Direction for the ROR/SIS National Forests-- February 15, 2002*.

The 1999 Environmental Assessment and Decision Notice for *Integrated Noxious Weed Management on the Rogue River National Forest* identified the need to implement a program that would curtail the introduction and spread of noxious weeds on Forest. The control strategies include chemical, manual, mechanical, biological, and prescribed fire treatments.

The 2003 Siskiyou National Forest Decision Memo, “Non-Chemical Treatments on Invasive Plant Projects within the Siskiyou National Forest”, allows for control of invasive weeds using non-chemical methods, such as pulling, digging, hoeing, cutting, mowing, burning, mulching, and the introduction of biological control agents.

b. Effects Mechanisms and Analysis Framework

Non-native invasive plants are present on many parts of the Forest, particularly along roads. The Forest has an active prevention and control program for the worst of these invaders which are Oregon Department of Agriculture (ODA)-designated Noxious Weeds. ODA noxious weed lists can be viewed at <http://oregon.gov/oda/plant/weeds/lists.shtml>.

The Forest has known occurrences of over 25 species of noxious weeds. A Forest-specific noxious weed list can be requested at the Supervisor’s Office.

Two of these, *Alyssum murale* and *Alyssum corsicum*, deserve attention in this analysis because they are new to the Forest, are the first serious invasive plant threat to our native serpentine flora, and are present within a few miles of a number of roads proposed under various alternatives to be closed, or with mixed use restrictions, in the Eight Dollar Mountain area, Josephine Creek watershed, Rough and Ready Creek watershed, and W. Fork Illinois River watershed.

Primary vectors for noxious weeds on our Forest are mostly people, vehicles, machinery, imported rock and fill. The vector for one species, the non-native houndstongue, is animal fur/hair/hides, and for another, bull thistle, it is wind. Invasive plants are sometimes inadvertently included in seed mixes. All kinds of disturbance (fire, logging, grazing, soil displacement, etc.) increase the likelihood that these invaders will establish and spread, once their propagules are present. Road maintenance activities have the potential to spread invasive plants along roads. This risk is present under all alternatives and does not differ by alternative.

c. Direct and Indirect Effects of Alternatives

People and vehicles can and do spread invasive plants along roads and trails. The degree to which this currently occurs is reflected in **Alternatives 1 and 2**, and perhaps less so under **Alternatives 3 and 5** (in which some roads and trails would be closed to vehicles but some Maintenance Level 1 roads would become motorized trails).

The expected degree of spread, or risk of spread of invasive plants along roads and trails via people and vehicles, under **Alternative 4** is similar to Alternative 3 and 5 with an additional reduced risk in Botanical Areas, serpentine areas, and Inventoried Roadless Areas. This is because OHVs would be prohibited on trails in these areas.

Under **Alternative 1**, 275,000 acres of Forest Service land is available for off-road/off-trail motorized use, though in reality only a fraction of that is actually accessible. Under this alternative, OHVs and their operators have the potential to spread invasive plant seeds/propagules into these off-road/off-trail areas over many parts of the Forest. If invasive plants become established away from roads and trails, they are hard to detect and, for ODA-designated Noxious Weeds, could remain untreated and spread further before detected and control efforts initiated.

Under **Alternatives 2, 3, 4, and 5**, uncontrolled off-road/off-trail OHV use would not be allowed on the Forest and, assuming compliance with the Travel Management Rule, OHVs and their operators would not be a vector for invasive plants into off-road/off-trail areas.

Chapter 2 mitigation measures designed to prevent and control the spread of invasive non-native plants are expected to reduce but not eliminate that risk.

Under **Alternative 3**, a new OHV play area is proposed near Willow Lake, in and near an old borrow area from which Willow Lake Dam was constructed. This location is one of few known sites in SW Oregon for the noxious weed sulphur cinquefoil (*Potentilla recta*). There is concern that play area users could unknowingly transport sulfur cinquefoil seeds from the soil seedbank to their homes and other destinations, where new populations could establish, greatly reducing the current possibility of eradicating this noxious weed in SW Oregon. This concern would be greatest when the sticky clay soils at the proposed play area are wet and adhere readily to vehicles and OHVs.

Also present at the proposed play area site is medusahead grass (*Taeniatherum caput-medusae*), a serious rangeland noxious weed. The Forest has no effective way to get rid of medusahead once it establishes, and it has clinging seeds that are easily transported even in dry conditions. Unlike the cinquefoil, medusahead is frequently found, particularly on private lands, in the Butte Falls/Willow Lake area, and eradication from the overall area would not be possible.

Two other invasive weeds are close by the proposed new play area but not yet known to be within the exact area proposed for development. They are spotted knapweed and Dalmatian toadflax. Besides the potential for off-site transport of these weeds, play area construction and the ground disturbance from play area users could create conditions that favor the increase of these weeds on-site.

See the mitigation prescribed in Chapter II for the proposed new play area under Alternative 3. This mitigation is likely to control the abundance of sulphur cinquefoil, medusahead grass, and other noxious weeds within the play area. It would reduce but not eliminate the probability of these species spreading to new locations. Since the new play area is not proposed under Alternatives 1, 2, 4, and 5, there is less risk of noxious weed increase or transport from the proposed play area under these alternatives.

The potential for *Alyssum murale* and *Alyssum corsicum* to spread onto the Forest varies by alternative: Under Alternative 1, parts of the Forest near the Illinois Valley are currently open to off-road/off-trail travel, and few roads and trails are closed to motorized use. Alternative 1 represents the current potential for these two Alyssums to spread and establish on the Forest. Under Alternative 2, travel off of roads and trails is not allowed in the Illinois Valley area so the potential for spread and establishment of these two Alyssums is lessened. Under alternatives 3 and 5, some primitive roads would be closed to OHV use within the area of likely spread of the Alyssums, so there is somewhat less opportunity for the Alyssums to spread into those areas. Additional roads and trails would be closed under Alternative 4 so this alternative provides the least opportunity for the Alyssums to spread into those areas. It should be noted that none of the alternatives will have much influence on the success of Alyssum eradication efforts in the Illinois Valley and vicinity compared to the efforts that are currently underway on private lands in the area.

d. Cumulative Effects

On National Forest System lands, future projects would employ mitigation measures that are designed to reduce the potential for the spread or increased introduction of invasive plant species. It is unknown to what extent projects on private lands would lead to increased spread or introduction of invasive species.

It is not expected that the identification of motorized routes would substantially add to the incremental increase of the spread of invasive plants. Prohibiting cross-country motorized travel is expected to contribute toward meeting the regional goal of no net increase for invasive plants.

8. Invasive Pathogens

Effects of motorized vehicle use on the spread of invasive pathogens *Phytophthora lateralis*(PL) and *Phytophthora ramorum*(PR)

Changes in this section between FEIS and DSEIS:

- ACS Objectives and POC Management
- Clarifying Port-Orford-cedar and *Phytophthora lateralis* spread

Phytophthora (meaning “plant destroyer”) is a genus of more than 70 described species of the Oomycetes (Brasier et al. 2006). Often referred to as “fungi”, *Phytophthora* species are “water molds” that are more closely related to marine algae than fungi (Erwin and Ribeiro 1996). Favored by moist conditions, *Phytophthora* species include some of the world’s most notorious plant pathogens. Two non native invasive pathogens, *Phytophthora lateralis*, the cause of Port-Orford-cedar root disease, and *Phytophthora ramorum*, the cause of Sudden Oak Death or Ramorum leaf and twig blight, are known to occur on the Rogue River-Siskiyou National Forest. While these two pathogens have slightly different life histories, their spread may be influenced by human activities that move infested soil, water, or organic material.

a. Background

Port-Orford-cedar and *Phytophthora lateralis*

Port-Orford-cedar (*Chamaecyparis lawsoniana*) is native to an area along the Pacific Coast from Coos Bay, Oregon, to the mouth of the Mad River near Arcata, California. Its range extends from the coast to about 50 miles inland. There is also a small disjunct population in the Scott Mountains of California.

Phytophthora lateralis (PL) is a virulent, non-native root pathogen. It was introduced into the native range of POC in the early 1950s and its place of origin is unknown. It readily kills POC of all ages that are growing on sites favorable for infection. Once an area becomes infested, it is difficult to eradicate PL. Pacific yew (*Taxus brevifolia*) is occasionally infected by *Phytophthora lateralis* (Kliejunas 1994). Observations and laboratory trials show that Pacific yew is much less susceptible to *Phytophthora lateralis* than Port-Orford-cedar (POC). When found, infected yew is always in close association with many previously infected POC (Murray and Hansen 1997).

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However, PL does not threaten POC with extirpation. Considerable areas within the range of POC are on low-risk sites or in drainages that presently remain uninfested. There is little spread of PL on low-risk sites even when the pathogen is already established nearby. Low risk sites are defined as streamside POC greater than 100 feet from a road and non-stream side POC greater than 50 feet from a road. For the purposes of this analysis, probability of spread and establishment of PL into new uninfested areas is below 6.1%, it is considered low risk. Probability figures are based on literature and professional judgment of forest pathologists with substantial amounts of experience evaluating PL in the laboratory and in the field.

PL primarily affects high-risk sites, especially in streams and riparian areas. High risk sites are defined as low-lying wet areas (infested or not) that are located downslope from already infested areas or below likely sites for future introductions. These areas include streams, drainage ditches, gullies, swamps, seeps, ponds, lakes, and conclave low-lying areas where water collects during rainy weather (USDA-FS 2004). High risk sites include streamside POC within 100 feet of a road and non-streamside POC within 50 feet of a road.

A more complete discussion of risk, application of the Risk Key, the resultant management practices, and rate of spread can be found in the FSEIS Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI 2004) and is incorporated herein by reference. Some of the POC FSEIS is included throughout this section to assist in understanding the effects of PL Spread.

On the Rogue River – Siskiyou National Forest, current inventory data shows POC occurs on approximately 133,000 acres on the Gold Beach, Powers, and Wild Rivers Ranger Districts. About 12,700 acres (8.7%) are infested with *Phytophthora lateralis*, the pathogen that causes POC root disease.

Port-Orford-cedar program objectives are to maintain POC as an ecologically and economically significant species on National Forest lands. Stands of POC that contribute to management objectives are described as Measurably Contributing Port-Orford-cedar (MC-POC) because these stands are ecologically and economically significant species on National Forest lands. Port-Orford-cedar management will provide cost-effective mitigation for controllable activities creating appreciable additional risk to important uninfested POC, not to reduce all risk to all trees at all cost (USDA-FS 2004). Port-Orford-cedar management slows the spread of the non-native pathogen PL enough to maintain POC's significant ecological and economic functions, without the cost of the management strategy exceeding its effect on the value of these functions.

The range of POC is divided into four risk regions: North Coast, Siskiyou, Inland Siskiyou, and the disjunct California risk region. (USDA-FS USDI-BLM 2004).

North Coast Risk Region

The North Coast risk region is part of the Oregon Coast Range. This is an area of low mountains with high rainfall and dense coniferous forests. It has moderately sloping, dissected mountains and sinuous streams. The most important characteristic in terms of species composition is the occurrence of western hemlock as a dominant or co-dominant species.

The Powers Ranger District within the North Coast risk region has the greatest concentration of POC in the world, from the South Fork of Coquille River to Iron Mountain. This District is also unique in having stands with compositions of POC up to 70 to 80 percent. Included within the District are the Port-Orford-cedar Research Natural Area, the Big Tree Viewing Area, (which includes the largest POC in the world at nearly 12 feet in diameter), and the Coquille River Falls Research Natural Area. The District has been active in the inventory of POC through district-wide road surveys in 1964, 1972, 1983, 1992, and 1999 and 2008.

Siskiyou Risk Region

The Siskiyou risk region includes the Coastal Siskiyou, Siskiyou Mountains, and Gasquet Mountain ultramafics located in Oregon and California. In the northwest part of the region, the Coastal Siskiyou have highly dissected mountains and high gradient streams, as well as a few, small, alpine glacial lakes. This region has a high diversity of ecological conditions, which is reflected in the vegetation. In the middle of the region, the Siskiyou Mountains are higher and steeper than the other portions of the cedar's range in Oregon. The vegetation is dominated by Douglas-fir at low elevations, Jeffrey pine on ultramafic soils, and white fir and red fir series at higher elevations. In the south portion of this region, populations of POC are highly scattered across the landscape and within many vegetation types. Douglas-fir and tanoak are the predominate trees in this part of the region. The southern extreme of this region stretches to the southwest edge of the Klamath Mountains and into the northern California Coast Range. Many of the isolated populations of POC in this part of the region are often found on ultramafic soils.

The Port-Orford-cedar populations inside the Biscuit Fire perimeter were updated in 2005. Thirty-eight POC cores were burned in the Biscuit Fire and no longer contain the minimum 100 acres of POC needed to qualify as a POC core. In addition, the 2005 inventory showed 24,137 acres of POC present of which 838 acres (3.5%) are infested with PL. Port-Orford-cedar inventory updates outside the Biscuit fire perimeter are ongoing. Current inventories show 75,414 acres of POC present, of which 9,811 acres (13.0%) are infested with PL.

Port-Orford-cedar can be found from Iron Mountain on the northern boundary of the Gold Beach District south to Mineral Hill. POC grows from near sea level up to approximately 4,700 feet at Chetco Peak in the Kalmiopsis Wilderness. Port-Orford-cedar is mostly found within 100 feet of the streams, but is also present in upland areas on many different soil types, including serpentine. Port-Orford-cedar is mixed with Douglas-fir, true firs, pines, and incense cedar. In the mixed conifer stands, POC crown closure is generally 5 to 20 percent, but can be up to 80 percent in small isolated areas.

Many of the POC within these districts are 200 to 400 years old and 20 to 60 inches in diameter. PL has occurred along forest roads since about 1960. The disease has spread to many stands, mostly along roads and streams, and including locations in the Kalmiopsis Wilderness following introduction.

Many of the POC within the Wild Rivers Ranger Districts range in age from 200 to 400 years and are 20 to 60 inches in diameter. Port-Orford-cedar root disease has been present along the Oregon side of the Grayback Road going toward Happy Camp, California, since about 1960. Sanitation removals were implemented on the California side to reduce the potential for further disease introduction. So far, the root disease has not been found on the California side of the Grayback Road.

In contrast, in Oregon, there has been considerable spread along this route and subsequent downstream movement in the years following introduction. The pathogen has spread to many stands, mostly along roads and down streams, east of Highway 199 on the Wild Rivers Ranger District. *Phytophthora lateralis* has infested the Grayback/Sucker Creek drainage near the Oregon Caves National Monument. The Wild and Scenic Illinois River and Briggs Valley area have a 6 to 40 percent stand composition of POC and are uninfested. Other major drainages in the Illinois Valley have scattered distributions of uninfested POC amidst steep topography.

Port-Orford-cedar is most often found in riparian areas within the Wild Rivers Ranger District. Generally, POC is within 100 feet of the stream; however, small groves of POC can be found on alluvial fans and benches along these streams. Crown closure in the streamside areas are from 10 to 50 percent. There are upland populations on the many different soil types, including serpentine. Port-Orford-cedar is mixed with Douglas-fir, true firs, pines, and incense cedar up to approximately 4,500 feet elevation. In these mixed conifer stands, POC crown closure is generally 5 to 20 percent. Before the Biscuit Fire, POC on serpentine soils could be found from Josephine Mountain south to the Oregon border, where POC was scattered with white, knobcone, and lodge pole pines. In other serpentine areas, POC can be found with incense cedar and Douglas-fir. In these areas, POC crown closures are less than 2 percent.

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POC has an especially significant presence and ecological role on areas with ultramafic (serpentine) soils. The contribution of POC to forest canopy cover on ultramafic soils in plant association groups where POC was prominent in the overstory show that POC made up 38 percent of the overstory cover and in ultramafic riparian stands it made up 50 percent of the overstory cover (USDA-FS USDI-BLM 2004a).

For areas outside of the Powers Ranger District and the Biscuit Fire perimeter, the following protocol is used to determine what constitutes “important uninfested POC”, that measurably contributes to meeting Land and Resource Management Plan objectives.

Measurably Contributes/High Risk Plant Association Groups (PAGs)

The moist tanoak plant association group contains POC that measurably contributes to meeting management objectives. Canopy cover is greater than ten percent, risk is considered to be high, and POC presence in this PAG is common. Loss of POC could reduce the potential of meeting management objectives in this PAG (USDA – FS, UDSI - BLM 2004).

The Ultramafic - SW Oregon PAG also contains POC that measurably contributes to meeting management objectives. This PAG has greater than ten percent canopy provided by POC, occurs on high-risk sites, frequently contains POC and is unique to the Klamath province. Port-Orford-cedar provides an uncommon ecological function on ultramafic soils and loss of this species can prevent the attainment management objectives (USDA – FS, UDSI - BLM 2004b).

Measurably Contributes/Low Risk PAGs

The Port-Orford-cedar PAG and coastal western hemlock PAGs both have greater than ten percent canopy cover provided by POC, commonly contain POC and occur on low risk sites. Since POC occurs on low risk sites in these PAGs, POC is expected to persist in the canopy even if some mortality from PL occurs and continue to measurably contribute to meeting management objectives (USDA – FS, UDSI - BLM 2004).

For the Powers Ranger District and inside the Biscuit Fire perimeter, POC canopy cover of six percent or greater is the threshold for POC that measurably contributes to meeting management objectives.

ADDED:

POC-PL Management and Consistency with ACS Objectives

Forest management projects are implemented under the direction for Port-Orford-cedar management on the Rogue River-Siskiyou National Forest is described in the Record of Decision and Land Resource Management Plan Amendment for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI 2004). This decision is consistent with other elements of the Siskiyou National Forest Land and Resource Management Plan (USDA-FS 1989) including amendments made April 13, 1994, known collectively as the Northwest Forest Plan (NWFP) (USDA-FS and USDI-BLM 1994b). This amendment does not change any Standards and Guidelines for the NWFP, nor does it significantly reduce protection for late-successional or old-growth forest related species, or reduce protection for aquatic ecosystems. Therefore, POC management strategies listed in the Record of Decision and Land Resource Management Plan for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI 2004) will not have an adverse impact on the nine Aquatic Conservation Strategy Objectives required by the Northwest Forest Plan Amendments. Below is a summary regarding consistency with the elements and components of the ACS Objectives.

Reducing POC risk within Riparian Reserves contributes to meeting ACS objectives by decreasing tree mortality, thereby maintaining stream shade and habitat, bank stability, and maintaining the physical integrity of the aquatic system.

Bank stability is expected to remain within the range of natural variability. This is because POC has tremendous decay resistance and the mass of large roots form a matrix that will persist for years (Burroughs and Thomas 1977) and resist the action of flowing water along streams, thus binding streambanks. In the meantime, a replacement stand would be increasing root strength. In the ultramafic soils areas, the underlying bank material includes cobble-sized rock that is very resistant to erosion, thus preventing the lateral migration of streams. POC would have very long and variable temporal inputs to the streams as standing POC snags may be aged in excess of 800 years old (Jimerson 1999). The turnover rate of stands of conifer or mixed conifer/hardwood would be considerably faster (expected to be in the range of 60 to 100 years for hardwoods and 80 to 300 for non-cedar conifers). (USDA, USDI 2004)

ADDED: (continued)

Stream shading response, as affected by POC that succumbs to PL, varies by risk region. In the North Coast Risk Region and non-ultramafic portions of the Siskiyou and Inland Siskiyou Risk Regions, spaces in the canopy created by POC mortality due to PL would be filled rapidly by adjacent trees broadening their canopies, release of understory trees, and seeded trees. Therefore, loss of shade and increases in stream temperatures are not expected (USDA, USDI 2004).

POC provides valuable large wood input, even though the snags decay slowly. However, the large wood within the streams decay slowly as well, and having a large wood component contributes to maintaining a stream's sediment regime by slowing and/or accumulating sediment input.

Within the ultramafic soils areas, there may be a future gap in large wood recruitment for POC killed close to the stream. However this short-term lower recruitment rate is not expected to be significant because: durable POC material will be standing as snags on streambanks that would be future downed wood; healthy POC trees not subject to infection or the influences of standing water in riparian areas would provide some contribution of woody material; POC log structure in streams will considerably outlast other tree species, which will result in maintaining stream structural integrity and habitat diversity; and a Douglas-fir, Jeffery pine, western white pine, or red alder or tanoak replacement stand will likely begin providing large wood recruitment to streams within 80 to 200 years. (USDA, USDI 2004)

However, this short-term lower recruitment rate is not expected to be significant because (1) durable POC material will be standing as snags on streambanks that would be future downed wood, (2) healthy POC trees not subject to infection or the influences of standing water in riparian areas should provide some contribution of POC woody material, (3) POC log structure in streams will considerably out last other tree species holding together stream structural integrity and habitat diversity, and (4) a Douglas-fir, Jeffery pine, western white pine, or red alder or tanoak replacement stand will likely begin providing large wood recruitment to streams within 80 to 200 years.

Reducing POC risk within Riparian Reserves contributes to meeting ACS objectives by decreasing tree mortality, thereby maintaining stream shade and habitat, bank stability, and maintaining the physical integrity of the aquatic system. Maintaining these elements would result in maintaining populations of native plant, invertebrate, and vertebrate riparian-dependent species.

Phytophthora ramorum

In the mid-1990s, abrupt die-off of large numbers of tanoak (*Lithocarpus densiflorus*) and coast live oak (*Quercus agrifolia*) trees was observed on hillsides in California's Marin County. The cause of the die-off was unknown and local residents and the press coined the phrase "Sudden Oak Death" to describe the rapid onset of tree mortality they observed (Goheen et al. 2006). In 2000, University of California researchers identified a previously unknown *Phytophthora* species, as the causal organism after isolating it from cankers (localized areas of dead cambium) on dying trees (Rizzo et al. 2002).

Soon it was recognized that the same pathogen was causing leaf blight, stem cankers and tip dieback on nursery-grown rhododendrons and viburnums in Europe and the pathogen was formally named *Phytophthora ramorum* (Werres et al. 2001). Scientific evidence suggests that *P. ramorum* is a non-native pathogen in both North America and Europe, which has been separately introduced; however, its origin is unknown (Ivors et al. 2004, Rizzo and Garbelotto 2003, Rizzo et al. 2005). To date, millions of oaks and tanoaks in California have been killed on an estimated 2 million infested acres (Meentemeyer et al. 2008).

Phytophthora ramorum was first discovered in southwest Oregon (Curry County) forests in 2001, where it was killing tanoak (*Lithocarpus densiflorus*) and infecting Pacific rhododendron (*Rhododendron macrophyllum*) and evergreen huckleberry (*Vaccinium ovatum*) (Goheen et al. 2002).

At that time there were nine infested forest sites ranging in size from 0.5 to 11 acres and totaling 40 acres on non-industrial private forest lands, industrial private forest lands and federal forest land administered by the Coos Bay District, Bureau of Land Management. *Phytophthora ramorum* probably was present at one location as early as 1998 (Hansen et al. 2008).

Treatments to eradicate the pathogen from infested sites began in Curry County during fall of 2001 and involved cutting, piling and burning infected plants and all nearby host vegetation. The use of injected herbicide to prevent sprouting of tanoaks was included, where possible, in the treatment prescription after 2003. Upon completion of burning most sites have been planted with non-host or conifer seedlings. All infested sites found since the initial discovery of the pathogen, regardless of ownership, have been treated. To date over 750 tanoaks have been found infected since 2001 on approximately 204 acres; altogether, about 2400 acres have been treated (A. Kanaskie, pers. comm. 2009). In all, two infested sites have been identified on the Rogue River-Siskiyou National Forest, one in 2006 and one in 2008. Sites are located approximately 1000 to 1500 feet from established roads; one site is located approximately 200 feet uphill from an established non-motorized hiking trail. Both sites, with a combined treatment area totaling approximately 35 acres, have been treated by herbicide injection, cutting, piling, and burning.

Most *Phytophthora* species are root pathogens; however, *P. ramorum* predominantly affects aboveground plant parts such as leaves, needles, boles, green twigs and woody stems (Davidson et al. 2003, Hansen et al. 2008). Over 100 plant species are known hosts including native forest species such as tanoak, oaks in the red oak group such as California black oak (*Quercus kelloggii*), Douglas-fir (*Pseudotsuga menziesii*), coast redwood (*Sequoia sempervirens*), Pacific rhododendron, evergreen huckleberry, and Pacific madrone (*Arbutus menziesii*) as well as important commercial nursery species such as rhododendron, camellia, Pieris and laurel. The most current host list is posted at http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/. In Oregon, the list of native plants that have been found infected in the wild is much shorter; tanoak, evergreen huckleberry and Pacific rhododendron are usually the only infected species (Goheen et al. 2006).

Phytophthora ramorum is well adapted to the mild, wet conditions of the Pacific Coast. The pathogen produces small sacs (sporangia) of swimming spores (zoospores) that readily break off and can be spread in rain splash and wind. Multiple generations of spores may be produced during wet weather periods at any time of year (Hansen et al. 2008). The pathogen spreads from tree to tree as zoospores or sporangia in water: rain splash, drip and stem flow (Hansen et al. 2008). Longer distance spread in forests is facilitated by turbulent transfer of sporangia dislodged from upper crown infections in clouds and wind-driven rain (Hansen et al. 2008).

Phytophthora ramorum also makes thick-walled resting spores (chlamydospores) in infected plant parts that allow it to survive heat and drought and persist for months to several years in soil and plant debris collected adjacent to stumps of known infested trees (Davidson et al. 2008, Fichtner et al. 2007, Goheen et al. 2006). It has been shown that soil propagules of *P. ramorum* can be picked up and carried via soil adhering to hikers' shoes and on mountain bike tires (Cushman and Meentemeyer, 2008). *Phytophthora ramorum* can be detected in stream water using floating leaf baits; however, no observations have been made in Oregon that suggests streamwater as the source for new infections (E. Hansen, pers. comm. 2009). *Phytophthora ramorum* can also be moved over extreme long distances (continental, global scales) in infected nursery stock (Goheen et al. 2006).

b. Effects Mechanisms and Analysis Framework

Phytophthora lateralis

Phytophthora lateralis is spread via water or soil. A typical spread scenario involves infested soil being transported into an un-infested area on a vehicle or piece of equipment or, potentially, in infested water being transported in the tanks of fire engines or helicopter buckets during suppression activities. The infested soil falls off of the vehicle or spores are delivered via water and the pathogen first infects POC near the site of introduction. New spores from that infection are then washed downhill in surface water infecting additional hosts. This is especially lethal along drainages and creeks where infested water is channeled and flows near concentrations of healthy POC.

ADDED:

Infection by PL is greatly favored by cool conditions and requires the presence of water around POC roots for at least several hours. (Zobel et al. 1985) Optimal temperatures for infection are between 50 and 68 degrees F. (Trione 1974) Most POC are infected by the pathogen in the cool, wet parts of the year. Very little infection occurs in the dry, warm summer months. When evaluating the likelihood of PL spread in new areas, consideration needs to be given to a number of factors influencing PL spread and establishment. The management Direction for Port-Orford-cedar (POC) management on the Rogue River – Siskiyou National Forest is described in the Record of Decision (ROD) and Land and Resource Management Plan Amendment for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI 2004) and provides the Forest Service with a Risk Key to address additional appreciable risk of PL spread. If the Risk Key is triggered by a proposed project, the decision maker is provided a suite of management practices that will reduce the spread of PL to acceptable levels.

“Uninfested 7th field watersheds” are defined as watersheds with greater than 50 percent Federal ownership and with greater than 100 Federal acres in stands that include POC (not including plantations where POC did not previously occur), where at least the Federal lands are uninfested or essentially uninfested with PL. Uninfested POC stands within these watersheds are referred to as POC cores. POC cores are not necessarily contiguous acres. Analysis done for the FSEIS of the Record of Decision and Land Resource Management Plan for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI, 2004) using existing Geographic Information Systems (GIS) stand mapping indicated there were 162 uninfested 7th field watersheds in Oregon, 144 on the Rogue River-Siskiyou National Forest. Stands with any level of POC are included.

Watersheds no longer qualify for POC cores if 5 percent or more of the POC core area becomes infested with PL. Because these watersheds sometimes empty into a larger stream that is infested, infestations within the lowest 2 acres of the watershed (and lowest 200 feet of stream) do not count against the current uninfested status or the 5 percent (USDA-FS 2004).

Post Biscuit fire POC mapping and inventory updates show that twenty-eight of the original uninfested 7th field watersheds do not have 100 acres of POC. These twenty eight seventh field watersheds will continue to be managed as POC cores. One seventh field watershed (12J07F) has approximately 2.5 acres of infested POC and about 75 acres of healthy POC. A map of all seventh field watersheds can be found at: <http://www.fs.fed.us/r6/rogue-siskiyou/projects/foresthealth/poc/08-map-2.pdf>

One seventh field watershed (07L14W) was removed from the POC core list. This watershed exceeds the five percent infection criteria from the POC ROD (USDA-FS 2004). In this seventh field watershed, post Biscuit fire mapping shows approximately 26 acres of infected POC and 168 acres of healthy POC. Infection percent for this seventh field watershed is 13.4%. The two new PL locations were identified in 2004 as part of the post Biscuit fire POC mapping update. It is not possible to tell exactly when or how the area became infested. The new PL areas are located in the northeast quarter of section 29, Township 36 South, Range 12 West.

Phytophthora ramorum

The spread of *P. ramorum* poses a potentially serious threat to the forest ecosystem function, wildlife habitats, fire behavior, landscape aesthetics, and the horticultural and timber industries. (Goheen et al 2006, Rizzo and Garbelotto 2003, Appiah et al. 2004, Hansen et al. 2008).

Rizzo and Garbelotto (2003) speculate that the “broad host range of *P. ramorum*, the variability of symptoms between different hosts, and the pathogen’s aerial dispersal suggest that it has the potential to cause a cascade of long-term landscape changes.” In the California counties where Sudden Oak Death (SOD) was first discovered, the disease has already adversely affected ecosystem functions, increased fire and safety hazards and reduced property values in developed areas (Rizzo and Garbelotto 2003, Appiah et al. 2004, Goheen et al. 2006).

Federal (7 CFR Part 301, http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/regulations.shtml) and State (ORS 603-052-1230 and ORS 603-052-1250, <http://egov.oregon.gov/ODA/PLANT>) regulations are in place to protect natural resources and horticultural industries from human-assisted spread of *P. ramorum*. These regulations restrict the interstate and intrastate movement of regulated and restricted articles from designated quarantine areas. Regulated articles, which may be moved from quarantined areas contingent upon the application of certain phytosanitary measures, include soil and nursery stock (except acorns and seeds), unprocessed wood and wood products (including firewood, logs, and lumber), and plant products (including wreaths, garlands, and greenery) of designated host plant species. Specifically, federal and state regulations prohibit the movement of soil from known infested sites or from within five meters of known infected plants unless it has been sterilized.

Restricted articles from quarantined areas, which are prohibited from moving outside the quarantine area except under permit, include bark chips, forest stock, and mulch of designated host plant species. The regulations also include provisions for the issuance of certificates and compliance agreements, as well as provisions regarding treatments for regulated articles and inspection and sampling protocols for nurseries shipping host plants interstate. Water is not currently a regulated article.

As of January 2008, a 160 square mile area of Curry County, Oregon is currently subject to quarantine as established under these regulations and is described as follows: the portion of Curry County that lies inside the area south of the northern border of T38S R12W sections 29 and 30, T 39S R13W sections 1, 2, 3, 4, 5, and 6, and T39S R14W sections 1, 2, 3, 4, and 5; then west of the eastern border of T38S R12W sections 29 and 32, T39S R12W sections 5, 8, 17, 20, 29, and 32, T40S R12W sections 5, 8, 17, 20, 29, and 32, and T41S R12W sections 5 and 8; then north of the southern border of T41S R12W Sections 7 and 8, T41S R13W Sections 23 and 24 to the intersection with US Highway 101 and then northeast of US Highway 101 to the intersection with T41S R13W Section 10 and then north of T41S R13W Sections 8, 9, and 10; then east of the western border of the Pacific Coastline. The 102,400 acre *P. ramorum* quarantine area includes approximately 20,000 acres of land administered by the Rogue River-Siskiyou National Forest.

Currently, motorized vehicle use does not influence the spread or intensification of *P. ramorum* on the Rogue River-Siskiyou National Forest. Infested sites are not near or adjacent to roads or motorized trails.

Should *P. ramorum* be confirmed on other sites on the Rogue River-Siskiyou National Forest, decisions related to motorized vehicle use shall comply with federal and state regulations regarding this pathogen.

c. Direct and Indirect Effects of Alternatives

Phytophthora lateralis

Potential for the spread of *Phytophthora lateralis*, the pathogen that causes Port-Orford-cedar root disease is not simply a function of how many acres are entered. Rather, it is a function of a number of factors including acres entered with healthy POC, acres entered with PL, management performed on these acres, season of activity on these acres, and sequencing of units containing POC and PL to name a few. For a full discussion on the factors affecting pathogen spread and factors affecting risk of infection, refer to the FSEIS of the Record of Decision and Land Resource Management Plan for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI, 2004), incorporated herein by reference.

CHANGED:

Employing a planned combination of management practices can reduce the probability of long-distance spread more than a single practice. No priority is assumed by the order of management practices listed under Mitigation Measures Common to All Alternatives, Chapter II-51-52. Therefore, an integrated program using a combination of public education, road closures, road management measures, vehicle and equipment washing treatments, roadside sanitation*, timing of activities during dry seasons, using certified clean or Clorox bleach-treated water, regulation of special use activities such as cedar bough collecting, has a suggested probability of pathogen spread between zero and two percent per activity (USDA Forest Service USDI Bureau of Land Management 2004).

*Roadside sanitation is not included as a mitigation measure in this document because vegetation altering practices requires reinitiation of formal consultation with the Fish and Wildlife Service pursuant to the programmatic consultation completed on February 17, 2004, to implement the Record of Decision for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest 2004. The mitigation measures listed in this document are within the reasonable range of cost-effective management practices available to reduce PL spread.

Application of the Risk Key and the resultant management practices will make this project consistent with the mid-and large-scale geographic and temporal-scale effects described by the analysis in the FSEIS of the Record of Decision and Land Resource Management Plan for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI, 2004). Appendix F of this DSEIS contains information specific to where the Risk Key applies to decisions being proposed by this document.

CHANGED:

Alternative 1

Under this alternative, the existing condition would continue. No changes would be made to the current National Forest transportation system and no cross-country travel prohibition would be put into place. This would provide 86,211 acres of Measurably Contributing (MC-POC) and infested POC areas open for motorized use.

The potential for new areas of PL spread would be the greatest under this alternative. This is because Alternative 1 does not prohibit cross-country travel. All POC populations, except for specially designated areas closed to motorized travel, would be considered high risk sites as they all would potentially be within 50 feet of an OHV accessible area.

However, due to steep topography and heavy vegetation associated with most of these areas, it is estimated that significantly less acres are capable of supporting this use. Based on the analysis assumptions at DSEIS Chapter III-3, it is not anticipated that this use would measurably change. Therefore, the potential for importing PL onto sites with healthy POC and exporting PL off infested sites would not change from the current condition. More discussion concerning effects of this alternative is described in the FSEIS of the Record of Decision and Land Resource Management Plan for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI, 2004) as Alternative 1. These effects are incorporated by reference.

Impacts Common to Alternatives 2, 3, 4, and 5

Under these alternatives cross-country travel would be prohibited. This would close 86,211 acres MC-POC and infested POC areas open for motorized use. Eliminating motorized use off designated routes would help protect healthy populations of MC-POC. Therefore, Alternatives 2, 3, 4, and 5 would reduce the current level of impacts and have less effect than Alternative 1 on the potential for PL spread. In Alternatives 3, 4, and 5 there will be a decrease in allowable motorized use of roads and trails. However, these alternatives only propose minor decreases in motorized use within areas containing POC.

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In addition to cross-country travel closure, the Port-Orford Cedar Risk Key is a site-specific analysis tool to help determine where risk reduction management practices would be applied. Only those roads or trails that trigger the POC Risk Key because there is a proposed change in motorized use from the current condition were analyzed. The Risk Key analysis and a more complete list of tables highlighting those proposed road and trail changes are documented and found in Appendix F of this DSEIS.

Alternative 2

In general, Alternative 2 would designate the existing motorized travel routes, except for cross-country travel. Therefore, aside from reducing potential PL spread by closure of cross county travel, the potential for importing PL onto sites with healthy POC and exporting PL off infested sites would not change from the current condition (Alternative 1) as discussed above.

Alternative 3

In general, Alternative 3 would reduce risk to POC that measurably contributes to meeting management objectives on the Rogue River-Siskiyou National Forest by designating roads, trails, or areas for motorized vehicle use compared to the current situation. Designating specific areas for motorized use reduces the potential to export PL off infested sites and import PL onto uninfested sites as the area utilized for motor vehicle use declines.

There are three proposed changes in Alternative 3 that will introduce additional appreciable risk:

- 1) .05 mile of new motorized trail (Woodruff) in Township 36 South, Range 13 West, section 9. Access to the new trail from the west passes through a PL infested area;
- 2) 4.8 miles of Maintenance Level 1 roads in the Signal Butte area being proposed for conversion into motorized trails; and
- 3) 2.7 miles of a Maintenance Level 1 road to access Biscuit Hill are being proposed for conversion into a motorized trail.

These proposed road to trail conversions pass through both healthy and PL infested areas of POC. While this is a proposed change from the current condition, these areas currently receive OHV use due to the accessibility of the area's Maintenance Level 1 roads and openness of the terrain.

By implementing a combination of management practices contained in the mitigation section of Chapter II of this document, the effects would be consistent with those described in the January 2004, FEIS for Port-Orford-cedar management in Southwest Oregon. Therefore, no additional effects, direct or indirect are anticipated from the proposed changes. In addition, since these areas are currently receiving use by OHVs without the implementation of mitigation measures to abate the spread of PL, the proposed road and trail changes that will trigger the Risk Key and resultant management practices could decrease the likelihood of PL spread.

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Alternative 4

In general, this alternative has the greatest potential to reduce the spread of PL. This is because Alternative 4 proposes the most restrictive use of motorized vehicles within MC-POC and PL areas. All of the items in Alternative 3 requiring implementation of one or more of the POC Management practices are not present in Alternative 4. Therefore, no appreciable additional risk to POC that measurably contribute to meeting management objectives is occurring within this alternative. Risk is reduced compared to Alternative 3 because the potential for PL spread decrease due to overall reductions in motorized vehicle associated with this alternative.

Alternative 5

Under Alternative 5, only one of the proposed changes in Alternative 3 requiring implementation of one or more of the POC Management practices is included: 4.8 miles of Maintenance Level 1 roads being converted to motorized trails. These proposed road to trail conversions pass through both healthy and PL infested areas of POC. Risk is reduced compared to Alternative 3 as potential for PL spread is lessened due to an overall reduction in motorized opportunities in MC-POC and PL areas. In addition, as stated above, this area is currently receiving OHV use due to the accessibility of the area’s maintenance level 1 roads and openness of the terrain. Therefore, the proposed road to trail changes will trigger the Risk Key and resultant management practices, which could decrease the likelihood of PL spread.

Table III-16 below summarizes the change of motorized use within MC-POC and PL areas by alternatives.

Table III-16. Comparison of Alternatives – *Phytophthora lateralis* and Port-Orford-cedar

Measurable Contributing (MC) and <i>Phytophthora lateralis</i> (PL) infested Areas of Port-Orford-Cedar (POC)	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Acres of Cross-Country Travel (within PL infested POC)	9,697	0	0	0	0
Acres of Cross-Country travel (within MC-POC)	76,514	0	0	0	0
Miles of Open Roads (intersecting PL infested POC)	426.9	426.9	424.7	420.2	424.7
Miles of Open Roads (intersecting MC-POC)	892.8	892.8	871.7	852.6	871.7
Miles of Motorized Trails (intersecting PL infested POC)	8.7	8.7	6.1	6.0	6.1
Miles of Motorized Trails (intersecting MC-POC)	54.6	54.6	42.3	14.7	39.2

Phytophthora ramorum

All alternatives shall comply with federal and state regulations regarding *P. ramorum*. Soil from infested sites shall not be transported outside the currently designated quarantine area unless subjected to approved and officially verified sterilization treatment. Movement of restricted or regulated plant materials to locations outside the quarantine area shall comply with current regulations.

The current understanding of the role water-based propagules play in pathogen survival and spread is not well understood. Infested water is currently not a restricted article; however, to reduce the potential risks of spreading the pathogen, any water taken from infested streams for purposes such as dust abatement or construction for use outside the quarantine area shall be treated with Chlorox® according to label directions.

d. Cumulative Effects

The Rogue River–Siskiyou National Forest is within the North Coast and Siskiyou Risk Regions for POC. Of the 48,019 POC acres on the Powers Ranger District, 2,453 acres (5.1 %) are infested. Twenty percent of the sites in the North Coast Risk Region are considered to be high risk (25,250 acres). At this time approximately fifteen percent of the risk region is considered infested (18,900 acres). This level of infestation on the Powers Ranger district is below the infestation level for the Risk Region as a whole. In 100 years, the predicted amount of infested acres is predicted to increase to 17 percent of high-risk sites (approximately 20,800 acres).

For the Gold Beach and Wild Rivers Ranger Districts, there are approximately 99,551 acres of POC of which 10,649 acres are infested (10.7%). In this risk region, forty percent of the acres are considered to be at high risk (approximately 46,550 acres). Eleven percent of the Risk Region (12,800 acres) is considered infested. The current level of infestation is slightly below the eleven percent infested acres for the Risk Region as a whole. In 100 years, the predicted amount of infested acres is predicted to increase to 20 percent of high-risk sites (approximately 23,600 acres).

On the National Forest System lands, future projects would employ mitigation measures that are designed to reduce the potential for the spread of PL. It is unknown to what extent projects on private lands would lead to increased PL spread. It is not expected that the identification of motorized routes would add to the incremental increase of PL spread beyond the 100 year predictions above. Prohibiting cross-country motorized travel is expected to contribute to a reduction in PL spread and meet management objectives.

These estimates cover all management activity for the Forest Service and BLM. A more complete discussion of risk and rate of spread can be found in the FSEIS for Management of Port-Orford-cedar in Southwest Oregon, Siskiyou National Forest (USDA, USDI, 2004).

9. Terrestrial Wildlife Listed Species

Will motorized vehicle use affect wildlife species federally listed as Threatened or Forest Service Sensitive species?

Changes in this section between the FEIS and this DSEIS:

- Clarified effects of motorized use to owl cores

A Biological Evaluation process was conducted for, Proposed, Endangered, Threatened, or Sensitive (PETS) terrestrial wildlife species for this designation process; all information and findings are included within this Final EIS. It is Forest Service policy to minimize adverse effects to the habitat of listed Threatened or Endangered species and to minimize adverse effects to designated Critical Habitat for listed species as well as to protect individual organisms from harm or harassment as appropriate.

The purpose of this evaluation is to determine and document the possible effects that the proposed activity and alternatives would have on any PETS wildlife species (FSM 2672.4). A second objective of this evaluation is to ensure these species receive full consideration in the decision-making process, to maintain species viability and meet defined recovery goals. The Biological Evaluation process (FSM 2672.43) provides a description of office analysis, and mitigation activities necessary to ensure proposed management actions will not likely jeopardize the continued viability of:

- Species listed or proposed to be listed as Endangered or Threatened by the USDI Fish and Wildlife Service.
- Species listed as Sensitive by the USDA Forest Service Region 6 (USDA Forest Service 2008, FSM 2670.44).

a. Background

The US Fish and Wildlife Service (FWS) designates Proposed, Endangered or Threatened species under authority of the Endangered Species Act (ESA) of 1973 (Public Law 93-205), as amended. The Forest Service in the Pacific Northwest Region (FS Region 6) identifies and designates Sensitive species. This evaluation discloses impacts to those PETS species that: 1), are known or are suspected to occur inside the action area based on confirmed sightings or geographic range, 2), have suitable habitat in or near the action area, and 3), would be affected by the proposed action or other alternatives. Furthermore, this process identifies conservation measures included in proposed actions that would eliminate, reduce, avoid or compensate for unwanted effects to listed species.

Section 7 of the Endangered Species Act (ESA) also directs each Federal agency to insure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of any Threatened or Endangered species or result in the destruction or adverse modification of their critical habitat. The ESA also directs each Federal agency to confer or consult with the appropriate Secretary on any action, which is likely to jeopardize or affect the continued existence of any species or its critical habitat.

In compliance with Section 7 of the Endangered Species Act (ESA)(1973 *et seq.*) and the Forest Service Biological Evaluation process for Proposed, Threatened, Endangered, and Sensitive (PETS) terrestrial wildlife species, the list of species potentially occurring within the RRSNF was reviewed.

The January 31, 2008 Pacific Northwest Region (R6) listing of species applicable to the RRSNF was reviewed in regard to potential effects on any of these Sensitive species by actions associated with this proposal. Pre-field and reconnaissance results and determinations are summarized below. Tables III-6 and 7 displays the process and which of the steps were necessary to complete the impact evaluation for each PETS wildlife species considered.

Table III-6. Steps in the Biological Evaluation Process – Threatened Species

FWS Listed Threatened Wildlife Species & Habitat	Pre-Field Review Existing Sighting or Habitat?	Field Reconnaissance Species/Habitat Present?	Conflict Determination Potential Conflict?	Effects Analysis Needed?
Northern spotted owl	YES	YES	YES	YES
Spotted owl Critical Habitat	YES	YES	YES	YES
Marbled murrelet	YES	YES	YES	YES
Marbled murrelet Critical Habitat	YES	YES	YES	YES

Table III-7. Steps in the Biological Evaluation Process – Sensitive Species

FS Sensitive Wildlife Species	Pre-Field Review Existing Sighting or Habitat?	Field Reconnaissance Species/Habitat Present?	Conflict Determination Potential Conflict?	Effects Analysis Needed?
American peregrine falcon	YES	YES	YES	YES
Bald eagle	YES	YES	YES	YES
Harlequin duck	YES	YES	YES	YES
Lewis' woodpecker	YES	YES	YES	YES
White-headed woodpecker	YES	YES	YES	YES
Northern waterthrush	NO	NO	NO	NO
California wolverine	NO	NO	NO	NO
Pacific fisher	YES	YES	YES	YES
Pacific pallid bat	YES	YES	YES	YES
Townsend's big-eared bat	YES	YES	YES	YES
Pacific fringe-tailed myotis	YES	YES	YES	YES
Northwestern pond turtle	YES	YES	YES	YES
Oregon spotted frog	YES	YES	YES	YES
Foothill yellow-legged frog	YES	YES	YES	YES
Siskiyou mountains salamander	YES	YES	YES	YES
California slender salamander	YES	YES	YES	YES
Black salamander	YES	YES	YES	YES
Siskiyou short-horned grasshopper	YES	YES	YES	YES
Coronis fritillary	YES	YES	YES	YES
Mardon skipper	YES	YES	YES	YES
Insular blue butterfly	YES	YES	YES	YES
Hoary elfin	YES	YES	YES	YES
Johnson's hairstreak	YES	YES	YES	YES
Franklin's bumblebee	YES	YES	YES	YES
Siskiyou hesperian	YES	YES	YES	YES
Pristine springsnail	YES	YES	YES	YES
Crater Lake tightcoil	YES	YES	YES	YES
Pacific walker	YES	YES	YES	YES
Robust walker	YES	YES	YES	YES
Traveling sideband	YES	YES	YES	YES
Chace Sideband	YES	YES	YES	YES
Green sideband	YES	YES	YES	YES
Scale lanx	YES	YES	YES	YES
Highcap lanx	YES	YES	YES	YES
Oregon shoulderband snail	YES	YES	YES	YES
Klamath rim pebblesnail	NO	NO	NO	NO
Evening field slug	YES	YES	YES	YES
Western ridged mussel	YES	YES	YES	YES

Species background and accounts for FWS Threatened wildlife species and Critical Habitats, and FS Sensitive wildlife species, considered as part of this Biological Evaluation, are contained in Appendix C to this EIS, incorporated by reference.

b. Effects Mechanisms and Analysis Framework

See the assumption discussion at the beginning of Chapter III for a general list of assumptions used in this analysis.

Available literature indicates that public wheeled motor vehicle use of roads and trails affects wildlife, directly and indirectly, in a wide variety of ways. Although there is a considerable body of research describing effects of motorized roads and trails on wildlife, these interactions are complex, variable, and information gaps remain (Gaines et al. 2003, Trombulek and Frissell 2000, USDA Forest Service 1998). Road and trail-related effects can be categorized in a variety of ways; for this analysis they have been placed into the following three categories: effects resulting from human-caused mortality, effects resulting from changes in behavior, and effects resulting from habitat modification.

Human-caused mortality can be the result of collisions, hunting, trapping, poaching, negative human interactions, and collection. Death or injury from a vehicle hitting or running over an animal is well documented and affects the vast majority of terrestrial species, though to varying degrees (Trombulak and Frissell 2000). In general, road mortality increases with traffic volume and speed, and road kill on native surface forest roads is generally not significant for large mammals (USDA FS 1998). Small mammals and herptiles are more vulnerable because individuals are inconspicuous and slow-moving. Amphibians may be especially vulnerable to road mortality because their life histories often involve migration between wetland and upland habitats (Trombulak and Frissell 2000, USDA FS 1998). Raptors are also vulnerable to collisions on forest roads due to their foraging behaviors, but the most substantial documented mortality has been along highways. Roads and motorized trails open areas to increased poaching or illegal shooting and losses from incidental trapping. These factors can be substantial for species with low population numbers for which even low rates of additive mortality may affect population stability. On the RRSNF, the current magnitude of these impacts or their influence upon populations is largely unknown.

Changes in behavior can include displacement or avoidance, impacts on breeding behavior, and physiological impacts. Gaines et al. (2003) reviewed literature on road- and trail-associated effects upon wildlife and found that alteration of use of habitats in response to roads or road networks was the most common interaction reported. Fifty to sixty percent of the 29 focal species reviewed were impacted in this manner (Gaines et al. 2003). Studies have documented shifts in an animal's home range area, shifts in foraging patterns, and disturbance of nesting or breeding behaviors resulting from motorized road or trail use and associated increased human recreation activity facilitated by motorized access (Foppen and Reijnen 1994; Johnson et al. 2000; Rost and Bailey 1979). Recreation activities (hiking, camping, fishing, shooting, etc.) that are associated with the access provided by motorized routes, result in indirect disturbance and displacement effects that often exceed the direct influence of the roads and trails.

Many species avoid areas in proximity to roads or trails, or exhibit flight behavior within a certain distance of route use, though studies documenting the magnitude and duration of behavioral responses are limited. Road usage by vehicles has a substantial role in determining animal's road avoidance behavior.

Black bear, for example, crossed roads with low traffic volume more frequently than roads with high traffic volume, and almost never crossed interstate highways (Brody and Pelton 1989). Perry and Overly (1977) documented displacement of deer up to 800 meters from major roads, and from 200 to 400 meters from secondary and primitive roads.

Activities that create elevated sound levels or result in close visual proximity of human activities at sensitive locations (e.g., nest trees), have the potential to disrupt normal behavior patterns. Studies of the effects of human disturbance upon wildlife have revealed that the immediate postnatal period in mammals and the breeding period in birds are time periods when individuals are most vulnerable to disturbance. Intrusion-induced behaviors such as nest abandonment and decreased nest attentiveness have led to reduced reproduction and survival in species that are intolerant of intrusion (Knight and Gutzwiller 1995). Foppen and Reijnen (1994), for example, found that the reproductive success of forest bird species declined in areas fragmented by roads. Wasser et al. (1997) found that stress hormone levels were significantly higher in male northern spotted owls (but not females) when they were located less than 0.25 miles from a major logging road compared to spotted owls in areas greater than 0.25 miles from a major logging road. Chronic high levels of stress hormones may have adverse consequences on reproduction or physical condition of birds, though these effects are not well understood.

Wildlife response to noise disturbance is complex, being neither uniform nor consistent. Delaney et al. (1999) reviewed literature on the response of owls and other birds to noise and concluded that birds generally flush in response to disturbance when distances to the source are less than about 200 feet and when sound levels are in excess of 95 decibels and the tendency of a bird to flush from a nest declines with experience or habituation to the noise, although the startle response cannot be completely eliminated by habituation.

Habitat modification includes habitat loss, fragmentation, edge effects, snag and down log reduction, routes for competitors, movement barriers. Road and trail networks remove habitat but also have a broader effect than just the conversion of a small area of land to route surfaces. Andren (1994) suggested that as landscapes become fragmented, the combination of increasing isolation and decreasing patch size of suitable habitat is adversely synergistic, compounding the effects of simple habitat loss. In particular, species associated with old forest habitats may be impacted by such effects. A decrease in interior forest patch size results in habitat loss and greater distance between suitable interior forest patches for sensitive species such as the northern spotted owl and American marten.

Additional habitat modification occurs as an indirect effect of managing roads or trails for public wheeled motor vehicle use. Trees posing a potential safety hazard ("hazard trees") are removed along roads. These trees are typically snags that are within a tree-height distance from the road. This safety policy results in a largely "snag free" zone of 200 to 300 feet from a road's edge, also affecting the recruitment of large down wood within this zone. Few hazard trees are typically removed along trails.

Major highways are known to create movement barriers for a number of wildlife species, particularly wide-ranging carnivores and ungulates, and are suspected of being a major factor in the decline of some forest carnivores, such as fisher and marten (Brody and Pelton 1989, USDA FS 2001). The slower speed and lower traffic volume roads and trails that are being evaluated in the alternatives are less likely to create barriers to movement. However, the extent to which denser networks of roads and trails might result in barriers to movement for some wildlife species is unknown (USDA FS 2001a).

The following discussions are specific to those species on the RRSNF that have the potential to be affected.

Threatened Species and Critical Habitat

Spotted Owl Effects Mechanisms

The spotted owl was listed as threatened on June 26, 1990, due to widespread loss and adverse modification of suitable habitat across the owl's entire range and the inadequacy of existing regulatory mechanisms to conserve the owl (USDI FWS 1990).

There has been little data regarding the impacts of noise on spotted owls. However, the US Fish and Wildlife Service has recently analyzed the available data on spotted owls, murrelets and other species and has consulted species experts who have worked extensively with spotted owls to determine the extent to which above-ambient noises affect spotted owls. The results of this analysis indicate that spotted owls may flush from their nest or roost or may abort a feeding attempt of their young when the following activities occur up to the distances specified in Table III-8. This data has been used by the USFWS in biological opinions and it is the USFWS's current understanding of harassment distances based on the best available science.

Consequently, the distances will be incorporated into this analysis as current guidance for harassment distances for various activities as it relates to adverse effects to the spotted owl from harassment due to disturbance. If the FWS's understanding of these distances change, adjustments to these distances may be recommended in the future.

Table III-8. Harassment Distances from Various Activities for Spotted Owls

Type of Activity	Distance at which spotted owl may flush or abort a feeding attempt
A blast larger than 2 pounds of explosives	1 mile
A blast of 2 pounds or less	120 yards
An impact pile driver, a jackhammer, or a rock drill	60 yards
A helicopter or a single-engine airplane	120 yards
OHVs, chainsaws	65 yards
Heavy equipment	35 yards

The risk to spotted owls from noise disturbance is tied to the timing of the activity and is highest when adults are defending young or eggs in a nest or are feeding and protecting recently fledged juveniles. During this period, the separation of adults and their young could result in death or injury to the young as a result of predation.

The leading known causes of mortality in juvenile spotted owls are starvation and predation by great horned owls (Miller 1989). The time period when adults or offspring are unable to move away from threats or noises is between the time that the eggs are laid and when the young can fly, which is generally about two weeks after the young fledge from the nest. After the young are able to fly, it is assumed that adults and young may move, but would stay together if annoyed by noise. The timing of these development benchmarks (nesting and fledging) varies geographically, although spotted owls are generally believed to start laying their eggs around the beginning of March. In Oregon, data based on fledge dates indicate June 30th is the date by which almost all juveniles are capable of flight. This March 1 –June 30 period of vulnerability is called the “critical nesting period.”

Marbled Murrelet Effects Mechanisms

USFWS listed the marbled murrelet as ‘Threatened’ under the Endangered Species Act in 1992 (USDI FWS 1992b). The primary reasons postulated for the decline in marbled murrelet numbers included a loss of nesting habitat and poor reproductive success (USDI FWS 1997). Predation via corvids and or rodents is also considered a threat to reproductive success. Critical habitat for marbled murrelets was designated in 1996 and corresponds primarily to areas designated as Late-Successional Reserve in the Northwest Forest Plan (USDA and USDI BLM 1994, USDI FWS 1996).

The results of the same analysis by the FWS indicates that murrelets may flush from their nest or roost or may abort a feeding attempt of their young when the following activities occur up to the distances specific in Table III-9. These distances are somewhat different than the distances for spotted owls due to the available scientific data.

In addition, a visual harassment distance of a minimum of one hundred yards is included and is based on an effort by the Services’ Regional Office to quantify both visual and auditory harassment to murrelets (USDI 2003). This data has been used by the FWS in two biological opinions and it is the Service’s current understanding of harassment distances based on the best available science. Consequently, it will be incorporated into this analysis as current guidance for harassment distances for various activities as it relates to adverse effects to the murrelets from harassment due to disturbance. If the Services’ understanding of these distances change, adjustments to these distances may be recommended in the future.

Table III-9. Harassment Distances from Various Activities for Marbled Murrelet

Type of Activity	Distance at which murrelets may flush or abort a feeding attempt
A blast larger than 2 pounds of explosives	1 mile
A blast of 2 pounds or less	120 yards
An impact pile driver, a jackhammer, or a rock drill	100 yards
A helicopter or a single-engine airplane	120 yards
OHVs, chainsaws	100 yards
Heavy equipment	100 yards

Above-ambient noises further than these distances from murrelets are expected to have either negligible effects or, if the sound reaches no murrelet, no effect to murrelet. The types of reactions that murrelets could have to noise that the FWS considers having a negligible impact include flapping of wings, the turning of a head towards the noise, attempting to hide, assuming a defensive stance, etc.

The risk to murrelets from noise disturbance is tied to the timing of the activity and is highest when adults have eggs in a nest or are feeding and protecting recently fledged juveniles. During these periods the separation of adults and their young could result in death or injury to the young as a result of predation. The leading known causes of mortality in juvenile murrelets are starvation and predation by corvids (Miller 1989).

The timing of these development benchmarks (nesting and fledging) varies geographically, although murrelets generally start laying their eggs around the beginning of April. In Oregon, August 5th is the date by which data indicate that all juveniles are capable of flight and most have likely fledged and returned to the ocean sites.

c. Direct and Indirect Effects

Direct and indirect effects are analyzed on National Forest lands within the areas proposed for change under the Action Alternatives. The direct and indirect effects reflect the existing condition, which includes routes covered by the Federal Highway Safety Act, County Roads, and State and Federal Highways already designated for public use. The analysis includes NFS roads and trails, or routes mapped through the route inventory process that are proposed to be designated for motorized use.

Threatened Species and Critical Habitat

Northern Spotted Owl

Above-ambient noises further than the distances shown in Table III-8 for spotted owls are expected to have either negligible effects or no effect to spotted owls. The types of reactions that spotted owls could have to noise that the FWS considers to have a negligible impact, include flapping of wings, the turning of a head towards the noise, hiding, assuming a defensive stance, etc. (USFWS 2003). OHV manufacturers and OHV groups have been working to reduce noise emissions from many models of recreational vehicles. However, many models (particularly 2-cycle) still produce decibel levels similar to chainsaws.

If potentially new disturbing activities are implemented during the spotted owl critical nesting season (March 1 – June 30) within the prescribed distances in Table III-8 of occupied or unsurveyed spotted owl habitat, those activities may adversely affect spotted owls by causing adults to flush from their nest site, abandon a nest, or cause juveniles to prematurely fledge, interrupt foraging activity, or result in increased predation due to less protection when the adult flushes. After June 30, it is presumed that most fledgling spotted owls are capable of sustained flight and can avoid harmful disturbances.

Effects to spotted owls due to disturbance under **Alternatives 1, 2, and 4** would result in a **no effect (NE)** determination for disturbance or habitat modification. This determination is based on the fact that no new trail construction/reconstruction would occur and no Maintenance Level 1 roads would be converted to motorized trails. There would be no change in the amount of use that existing roads and trail receive, with the exception of Alternative 4, where motorized use that currently exists on approximately 114 miles of trail would be prohibited. Also, under **Alternatives 2, 3 (Proposed Action), 4, and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public.

Effects to spotted owls due to disturbance could occur under **Alternatives 3 (Proposed Action) and 5** and would result in a “**may effect, not likely to adversely effect (NLAA)**” determination assuming mitigation measures are applied.

This determination is due to the proposed trail construction/reconstruction and conversion of Maintenance Level 1 roads to motorized trails under this alternative. It is assumed that there would be no measurable change in the amount of use these routes currently receive. However, at this time there is no information that would allow the FS to meaningfully measure, detect, or evaluate potential effects. Therefore, though any effects may be discountable, an NLAA determination is made for disturbance to spotted owls.

ADDED:

The Letter of Concurrence from the U.S. Fish and Wildlife Service (in Appendix C) issued November 5, 2009, is in response to the Forest’s request for informal consultation for travel management activities. The USFWS agreed with the assessment that “disturbance will be reduced within the core areas or nest patches of seven spotted owl known sites on the Gold Beach and Wild Rivers Ranger Districts.” In addition, the USFWS concurred with the Forest that “the potential disturbance of spotted owls associated with 32 acres of spotted owl NRF habitat, *may affect, is not likely to adversely affect* the spotted owl due to disturbance because the Forest will implement mandatory PDCs that restrict activities during the critical breeding season, or will conduct protocol surveys to ensure spotted owls are not breeding in the area.”

Due to the potential for vegetation clearing (it is estimated that several conifer trees less than 8 inches in diameter would be cut) on the proposed Penn Sled trail, a “**may affect, not likely to adversely affect (NLAA)**” determination is made for suitable habitat for **Alternatives 3 (Proposed Action) and 5**, assuming mitigation measures are implemented. This determination is due to habitat potentially being degraded by construction/reconstruction activities.

For all **Action Alternatives**, spotted owl habitat and dispersal opportunities overall would not be reduced from current conditions. In the absence of large-scale disturbance (wildfire, insects, and disease) the densities of northern spotted owls would likely remain stable, notwithstanding other threats identified by the Sustainable Ecosystems Institute report (Courtney et al. 2004) which include barred owls and West Nile Virus.

Northern Spotted Owl Critical Habitat

Critical Habitat for the northern spotted owl was designated in Federal Register 57 and includes the primary constituent elements that support nesting, roosting, foraging (NRF), and dispersal. Designated Critical Habitat also includes forest land that is currently unsuitable, but has the capability of becoming suitable NRF habitat in the future (FR 73 47326). Primary constituent elements of spotted owl critical habitat are those physical and biological attributes that are essential to species conservation. In the final CHU the Service defined the following elements of Primary Constituent Elements;

- Sites for Breeding, Reproduction, and Rearing of Offspring (Nesting Cover or Shelter (Roosting))
- Food or Other Nutritional or Physiological Requirements (Foraging)

- Habitats That Are Representative of the Historical Geographical and Ecological Distributions of the Northern Spotted Owl

(1) Forest types known to support the northern spotted owl across its geographic range

(2) Forest types as described in the Rule are of sufficient area, quality, and configuration, or that have the ability to develop these characteristics, to meet the home range needs of territorial pairs of northern spotted owls throughout the year.

- (a) Nesting Habitat
- (b) Roosting Habitat
- (c) Foraging Habitat

2010 Spotted Owl Recovery Plan

On August 2011, the US Fish and Wildlife Service released the final spotted owl recovery plan (USDI Fish and Wildlife Service 2011). The plan describes four primary recovery criteria and 36 recovery actions.

The new information provided above and summarized by Courtney et al. (2004 and 2008) and the Final Revised Spotted Owl Recovery Plan (USDI Fish and Wildlife Service 2011) does not alter analysis or change the effects determinations for any of the Action Alternatives. The concerns for spotted owls related to a population decline and the increase in barred owls are less in southwest Oregon than in other areas within the range of the spotted owl because the population in South Cascades is stable and the barred owl population is not as robust as in the northern portions of the range of the spotted owl (Courtney et al. 2004, 2008; Anthony 2005 and 2006).

Marbled Murrelet

None of the **Action Alternatives** would remove or modify any murrelet habitat. The only proposed trail construction/reconstruction within the range of the murrelet occurs within a meadow where the trail follows an old wagon road. No habitat is present within this meadow.

Disturbance related effects would be the similar for the murrelet as described for the spotted owl. **Alternatives 1, 2, and 4** would result in a **no effect (NE)** determination for disturbance or habitat modification.

Effects to the murrelet due to disturbance could occur under the **Alternatives 3 (Proposed Action) and 5** and would result in a “**may effect, not likely to adversely effect (NLAA)**” determination assuming mitigation measures are applied. In addition, under **Alternatives 2, 3 (Proposed Action), 4, and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public.

This determination is due to the proposed trail construction/reconstruction and conversion of Maintenance Level 1 roads to motorized trails under this alternative. It is assumed that there would be no measurable change in the amount of use these routes currently receive. However, at this time there is no information that would allow the FS to meaningfully measure, detect, or evaluate potential effects. Therefore, though any effects may be discountable, an NLAA determination is made for disturbance to spotted owls.

If new or increased potentially disturbing activities are implemented within the prescribed distances (Table III-9) of occupied or unsurveyed murrelet habitat during the murrelet critical nesting season (April 1 – Aug 5), those activities would likely to adversely affect murrelets by causing adults to flush from their nest site, nest abandonment, premature fledging, interruption of feeding attempts, or increased predation due to less protection when the adult flushes. After August 5, it is presumed that most fledgling have returned to the ocean and disturbance from proposed actions within the prescribed distances shown in Table III-9. Between August 6 and September 15, project activities would not adversely affect murrelets, if daily timing restrictions are applied until September 15.

Marbled Murrelet Critical Habitat

Critical habitat for marbled murrelets was designated in May 1996 (61 FR 102:26256-26320). The Service has designated approximately 3.9 million acres of land as critical habitat, of which 78 percent (3.0 million acres) is located on Federal lands within the area covered by the NWFP boundary. For all **Action Alternatives**, there is a “**no effect (NE)**” determination made. No habitat within a designated CHU would be altered or affected.

Forest Service Sensitive Species

Table III-7 identifies R-6 Sensitive Species known or suspected to occur on the RRSNF. The following species were determined to have no conflict with the **Action Alternatives** because there are no known sightings or habitat potentially affected by analyzed actions, or the action area was determined to not be within the range of the species: **Northern waterthrush, California wolverine, Oregon spotted frog, and Klamath rim pebblesnail.** The determination for these species is “**No Impact.**”

Based on known or suspected species occurrence or suitable habitat the following species were analyzed and were determined to be unaffected by actions associated with the **Action Alternatives: American peregrine falcon, bald eagle, harlequin duck, Townsend’s big-eared bat, pallid bat, fringe-tailed bat, northwestern pond turtle, foothill yellow-legged frog, Siskiyou short-horned grasshopper, coronis fritillary, insular blue butterfly, hoary elfin, Johnson’s hairstreak, Franklin’s bumblebee, Siskiyou hesperian, pristine springsnail, Crater Lake tightcoil, pacific walker, robust walker, scale lanx, highcap lanx, evening fieldslug, and western ridged mussel.** Due to a lack of direct or indirect impacts to the species or their habitats from the proposed actions, the determination for these species is “**No Impact.**”

Based on known or suspected species occurrence or suitable habitat the following species were analyzed and were determined to potentially incur effects, as described below. These effects are essentially similar for all Action Alternatives.

Lewis’ Woodpecker and White-Headed Woodpecker

Effects to Lewis’ woodpecker and white-headed woodpecker due to disturbance under **Alternatives 1, 2, and 4** would result in a “**no impact**” determination. This determination is based on the fact that no new trail construction/reconstruction would occur and no Maintenance Level 1 roads would be converted to motorized trails. There would be no change in the amount of use that existing roads and trail receive, with the exception of Alternative 4, where motorized use that currently exists on approximately 114 miles of trail would be prohibited.

Generally, the new trail construction on the Siskiyou Mountains Ranger District is on a north-facing aspect where both ponderosa pine and oak habitats are very limited. Under **Alternatives 3 (Proposed Action) and 5**, roads “open” to the public are reduced by approximately 31 miles. However, approximately 23 miles of Maintenance Level 1 roads would be converted to motorized trails. In addition, Under **Alternatives 2, 3 (Proposed Action), 4 and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public.

Effects to these woodpecker species due to disturbance could occur under **Alternatives 3 and 5** and would result in a “**may adversely impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability range wide**” determination. This determination is due to the proposed trail construction/reconstruction and conversion of Maintenance Level 1 roads to motorized trails under these alternatives. It is assumed that there would be no measurable change in the amount of use these routes currently receive. However, at this time there is no information that would allow the FS to meaningfully measure, detect, or evaluate potential effects. Therefore, though any effects may be discountable, a “may impact individuals” determination (MIIH) is made for disturbance to Lewis’ woodpecker and white-headed woodpecker.

Pacific Fisher

Effects to the Pacific fisher due to disturbance under **Alternatives 1, 2, and 4** would result in a “**no impact**” determination. This determination is based on the fact that no new trail construction/reconstruction would occur and no Maintenance Level 1 roads would be converted to motorized trails. There would be no change in the amount of use that existing roads and trail receive, with the exception of Alternative 4, where motorized use that currently exists on approximately 139 miles of trail would be prohibited. In addition, Under **Alternatives 2, 3 (Proposed Action), 4, and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public.

Effects to the Pacific fisher due to disturbance could occur under **Alternatives 3 (Proposed Action) and 5** and would result in a “**may adversely impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability range wide**” determination. This determination is due to the proposed trail construction/reconstruction and conversion of Maintenance Level 1 roads to motorized trails under these alternatives. It is assumed that there would be no measurable change in the amount of use these routes currently receive. However, at this time there is no information that would allow the FS to meaningfully measure, detect, or evaluate potential effects. Therefore, though any effects may be discountable, a “may impact individuals” determination (MIIH) is made for disturbance for Pacific fisher.

Siskiyou Mountains, California Slender, and Black Salamanders

Under **Alternatives 1, 2, and 4**, there is no trail construction proposed nor is there any conversion of Maintenance Level 1 roads to motorized trails. For these alternatives, there is a determination of “**no impact**”.

Under **Alternatives 3 (Proposed Action) and 5**, the construction/reconstruction of 1.2 miles of trail through potential habitat on the Siskiyou Mountains Ranger District would affect approximately 1 acre of habitat for these species. In addition to potential habitat loss, there is a potential for direct mortality on individuals of these species from crushing by OHVs on both the new trail construction/reconstruction and where Maintenance Level 1 roads are converted to motorized trails on the Gold Beach RD. However, under **Alternatives 2, 3 (Proposed Action), 4, and 5**, harassment and direct mortality potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public.

Therefore, a “**may impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability range wide**” determination (MIIH) is made.

Traveling/Chace Sideband, and Oregon Shoulderband

Under **Alternatives 1, 2, and 4**, there is no trail construction proposed nor is there any conversion of Maintenance Level 1 roads to motorized trails. For these alternatives, there is a determination of “**no impact**.”

Under **Alternatives 3 (Proposed Action) and 5**, the construction/reconstruction of 1.2 miles of trail through potential habitat on the Siskiyou Mountains Ranger District would affect approximately 1 acre of habitat for these species. In addition to potential habitat loss, there is a potential for direct mortality on individuals of these species from crushing by OHVs on both the new trail construction/reconstruction and where Maintenance Level 1 roads are converted to motorized trails on the Gold Beach RD. However, under **Alternatives 2, 3 (Proposed Action), 4, and 5**, harassment and direct mortality potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public.

Therefore, a “**may impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability range wide**” determination (MIIH) is made.

Mardon Skipper

Under **Alternatives 1, 2, 4, and 5**, there is no trail construction proposed within any meadow. For these alternatives, there is a determination of “**no impact**.”

Under **Alternative 3 (Proposed Action)**, the construction/reconstruction of 0.5 miles of trail through potential habitat on the Gold Beach Ranger District would affect some meadow habitat for this species. Therefore, a **“may impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability range wide”** determination (MIIH) is made. It is recommended that an additional survey of this site be conducted prior to any reconstruction. If surveys are conducted and no individuals are found, a **“no impact”** determination is warranted.

Summary

A summary of the determination for Threatened and Forest Service Sensitive species is displayed in Tables III-10 and III-11 below and on the next page.

Table III-10. Effects Determination – Threatened Species

FWS Listed Threatened Wildlife Species & Habitat	Effects Determination				
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Northern spotted owl	NA	NE	NLAA	NE	NLAA
Northern spotted owl Critical Habitat	NA	NE	NE	NE	NE
Marbled murrelet	NA	NE	NLAA	NE	NLAA
Marbled murrelet Critical Habitat	NA	NE	NE	NE	NE

Codes for determinations:

NA – not applicable NE – no effect NLAA – may effect, not likely to adversely affect

Table III-11. Effects Determination – Forest Service Sensitive Species

FS Sensitive Wildlife Species	Effects Determination				
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
American peregrine falcon	NA	NI	NI	NI	NI
Bald eagle	NA	NI	NI	NI	NI
Harlequin duck	NA	NI	NI	NI	NI
Lewis' woodpecker	NA	NI	NI	NI	NI
White-headed woodpecker	NA	NI	NI	NI	NI
Northern waterthrush	NA	NI	NI	NI	NI
California wolverine	NA	NI	NI	NI	NI
Pacific fisher	NA	NI	NI	NI	NI
Pacific pallid bat	NA	NI	NI	NI	NI
Townsend's big-eared bat	NA	NI	NI	NI	NI
Pacific fringe-tailed myotis	NA	NI	NI	NI	NI
Northwestern pond turtle	NA	NI	NI	NI	NI
Oregon spotted frog	NA	NI	NI	NI	NI
Foothill yellow-legged frog	NA	NI	NI	NI	NI
Siskiyou mountains salamander	NA	NI	MIIH	NI	MIIH
California slender salamander	NA	NI	MIIH	NI	MIIH
Black salamander	NA	NI	MIIH	NI	MIIH
Siskiyou short-horned grasshopper	NA	NI	NI	NI	NI
Coronis fritillary	NA	NI	NI	NI	NI
Mardon skipper	NA	NI	MIIH	NI	NI
Insular blue butterfly	NA	NI	NI	NI	NI
Hoary elfin	NA	NI	NI	NI	NI
Johnson's hairstreak	NA	NI	NI	NI	NI
Franklin's bumblebee	NA	NI	NI	NI	NI
Siskiyou hesperian	NA	NI	NI	NI	NI
Pristine springsnail	NA	NI	NI	NI	NI
Crater Lake tightcoil	NA	NI	NI	NI	NI
Pacific walker	NA	NI	NI	NI	NI
Robust walker	NA	NI	NI	NI	NI
Traveling sideband	NA	NI	MIIH	NI	MIIH
Chace Sideband	NA	NI	MIIH	NI	MIIH
Green sideband	NA	NI	NI	NI	NI
Scale lanx	NA	NI	NI	NI	NI
Highcap lanx	NA	NI	NI	NI	NI
Oregon shoulderband snail	NA	NI	MIIH	NI	MIIH
Klamath rim pebblesnail	NA	NI	NI	NI	NI
Evening field slug	NA	NI	NI	NI	NI
Western ridged mussel	NA	NI	NI	NI	NI

Codes for determinations:

NA – not applicable

NI – no impact

MIIH – may impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability range wide

d. Cumulative Effects

Present and foreseeable future actions that may affect terrestrial wildlife species or habitats on the Forest include: wildland fire, fuels treatments, livestock grazing, dam maintenance, minerals management, developed and dispersed recreation, invasive species, timber harvest and vegetation treatments, reforestation, restoration, road management, and special uses. All of these activities will be designed to meet the direction provided within the Northwest Forest Plan and the local Land and Resource Management Plans (i.e., Forest Plans), and in accord with Aquatic Conservation Strategy objectives (NWFP 1994, Rogue River NF LRMP 1990, and Siskiyou NF LRMP 1989).

None of the alternatives would result in substantial direct or indirect adverse effects to terrestrial wildlife species. Thus, implementation of the project is not expected to result in detrimental cumulative effects to terrestrial wildlife species or habitat.

All routes that are being considered for designation within the alternatives of this project currently exist and are receiving some amount of use. Further, it is assumed that because of this existing use, regardless of which alternative is selected, detrimental effects to terrestrial wildlife habitat and populations from the motorized route network would either be reduced or maintained when compared to the current condition.

10. Management Indicator Species

Will motorized vehicle use affect species identified as LRMP Management Indicator Species, especially deer and elk within Big Game Winter Range areas?

The National Forest Management Act (NFMA) requires that each Forest identify management indicator species in the planning process and that "fish and wildlife habitats will be managed to maintain and improve habitat of selected management indicator species." By monitoring the habitat changes or trends of these particular indicator species, the effects of management activities on the associated animal communities can theoretically be determined. Since the habitats of these indicator species cover the majority of the vegetative seral stages on the Forest, it is assumed that meeting the requirements of these species will assure that the needs of associated species will be met over time.

Management indicators representing overall objectives for wildlife, fish, and plants may include species, groups of species with similar habitat relationships, or habitats that are of high concern (FSM 2621.1).

a. Background

Five forest wildlife species and one group were selected as Management Indicator Species (MIS), as detailed in the 1990 Rogue River Land and Resource Management Plan. Indicator species were intended to serve as habitat surrogates used to suggest qualitatively the condition of the habitat they represent.

Black-tailed deer and **Roosevelt elk** habitat will be managed to provide adequate forage, hiding cover, and thermal cover conditions throughout summer and winter range. Three species represent mature and old-growth forest habitat conditions: **pine marten**, **pileated woodpecker**, and **spotted owl**. Habitat for **woodpeckers** (besides pileated) is managed based on land allocations and represent snag habitat.

The 1989 Siskiyou NF LRMP identified eight management indicator species. These include the **bald eagle** (habitat along major rivers), **osprey** (habitat along large rivers), **spotted owl** (old-growth forest), **pileated woodpecker** (mature forest), **pine marten** (mature forest), **black-tailed deer** (early forest successional stages), **Roosevelt elk**, (early forest successional stages), and **woodpeckers** (wildlife trees or snags).

Species background and accounts for MIS species are contained in Appendix C to this EIS, incorporated by reference.

b. Effects Mechanisms and Analysis Framework

See the assumption discussion at the beginning of Chapter III for a general list of assumptions used in this analysis.

Black-tailed Deer and Roosevelt Elk

Deer and elk are likely to be affected by the following road or motorized trail-associated factors: collisions, hunting, poaching, displacement or avoidance, disturbance at a specific site (Gaines et al. 2003).

Mortality from vehicle collisions on highways and other surfaced roads is often substantial, but collisions on native surface routes with lower speeds and traffic volumes, such as the routes that are being evaluated in this project, is probably slight.

Greater human access can increase opportunities for hunting as well as poaching of deer and elk. Since hunting levels for deer are controlled through tag limits established by Oregon Department of Fish and Wildlife, an increase in hunting opportunity or hunter success is unlikely to impact deer populations (deVoss et al. 2003). Hunting limits also take into account estimates of the amount of illegal kill and road kill occurring.

In general, studies show that deer and elk will move away from, or flush, from an approaching person and will usually allow a person in or on a vehicle to get closer than a person on foot (Freddy et al. 1986; Wisdom et al. 2005).

In northeast Oregon, movement rates and flight responses in deer were not as substantial as in elk; however deer tended to seek dense cover when disturbed, which may reduce forage opportunities and a reduction in opportunities to put on needed fat for winter. Wisdom et al. found that mule deer showed little measurable flight response to experimental OHV treatments but cautioned that deer may well be responding with fine-scale changes in habitat use (i.e., avoidance), rather than substantial increases in movement rates and flight responses. Several studies have found that deer avoid areas in proximity to roads.

Road density can also have adverse effects on deer. These include loss of habitat, increased harvest from both legal and illegal hunting, and vectors for invasive/non-native species. High road densities and the associated traffic have been shown to decrease habitat quality and increase vulnerability for deer. During winter, when big-game species are on winter ranges, forage availability and value is generally low due to senescence of grasses and forbs. During this period open roads and the associated traffic have even greater detrimental effects on big-game due to their inability to escape harassment (disturbance) and both legal and illegal hunting pressure due to deep snow.

Elk experience higher levels of stress when exposed to increased road density. Physiological indicators of stress, such as fecal glucocorticoids, have been observed in elk exposed to increased road density and traffic on roads (Millspaugh et al. 2001). Energetic costs of moving away from disturbance associated with roads may be substantial (Cole et al. 1997). During periods of deep snow, disturbance associated with roads likely increases energetic costs even more. In elk, if body fat is reduced below 9% as animals enter the winter period, the probability of surviving the winter is reduced (Cook et al. 2004).

American Marten

Motorized routes can impact marten in a number of ways. Gaines et al. (2003) found marten likely to be affected by the following road and motorized trail-associated factors: collisions, displacement or avoidance, habitat loss or fragmentation, snag reduction, down log reduction, edge effects, and movement barrier or filter.

Buskirk and Ruggiero (1994) identified collisions with motor vehicles as a source of marten mortality. However, collisions are much less likely to occur along the slower-speed native surface routes that are being evaluated in this project.

Robitaille and Aubrey (2000), studying marten in an area of low road density and traffic (primarily logging roads), found that marten use of habitat within 300 and 400 meters of roads was significantly less than habitat use at 700 or 800 meters distance. Although marten were detected in proximity to roads in their study, significantly less activity occurred within these zones.

Martens are known to be sensitive to changes in overhead cover, such as can result from roads or trails (Hargis and McCullough 1984, Buskirk and Ruggiero 1994). Roads and trails can fragment habitat, and could thus affect the ability of marten to use otherwise suitable habitat on either side of the route.

High levels of coarse woody debris (snags, downed logs, root masses, large branches) is an essential component of marten habitat, especially during the winter months when marten require such structures for cover and hunting opportunities under the snow. In addition, large logs with cavities provide rest and den sites for marten. Activities that remove coarse woody debris are therefore likely to degrade marten habitat (Buskirk and Ruggiero 1994). Hazard tree removal along roads will reduce numbers of snags and, in turn, down logs within a distance of about 60 meters alongside roads. Motorized routes provide access to woodcutters, also reducing amounts of down wood within roadside corridors. These effects within 60 meters of roads may, however, be incidental to the displacement and avoidance factors that apparently influence marten use of habitat within a greater distance of motorized routes.

Northern Spotted Owl

Refer to Terrestrial Wildlife Listed Species Issue (Section E, 9, this Chapter) for background discussion and effects mechanisms related to the northern spotted owl.

Pileated Woodpecker and Other Woodpeckers

Cavity nesting birds include the pileated woodpecker, as well as other woodpeckers. Nesting habitat for this group of MIS is provided in forested vegetation types with snags larger than 15 inches diameter. Road and motorized trail-associated factors likely to affect these species are edge effects and the reduction of snags and down logs. Cavity nesting birds are typically more secure from nest predation than other forest birds, and recreational disturbance is not known to be a limiting factor as it is for some other forest bird species (Gaines et al. 2003).

Snag and log reduction occurs as an indirect effect of managing roads or trails for public use. Trees posing a potential human safety hazard (“hazard trees”) are removed along roads open for public use, as well as along roads receiving concentrated use during implementation of a specific project. Hazard trees are typically dead or dying trees that occur within a tree-height distance from the road. This safety policy results in a reduction in snags within a zone of about 200 to 300 feet from a road’s edge. Wisdom and Bate (2008) found that human access can have substantial effects on snag density. In their study area on the Flathead National Forest in Montana, stands adjacent to roads had snag densities three times lower than the snag densities within stands not adjacent to roads. The amount of down wood is also influenced within this zone, both by the removal of hazard trees that would become future down wood, and by the access provided for woodcutters. Down wood is important as a foraging substrate, providing insects required by species like the pileated woodpecker.

Bald Eagle and Osprey

Bald eagles could be affected by the following road and motorized trail-associated factors: displacement and avoidance, disturbance at a specific site (nest site), and reduction of snags.

Reported responses of bald eagles to human activities have included spatial avoidance of activity and reproductive failure (Anthony et al. 1995). Bald eagles seem to be more sensitive to humans afoot than to vehicular traffic (Grubb and King 1991, Hamann et al. 1999). Anthony and Isaacs (1989) found that the mean productivity of bald eagle nests was negatively correlated with their proximity to main logging roads, and the most recently used nests were located in areas farther from all types of roads and recreational facilities when compared to older nests in the same territory. Nest site protection through area closures is one of the primary ways that the Forest Service and land management entities have implemented measures to avoid the potential for nest failures due to human disturbances.

c. Direct and Indirect Effects of Alternatives

Black-tailed Deer and Roosevelt Elk

Variables such as the amount and frequency of traffic, and the spatial distribution of roads in relation to deer use, influence the degree of negative effects that roads have on deer use in forested habitats (Perry and Overly 1977; Johnson et al. 2000; deVos et al. 2003). Under all alternatives, there would be no change to existing levels of road density across the affected watersheds though Alternatives 3 and 4 would reduce the amount of roads and trails open to motorized traffic. However, the coupling of the diverse array of vegetative conditions with undulating terrain results in a low likelihood of deer and or elk being unable to efficiently locate and use effective security cover. Forage production, in the form of grasses – forbs – shrubs, would not be changed under any alternative.

Under **Alternative 1** there would be no change over current conditions. Under **Alternatives 2, 3 (Proposed Action), 4, and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public. In addition, Alternative 4 would reduce the miles of trails open to motorized vehicles.

Within the area covered by the 1990 RRNF LRMP, lands identified as Big Game Winter Range (MA 14) would employ seasonal restrictions to reduce impacts to big game within winter range areas as the need is identified. These seasonal restrictions are employed on the High Cascades and Siskiyou Mountains Ranger Districts, in all areas of Big Game Winter Range.

Due to either no change or an overall reduction in the potential for disturbance under all alternatives, the proposed actions will not contribute to a negative trend in viability to deer and elk on the Rogue River-Siskiyou National Forest.

Northern Spotted Owl

Refer to Terrestrial Wildlife Listed Species Issue (Section E, 9, this Chapter) for background discussion and effects on northern spotted owls.

American Marten

American marten are associated with mature habitats that generally provide relatively high levels of canopy closure, large snags, and downed wood. The Forest contains high-quality late-successional habitat that appears to be suitable for marten. Surveys that are designed to detect forest carnivores have been conducted. Marten are common on the High Cascades Ranger District. Activities that remove coarse woody debris are more likely to degrade marten habitat (Buskirk and Ruggiero, 1994). Ongoing hazard tree treatment (felling) along open Forest roads will continue to reduce numbers of snags. Motorized routes provide access to woodcutters, also potentially reducing amounts of down wood within roadside corridors. These effects within 60 meters of roads may, however, be incidental to the displacement and avoidance factors that apparently influence marten use of habitat within a greater distance of motorized routes.

Under **Alternative 1 (No-Action)**, there would be no change in the current condition. Areas that are within 100-200 feet of the road prism generally have reduced suitability for den and rest sites due to previous hazard tree felling and firewood removal.

Under **Alternatives 3 (Proposed Action), 4, and 5**, there is an overall decrease in the total “open” roads for vehicular and OHV traffic across the Forest. Areas that are within 200-300 feet of the road prism would continue to have reduced suitability for den and rest sites due to previous hazard tree felling. In addition, under **Alternatives 2, 3 (Proposed Action), 4, and 5**, harassment and direct mortality potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public.

Activities associated with project implementation such as new trail and play area construction, and conversion of Maintenance Level 1 roads to trails are likely to have the greatest potential effects on marten during the denning and early kit rearing periods because resident marten in those areas may not be habituated to the activities proposed.

However, under **Alternatives 3, 4, and 5**, there is an overall decrease in the total “open” roads for vehicular and OHV traffic across the Forest. Therefore, these alternatives may impact individual marten, however, implementation of any of the Action Alternatives is not likely to result in a loss of viability on the planning area (Forest), nor cause a trend to Federal listing or a loss of species viability range wide. Alternative 4 would have less impact than Alternatives 3 and 5 because motorized use of some trails would be prohibited.

Pileated Woodpecker and other Woodpeckers

Refer to Terrestrial Wildlife Listed Species Issue (Section E, 9, this Chapter) for background discussion and effects on woodpeckers.

There would be no change from the current level of disturbance for Pileated woodpecker and other woodpeckers under **Alternatives 1, 2, and 4**.

Effects to these woodpecker species due to disturbance could occur under the **Alternatives 3 and 5**. This is due to the proposed trail construction/reconstruction and conversion of Maintenance Level 1 roads to motorized trails under this alternative. It is assumed that there would be no measurable change in the amount of use these routes currently receive. In addition, under **Alternatives 2, 3 (Proposed Action), 4, and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public.

Due to either no change or an overall reduction in the potential for disturbance under all alternatives, the proposed actions will not contribute to a negative trend in viability to pileated and other woodpeckers on the Rogue River-Siskiyou National Forest.

Bald Eagle and Osprey

Bald eagles were listed as Endangered in Oregon and elsewhere by the US Fish and Wildlife Service in 1967 (USDI FWS 1967). In 1995, bald eagles were down listed to threatened status (USDI FWS 1995). The bald eagle was removed from the federal list of endangered and threatened plants and wildlife by a ruling published in the Federal Register on July 9, 2007 and effective August 8, 2007 (72 FR 37346). Bald eagles continue to be protected under the Bald and Golden Eagle Protection Act of 1940.

Bald eagle habitat on the Rogue River-Siskiyou NF is protected and managed in accordance with the Pacific Bald Eagle Recovery Plan (USDI FWS 1986), and Standards and Guidelines 4-3 and 4-4 of the Siskiyou National Forest Land and Resource Management Plan (USDA 1989). As part of the recovery plan, key nesting habitat areas have been identified on the Rogue River-Siskiyou NF along the Rogue, Illinois, and Sixes Rivers (USDI FWS 1986).

Osprey are closely associated with open water (lakes, rivers, and streams). It breeds in the Forest's major habitat types but only when adjoining open water. Osprey are regularly observed along the major rivers across the Forest.

Motorized use minimally occurs in proximity to large open water or major rivers. Motorized use designation would not impact nest trees. Bald eagles and osprey are often seen in proximity to human inhabited areas and impacts from disturbance are not anticipated. As such, no adverse impact is expected. No further discussion is being made in this analysis.

d. Cumulative Effects

Present and foreseeable future actions that may affect MIS species or habitats on the Forest include: wildland fire, fuels treatments, livestock grazing, dam maintenance, minerals management, developed and dispersed recreation, timber harvest and vegetation treatments, reforestation, restoration, road management, and special uses. All of these activities will be designed to meet the direction provided within the Northwest Forest Plan and the local Land and Resource Management Plans (i.e., Forest Plans), and in accord with Aquatic Conservation Strategy objectives (NWFP 1994, Rogue River NF LRMP 1990, and Siskiyou NF LRMP 1989).

None of the alternatives would result in substantial direct or indirect adverse effects to MIS species. Thus, implementation of the project is not expected to result in detrimental cumulative effects to wildlife MIS species or habitat.

All routes that are being considered for designation within the alternatives of this project currently exist and are receiving some amount of use. Further, it is assumed that because of this existing use, regardless of which alternative is selected, detrimental effects to terrestrial wildlife MIS habitat and populations from the motorized route network would either be reduced or maintained when compared to the current condition.

11. Other Special or Rare and Uncommon Terrestrial Wildlife

Will motorized vehicle use designation affect other special or rare and uncommon terrestrial wildlife species or neotropical birds?

Special species considered rare and uncommon include flammulated owl, great gray owl, pygmy nuthatch, and Oregon red tree vole, and habitat for neotropical migratory birds.

a. Background

Rare and Uncommon Species

Flammulated owl (*Otus flammeolus*)
Great gray owl (*Strix nebulosa*)
Pygmy nuthatch (*Sitta pygmaea*)
Oregon Red Tree Vole (*Arborimus longicaudus*)

Neotropical Migratory Birds

Vaux's swift, pileated woodpecker, Brown creeper; red crossbill; varied thrush, Hermit warbler; Hammond's flycatcher; Pacific-slope flycatcher; Wilson's warbler; winter wren, Black-throated gray warbler, Hutton's vireo, Olive-sided flycatcher; western bluebird; orange-crowned warbler; rufous hummingbird, Band-tailed pigeon, California quail, western screech-owl, Nuttall's woodpecker, oak titmouse, wrentit, California thrasher, black-chinned sparrow

Species background and accounts for rare and uncommon terrestrial wildlife species and neotropical birds are contained in Appendix C to this EIS, incorporated by reference.

b. Direct and Indirect Effects of Alternatives

Flammulated Owl

This species is closely associated with the mixed forest habitat type but it requires ponderosa pine in its habitat. This species is closely associated with multi-story, moderate-closed canopy structural conditions. There would be no effect to canopies of mixed or ponderosa pine forests or habitat under any alternative. In addition, under **Alternatives 3 (Proposed Action), 4, and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public. However, due to the potential of disturbance to nesting owls from noise associated with passenger vehicle and OHV traffic, all alternatives may impact but not adversely impact this species.

Great Gray Owl

The range for this species includes the Forest and there are several documented locations, primarily on the High Cascade Ranger District and two locations on the Siskiyou Mountains Ranger District. There would be no effect to suitable habitats for great gray owl habitat under any alternative. In addition, under **Alternatives 3 (Proposed Action), 4, and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public. However, due to the potential of disturbance to nesting owls from noise associated with passenger vehicle and OHV traffic, all alternatives may impact but not adversely impact this species.

Pygmy Nuthatch

This species is associated with the Forest's habitat types and is considered to require ponderosa pine as a habitat component. This species is present within the Forest. There would be no effect to suitable habitats for pygmy nuthatch habitat under any alternative. In addition, under **Alternatives 2, 3 (Proposed Action), 4, and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public. However, due to the potential of disturbance from noise associated with passenger vehicle and OHV traffic, all alternatives may impact but not adversely impact this species.

Oregon Red Tree Vole

The Oregon red tree vole is a nocturnal, arboreal mammal specialized in feeding on needles of Douglas-fir and other coniferous trees (Maser 1998). The species is endemic to western Oregon (Verts 1998) primarily in coniferous forests of western Oregon (Csuti et al. 1997; Maser 1998). There would be no effect to Douglas-fir forests or vole habitat under any alternative. In addition, under **Alternatives 2, 3 (Proposed Action), 4 and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public. However, due to the potential of disturbance from noise associated with passenger vehicle and OHV traffic, all alternatives may impact but not adversely impact this species.

Neotropical Migratory Birds (Landbirds)

Effects to landbirds are variable depending on the habitat associations of the individual species and effects to habitats previously described (see EIS Appendix C). There would be no effect to forested conditions under any alternative.

OHV trail development could create possible adverse impacts on nesting success and abundance of breeding bird via disturbance. Areas within 100 meters of OHV trails may provide reduced-quality habitat to nesting songbirds, particularly for species that suffer substantial losses of annual fecundity due to abandonment or desertion of individual breeding attempts. Limitation of OHV trail development in breeding areas of rare or endangered birds could minimize conflicts over land use between recreation and wildlife conservation.

In those areas with reductions in open roads or trails, a beneficial effect on landbird breeding and nesting can be expected. The converse would be true in those areas where Maintenance Level 1 roads are opened to OHV use, in any area with new trails or play areas, and in areas where mixed use is proposed due to increases in traffic, although effects would likely be reduced in areas with already open roads. In addition, under **Alternatives 3 (Proposed Action), 4, and 5**, harassment potential would be decreased due to the reduced potential for noise and human activities through the elimination of cross country travel and the reduction in the amount of roads open to the public. However, due to the potential of disturbance from noise associated with passenger vehicle and OHV traffic, all alternatives may impact but not adversely impact neotropical landbirds.

c. Cumulative Effects

Present and foreseeable future actions that may affect special or rare and uncommon terrestrial wildlife species or habitats on the Forest include: wildland fire, fuels treatments, livestock grazing, dam maintenance, minerals management, developed and dispersed recreation, timber harvest and vegetation treatments, reforestation, restoration, road management, and special uses. All of these activities will be designed to meet the direction provided within the Northwest Forest Plan and the Land and Resource Management Plans (i.e., Forest Plans), and in accord with Aquatic Conservation Strategy objectives (NWFP 1994, Rogue River NF LRMP 1990, and Siskiyou NF LRMP 1989).

None of the alternatives would result in substantial direct or indirect adverse effects to special or rare and uncommon terrestrial wildlife species or habitats. Thus, implementation of the project is not expected to result in detrimental cumulative effects.

All routes that are being considered for designation within the alternatives of this project currently exist and are receiving some amount of use. Further, it is assumed that because of this existing use, regardless of which alternative is selected; detrimental effects to special or rare and uncommon terrestrial wildlife species or habitats from the motorized route network would either be reduced or maintained when compared to the current condition.

12. Fisheries and Aquatic Species

Changes in this section between the FEIS and this DSEIS:

- Revised section to clarify effects analysis

Effects of motorized vehicle use on fish (native and anadromous) and other aquatic species

A Biological Evaluation of the Action Alternatives was conducted to evaluate potential effects on fish species listed under the Federal Endangered Species Act, Forest Service Sensitive fish species, and on other native fish species; all information and findings are included within this Final EIS. The Biological Evaluation process (FSM 2672.43) is intended to conduct and document activities necessary to ensure proposed actions will not likely jeopardize the continued existence or cause adverse modification of habitat.

a. Background

The Rogue River-Siskiyou National Forest provides a diverse array of aquatic habitats for many species of fish. There are over 2,000 miles of fish bearing stream habitat on the forest, of which approximately 1,200 miles support anadromous fish populations.

The Forest contains portions of six designated Wild and Scenic Rivers, including the: upper Rogue, lower Rogue, Chetco, Illinois, Elk, and North Fork Smith Rivers; all of which have fisheries Outstanding and Remarkable Values. Lake habitat is also abundant on the Forest, particularly within the Sky Lakes and Red Buttes Wilderness Areas, where many high elevation lakes are stocked with trout.

At the landscape scale, it is well documented that motorized routes can modify the frequency, timing, and magnitude of disturbance to aquatic systems. The current motorized travel system on the Forest includes 5,758 miles of motorized routes. Many of these routes are located within proximity to occupied fish habitat. The overriding adverse effect of this motorized travel system on the fisheries resource is via sediment input to stream systems, and to a lesser degree fragmentation of aquatic habitats due to impassable road/stream crossings. These conditions have contributed to decreased distribution and abundance of native salmonid stocks, particularly anadromous salmon and steelhead.

Status of Listed Species, Essential Fish Habitat, and Critical Habitat

Southern Oregon Northern California Coasts (SONCC) coho salmon was listed by the National Marine Fisheries Service (NMFS) under the Endangered Species Act (ESA) as Threatened on May 6, 1997 (62 FR 24588). This status was reaffirmed on June 28, 2005 (70 FR 37160). Critical habitat for SONCC coho salmon was designated by the NMFS on May 5, 1999 (64 FR 24049). Final protective regulations for SONCC coho were issued under section 4(d) of the ESA, on June 28, 2005 (70 FR 37160).

SONCC coho salmon and Chinook salmon Essential Fish Habitat (EFH) was defined by the Pacific Fisheries Management Council (PFMC) in Appendix A to Amendment 14 of the Pacific Coast Salmon Plan (PFMC 1999). This designated EFH under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) as amended by the Sustainable fisheries Act of 1996 (Public Law 104-267).

Oregon Coast (OC) coho ESU was listed as Threatened on August 10, 1998 (63 FR 42587). This listing was reevaluated and NMFS determined listing OC coho was not warranted on January 17, 2006. The listing was once again reevaluated and NMFS determined a listing of threatened was warranted on February 4, 2008 (73 FR 7816). OC coho salmon critical habitat was designated as Threatened also on February 11, 2008 (73 FR 7816). Final protective regulations for OC coho salmon were issued on February 11, 2008 (73 FR 7816). On April 28, 2009 NMFS announced that it was initiating a status review of OC coho. At present, this status review is ongoing.

The OC steelhead trout distinct population segment (DPS) was proposed as threatened under the ESA on August 9, 1996 (61 FR 41541), but was found not warranted for listing. OC steelhead is currently listed as a species of concern by NMFS.

Interim final rules for Essential Fish Habitat (EFH) under the Magnuson-Stevens Act (16 U.S.C. 1855(b)) were published in the Federal Register/ Vol. 62, No. 244, December 19, 1997 and final rules published in the Federal Register/ Vol. 67, No. 12, January 17, 2002. These rules are pertinent to Chinook salmon and coho salmon habitat within the OC and SONCC. There is no Recovery Plan for SONCC and OC coho salmon. An ESU review has not been completed.

The USDA Forest Service Region 6 Sensitive Species List was updated on January 31, 2008. This update identified the following Sensitive fish and aquatic mollusk species as potentially being affected by land management activities on the Rogue River-Siskiyou National Forest: Chinook salmon, inland redband trout, pit sculpin, western ridged mussel, Klamath rim pebblesnail, highcap lanx, scale lanx, robust walker, pacific walker, and pristine springsnail.

This project involves the identification of a motorized travel system for the Forest. Following completion of the MVUM, motorized travel on the Forest would be restricted to designated routes and areas only. In general, this project is merely designating permitted vehicle use on the existing system of routes within the Forest. Accordingly, the baseline (i.e., pre-project) condition includes all adverse impacts to aquatic biota populations and habitat from this existing route network. The magnitude and extent of road and trail impacts to fish population and fisheries habitat is highly variable depending on site specific characteristics. General effects of roads and trails on the fisheries resource are described below.

b. Effects Mechanisms and Analysis Framework

At the landscape scale, it is well documented that motorized routes modify the frequency, timing, and magnitude of disturbance to aquatic systems. The current motorized travel system on the Forest includes over 5,700 miles of motorized routes. Many of these routes are located within proximity to occupied fish habitat. The overriding negative effect of this motorized travel system on the fisheries resource is via sediment input to stream systems, Riparian Reserves fragmentation, and to a lesser degree fragmentation of aquatic habitats due to impassable or partially impassable road/stream crossings. These conditions have contributed to decreased distribution and abundance of native salmonid stocks, particularly anadromous salmon and steelhead.

This analysis evaluates the potential direct and indirect effects of the action alternatives on SONCC coho salmon, SONCC coho critical habitat, OC coho salmon, OC coho salmon critical habitat, EFH, and FS sensitive aquatic species. Some changes in motorized vehicle use are proposed where certain roads and trails cross fish-bearing habitat, including coho critical habitat. There is potential to affect individual coho, coho critical habitat, EFH, and sensitive fish habitat (i.e. SONCC Chinook, OC steelhead). Coho critical Habitat and EFH are the same within the boundaries of the Rogue River-Siskiyou National Forest, so any potential effect to one (i.e. critical habitat) would obviously result in an effect to the other (i.e. EFH). Further, coho critical habitat and EFH fully encompass the distribution of SONCC Chinook salmon and OC steelhead. This analysis will discuss effects to coho critical habitat for feasibility and readability, recognizing that the same effect would apply to EFH and sensitive fish habitat (i.e. SONCC Chinook, OC Steelhead).

For the purposes of this analysis, effects to listed fish species and sensitive aquatic biota will be disclosed for all changes proposed to the existing transportation system open to the public. For all other existing routes, where there is no change proposed a continuation of the existing use does not constitute a new effect.

Threatened, Endangered, and Sensitive Fish Species (TES)

In compliance with Section 7 of the Endangered Species Act (ESA) and the Forest Service Biological Evaluation process for TES fish species, the list of species potentially occurring within the Forest was reviewed. Lists for the Rogue River-Siskiyou National Forest (RRS-NF) and the Pacific Northwest Region (R-6) were reviewed in regard to potential effects on any of these species by actions associated with the Motorized Vehicle Use Project. Pre-field and reconnaissance results are summarized in the table on the following page.

In summary, PC chum salmon, inland redband trout, pit sculpin, western ridged mussel, Klamath rim pebblesnail, highcap lanx, scale lanx, robust walker, pacific walker, and pristine springsnail, are not known to occur or have suitable habitat within proximity to any of the proposed route changes included within any of the action alternatives. Therefore, a **No Impact** determination is rendered and these species will not be discussed further within this document.

Table III-23. Threatened and Sensitive Fish and Aquatic Species

Species		Pre-field Review	Field Surveys
Common name	Scientific Name	Existing Sighting or Potential Habitat	Habitat or Species Present
<i>Threatened Species</i>			
SONCC Coho salmon	<i>Oncorhynchus kisutch</i>	Yes	Yes
OC Coho Salmon	<i>Oncorhynchus kisutch</i>	Yes	Yes
<i>Sensitive Species</i>			
SONCC Chinook salmon	<i>Oncorhynchus tshawytscha</i>	Yes	Yes
PC chum salmon	<i>Oncorhynchus keta</i>	No	No
OC Steelhead	<i>Oncorhynchus mykiss</i>	Yes	Yes
Inland redband trout	<i>Oncorhynchus mykiss</i>	No	No
Pit sculpin	<i>Cottus pitensis</i>	No	No
Western ridged mussel	<i>Gonidea angulata</i>	No	No
Klamath rim pebblesnail	<i>Fluminicola sp.</i>	No	No
Highcap lanx	<i>Lanx alta</i>	No	No
Scale lanx	<i>Lanx klamathensis</i>	No	No
Robust walker	<i>Pomatiopsis binneyi</i>	No	No
Pacific walker	<i>Pomatiopsis californica</i>	No	No
Pristine springsnail	<i>Pristinicola hemphilli</i>	No	No

c. Direct and Indirect Effects

Alternative 1 – No Action

Under the No Action Alternative, no changes to the existing transportation system would occur. Current aquatic habitat conditions and trends would continue. The Land and Resource Management Plans for the RRSNF would continue to guide land management actions across the Forest. The direction provided within these plans is adequate to protect and maintain aquatic biota populations and habitat throughout the Forest.

Route proliferation would continue to result within areas where cross-country travel is permitted. Travel to dispersed campsites would not be limited to 300 feet off open roads. In general, these continued actions across the Forest have the potential to adversely cause upland erosion and sediment influx into stream networks.

Alternative 2

Alternative 2 was developed to meet the intent of the Travel Management Rule (36 CFR Part 212), with no alterations to the current motorized use on the Forest. As such, the effects caused by the existing road and trail designations to the fisheries resource are identical to those disclosed within Alternative 1.

Impacts common to Alternatives 2, 3, 4, and 5

Closure of Cross-Country Travel

Under these alternatives cross-country travel would be prohibited. This would close approximately 275,000 acres of the RRSNF to cross-country motorized travel. The vast majority of these acres are located in watersheds that do not contain coho salmon critical habitat, due to the presence of fish passage barriers. However, where SONCC/OC coho salmon critical habitat, Chinook or coho salmon Essential Fish Habitat, including sensitive species, such as, OC steelhead and SONCC Chinook salmon exist, the elimination of cross-country motorized travel provides a mechanism for potential reduction in upland erosion and sediment influx into stream networks. This reduction could lead to improvement and maintenance of existing high quality fisheries habitat. These benefits are not expected to occur at magnitudes where the effects are measurable or discernable when compared to the ongoing sediment production caused by natural events and Forest transportation systems.

Dispersed Camping Limitations

These alternatives also reduce motorized access for dispersed camping to 300 feet or less off of open roads. Dispersed recreation is a common activity across the Forest that can result in detrimental impacts to adjacent aquatic habitats. These effects may include increased sediment influx into water bodies from bank damage and user-created crossings, reduced riparian plant composition and structure, and increased risk of aquatic nuisance species transfer and introduction (Gucinski et al. 2001). Each of these effects has the potential to reduce fisheries habitat condition and population structure at the site scale. This reduction could lead to improvement of existing high quality fisheries habitat. These benefits are not expected to occur at magnitudes where the effects are measurable when compared to the ongoing natural sediment production, and that which will continue to occur as a result of the remaining road and trail system.

Impacts common to Alternatives 2, 3, and 5

Amend the Siskiyou and Rogue River National Forest Land and Resource Management Plans to make motorized use along portions of several trails consistent with Standards and Guidelines for the land allocations that they pass through.

Forest Trails #1169 (Game Lake Trail), #1173 (Lawson Creek Trail), #1161 (Illinois River Trail), #1166 (Hobson Horn Trail) - Lawson Creek-Illinois River, Indigo Creek, and Silver Creek Watersheds, #1207 (Boundary Trail) – Carberry, Grayback-Sucker Creek Watersheds and #900 and #903(Boundary connecting trails) – Upper Applegate River Watershed

In particular, a motorized section of Trail 1161 is located adjacent to occupied coho habitat within the Illinois River. This trail section is located upstream of Oak Flat, and is approximately 0.25 miles east of the river.

The Boundary Trail closely follows the watershed divide between Carberry Watershed and Grayback/Sucker Creek Watershed. This alignment would be expected to generate little hydrologic impact since it is at or near the top of the watershed. Further, the boundary trail is located along a ridgeline, and does not occur in close proximity to occupied coho habitat. The nearest coho habitat is over 4 miles downstream within Sucker Creek, with Chinook occurring even further downstream (approximately 10 miles downstream).

These changes would have no effect to coho salmon critical habitat, as the action merely involves an administrative change to make existing motorized use of trails consistent with the standards and guidelines within Siskiyou and Rogue River National Forest Land and Resource Management Plans.

Alternative 3 – Proposed Action

Alternative 3 includes changes to the existing motorized route designations within 22 5th field watersheds on the Forest. These actions are included in the tables below for each District. These actions occur on the Powers, Gold Beach, Wild Rivers, Siskiyou Mountains, and High Cascades Ranger Districts.

In addition to closing cross-country travel, the following discussion presents effects by specific Ranger Districts, with a focus on the proposed activities as identified in italics.

Powers Ranger District

Watersheds with proposed activities are included in Table III-14.

Table III-24. Watersheds with Proposed Activities – Powers Ranger District

Alternative(s)	Activity	Watershed	Total Units (miles/acres)	Units within Riparian Reserves	Distance from CH/EFH
3	Designate motorized mixed use	S. Fork Coquille River	3.09	1.58	9.35*
3	Designate motorized mixed use	W. Fork Cow Creek	2.44	0.95	0
4 and 5	Prohibit motorized use on an existing trail	S Fork Coquille	0.91	0.21	0.05*

Designate paved road for motorized mixed use

Forest Road 3348 – South Fork Coquille and West Fork Cow Creek Watersheds

This road use change designates mixed use on a specific road, and would not change the level of hydrologic impact represented by the existing road, since the road configuration and maintenance level would remain unaffected.

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that a certain segment of existing road would receive. Given that this road segment currently allows motorized use, no change from the existing condition would occur. Consequently, no change to coho critical habitat would occur. This road segment is located approximately 0.65 miles from occupied coho and Chinook habitat within the mainstem of the Rogue River.

Gold Beach Ranger District

Watersheds with proposed activities are included on the following table:

Table III-25. Watersheds with Proposed Activities – Gold Beach Ranger District

Alternative(s)	Activity	Watershed	Total Units (miles/acres)	Units within Riparian Reserves	Distance from CH/EFH
3	Convert mtn. Level 1 to motorized trail	Rogue River	3.77	0.75	1.60
5	Convert mtn. Level 1 to motorized trail	Rogue River	2.90	0.20	2.40
3 and 5	Convert mtn. Level 1 to motorized trail	Hunter Creek	2.68	0.39	11.50
3 and 5	Convert mtn. Level 1 to motorized trail	Lawson Ck-Illinois R	3.69	0	5.10
3	Prohibit motorized use on an existing trail	Lawson Ck – Illinois R	10.65	1.23	0
4	Prohibit motorized use on an existing trail	Lawson Ck – Illinois R	28.02	4.76	0
5	Prohibit motorized use on an existing trail	Lawson Ck – Illinois R	14.27	2.59	0
4	Prohibit motorized use on an existing trail	Shasta Costa – Rogue R	0.73	0.08	0
4	Prohibit motorized use on an existing trail	Hunter Creek	1.57	0	7.10
4	Prohibit motorized use on an existing trail	Pistol River	0.13	0	2.80
4	Prohibit motorized use on an existing trail	Chetco River	0.20	0	1.95
4	Prohibit motorized public use	Chetco River	3.27	0	0.35
4	Prohibit motorized public use	Winchuck River	3.13	0	0.65
3 and 5	Prohibit motorized mixed use	Chetco River	12.51	0.52	0.05
3 and 5	Designate motorized mixed use	Shasta Costa – Rogue R.	0.17	0.12	0.7
3 and 5	Designate motorized mixed use	Rogue River	0.14	0	0.1
3	Construct motorized trail	Rogue River	0.30	0	1.65

Convert maintenance level 1 roads to motorized trails

Forest Roads 3313103, 3680190, 3680195, and 3680220 – Rogue River and Hunter Creek Watersheds

These roads occur along the shared watershed divide between the Upper Hunter Creek, Lower Rogue River-Gold Beach, and Quosatana Creek subwatersheds. These roads descend gradually from the ridgeline about 500 feet in elevation, generally along the slope contour. Channel crossings are few and are near the uppermost extent of ephemeral streams. Direct and indirect effects of road to trail conversion would be limited to the immediate area and would not contribute sediment to perennial streams (refer to water quality section III, D, 1).

This change would have no effect to coho salmon or coho critical habitat, due to the affected routes not occurring within proximity to coho critical habitat. Within the Hunter Creek watershed, the nearest coho critical habitat is located approximately 11.5 miles downstream, within the Hunter Creek mainstem. Within the Rogue River watershed, the nearest coho salmon critical habitat is located over 3 miles downstream within Quosatana Creek.

Coho salmon usage within Rogue River watershed, and more specifically the Quosatana Creek subwatershed, is generally isolated within the mainstem Rogue River, which is used as a migration corridor for upstream bound adults, and outmigrating smolts. A July 2009 Level II stream survey did not locate any coho salmon within Quosatana Creek (Siskiyou Research Group 2009).

Forest Roads 3680351, 3680353, and 3680409 – Lawson Creek-Illinois River and Klondike Creek-Illinois River Watersheds

These roads were evaluated in the Lawson Creek Watershed Analysis (1997), and were rated as low to moderate sediment sources. These ridge-top roads are not located within the riparian reserve allocation, and are over 1000' from the nearest perennial stream channel. Conversion of these roads to trails would not result in any sediment influx into perennial stream channels.

This change would have no effect to coho salmon critical habitat, due to the affected routes not occurring within proximity to coho critical habitat. The nearest coho critical habitat is located over 5 miles downstream within Lawson Creek.

Forest Roads 3313110 and 3313117 – Rogue River Watershed

These roads are located near the ridgeline, and cross only one ephemeral stream channel. Conversion of these roads to trails would not result in any sedimentation outside of the immediate area. Thus, no sediment influx into perennial streams would occur (refer to water quality section III, D, 1).

This change would have no effect on coho salmon critical habitat, due to the affected routes not occurring within proximity to coho critical habitat. The nearest coho salmon critical habitat is located approximately 2.4 miles downstream within Quosatana Creek. Level II stream surveys in 2009 and 1998 did not document any coho within Quosatana Creek (Siskiyou Research Group, 2009, Siskiyou Research Group 1998), however the stream is accessible to coho and is considered coho critical habitat. A 2009 level II stream survey data identified only one Chinook juvenile within Quosatana Creek, although ample Chinook juveniles were identified within the mainstem Rogue River, just below the confluence with Quosatana (Bennett personal communication). It is assumed that these fish largely outmigrated from Quosatana Creek.

Construct New Motorized Trail

Woodruff Trail Connector – Rogue River Watershed

This action would occur within the Rogue River watershed, west of Quosatana Creek. This action would potentially create a long-term sediment source within the Quosatana Creek subwatershed, with potential to indirectly impact water quality within a tributary to Quosatana Creek, and to a lesser extent mainstem Quosatana Creek. The nearest CCH habitat is located 1.65 miles downstream of the proposed route, within Quosatana Creek. The influx of additional sediment into tributaries of and mainstem Quosatana Creek could result in a persistent negative impact; though these effects would be immeasurable and indiscernible due to the existing roaded nature of the subwatershed, and its existing sediment load. Suspended and deposited sediment and associated increased turbidity at high enough levels could impair essential behavior patterns (e.g. feeding) and influence egg to fry survival and smolt growth (Suttle et al. 2004).

Designate paved road for motorized mixed use

Forest Road 2308 – Shasta Costa Creek-Rogue River Watershed

This road use change designates mixed use on a specific road, and would not change the level of hydrologic impact represented by the existing road, since the road configuration and maintenance level would remain unaffected.

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that a certain segment of existing road would receive. Given that this road segment currently allows motorized use, no change from the existing condition would occur. Consequently, no change to coho critical habitat would occur. This road segment is located approximately 0.65 miles from occupied coho and Chinook habitat within the mainstem of the Rogue River.

Prohibit motorized mixed use

Forest Roads 1376010, 1376011, 1376012, 1376013, 1376014, 1376015, 1376019, 1376902, 1376906, and 1376908 – Chetco River Watershed

These road use changes eliminate mixed use on specific roads, and would not change the level of hydrologic impact represented by the existing road, since the road configuration and maintenance level would remain unaffected (Joplin 2011).

This change would have no effect on coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing road would receive. Given that these road segments would remain on the landscape and continue to receive motorized traffic, no change from their existing condition would occur. Consequently, no change to coho critical habitat would occur.

Prohibit motorized use on existing trails

Forest Trail #1173 (Lawson Creek Trail) – Lawson Creek-Illinois River Watershed

This trail has few ephemeral stream crossings, as it descends down the canyon slope and crosses Lawson Creek, a perennial fish-bearing stream. Motorized use does not currently occur on this trail because of the steep slopes and dense vegetation. Eliminating motorized use of this trail is consistent with current use, management direction, and Best Management Practices because of the trail's proximity to coho salmon critical habitat.

This change would have no effect on coho salmon critical habitat, as the trail is not currently receiving motorized use. Accordingly, the action would not alter existing conditions and trail use. The nearest coho salmon critical habitat is located immediately adjacent to the trail within Lawson Creek.

Forest Trail #1169 (Game Lake Trail) – Lawson Creek-Illinois Watershed

This trail segment extends from the Illinois River southward along the subwatershed divide. Although this trail has multiple ephemeral stream crossings, they are at or near the point of initiation of these channels. The slope position of this trail is benign, in that it follows the contour, does not intercept more than one perennial stream, and is located very near the subwatershed divide. Trail generated sediment would be limited to the immediate area of the trail, and would be small in quantity. Sediment would not reach coho critical habitat within the Illinois River (see water quality section III, D, 1). Eliminating motorized use of this trail is consistent with current use, management direction, and Best Management Practices because of the trail's proximity to coho salmon critical habitat.

This change would have no effect on coho salmon critical habitat, as the trail is currently receiving very little or no use by motorized vehicles. Accordingly, the action would not alter existing conditions or trail use. The nearest coho salmon critical habitat is located immediately adjacent to the trail within the Illinois River.

Wild Rivers Ranger District

Watersheds with proposed activities are included on the following table:

Table III-26. Watersheds with Proposed Activities – Wild Rivers Ranger District

Alternative(s)	Activity	Watershed	Total Units (miles/acres)	Units within Riparian Reserves	Distance from CH/EFH
3 and 5	Convert mtn. Level 1 to motorized trail	Hellgate Canyon – Rogue River	0.29	0	1.20
3	Convert mtn. Level 1 to motorized trail	Klondike Ck-Illinois R	0.76	0	1.25
3	Convert mtn. Level 1 to motorized trail	NF Smith River	2.72	0	0.70
3 and 5	Prohibit motorized use on an existing trail	Briggs Creek	11.11	0.89	6.70
3 and 5	Prohibit motorized use on an existing trail	Silver Creek	1.85	0.71	12.50
3 and 5	Prohibit motorized use on an existing trail	Sucker Creek	2.98	0.32	3.00
3 and 5	Prohibit motorized use on an existing trail	Indian Creek	1.08	0	1+ miles
4	Prohibit motorized use on an existing trail	Indigo Creek	13.80	1.20	0
4	Prohibit motorized use on an existing trail	Briggs Creek	27.08	11.49	3.85
4	Prohibit motorized use on an existing trail	Silver Creek	11.14	1.78	2.75
4	Prohibit motorized use on an existing trail	Sucker Creek	8.16	1.01	3.00
4	Prohibit motorized use on an existing trail	Indian Creek	1.08	0	1+ miles
3, 4, and 5	Prohibit motorized mixed use	Josephine Ck – Illinois R	11.97	3.43	0
4	Prohibit motorized mixed use	Silver Creek	4.59	0	9.30
4	Prohibit motorized mixed use	Klondike Ck – Illinois R.	0.20	0	1.25
3 and 5	Prohibit motorized public use	W. Fork Illinois	7.65	0.30	0.1
4	Prohibit motorized public use	W. Fork Illinois	16.69	0.30	0.15
3 and 5	Prohibit motorized public use	Silver Creek	0.65	0.23	13.8
3 and 5	Prohibit motorized public use	Josephine Ck – Illinois R.	4.82	2.56	0
4	Prohibit motorized public use	Josephine Ck – Illinois R.	11.50	4.13	0
3 and 5	Prohibit motorized public use	Deer Creek	1.52	1.20	0
4	Prohibit motorized public use	Briggs Creek	0.32	0	8.10
4	Prohibit motorized public use	N Fork Smith River	15.89	1.17	0

Prohibit Public motorized use on Forest roads

Forest Roads 4400445, 4400459, 4400460, 4400480, and 4400485 – West Fork Illinois River Watershed

This road network follows subwatershed divides throughout its length, with very small overlap into riparian reserve. Closure to public motorized use would have no impact on riparian resources or water quality (see water quality section III, D, 1).

This change would have no effect to coho salmon critical habitat, as the affected road segments would remain on the landscape. The nearest coho critical habitat is located approximately 0.10 miles from Forest Road 4400445, within Rough and Ready Creek. However, most of the affected road segments are located along ridgelines over 1.5 miles away from coho critical habitat within Rough and Ready Creek and the West Fork Illinois River.

Forest Roads 4300011, 4300910, 4300920, 4300925, 4201016, 4103011, 4103825, 4103827 – Josephine Creek-Illinois River and Deer Creek Watersheds

These roads would remain as Level 2 roads, subject to frequent administrative and permitted use and maintenance. The current hydrologic impacts from these roads would remain on the landscape. Closure to public use alone, is not expected to result in beneficial effects to water quality within affected watersheds (see water quality section III, D, 1).

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing road would receive. Given that these road segments would remain on the landscape and continue to receive motorized traffic, no change from their existing condition would occur. Consequently, no change to coho critical habitat would occur.

Several of these road segments are located adjacent to Josephine Creek, which is coho critical habitat.

Forest Road 2600050 – Silver Creek Watershed

This road would remain as a Level 2 road, subject to frequent administrative and permitted use and maintenance. The current hydrologic impacts from these roads would remain on the landscape. Closure to public use alone, is not expected to result in beneficial effects to water quality within affected watersheds.

Elimination of public motorized use would have no effect to coho salmon critical habitat, since the action merely involves a change in the type of use on the road segment, and due to the route not occurring within proximity to coho critical habitat, located in the mainstem Illinois River, over 13 miles downstream.

Prohibit motorized mixed use

Forest Roads 4201029, 4201881, 4300011, 4300910, and 4300920 – Josephine Creek-Illinois River Watershed

This road use change designates mixed use on a specific road, and would not change the level of hydrologic impact represented by the existing road, since the road configuration and maintenance level would remain unaffected.

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing road would receive. Given that these road segments would remain on the landscape and continue to receive motorized traffic, no change from their existing condition would occur. Consequently, no change to coho critical habitat would occur.

Several of these road segments are located adjacent to Josephine Creek, which is coho critical habitat.

Convert maintenance level 1 road to motorized trail

Forest Road 2509601 – Rogue River-Hellgate Watershed

This change would have no effect to coho salmon critical habitat, due to the affected route not occurring within proximity to occupied coho habitat. Further, road 2509601 is located along a ridgeline and does not cross any stream channels. The nearest coho salmon occupied habitat is located in the mainstem of Taylor Creek, approximately 1.2 miles downstream.

Forest Road 4402494 – North Fork Smith River

This road is located on a ridgeline and does not cross riparian reserve. This change would have no effect to coho salmon critical habitat, due to the affected route not occurring within proximity to occupied coho habitat. The nearest coho salmon occupied habitat is located in Biscuit Creek, approximately 0.7 miles downstream.

Prohibit motorized use on trails

Forest Trail #1184 (Silver Lake), #1142 (Taylor Creek), #1142A (Big Pine Spur), #1281 (Onion Way), #1282 (Secret Way), #1282A (Secret Way Spur), and #1135 (Swede Creek) – Briggs Creek and Silver Creek Watersheds

These trails generally follow minor ridgelines, and cross the heads of 6 ephemeral streams. Prohibiting motorized use on these trails would be consistent with protection of unstable slopes and sensitive riparian areas (see water quality section III, D, 1).

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing trail would receive. Given that these trails would remain on the landscape, and do not occur within close proximity to coho critical habitat, no change to coho habitat would occur. The nearest coho and Chinook occupied habitat is located approximately 6.7 miles downstream within the Illinois River.

Forest Trails #1206 (Mt. Elijah), #1214 (Bigelow Lake), #1245 (Bolan Lake), and #1245A (Kings Saddle) – Sucker Creek and Indian Creek Watersheds

These trails are located along ridgelines. There would be a localized reduction of erosion, associated with the elimination of motorized use. However, there would be no effect on water quality within distant listed streams.

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing trail would receive. Given that these trails would remain on the landscape, and do not occur within close proximity to coho critical habitat, no change to coho critical habitat would occur. The nearest coho critical habitat is located approximately 3 miles downstream within Sucker Creek.

Siskiyou Mountains Ranger District

Watersheds with proposed activities are included on the following table:

Table III-27. Watersheds with Proposed Activities – Siskiyou Mountains Ranger District

Alternative(s)	Activity	Watershed	Total Units (miles/acres)	Units within Riparian Reserves	Distance from CH/EFH
3 and 5	Prohibit motorized use on an existing trail	Headwaters Applegate River	3.84	1.22	8.20
4	Prohibit motorized use on an existing trail	Headwaters Applegate River	25.60	7.36	3.20
4	Prohibit motorized use on an existing trail	Upper Applegate R	13.04	5.10	0
3 and 5	Construct motorized trail	Headwaters Applegate River	1.18	0	6.30

Prohibit motorized use of trail

Forest Trail #958 (Horse Camp) – Upper Applegate River Watershed

This trail crosses four ephemeral channels and is within the riparian reserve of both Echo Creek and Cook and Green Creek. Closure to motorized use would be consistent with ACS goals for protecting riparian reserves. Closure is unlikely to affect water quality since the area is covered by snow much of the year, and channels are dry when use occurs (see water quality section III, D, 1).

This change would have no effect to coho salmon critical habitat, as it is located upstream of the Applegate Dam; which is permanent barrier to coho salmon and other anadromous fish species. Consequently, the Horse Camp trail is located outside the range of coho salmon critical habitat and Chinook and coho salmon essential fish habitat.

Construct and relocate trail to allow motorized use by Class III vehicles

Forest Trail #957 (Penn Sled) – Upper Applegate River Watershed

The trail is in a low precipitation area with no riparian crossings. The new trail segment does not cross riparian reserve, and would have no impact on water quality (see water quality section III, D, 1).

This action would have no effect on coho salmon critical habitat, as it is located upstream of the Applegate Dam; which is permanent barrier to coho salmon and other anadromous fish species. Consequently, the Penn Sled Trail is located outside the range of coho salmon critical habitat and Chinook and coho salmon essential fish habitat.

High Cascades Ranger District

Watersheds with proposed activities are included on the following table:

Table III-28. Watersheds with Proposed Activities – High Cascades Ranger District

Alternative(s)	Activity	Watershed	Total Units (miles/acres)	Units within Riparian Reserves	Distance from CH/EFH
3	Designate motorized mixed use	Headwaters Rogue River	5.72	3.72	20+
3	Designate motorized mixed use	S Fork Rogue River	16.21	2.44	20+
3	Designate motorized mixed use	Big Butte Creek	0.82	0.07	10.8
3	Designate motorized mixed use	Little Butte Creek	8.24	0.80	4.40

Designate Motorized Play Area

Near junction of Road 3050 and County Road 821 – Big Butte Creek Watershed

This action would have no effect on coho salmon critical habitat, as it is located upstream of Butte Falls; which is natural barrier to coho salmon and other anadromous fish species. Consequently, the proposed play area is located outside the range of coho salmon critical habitat and Chinook and coho salmon essential fish habitat.

Designate paved road for motorized mixed use

Campground Spurs – Headwaters Rogue River Watershed

This action would have no effect on coho salmon critical habitat, as it is located upstream of Lost Creek Dam; which is natural barrier to coho salmon and other anadromous fish species. Consequently, these sites are located outside the range of coho salmon critical habitat and Chinook and coho salmon essential fish habitat.

Forest Roads 34 and 37 – South Fork Rogue River Watershed

This action would have no effect on coho salmon critical habitat, as it is located upstream of Lost Creek Dam; which is natural barrier to coho salmon and other anadromous fish species. Consequently, these roads located outside the range of coho salmon critical habitat and Chinook and coho salmon essential fish habitat.

Forest Roads 3705 and 3720 – Little Butte Creek Watershed

This action would have no effect on coho salmon critical habitat, as it is located upstream of Lost Creek Dam; which is natural barrier to coho salmon and other anadromous fish species. Consequently, these roads are located outside the range of coho salmon critical habitat and Chinook and coho salmon essential fish habitat.

Alternative 4

Alternative 4 was developed to provide increased protection to some sensitive areas on the Forest, while still providing for motorized access. In general, the effects to fisheries from this alternative are very similar to those disclosed under Alternative 3. However, this alternative would eliminate motorized trails within Botanical Areas, and areas with serpentine soils, which could result in localized benefits to the associated stream systems.

These impacts would mostly be tied to a potential reduction in erosion on trails that would no longer allow motorized travel. Cross-country motorized travel would also be eliminated across the forest, with the exception of the existing Woodruff play area. Given that the current route network would remain on the landscape; no measurable effects to the fisheries resource, beyond the existing condition and trend, would occur.

All road and trail prohibitions being proposed in Alternative 3 are also included in this alternative; therefore, refer to Alternative 3 for those effects concerning road and trail prohibitions previously described above. The following discussion represents those effects unique to Alternative 4 by specific Ranger Districts, with a focus on the proposed activities as identified in italics.

Powers Ranger District

Prohibit motorized use on a trail

Forest Trail #1150 – South Fork Coquille River Watersheds

This trail is partially located within riparian reserve, and terminates near occupied coho salmon habitat within the South Fork Coquille River. This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing trail would receive. Given that this trail would remain on the landscape, no change to coho critical habitat would occur. The nearest coho occupied habitat is located approximately 0.05 miles downstream within the South Fork Coquille River.

Gold Beach Ranger District

Prohibit Public motorized use on roads

Forest Roads 1107350, 1107357, and 1107950 – Chetco River Watershed

This change would have no effect to coho salmon critical habitat, as the affected road segments would remain on the landscape. The nearest coho critical habitat is located approximately 0.35 miles from Forest Road 1107950, within the South Fork Chetco River. However, most of the affected road segments are located along ridgelines over 1.0 miles away from coho critical habitat within the South Fork Chetco River drainage.

Forest Roads 1205245, 1205246, 1205248, 1205249, and 1205321 – Winchuck River Watershed

This change would have no effect to coho salmon critical habitat, as the affected road segments would remain on the landscape. The nearest coho critical habitat is located approximately 0.65 miles from Forest Road 1205249, within the East Fork Winchuck River. However, most of the affected road segments are located along ridgelines over 0.65 miles away from coho critical habitat within the East Fork Winchuck River drainage.

Prohibit motorized use on existing trails

Forest Trail #1161 (Illinois River Trail) and Nancy Creek Trail – Lawson Creek – Illinois River, and Indigo Creek Watersheds

These trails are located on sub-watershed divides, and more commonly along contours within the Illinois River and Indigo Creek drainages. There are several ephemeral drainage crossings along these trails. Additionally, the Illinois River trail crosses Indigo Creek.

This change would have no effect on coho salmon critical habitat, as the trails would remain on the landscape. The nearest coho salmon critical habitat is located immediately adjacent to the trail within the Illinois River.

Forest Trail unnumbered near Shasta Costa Creek – Shasta Costa Creek-Rogue River Watershed

This trail is moderately-steep and generally located outside of riparian reserve. Given the gradient of the trail, elimination of motorized use would not mitigate the existing erosion occurring along the trail. Accordingly, this change would have no effect on coho salmon critical habitat, as the trail would remain on the landscape. The nearest coho salmon critical habitat is located immediately adjacent to the trail within Shasta Costa Creek.

Forest Trails #1166 (Silver Peak-Hobson Horn), and #1180 (Fish Hook Trail) – Indigo Creek and Silver Creek Watersheds

These trails are located along watershed and sub-watershed divides, outside of riparian reserves. Accordingly, this change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing trail would receive. Given that these trails would remain on the landscape, and do not occur within close proximity to coho critical habitat, no change to coho critical habitat would occur. The nearest coho critical habitat is located approximately 0.25 miles downstream within East Fork Indigo Creek.

Red Flat Trail – Hunter Creek Watershed

This trail is located along a minor drainage divide, outside of riparian reserves. This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing trail would receive. Given that this trail would remain on the landscape, and do not occur within close proximity to coho critical habitat, no change to coho critical habitat would occur. The nearest coho critical habitat is located over 7 miles downstream within Hunter Creek.

Forest Trail #1164 (Woodruff) – Rogue River Watershed

Elimination of motorized use of this trail would support ACS objectives to protect the integrity of stream channels and aquatic vegetation. No sediment would escape the immediate area or reach perennial streams.

This change would have no effect on coho salmon critical habitat, due to the affected routes not occurring within proximity to coho critical habitat and the action merely involves a change in the type of use that this existing trail would receive. In addition, the nearest coho salmon critical habitat is located over a half mile downstream within Quosatana Creek. Level II stream surveys in 2009 and 1998 did not document any coho within Quosatana Creek (Siskiyou Research Group, 2010, Siskiyou Research Group 1998), however the stream is accessible to coho and is considered coho critical habitat. A 2009 level II stream survey data identified only one Chinook juvenile within Quosatana Creek, although ample Chinook juveniles were identified within the mainstem Rogue River, just below the confluence with Quosatana (Bennett personal communication). It is assumed that these fish largely outmigrated from Quosatana Creek.

Wild Rivers Ranger District

Prohibit Public motorized use on roads

Forest Roads 4103087, 4201844, 4201846, 8204847, 2524015, and 2524048 – Josephine Creek-Illinois River and Deer Creek Watersheds

These roads would remain as Level 2 roads, subject to frequent administrative and permitted use and maintenance. The current hydrologic impacts from these roads would remain on the landscape. Closure to public use alone, is not expected to result in beneficial effects to water quality within affected watersheds (Joplin 2011).

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing road would receive. Given that these road segments would remain on the landscape and continue to receive motorized traffic, no change from their existing condition would occur. Consequently, no change to coho critical habitat would occur.

Several of these road segments are located adjacent to Josephine Creek, which is coho critical habitat.

Forest Roads 4402019, 4402112, 4402172, 4402206, 4402259, 4402450, 4402497, 4402530, and 4402550 – North Fork Smith River Watershed

This road network would be closed to public motorized use under Alternative 4. The network closely follows subwatershed divides and secondary ridgelines, managing to avoid riparian reserves throughout all but the western end of the network. These roads are distant from both Coho critical habitat and listed streams except at the west end (Joplin 2011).

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing road would receive. Given that these road segments would remain on the landscape and continue to receive motorized traffic, no change from their existing condition would occur. Consequently, no change to coho critical habitat would occur.

Prohibit motorized mixed use on roads

Forest Road 2512091 – Silver Creek Watershed

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing road would receive. Given that these road segments would remain on the landscape and continue to receive motorized traffic, no change from their existing condition would occur. Consequently, no change to coho critical habitat would occur.

Prohibit motorized use on trails

Forest Trails #1132 (Briggs Creek), #1143 (Red Dog), #1153 (Phone), #1146 (Dutchy Creek) and #1135 (Swede Creek) – Briggs Creek and Silver Creek Watersheds

These trails generally follow minor ridgelines, and cross the heads of ephemeral streams. Prohibiting motorized use on these trails would be consistent with protection of unstable slopes and sensitive riparian areas.

This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing trail would receive. Given that these trails would remain on the landscape, and do not occur within close proximity to coho critical habitat, no change to coho habitat would occur. The nearest coho and Chinook occupied habitat is located approximately 6.7 miles downstream within the Illinois River.

Forest Trails #1207 (Boundary Trail) and #1230 (Elk Creek) Carberry, Grayback-Sucker Creek Watersheds

The Boundary Trail closely follows the watershed divide between Carberry Watershed and Grayback/Sucker Creek Watershed. This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use for this trail, which has little hydrologic impact since it is at or near the top of the watershed.

Further, the Boundary Trail does not occur in close proximity to occupied coho habitat. The nearest coho habitat is over 4 miles downstream within Sucker Creek, with Chinook occurring even further downstream (approximately 10 miles downstream).

Elk Creek Trail follows an ephemeral channel within the Riparian Reserve for more than half its length and crosses the headwaters of Grayback Creek. Prohibiting motorized use on this trail would be consistent with protection of unstable slopes and sensitive riparian areas. This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing trail would receive. Given that this trail would remain on the landscape, and does not occur within close proximity to coho critical habitat, no change to coho critical habitat would occur. The nearest coho critical habitat is located approximately 4.4 miles downstream within Grayback Creek.

Siskiyou Mountains Ranger District

Prohibit motorized use on trails

Forest Trails #1207 (Boundary Trail), #900, and #903 (Connector Trails) – Upper Applegate River Watershed

The Boundary Trail closely follows the watershed divide between Carberry Watershed and Grayback/Sucker Creek Watershed. This change would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use for this trail, which has little hydrologic impact since it is at or near the top of the watershed.

Further, the Boundary Trail does not occur in close proximity to occupied coho habitat. The nearest coho habitat is over 4 miles downstream within Sucker Creek, with Chinook occurring even further downstream (approximately 10 miles downstream).

Prohibiting motorized use on the connector trails would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing trails would receive. In addition, these trails would remain on the landscape, and are outside the range of coho salmon critical habitat and Chinook and coho salmon essential fish habitat because they are located upstream of Applegate Dam, which is a natural barrier to anadromous fish species.

Forest Trail #959 (Cook and Green) – Headwaters Applegate River Watershed

This trail is located along Cook and Green Creek, with several ephemeral channels. Elimination of motorized use would have no effect to coho salmon critical habitat, as it is located upstream of the Applegate Dam; which is permanent barrier to coho salmon and other anadromous fish species. Consequently, the Horse Camp trail is located outside the range of coho salmon critical habitat and Chinook and coho salmon essential fish habitat.

Forest Trail #921 (Little Grayback) – Headwaters Applegate River Watershed

This trail is located near the watershed divide. Elimination of motorized use would have no effect to coho salmon critical habitat, as it is located upstream of the Applegate Dam; which is permanent barrier to coho salmon and other anadromous fish species. Consequently, the Horse Camp trail is located outside the range of coho salmon critical habitat and Chinook and coho salmon essential fish habitat.

Forest Trails #919 (Mule Mountain), #920 (Mule Creek), and #918 (Charley Buck/Baldy Peak) – Upper Applegate River Watershed

Trail #918 and #919 follow the subwatershed divide and secondary ridgelines. These two trails are benign in terms of riparian or water quality impacts since they avoid riparian areas. Trail #920 follows the majority of the main channel of Mule Creek up to the headwaters. This results in abundant tributary crossings near their confluence with the mainstem. The trail also intercepts many first order tributaries on its way to join Trail #919 at the ridge. The Squaw-Elliott Watershed Analysis states that Mule Creek typically becomes dry by June of most years and remains so until the autumn rains. This would tend to reduce the level of effect of motorized impact; however, motorized use so closely following the channel is inconsistent with ACS objectives protecting stream bank integrity and aquatic vegetation. Mule Creek also provides critical Coho habitat near the confluence with the Applegate River; trail generated sediment is likely to be readily flushed into reach critical habitat. Prohibiting motorized use would alleviate some stream channel degradation, even if pedestrian use continues (Joplin 2011).

Elimination of motorized use along Trail #920 could result in an immeasurable beneficial effect to coho critical habitat within Mule Creek, associated with reduced sediment influx. Though the continued presence of the trail and use by non-motorized traffic would continue create sediment, similar to the existing condition.

Elimination of motorized use along Trails #918 and #919, would have no effect to coho salmon critical habitat, as the action merely involves a change in the type of use that certain segments of existing trail would receive. Given that these trails would remain on the landscape, and do not occur within close proximity to coho critical habitat, no change to coho critical habitat would occur.

High Cascades Ranger District

There are not changes proposed to the High Cascades Ranger District under this alternative. The Prospect OHV system would remain in place and current management practices would continue.

Alternative 5 – Preferred Alternative

Alternative 5 was developed as a combination of Alternatives 3 and 4 with the objective to provide increased protection to some sensitive areas on the Forest, while still providing for motorized access. In general, the effects to fisheries from this alternative are very similar to those disclosed under Alternatives 3 and 4.

In particular, Alternative 5 **removes** the actions identified below that were analyzed and described in Alternative 3 (proposed action) and **incorporates** the following actions that were analyzed and described in Alternative 4.

Powers Ranger District

***Removes:** Designate paved road for motorized use – Forest Road 3348*

***Incorporates:** Prohibit motorized use on existing trail – Forest trail #1150 (Big Tree)*

Gold Beach Ranger District

***Removes:** Convert maintenance level 1 roads to motorized use – Forest Road 3680409*

***Removes:** Construct new motorized trail – Woodruff trail connector*

***Incorporates:** Prohibit motorized use on existing trails – Forest trail #1164 (Woodruff), #1161 (Illinois River Trail) and #1169 (an additional .8 mile of Game Lake Trail)*

Wild Rivers Ranger District

Removes: Convert maintenance level 1 roads to motorized use – Forest Road 4402494

Siskiyou Mountains Ranger District

No changes from Alternative 3 are being proposed within this District. Inversely, there are no proposed design elements of Alternative 4 being incorporated within this District.

High Cascades Ranger District

Removes: Designate Play Area – Near junction of Road 3050 and County Road 821

Removes: Designate paved roads for motorized mixed use – Campground spurs, Forest Roads 34, 37, 3705, and 3720.

The effects of combining these proposed changes into Alternative 5 would mostly provide a potential reduction in localized erosion on trails that would no longer authorize motorized travel. Cross-country motorized travel would also be eliminated across the forest, with the exception of the existing Woodruff play area. Given that the current route network would remain on the landscape; no measurable effects to the fisheries resource, beyond the existing condition and trend, would occur.

Summary of Effects Determination

The closure of cross-country travel and limits on dispersed camping included in the action alternatives would have a **Beneficial Effect** on SONCC coho salmon, SONCC coho critical habitat, OC coho salmon, and OC coho salmon critical habitat. Further, these activities will have a **Beneficial Effect** to Essential Fish Habitat for coho salmon and Chinook salmon. These Beneficial Effects are covered under the existing programmatic consultation for Fish Habitat Restoration Activities in Oregon and Washington (NMFS 2008, NMFS 2006, USFWS 2007), under category 9 “Reduction of Recreation Impacts”. Further, this action would create a Beneficial Impact to SONCC Chinook salmon, and OC steelhead.

All other proposed activities under **the Action Alternatives** would have no effect on coho salmon or coho critical habitat and would have no effect to Essential Fish Habitat for coho salmon and Chinook salmon, and no impact to SONCC Chinook salmon and OC steelhead. Due to these no effect determinations, no further consultation with NOAA Fisheries Service is required.

As stated earlier in this discussion, **No Impact** was determined for effects on PC chum salmon, inland redband trout, pit sculpin, western ridged mussel, Klamath rim pebblesnail, highcap lanx, scale lanx, robust walker, pacific walker, and pristine springsnail.

d. Cumulative Effects

None of the Action Alternatives would result in measurable direct or indirect effects to fisheries resources at the watershed or subwatershed scale. Detrimental effects to aquatic biota habitat and populations from the motorized route network would either be reduced or maintained when compared to the current condition. Thus, implementation of the project is not expected to result in detrimental cumulative effects to the fisheries resource.

Present and foreseeable future actions that may affect the fisheries resource and aquatic habitats on the Forest include: wildland fire, fuels treatments, livestock grazing, dam maintenance, minerals management, developed and dispersed recreation, timber harvest and vegetation treatments, reforestation, restoration, road management, and special uses. All of these activities will be designed to meet the direction provided within the Northwest Forest Plan and the Land and Resource Management Plans (i.e., Forest Plans), and in accord with Aquatic Conservation Strategy objectives (NWFP 1994, Rogue River NF LRMP 1990, and Siskiyou NF LRMP 1989).

13. Visuals

Effects of motorized vehicle use on-scenic quality

The scenic resources on the Rogue River-Siskiyou National Forest were inventoried under the Forest Service's Visual Management System (VMS) during the late 1970s and have been updated as specific projects were identified. This motorized vehicle use designation project is analyzed utilizing the VMS in order to maintain the integrity of the original inventory and established Visual Quality Objectives (VQOs).

a. Background

Scenic Management Guidelines

Basic inventories for developing the VQOs of an area include:

Landscape Variety Class (A = Distinctive; B = Common; and C = Minimal) is a determination of the importance of the scenic quality of the natural landscape.

Sensitivity Level (Level 1 = High; 2 = Average; and 3 = Low) is a measure of the people's concern for scenic quality.

Distance Zones is a measurement of the landscape seen from the viewing point (foreground is up to one-half mile; middleground is up to five miles; and background is to the remaining seen area).

Forested foreground scenery viewed from sensitivity level one roads and trails would be expected to exhibit a late seral character as well as a multi-storied stand of conifers. The immediate foreground should display a diversity of species and age groups including hardwoods and the shrub/groundcover layer.

Attention to details, such as minimizing ground disturbance, reducing stump heights, and managing to view large trees is necessary to maintain the sense of a natural system and the traveling public's scenic expectations. Form, lines of individual trees, and color are the dominant characteristics of the seen landscape in foregrounds.

Middleground and background areas should appear in a near natural state with openings of sizes and shapes that would reflect natural processes. Texture and lines in the landscape are important in these views (USDA 1974).

In 1995, the Visual Management System was implemented and supersedes the Visual Management System which was utilized and incorporated into the individual Rogue River-Siskiyou National Forest Management Plans (1989 & 1990). Both systems have maintained and enhanced the visual character of National Forest and Grasslands since 1974. The newer Scenery Management System, also referred to as Landscape Aesthetics, is a further refinement for integrating the benefits, values, desires and preferences regarding aesthetics and scenery for all levels of land management planning on the Forest.

Implementation of all projects on the Rogue River-Siskiyou National Forest will incorporate the Scenery Management System. Although, very similar, the Visual Management System is utilized for the effects analysis of motorized vehicle use on scenic quality for Forest settings.

Scenic Analysis Area

Portions of the Forest are visible from several important viewpoints in and around the greater Ashland, Medford, Grants Pass, and Gold Beach areas as well as from Interstate 5, Highways 199, 62, and 140, and Forest roads and trails.

The majority of the visual land allocations as associated with the Forest Plans are to Foreground Partial Retention and Middleground Partial Retention. These areas, as seen from selected travel routes and use areas are to be managed so that, to the casual observer, results of activities are evident but are visually subordinate to the landscape. A management system is adopted which introduces some alteration of standard vegetation treatments (4-66 – 4-143, Siskiyou LRMP; 4-33 – 4-308, Rogue River LRMP).

Land management allocations on the Forest and their associated VQOs are presented in Table III-19 below. See EIS Chapter I for reference to the goal and description of the allocation, for the allocation reference number.

Table III-29. Visual Quality Objectives and Land Management Allocations

LRMP	Preservation	Retention	Partial Retention	Modification	Maximum Modification
Siskiyou	MA 1, 2, 3, 4, 5, 6, 7, 8, 9, 11	MA 10, 11, 12	MA 11, 13	MA 11, 14	---
Rogue River	MA 13, 25	MA 3, 5, 6, 8, 10, 11, 12, 15, 19, 26	MA 7, 9, 22	MA 4, 14, 16, 17, 18	MA 1, 20, 21, 23

b. Direct and Indirect Effects of Alternatives

The scenic quality of the Forest would not be directly affected by the **No-Action Alternative or Alternative 2**. The existing condition would persist with no additional motorized roads, trails, or areas constructed.

The scenic quality of the Forest could slightly be directly affected by **Alternative 3 (Proposed Action) and Alternative 5**. Approximately 2 miles of trails would be constructed. New motorized trails would include construction of a 0.5 mile connection to the Woodruff Trail (MA 14 (Siskiyou LRMP)) under Alternative 3 and relocating a small portion of the 1.2 miles of the Penn Sled Trail (MA 14, 20, 21 (Rogue River LRMP)) under Alternatives 3 and 5. Both of these trails would run through Management areas that allow either Modification or Maximum Modification of visuals, thereby permitting the proposed construction and associated maintenance.

The Penn Sled Trail already exists as a historical motorized trail with trail tread in tact. Thus, direct effects would involve minor impacts related to simple maintenance. New trail construction or maintenance would involve a minimal amount of vegetation disturbance including light brushing and a limited number of conifers (less than 8 inches in diameter) removed. The Proposed Action would be compliant with the Forest's visual Standards and Guidelines.

The scenic quality of the Forest would not be directly affected by **Alternative 4**. This alternative would not result in any new trails, roads, or areas constructed. While, 139 miles of motorized trails would not be included in the designation of this alternative, merely removing trails from use would not result in a concurrent improvement in visual or scenic quality.

The scenic quality of the Forest would be indirectly affected only by the Proposed Action. In the foreseeable future the Proposed Alternative would minimally enrich visuals by converting Maintenance Level 1 roads to trails. Thereby, allowing natural processes to re-establish vegetation on the roadbeds or by Forest managers actively designing a more natural, closed-in, and winding trail corridor. While Alternative 4 would remove 139 miles of trails out of motorized use, these trails would still be maintained for non motorized use and thus would visually remain consistent with the current condition.

c. Cumulative Effects

None of the alternatives would result in substantive cumulative effects. While, the Proposed Action would remove a few small diameter trees and incur a minimal amount of brushing, these actions would be insignificant and visually unnoticeable. Therefore the effects of the alternatives would not combine with past, present, or foreseeable projects to warrant an adverse cumulative effect stemming from visuals or scenic quality.

14. Sound Level

Effects of motorized use on human hearing and human solitude

In regard to sound, the identification of roads, trails, and areas for motorized use could affect the public in two main ways. First, physically, sound can have detrimental effects to human hearing, possibly leading to Noise-Induced Hearing Loss (NIHL). Second, sound can become noise and impose an unfavorable effect on recreationists seeking solitude.

a. Background

Sound is defined as a vibration in the air that can be heard and measured. Noise is defined as a sound that has characteristics that may irritate or annoy a listener, interfere with the listener's activity, or in some other way be distinguished as unwanted (Harrison 1980).

Sound Laws

The US Environmental Protection Agency (EPA) adopted federal sound limits for new off-highway motorcycles, except competition machines, and three-wheeled ATVs beginning with the 1983 model year (Subpart D of 40 CFR 205.152). Sound limits are currently 80 decibels (dB) for vehicles displacing less than 170cc and 82 dB for those over 170cc, based on a precise, engineering acceleration test measured from a pass by assessment at a distance of 50 feet. Four-wheeled OHVs, however, are not regulated by the EPA noise standards because these products were not manufactured when the EPA regulations were promulgated.

To provide assurance that these products also comply with the EPA sound limits, the major manufacturers and the American National Standards Institute (ANSI) developed a voluntary standard (ANSI/SVIA-1-2001) that recommends to the EPA off-highway motorcycle sound limits for four-wheeled OHVs.

The EPA Office of Noise Abatement and Control was eliminated shortly after the EPA adopted the motorcycle noise regulations, however manufacturers are still required by federal law to certify their products or pay heavy fines (MSWG 2005).

To address the need for an in-use enforcement tool, the Motorcycle Industry Council (MIC) worked with the Society of Automotive Engineers (SAE) to develop quick, easy, and economical stationary sound test procedures. Stationary sound test procedures for determining excessively loud off-highway motorcycles and OHVs are now widely used by nine states, including Oregon (MSWG 2005).

Table III-30. Oregon Vehicle Standards: Allowable Noise Limits

Vehicle	Model Year	Stationary: Maximum Noise Level at 20 inches	Moving: Maximum Noise at 50 feet
Motorcycles	Pre 1975	102 dB	85
Motorcycles	After 1975	99 dB	82
Front Engine (SUV, Truck, Car)	All	95 dB	78
Mid & Rear Engine (quad, sandrail)	All	97 dB	78

(OAR 2008) & (OPRD 2008)

b. Effects Mechanisms and Analysis Framework

Sounds from motor vehicles can have detrimental effects to human hearing. Sounds that are too loud or loud sounds that last a long time can result in damage to the inner ear causing NIHL. Sensitive hair structures, called hair cells, are small sensory cells that convert sound energy into electrical signals that travel to the brain. Once damaged, hair cells cannot grow back (NIDCD 2008).

NIHL can be caused by a one-time exposure to an intense “impulse” sound, such as the crack of a motorcycle revving up, or by continuous exposure to loud sounds over an extended period of time. The loudness of sound is measured in units called decibels. Sources of sound emitting from 120 to 150 decibels can cause NIHL. Long or repeated exposure to sound at or above 85 decibels can also cause hearing loss. The louder the sound, the shorter the time period before NIHL can occur. Some sounds are so loud (140+ decibels), any exposure to them at close range can cause permanent damage and hearing loss. Sounds of less than 75 decibels, even after a long exposure, are unlikely to cause hearing loss. Distance from the sound is equally important as the duration. Table III-21 shows the accepted standards for recommended permissible exposure times for continuous average noise before possible damage to human hearing can occur (NICD 2008).

Table III-31. Human Decibel Exposure Time Guidelines

Continuous decibels (dB)	Permissible Exposure Time
85	8 hours
91	2 hours
97	30 minutes
100	15 minutes
106	< 4 minutes
109	< 2 minutes
112	< 1 minute
115	< 30 seconds

Sounds can result in immediate hearing loss and be accompanied by tinnitus or the ringing, buzzing, or roaring of ears or head. These symptoms can subside over time. Hearing loss and tinnitus may be experienced in one or both ears, and tinnitus may continue constantly or occasionally throughout a lifetime. NIHL from both impulse and continuous sounds can be prevented by regularly using hearing protection such as earplugs, earmuffs, or riding helmets. (NIDCD 2008).

Sounds from motor vehicles can also have detrimental effects on non-motorized recreation users and those seeking solitude, especially on trails. Sound levels or loudness are not good predictors of annoyance because some sounds are considered intrusive even at low levels. According to Herbert Kariel, studies show that it is a combination of the physical characteristics of sounds themselves and their socio-psychological aspects which determines their evaluation as pleasing, annoying, or acceptable.

Socio-psychological aspects of sounds are those that deal with their interpretation and the effect of sound on the individual. When a sound is heard, people interpret, evaluate, and attach meaning and significance to it. People judge its appropriateness for the setting, whether it is potentially harmful or helpful, and how it relates to past experience. Sounds which are interpreted as aiding or benefiting an activity are evaluated positively, while those deemed as interfering with or being detrimental to an activity are considered displeasing or annoying.

In addition, sounds over which people feel they have no control or which are unpredictable, are considered annoying. Sounds such as motorized vehicles, deemed as annoying by many non-motorized users (hikers), distract from the quality of the recreational experience. Conflict frequently arises between those who wish to enjoy and preserve quiet areas, where natural sounds predominate, and those whom wish to use mechanized equipment in such environments (Kariel 1990). On the RRSNF, user conflicts have been documented most noticeably on the Boundary Trail, and to a lesser extent, on other trails where motorized use (primarily motorcycles) is allowed.

c. Direct and Indirect Effects of Alternatives

Physical Effects of Sound

Direct effects associated with the Action Alternatives would be negligible. Motorcycles possess the loudest legal decibel (82 dB) of all vehicles included in Table III-19 at a distance of 50 feet. 85 dB being the threshold at which prolonged exposure greater than eight hours could result in hearing loss without the use of hearing protection.

Thus, a person would have to stand no further than 50 ft. from a motorcycle for longer than eight hours to be at risk. At a closer distance of 20 inches, such as when a motorcycle passes a hiker on a trail, the hiker could experience legal sound levels of 102 dB. At this distance, the hiker would have to remain at no further than 20 inches from the motorcycle for more than 10 minutes to risk NIHL. Users, such as hikers, typically experience only a few minutes at most of decibels over 85 as vehicles pass them on roads or trails. Therefore, their risk of hearing damage is minute.

Those whom are at the greatest risk of loud sounds above 85 dBs are the riders/drivers themselves as all vehicles (Table III-19) at a distance of 20 inches are above the 85 dB threshold. The Forest recognizes that the rider/driver of some vehicles may be more than 20 inches from the engine due to the design of the vehicle and thus be at less risk.

Wearing a helmet is Oregon law for all riders under the age of 18; observations by Forest Staff indicate that wearing helmets is the norm across the Forest, thus protecting riders from harmful sounds.

There are no foreseeable consequences that occur later in time or farther removed in distance from the point of a sound's origin. Therefore, there are no indirect effects of the alternatives in regards to physical sound. While users at a different location may hear vehicle use off in the distance, no physical damage stemming from the sound from a motor vehicle is foreseeable.

Social Effects of Sound

The direct effects of the **No Action Alternative** and **Alternative 2** would neither exacerbate nor improve the current user conflict stemming from sound related annoyance and social impacts of motor vehicle use. Alternative 1 would continue to allow cross-country travel of motor vehicles on 275,000 acres. Both Alternatives would allow use to continue on 246 trail miles, perpetuating the annoyance and interference of solitude for non-motorized users. The same number of miles of roads and trails would exist across the forest and thus have no effect or change over present conditions.

Direct effects of the **Alternative 3 (Proposed Action)** would slightly reduce user conflicts and social impacts related to what some consider the annoying sound of motor vehicles. Under this alternative, cross-country travel would be limited to two designated off-highway vehicle play areas. Total miles of open road would decrease by 7 miles. Total motorized trail mileage would decrease by approximately 17 miles. Thus, while the addition and subtraction of road and trail miles would be relatively insignificant, cross-country travel would be eliminated from 275,000 acres outside of the play areas, resulting in a potential reduction of annoying sounds and user conflicts between motorized and non-motorized users. User conflicts would continue to occur on most motorized trails, including the Boundary Trail. These conflicts would cease on the Bigelow Lake Trail, (which connects to Boundary), and on other trails located across the Forest (see Chapter II, District Specific Elements of Alternative 3).

The direct effects of **Alternative 4** are similar to the Proposed Action for road closures. However, this alternative proposes to close 114 miles of trails currently open to motorized use. Thus, it would have a potentially greater effect than the Proposed Action on reducing conflicts stemming from the noise associated with motorized vehicle use between motorized and non-motorized trail users.

The entire Boundary Trail system, a large portion of the Briggs Valley system, and a number of other trails would be closed to motorized use (see Chapter II, District Specific Elements of Alternative 4). Alternative 4 represents the highest potential for solitude (for non-motorized users) of all alternatives.⁸

Direct effects of the **Alternative 5** would slightly reduce user conflicts and social impacts related to what some consider the annoying sound of motor vehicles. Under this alternative, cross-country travel would be limited to one designated off-highway vehicle play area. Total miles of open road would decrease by 7 miles. Total motorized trail mileage would decrease by approximately 25 miles. Thus, while the addition and subtraction of road and trail miles would be relatively insignificant, cross-country travel would be eliminated from 275,000 acres outside of the play areas, resulting in a potential reduction of annoying sounds and user conflicts between motorized and non-motorized users. User conflicts would continue to occur on most motorized trails, including the Boundary Trail. These conflicts would cease on the Bigelow Lake Trail, (which connects to Boundary), and on other trails located across the Forest.

Total trail mileage on the Forest is 1,199 miles. Of that total, 246 miles would be motorized in Alternatives 1 and 2, 229 miles in Alternative 3, 132 miles in Alternative 4, and 221 miles in Alternative 5. All alternatives provide opportunities for solitude on a high number of Forest trails.

The indirect effects of the **No Action Alternative** and **Alternative 2** would likely result in some non-motorized users choosing to no longer recreate in areas where annoying sounds from motor vehicles persist. Non-motorized users would likely be displaced and begin to concentrate in areas where vehicles could not be heard.

⁸ It is important to note that many motorized users are seeking many of the same experiences as non-motorized users. For example, a motorcyclist may ride to a remote area, turn off the engine, and camp for a quiet night of solitude.

The indirect effects of the **Alternatives 3, 4, and 5** would increase the likelihood of non-motorized users finding areas devoid of motor vehicle noise. Utilizing the MVUM, which outlines motorized roads, trails, and areas, non-motorized users would have the ability to predict areas where sounds from motor vehicles could be avoided and where solitude could be found across the Forest. Therefore these alternatives increase the ability of non-motorized users to find areas where noise from motorized use would not distract from their pursuit of a quality recreational experience and thereby reduce user conflicts with motorized user groups.

d. Cumulative Effects

Physical sound from motor vehicle operation across the forest, combined with sounds of hikers, campers, aircraft overflights, logging operations, and various management activities could cumulatively add to the impacts of physical sound and/or noise. The difference in cumulative impacts between alternatives cannot be quantified, but does not appear to be substantially different. The Action Alternatives are not likely to create adverse cumulative noise effects considering this and other current and foreseeable activities.

15. Enforcement

Effects of proposed actions on the Agency's' ability to enforce laws

The Forest Service is responsible for enforcing the Code of Federal Regulations (CFRs) at 36 CFR 261 that applies to the RRSNF. The approximately 1.8 million acres of the Forest provide many challenges to law enforcement officials, ranging from minor infractions such as littering to serious situations like theft of timber, assaults, and drug-related incidents. Managing increased recreation use and related law enforcement issues proves to be a challenging issue on the Forest.

a. Background

Forest Service Law Enforcement and Investigations (LEI) personnel are responsible for protecting the public, employees, natural resources, and other property under the Agency's jurisdiction. Additionally, LEI investigates and enforces applicable laws and regulations that affect the National Forest System (NFS) lands, and prevents criminal violations. The new Travel Management Rule is one such regulation.

The Travel Management Rule requires designation of roads, trails, and areas open to motor vehicle use, and the prohibition of cross-country wheeled motorized vehicle travel by the public. This is a change in public motorized access management from previous conditions where most Forests were managed as "open to cross-country travel." The implementation of designated routes and areas for motorized vehicles would be the responsibility of all Agency employees, especially in the area of education and enforcement.

The law enforcement program is primarily responsible for issuing violations to the Travel Management Rule. The Forest will implement an educational strategy to develop responsible and concerned public land use attitudes working with forest users to prevent violations. Forest law enforcement officers (LEOs) and Forest Protection Officers (FPOs) make regular contacts in the field informing the users of the regulations and need for the prohibition. Violations of the Travel Management Plan are managed under the law enforcement program which is responsible for issuing violations to the Travel Management Rule.

The national LEI budget is funded by appropriated dollars from Congress to provide law enforcement services on the NFS lands. The travel management program is one of many Forest programs to benefit from Federal law enforcement funding. For the past few years, law enforcement funding has increased, and that has translated into an increase in field law enforcement personnel.

Authority and Jurisdiction

The Forest Service exercises its law enforcement authority when violation of laws or regulations occurs on NFS lands or when incidents affect the NFS. The existing authorities for enforcement are completely adequate and no new laws would be needed to implement the Travel Management Rule.

Every National Forest has a law enforcement plan that is updated annually. All Forest Service employees have a duty to know and understand their authorities and responsibilities, and to properly enforce laws and regulations relating to the Forest within their authority and capability. LEI and Agency personnel provide a regular and recurring presence on vast amounts of public land, roads, trails, and areas, and take appropriate action if illegal activity is discovered. Violations involving motorized vehicles are primarily enforced by FPOs, which patrol OHV use, roads, trails, and areas. These include violations such as operating a motor vehicle in violation of Federal regulations and Oregon and California vehicle code; parking improperly, resource damage to soils, vegetation or wildlife; and disorderly or unruly behavior. Forest Service LEOs, have discretion when deciding what type of action to initiate when handling violations to the following Federal laws that pertain specifically to motor vehicle use.

- The Act of June 4, 1897 (Title 16 United States Code 551), is the authority for issuing regulations at Title 36 Code of Federal Regulations, Part 261 (36 CFR 261). Specific OHV travel management regulations are in sections 261.9—Property, 261.13—Motor Vehicle Use, and 261.15—Use of Vehicles Off-Road. These CFRs cover a wide array of misdemeanor infractions.
- The Act of March 3, 1905 (Title 16 United States Code 559) authorizes all employees of the Forest Service to make arrests for violation of the laws and regulations pertaining to national forests. Normally, arrest authority is limited to trained law enforcement personnel. Any employee may take immediate action when necessary to protect life and prevent serious damage to or destruction of property, escape of a suspect, or loss of material evidence when such action can be done with reasonable safety.

The Forest Service has several methods of enforcing compliance with the regulations applicable to the RRSNF. FPOs are the primary personnel involved in enforcing regulation compliance. Forest Service LEOs or Sheriff's office personnel, commonly handle more dangerous violations such as disorderly conduct. The RRSNF currently has approximately 25 FPOs who can write warnings and citations as necessary to solicit compliance. The RRSNF also has six assigned field LEO positions, plus one law enforcement supervisor/program manager.

FPOs typically handle the most common violations. These include violations such as parking improperly, failure to pay fees, pets off of a leash, length of stay, improper motor vehicle use, and camping related offenses. In most cases, the public complies with the requests from FPOs and no citation is issued. FPOs are also typically responsible for installing and maintaining signs, information boards, barriers and physical closures, and providing information about rules and regulations. Many FPOs work seasonally, primarily during the summer, high use season.

LEOs typically issue warnings and citations for all of the above violations as well as for operating a motor vehicle in violation of federal regulations and Oregon vehicle codes. LEOs investigate and cite for cases of damaging or disturbing soils, vegetation, or wildlife as well as dealing with more serious crimes that can occur on the Forest. LEOs also commonly address cases of disorderly or unruly behavior of groups.

A small number of violations refer to nonpayment of fees, parking violations, misuse of trails, and recreation site occupancy violations. Some illegal activities go unnoticed and it is difficult to enforce all laws and regulations. Approximately 25% of a LEOs time is related to enforcement associated with motor vehicle use and travel management.

Cooperation

The Forest Service shares responsibility and cooperates with local, State, and other Federal agencies in the execution of its law enforcement program. The authority for cooperation among agencies, especially as it pertains to travel management, is within the act of August 10, 1971 (Title 16 United States Code 551a), which authorizes the Secretary of Agriculture to cooperate with, and provide reimbursement to, any State or political subdivision thereof, for the enforcement of their laws within NFS. This law does not deprive any State or local law enforcement agency from exercising its criminal and civil jurisdiction on lands that are part of the NFS.

Each Forest maintains close working relationships with many State and local law enforcement agencies that have law enforcement responsibilities within/and or adjacent to the Forest boundary. Forest Service law enforcement personnel cooperate fully with various agencies in carrying out their law enforcement responsibilities by providing assistance, liaison, advice, and information.

Forests maintain cooperative law enforcement agreements with their respective county sheriff's office. In these agreements, both parties recognize that public use of NFS lands is usually located in areas that are remote or sparsely populated and the enforcement of State and local law is related to the administration and regulation of NFS lands. Within the cooperative law enforcement agreements, an operating plan is developed outlining the supplemental work to be performed by the cooperating agency. Relative to the Travel Management Rule, operating plans may provide:

- Supplemental patrols in areas of high use.
- Supplemental patrols on weekends or during particular months of high use.
- Additional officers for large group gatherings or events.
- Vehicle checkpoints for vehicle registration, spark arrestors, and other miscellaneous items.

The RRSNF receives an annual budget to fund \$160,000 of the cost of law enforcement personnel and contract deputies through the Jackson and Curry County Sheriff's departments. Currently, there is no current funding for Josephine and Coos Counties.

Grants

The State of Oregon OHV allocation committee provides grant funding opportunities quarterly; law enforcement grant opportunities are offered once a year. The OHV grant process requires that the applicant provide 20-50 percent of the project cost as matching funds. The matching fund component can be met with in-kind services or materials. Appropriated annual funding would be used to meet the 20-50 percent matching funding or in-kind services/materials for requests placed to the State of Oregon OHV Grant opportunities.

Implementation and Tracking

Implementation of the Forest Service law enforcement program is continually adapting as law enforcement personnel assess the changing patterns of visitor use and attitudes, and the trends in violations, especially for property and resource damage. One method of assessment is the analysis of Law Enforcement and Investigations Management Attainment Reporting System (LEIMARS) data. LEIMARS tracks all known violations of criminal law or regulation on NFS lands (FSH 5309.11, chapter 40 and FSM 5340). Additionally, imbedded in LEIMARS is the case tracking system, which tracks all felony and serious misdemeanor cases. These tracking systems capture and record information on location, volume, damages, and type of violations occurring on NFS lands, provide a retrieval system of data on incidents and violations that is responsive to the needs of all organizational levels, provide agency managers with a means to identify and monitor law enforcement activities, specifically identify problem areas and periods of activity, and provide a method to record and analyze incidents involving violations or suspected violations on NFS lands.

b. Assumptions and Analysis Framework

Based on many years of enforcing OHVs, implementation of the Travel Management Rule from a law enforcement perspective assumes the following to be true. Additionally, these assumptions are based on several case studies in Region 5 (California).

Enforcement Assumptions:

- Enforcement of the laws and regulations related to Travel Management would be enforced equally in authority and weight as with all other Federal laws and regulations.
- It is assumed that most people would want to follow the law.
- As with any change in a regulation on NFS lands, there is usually a transitional period for the public to understand the changes. It is anticipated there would be a higher number of violations to the Travel Management Rule the first few years, then the number of violations would decline as the users understand and comply with the rules.
- The Forest will develop a public involvement plan using education, advice and warnings with the MVUM and TMP rule during the first phase of implementation.
- Users in communities adjacent to the Forest would comply within 1 to 2 years; frequent users, but further away from the Forest, would comply within 2 to 3 years, and infrequent users regardless of distant may take up to 5 years to comply.
- Law enforcement officer and agency personnel's presence and enforcement actions would positively affect OHV users' behaviors and attitudes.
- The Travel Management Rule and associated MVUM would clearly define the designated routes; therefore, making violations to the rule unequivocal.
- Once the MVUM is published, the implementation of the established dedicated network of roads, trails, and areas with signs, and user education programs, would reduce the number of violations.

Trends in violations related to the Travel Management Rule can be analyzed and appropriate action(s) taken, if needed. Appropriate action(s) may involve one or more techniques or adaptive strategies. In the law enforcement community, this is often referred to as the “**three E strategy**” of **engineering, education, and enforcement**. With the change in the Travel Management Rule, it is anticipated that the law enforcement program would use a combination of strategies, especially during the first 5 years of the rule’s implementation.

Engineering — Education — Enforcement

The **engineering strategy** is designed to prevent or reduce inadvertent violations, resource damage, and crime vulnerability. The strategy’s goal is to remove the opportunity to commit a violation. LEI personnel work with each Forest, particularly the recreation and engineering programs, to implement some or all of the following specific tactics:

- Proper design of improvements and facilities.
- Facility security measures such as installation of barricades, gates, and other natural obstacles.
- Forest signing, both directional and informational will be considered at portal locations, to assist the public to ensure they stay on designated trails, and out of wilderness and other sensitive areas.
- Physically close and rehabilitate decommissioned roads and trails (dependent on available funding).

The **educational strategy** focuses on specific user groups, school groups, recreation users, and the public. The goal is to develop responsible and concerned public land use attitudes in forest users to prevent violations. Forest LEOs and FPOs make regular contacts in the field informing the users of the regulations and need for the prohibition. The LEI personnel work with each Forest, particularly the recreation and public information programs, to identify and implement some or all of the following specific tactics:

- Have the Motor Vehicle Use Map (MVUM) easily available to public.
- Have route numbers visually marked on the ground.
- Distribute maps and brochures promoting responsible use.
- Conduct environmental interpretation activities in local communities, at schools, and with special interest groups.
- Use of all forms of the media (television, radio, and newspapers), especially prior to, and during, the high use periods.
- Ensure all employees understand the Travel Management Rule and the MVUM.
- Utilize high visibility prevention patrols and public information checkpoints, especially during the peak use periods.
- Encourage cooperating law enforcement agencies to make visitor contacts and provide violator information to Forest officers.
- Issue news releases of arrests and successful prosecutions, including offender names, criminal penalties, and court-ordered restitution.

The **enforcement strategy** is to enact crime prevention measures that are designed to reduce specific criminal activity, deter potential and repeat offenders, maximize enforcement actions and visibility, and increase prosecutorial successes. All enforcement actions should result in a better understanding of regulations pertaining to the management of NFS lands. LEI personnel would work with each Forest to identify and implement some or all of the following specific tactics:

- Schedule officers to work during the identified problem periods, including holidays and weekends.
- Utilize high profile “saturation patrols” and stationary surveillance posts in identified problem areas.
- Utilize the most effective and efficient means of patrol, including foot, horseback, all-terrain vehicle, watercraft, and aircraft.
- Enlist the aid of volunteers.
- Initiate an awards program.
- Supplement patrols with cooperating law enforcement agencies in areas of concern.
- Use technical investigative equipment (cameras, monitors, sensors) to assist officers with detecting and monitoring violations at known or suspected violation sites.
- Conduct planned and approved compliance checkpoints.
- Follow-up on complaints to document violations, damages, and identify suspect vehicles or persons.
- Require cooperating law enforcement agencies to assist with reporting and/or enforcing violations within their authority.
- Patrol with other cooperating law enforcement agency officers.
- Conduct unpredictable patrol schedules.
- Conduct special enforcement actions (unmarked vehicle deployment, surveillance, traffic check-points).
- Utilize LEIMARS and State motor vehicle data, to identify repeat offenders for enhanced prosecution.
- Pursue court-ordered restitution or civil collections for resource and property damages.

Measure of Success

Measuring the success of the Travel Management Rule from a law enforcement perspective would be done using the LEIMARS database. An analysis of the data may alert a Forest to a particular problem area for violations, such as a group campsite area that may be surrounded by flat meadow areas inviting riders to potentially violate the regulation. A successful program would see a positive change in the following measures:

- Measure 1: A reduction in the number of off-route travel violations.
- Measure 2: A reduction in the number of resource damage violations.

c. Direct and Indirect Effects of Alternatives

Under **Alternative 1, No Action**, LEOs and FPOs would continue to enforce laws and regulations to the best of their abilities. However, illegal activities would continue to occur due to a limited number of personnel who must cover a broad geographic range from the coast to the Cascades.

Under **Alternatives 2, 3, 4, and 5 (the Action Alternatives)** the RRSNF would incorporate one or more techniques or adaptive strategies associated with the “three E strategy” of engineering, education, and enforcement. The Forest would utilize grant funding as well as agency appropriated funds to increase staff patrols. Utilizing uniformed staff and volunteers, the Forest would seek to increase compliance with the new rules and regulations, increase agency visibility, and increase visitor safety on public lands.

The premise is that an educated vehicle operator is a responsible operator. LEOs and FPOs would communicate with visitors, hand out maps, and remind visitors of responsible driving practices. Ethics and principles in programs such as “*Leave No Trace, Right Rider*” and “*TREAD Lightly!*” would be promoted through this program. Grant funding would provide for better law enforcement through an increased presence, but motorized use violations would continue to occur, especially when LEOs are assigned to cases that involve more serious types of criminal activity.

Implementation of the Travel Management Rule and publication of the MVUM would initially confuse some Forest visitors. Currently, most areas on the Forest are “open unless posted closed.” Under the Rule areas are closed unless posted open. It would be the responsibility of the user to obtain and use the MVUM. Amendment of the Forest Plan and publication of the MVUM would increase the ability to cite those who cause resource damage. In the short term, enforcement issues are expected to increase due to the new regulations. In the long term, it is expected that Forest visitors would become accustomed to the MVUM, which would clearly show where motorized use is allowed.

It is impossible to predict the public’s compliance rate with new travel regulations, though certain issues like the complexity of regulations and the clarity of permissible uses certainly has an effect on people’s willingness and ability to comply. Public attitude and compliance assumptions based on the State of California Off-Highway Motor Vehicle Recreation Division data suggest that most Forest users want to do the right thing and would obey the rule, once they understand the rule and the MVUM. User compliance is anticipated to be: 95 percent of the users would be fully compliant; 2 to 3 percent of the users think about and may violate a law; and 1 to 2 percent of the users would violate the law.

Alternative 2 more closely follows current regulations on motorized use so it would be more enforceable in the short term than Alternatives 3, 4, and 5 where more change is proposed. Alternative 4 has the greatest amount of change from the current condition and would be the most difficult to enforce in the short term, particularly on motorized trails that are proposed for closure in this alternative.

The Action Alternatives involve changes in culture from historic access and freedoms on the Forest that some users enjoyed. A well-designed implementation and monitoring plan for realizing those changes is an important component for successful implementation of the new direction.

d. Cumulative Effects

The enforcement issue and narrative describes a managerial situation as opposed to environmental effects; therefore, cumulative effects discussions are not relevant to this analysis.

16. Mining Access

Effects of proposed actions on access for prospecting, locating, and developing mineral resources

Changes in this section between FEIS and DSEIS:

- Clarified laws related to mining entry and use of NFS roads

a. Background

In general, locatable minerals include both metallic minerals (gold, silver, lead, copper, zinc, nickel, etc.), nonmetallic minerals (fluorspar, mica, certain limestones and gypsum, tantalum, heavy minerals in placer form, and gemstones) and certain uncommon variety minerals. Prospecting and extraction of locatable minerals are permitted and administered on National Forest land under the 1872 Mining Law, as amended. While administration of the general mining law is the responsibility of the Bureau of Land Management, a Memorandum of Understanding between the BLM and the Forest Service allows joint administration of the mining law on National Forest lands. Surface use of National Forest lands is subject to regulations developed in 1974; these regulations specify orderly development of the land surface and subsequent land reclamation.

More than any other metallic mineral, gold has been the most sought-after mineral on the Forest, with a prospecting and production history (from both placer and lode deposits) dating back to 1850. Between 1850 and 1965, Oregon produced 58 million fine ounces of gold and 54 million fine ounces of silver. Most of this production was in southwestern and northeastern Oregon, the Siskiyou portion of the National Forest playing a significant role in this production. Gold placer activity is concentrated heavily along the Illinois River and Josephine, Sucker, Althouse, Galice, and Silver Creeks. Prospecting and production are likely to continue into the distant future. Recreational gold panning and dredging have also been increasing. Mining will most probably be from placer deposits located along and near various stream courses long known to contain gold-bearing gravels.

The Siskiyou portion of the Forest is a geologically diverse area which contains occurrences of gold, silver, nickel, chrome, cobalt, copper, manganese, molybdenum, mercury, coal, and limestone. The Rogue River portion of the Forest contains known occurrences of gold, silver, nickel, chrome, copper, molybdenum, tungsten, silica, antimony, cobalt, lead, mercury and zinc. Non-metallic locatable products such as limestone, sulphur and soapstone are also found on the Forest. Gold is the most sought-after mineral, with most of the recent exploratory activity occurring in the Siskiyou Mountains and Illinois River portions of the Forest.

Although most of the Forest's gold, chrome and other mining claims are inactive, many are being held in anticipation of a rise in value. Based on past efforts, most of the gold is widely scattered in relatively low-value per volume deposits. Placer mining is the most common form of mining on the Forest.

Both the approved Plans of Operations and the proposed activities currently under review in this DSEIS have roads needed by the operators for mining access. Under regulations (36 CFR §228.4 and §228.12), access requiring the construction of a road, trail, bridge, or off road vehicle is not authorized until approved in an operating plan. Generally, if a mining claim is more than a one-quarter mile from an existing road, the current road system would not meet access needs for a mine in either the development or production phase of operation. Exploration and prospecting operations would not require motor vehicle access unless approved in a Plan of Operations.

b. Regulatory Mechanisms and Analysis Framework

Any person entering federal lands identified within the Forest for the purpose of exploration, sampling, or beginning prospecting may use motor vehicles on all publicly maintained roads (including ML 1 roads) without further authorization from the Forest Service. 36 CFR §228.4 specifically states that such use is exempt from notifying the Forest Service. Further, if an operator reasonably concludes that the travel associated with exploration, sampling, or beginning prospecting will not cause a significant disturbance of surface resources, cross-country travel could also be exempt from notifying or obtaining additional authorization from the Forest Service prior to conducting this activity.

The regulations do not specifically state that cross-country or off road travel requires authorization, but the regulations allow the operator to evaluate any activity associated with mining to determine if a significant surface resource disturbance might occur. Regulation states that when a Plan of Operation is required, the use of an off-road vehicle is prohibited until the plan is approved. (36 CFR §228.12)

Case law indicates that a special use permit is not required for activities authorized under the mining laws. Therefore, requiring a special use permit authorizing access for mining activities prohibited by an order or in violation of the Travel Management Rule (36 CFR §261.13) would be inappropriate. If the mining activity was limited to the use of vehicles on publicly maintained roads, in most cases, the activity would not require any written authorization.

The Organic Administration Act and several court rulings make it clear that those entering NFS lands under the authority of mining laws must comply with the rules and regulations of the national forest. Conflict between regulations would make enforcement under 36 CFR §261 difficult if not impossible.

Any disputes between the Forest Service and an operator connected with access would best be handled administratively through the noncompliance provisions of 36 CFR §228.7. If compliance could not be achieved through this process, then either civil or criminal remedies could be pursued. Generally, the administrative or civil action would focus on whether or not the access is incident to mining or is causing a significant resource impact that would require a bond to ensure reclamation, or mitigation measures to minimize impacts.

Requirement to File Notice of Intent or a Plan of Operations

ADDED:

The U.S. Mining Laws, as amended, and the Organic Administration Act authorize any citizen (or person intending to become a citizen) the right to enter NFS lands for the purposes of prospecting, locating, developing, and removal of valuable deposits of certain minerals referred to as locatable minerals. (30 U.S.C. 22, 16 U.S.C. 479 and 482). Entry is allowed for:

- the purpose of exploration, sampling or beginning prospecting where a mining claim has not been filed or a Plan of Operation approved
- mining claimants or those individuals that own an unpatented mining claim that is properly filed and located
- mining operators with an approved Plan of Operations (with or without a mining claim)

36 CFR §228.4(a) requires the operator's prior submission of a Notice of Intent (NOI) to operate for "operations which might cause significant disturbance of surface resources." This means that the trigger for the submission of a notice of intent to operate is the operator's reasonable uncertainty as to the significance of the disturbance that the proposed operations will cause on NFS resources. If the operator reasonably concludes that the proposed operations will not cause significant disturbance of NFS resources, the operator is not required to submit a Notice of Intent to operate (or a proposed Plan of Operations). If the operator reasonably concludes that the proposed operations, more probably than not, will cause a significant disturbance of NFS resources, the operator should submit a proposed Plan of Operations to the district ranger. However, if the operator reasonably concludes that the proposed operations might, but probably will not cause significant disturbance of NFS resources, the operator should submit a Notice of Intent to operate to the district ranger.

Once a Notice of Intent to operate is filed, the Forest Service has an opportunity to determine whether the agency agrees with the operator's assessment that the operations are not likely to cause significant disturbance of NFS resources such that the Forest Service will not exercise its discretion to regulate those operations. If the district ranger, based on past experience, direct evidence, or sound scientific projection, disagrees with the operator's assessment and determines that the proposed operations, more probably than not, would cause significant disturbance of NFS resources, the district ranger shall require the operator to submit and obtain approval of a proposed Plan of Operations before commencing those operations. By means of the approved Plan of Operations, the district ranger shall obtain the operator's agreement to perform specific reclamation, post a reclamation performance bond, avoid unnecessary or unreasonable impacts on NFS resources, and implement other mitigation measures, as appropriate.

ADDED:

It is likely that some operators will not have the same perception or understanding of the impacts which their proposed operations may have on NFS resources that Forest Service specialists will have. Therefore, in 36 CFR §228.4(a)(4), the district ranger retains final authority to decide whether prior submission and approval of a Plan of Operations is required and can make this determination at any time, whether or not the operator first submits a notice of intent to operate. A Notice of Intent to operate is not intended to be a regulatory instrument; it simply was meant to be a notice given to the Forest Service by an operator which describes the operator's plan to conduct operations on NFS lands. Further, the intended trigger for a Notice of Intent to operate is reasonable uncertainty on the part of the operator as to the significance of the potential effects of the proposed operations.

Significant disturbance refers to operations “for which reclamation upon completion of [that operation] could reasonably be required,” and to operations that could cause impacts on NFS resources that reasonably can be prevented or mitigated. An operator must submit a proposed Plan of Operations if the applicable district ranger determines that the proposed operations “will likely cause significant disturbance of surface resources.” The phrase “will likely cause significant disturbance of surface resources” means that, based on past experience, direct evidence, or sound scientific projection, the district ranger reasonably expects that the proposed operations would result in impacts to NFS lands and resources which more probably than not need to be avoided or ameliorated by means such as reclamation, bonding, timing restrictions, and other mitigation measures to minimize adverse environmental impacts on NFS resources.

A March 28, 1974, letter also emphatically makes the point that the Forest Service's locatable mineral regulations do not use the term significant in the same manner as that term is used in the National Environmental Policy Act.

Mining activities allowed by regulation (36 CFR §228.4) and exempt from notice requirements include:

- Operations that will be limited to the use of vehicles on existing public roads or roads used and maintained for NFS purposes. A ML 1 road would fit this description and use by citizens entering under the mining laws would not require additional authorization.
- Prospecting and sampling that will not cause significant surface resource disturbance and will not involve removal of more than a reasonable amount of mineral deposit for analysis and study, which generally might include searching for and occasionally removing small mineral samples or specimens, gold panning, metal detecting, non-motorized hand sluicing, using battery operated dry washers, and collecting of mineral specimens using hand tools.
- Marking and monumenting a mining claim.
- Underground operations that will not cause significant surface resource disturbance.
- Operations, which in their totality, that will not cause surface resource disturbance substantially different than that caused by other users of the NFS who are not required to obtain a Forest Service special use authorization, contract, or other written authorization.
- Operations that will not involve the use of mechanized earthmoving equipment, such as bulldozers or backhoes, or the cutting of trees, unless those operations otherwise might cause a significant disturbance of surface resources, or operations for which a proposed Plan of Operations is submitted for approval.
- Entry allowed for mining claimants or those individuals that own an unpatented mining claim that is properly filed and located.

Upon submission of a Plan of Operations, the Forest Service can regulate the mining activities that are reasonably incident to mining. Any access would be addressed and approved in the Plan of Operations. A Plan of Operations that identified access would serve as the written approval allowing an exemption to Forest Service orders or regulations for travel where otherwise prohibited.

c. Direct and Indirect Effects of Alternatives

Assuming that there is a valid claim supported by discovery, it is implied that Congress granted a right of access under the general mining laws for mining purposes across public land. Barricading entry and threatening criminal action to bar entry to a mining claim by the government constitutes a legal impediment affecting a claimant's right to enter upon the surface of a claim. Thus, to the extent that entry on the surface of the land is necessary to effectuate the removal of minerals, it is assumed that such right was impliedly reserved in the grantor as a necessary incident of the reserved mineral estate.

Title 36 CFR §228, Subpart A, Locatable Minerals, outlines rules and procedures through which the use of the surface of NFS lands in connection with operations is authorized by the mining laws (30 U.S.C. 2 1-54). Based on these regulations, each operation is analyzed by the operator, and under certain circumstances, the district ranger. This analysis will determine if the proposed mining activity, including access, might cause a significant disturbance to surface resources. The operator is not required to obtain additional authorization if the access is reasonable incident to the level of mining, the use of vehicles is limited to existing roads used and maintained for NFS purposes, and/or if the operator can reasonably conclude that in totality all operations (including access) will not cause a significant disturbance to surface resources.

If the operator concludes that the proposed operations might cause a significant disturbance to surface resources, then a notice of intent must be submitted. If after submitting notice to the district ranger, the district ranger determines that the proposed operation, including access, is not or will not cause a significant disturbance, the district ranger will notify the operator that a Plan of Operation is not required. In these circumstances, access would be allowed by regulation and no other authorization, such as a Plan of Operations or permit, would be required.

This conflicts with 36 CFR §261.13 which does not allow an exemption for mining operations authorized under 36 CFR §228, Subpart A. Only in cases where the district ranger determines that an operation is causing or will likely cause a significant disturbance will a Plan of Operation be required. Only in the cases where the district ranger requires a Plan of Operations will an operator meet the requirement of 36 CFR 261.13 (h).

Selection of **any of the alternatives** would not affect access that is reasonably incidental to mining. However, alternatives that are more restrictive on motorized vehicle uses would result in a higher degree of administration to determine if the vehicle access is reasonably incidental and necessary for operational mineral activity. The current condition (Alternative 1) allows for mining activities that would cause a surface disturbance that is not substantially different from other national forest users who are not required to obtain authorization.

Implementation of an alternative that results in requiring national forest users to obtain authorization for travel previously allowed may result in mining operators submitting a notice of intent. This can be interpreted by a mining operator as additional restrictions by the government.

By current regulations (36 CFR 228 Subpart A), if access needed for mining would result in significant disturbance of surface resources to NFS lands, mitigation measures would be required to minimize adverse environmental impacts. Implementation of any alternative would not change this regulatory requirement. Therefore, the environmental effects would remain the same.

The Travel Management Rule requires that all roads and trails must be designated open to allow motorized use. The same is true for areas unless designated for motorized use. This effectively means a prohibition on most cross-country travel and ML 1 roads are closed to motorized vehicle use.

Alternatives that propose a reduction of motorized use from current conditions would increase administrative oversight needed by the agency for travel by persons entering the national forest for the purpose of mining or prospecting. The direct effect to mining operators would be a restriction on motor vehicle cross-country travel. All motor vehicle cross-country travel would be limited to what is reasonably incidental and necessary to mining activities. This would eliminate the option of motor vehicle travel cross-country travel when reasonable alternatives are determined to be suitable by the authorized officer (district ranger) for operations.

Additionally, these alternatives restrict the use of motor vehicle use on non-designated routes. This could result in the same effect to miners and prospectors as described for cross-country travel if the use of these routes (level 1 roads) were to result in significant resource disturbance of surface resources.

Generally, all alternatives (including Alternative 1) have the potential to increase the social and economic impacts to mining operators. Roads that are not designated as available for motor vehicle travel that are physically closed with barriers, berms, or gates may result in additional cost to mining operators to open and maintain access roads.

d. Cumulative Effects

In all alternatives, the potential for previous physical closure decisions to be implemented could continue to occur into the foreseeable future (e.g., closures for spread of root disease and/or mitigation for sedimentation, etc.).

As roads are physically closed or decommissioned over time by previous or future site specific project decisions or they grow closed due to lack of maintenance, the cost to mining operations would increase as the burden to open and maintain access roads for mining shifts from the government to the operator. This cost would be similar to the construction of a new road as part of the operations. The operator would have to assume all cost associated with maintenance, operation, and reclamation of the road.

As stated within the enforcement analysis, successful compliance with the Travel Management Rule under the Action Alternatives would take approximately 2 to 5 years. Eventually, it is hoped that physical closures would no longer be necessary on ML I (closed) roads and the removal of the road from the MVUM would be sufficient to achieve the closure objective. Therefore, over time, fewer physical closures may occur, reducing the need to reopen these roads for mining operations.

17. Cultural Resources

Effects of motorized vehicle use on cultural resource values

Designation of routes and areas for motor vehicle use on the Rogue River-Siskiyou National Forest has potential to affect archaeological and historic sites.

a. Background

All formal decisions made by the Forest Service during the travel system designation process are considered “undertakings” pursuant to Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations. Forests are responsible for initiating and completing the appropriate NHPA compliance for each decision affecting their transportation system. This responsibility consists of evaluating the potential effect of these decisions on historic properties in conformance with 36 CFR Part 800 and applicable programmatic agreements (PA).

Cultural resource concerns have been taken into account early in the motorized use designation process, with specific resource concerns contributing to the development of the Proposed Action. The Area of Potential Effect (APE) for proposed ground disturbance has been identified, issues and at-risk resources identified, potential effects evaluated, protection measures established, and plans developed for monitoring the effectiveness of protection measures.

The area within and adjacent to the Rogue River – Siskiyou National Forest has been inhabited for at least the past 11,500 years. Over the millennia, small bands of hunter/gatherer/fishers occupied village sites along the rivers and major tributaries. Seasonally, they traveled to the surrounding uplands for resource procurement. Salmon and acorns were the primary food sources for residents, with deer, elk, and camas bulbs as secondary staples. The population was made up of speakers of two primary linguistic groups, Athapascan and Takelma. Archaeological evidence of these occupants includes flaked stone tools of chert, jasper and obsidian, as well as ground stone mortars and pestles. Site types include villages, campsites, gravesites, stone quarries, trails, vision quest sites and petroglyphs. Roughly 200 prehistoric sites have been documented across the Forest.

With the Gold Rush period of the early 1850s came settlement of the area by miners, farmers and ranchers. By 1900, mining, grazing, hunting, trapping, homesteading, logging, and recreational activities were prominent land uses. Historic resources found on the Forest include cabins, trails, mines, ditches, railroad grades, mill sites, logging camps and homesteads. Historic Forest Service structures, a few dating to the early 1900s, include ranger stations, guard stations, fire lookouts and Depression-era CCC construction. Over 2,000 historic sites have been documented.

Additional information on the cultural background of the RRSNF can be found in two documents: Cultural Resource Overview of the Siskiyou National Forest (Beckham 1978), and Prehistory and History of the Rogue River National Forest: A Cultural Resource Overview (LaLande 1980).

b. Effects Mechanisms and Analysis Framework

Cultural resources can be affected by:

- construction and maintenance of new OHV trails;
- conversion and maintenance of ML1 roads to motorized trail use;
- concentrating use from currently open roads onto formally designated roads; and
- potential increased use of designated roads puts specific vulnerable sites at greater risk of vandalism and looting.

Beneficial effects can also be derived from certain transportation system decisions. Re-routing ground-disturbing vehicles away from significant sites can help protect them. Re-focusing recreationists' attention away from areas with archaeological sites can minimize illegal artifact collection. Re-directing public to areas with cultural resource interpretive sites is another potential benefit of motorized use planning.

Research of existing information, tribal consultation, and field survey based on proposed changes and cultural resource site probability are used to determine effects.

Site attributes considered for determining effects and planning mitigation measures include:

- Is the road a braided set of ruts, or are there two well defined tracks limited in their lateral migration by mature standing vegetation or topography?
- Is the surface of the road stable, does it erode easily, or is it on bedrock or natural gravel pavement?
- Is the site visible from the route? Is it attractive to road users?
- Is there potential for subsurface deposits?
- Is there evidence at the site of vehicles parking and people moving around on the site?
- Was the road or trail constructed through the site? Is there evidence of cut and fill slopes, blading, or berms having disturbed cultural deposits?
- Is there evidence of previous motorized vehicle/human effects to ground surface or site features (e.g., vandalism, artifact theft, vehicle donuts)?
- Does the route inappropriately intrude on a culturally important location, such as a traditional plant gathering site or a sacred site?

c. Direct and Indirect Effects of Alternatives

Currently, under the **No Action Alternative**, approximately 275,000 acres of the forest are open to cross-country travel. Impacts to sites from disturbance by OHVs, and vehicle access to sites by looters are both uncontrolled. Under Alternatives 2, 3, 4 and 5, the closure of approximately 275,000 acres of area currently open to cross country travel, leaving 15-25 acres open, would result in beneficial effects to cultural resource sites.

Alternative 2, aside from the vastly reduced area open to cross-country travel, is similar to the No Action Alternative.

Under **Alternatives 3 (Proposed Action), 4, and 5**, the small decrease overall in open roads that allow mixed-use would have little impact on cultural resource sites. The slight decrease in access to potential sites by OHV users under Alternatives 3, 4, and 5 could put sites at a slightly lower risk of vandalism and theft compared to Alternatives 1 and 2.

A small decrease in the miles of trails that allow motorized use would result in slightly less potential for impacts to cultural resource sites from ground disturbance caused by vehicle rutting. Alternatives 3 and 5 would have a more beneficial effect on cultural resource sites than Alternatives 1 and 2, which would have no change from the current situation. Alternative 4 would have significantly more benefits by providing the most reduction in miles of roads and trails available to motorized vehicles.

Alternatives 3 and 5, due to new trail construction and conversion of ML1 roads to motorized trail use, would have more potential to impact cultural resource sites than Alternatives 1, 2, and 4, none of which include these activities.

Under Alternatives 2, 3, 4, and 5, the impacts to sites vulnerable to damage from OHVs and looting due to “concentrating” use from so small a percentage of roads onto designated roads would be negligible.

The following discussion presents effects by specific Ranger Districts, with a focus on the elements associated with the Proposed Action.

Powers Ranger District

Mixed use would be designated on approximately 6.2 miles. These changes would not have any effect on cultural resource sites.

Motorized use would be prohibited on approximately 1 mile of trail that currently allows motorized use under Alternatives 4 and 5. This would have no adverse effect on cultural resources, and in some cases, a beneficial effect is possible.

Gold Beach Ranger District

Under Alternative 3, approximately 9.3 miles of ML1 roads in the Signal Buttes, Kimball Hill, Fairview Meadow, and Game Lake areas would be authorized for conversion to OHV trail use, with the potential to impact cultural resource sites. Under Alternative 5, all of the above-described ML 1 conversions would be authorized, except for the approximately .8 mile within the Game Lake area (Road 3680409); therefore, similar potential for impacts to cultural site from ML 1 conversions exists. Alternative 3 would also construct 0.5 mile of new trail (Woodruff connector) in the Kimball Hill area. Prior to approval of ground disturbing activities, a cultural resource survey will be completed. Any sites within the Area of Potential Effect will either be evaluated for significance with appropriate mitigation measures implemented, or avoided by project activities.

The prohibition of mixed use on approximately 12.4 miles of road where it is currently authorized would have a small beneficial effect on cultural resource sites by limiting access to sites.

Motorized use would be prohibited on approximately the following miles of trails per alternative: 11 miles for Alternative 3, 51 miles for Alternative 4, and 15 miles for Alternative 5. This would have no adverse effect on cultural resources, and in some cases, a beneficial effect is possible because of limiting site access.

Wild Rivers Ranger District

Approximately 0.3 mile of ML1 road in the Shan Creek area would be authorized for conversion to OHV use in Alternatives 3, and 5. Alternative 3 would convert 3 additional miles in the Biscuit Hill area. Prior to approval of ground disturbing activities, a cultural resource survey will be completed. Any sites within the Area of Potential Effect will either be evaluated for significance with appropriate mitigation measures implemented, or avoided by project activities.

Approximately 10 miles of road would be closed to public use (roads would still be open for permitted or limited administrative use). This change could have a beneficial effect on cultural resource sites by limiting site access.

Mixed use would be prohibited on approximately 32 miles of road where it is currently authorized under Alternatives 3, 4, and 5. This change could have a beneficial effect on cultural resource sites by limiting site access.

Forest Plan amendments for the Boundary Trail would allow motorized use to continue under Alternatives 3 and 5. No change in impacts to potential cultural resource sites would occur.

Motorized use would be prohibited on approximately the following miles of trails per alternative: 17 miles for Alternatives 3 and 5, and 28 miles for Alternative 4. This would have no adverse effect on cultural resources, and in some cases, a beneficial effect is possible because of limiting site access.

Siskiyou Mountains Ranger District

Approximately 1.2 miles of trail in the Penn Sled Trail area would be authorized for motorized use under Alternatives 3 and 5. Future trail construction, maintenance and use could have a potential to impact cultural resource sites. Cultural resource surveys have been completed. Required mitigation will occur prior to construction. These alternatives provide an opportunity for historic interpretation of the Penn Sled Trail.

Motorized use would be prohibited on approximately the following miles of trails per alternative: 4 miles for Alternatives 3 and 5, and 33 miles for Alternative 4. This would have no adverse effect on cultural resources, and in some cases, a beneficial effect is possible because of limiting site access.

Forest Plan amendments for the Boundary Trail would allow motorized use to continue under Alternatives 3 and 5. No change in impacts to potential cultural resource sites would occur.

High Cascades Ranger District

Approximately 31.5 miles of paved road would be designated for mixed use under Alternative 3. A slight increase in use of the road could result in a small increase to impacts to cultural resource sites from increased access to sites.

Determination

This project is determined to be a “**Historic Properties Avoided**” undertaking. This determination was made by the Forest Archaeologist under the terms of the 2004 Programmatic Agreement between ACHP, Oregon SHPO, and USFS R6.

d. Cumulative Effects

Present and foreseeable future actions that may affect cultural resources on the Forest include: wildland fire, fuels treatments, livestock grazing, dam maintenance, minerals management, developed and dispersed recreation, timber harvest and vegetation treatments, reforestation, restoration, road management, and special uses. All of these activities will be designed to meet the direction provided within the Northwest Forest Plan and the local Land and Resource Management Plans (i.e., Forest Plans), and in accord with Aquatic Conservation Strategy objectives (NWFP 1994, Rogue River NF LRMP 1990, and Siskiyou NF LRMP 1989).

The Action Alternatives for this project are expected to maintain or reduce effects to cultural resources from motorized use. The prohibition of cross-country travel included in all Action Alternatives is expected to have the greatest reduction of potential impacts to cultural resources. In addition, Alternatives 3, 4, and 5 would include a reduction in miles of routes open for public wheeled motor vehicle use adjacent to cultural sites. Therefore, at the scale of these special areas (site-scale), there would be no additional or foreseeable risk from adverse cumulative effects.

None of the alternatives would result in substantial direct or indirect adverse effects to cultural resources because prior to approval of ground disturbing activities associated with trail construction or conversion, a cultural resource survey will be completed. Any sites within the Area of Potential Effect will either be evaluated for significance with appropriate mitigation measures implemented, or avoided by project activities. Thus, implementation of the project is not expected to result in incremental cumulative effects.

18. Climate Change

Effects of motorized vehicle use on climate change (greenhouse gas emissions and carbon cycling) and effects of global climate change on motorized use

Former Forest Service Chief Abigail R. Kimbell characterized the Agency’s response to the challenges presented by climate change as “one of the most urgent tasks facing the Forest Service” and stresses that “as a science-based organization, we need to be aware of this information and to consider it any time we make a decision regarding resource management, technical assistance, business operations, or any other aspect of our mission.”⁹

⁹ Abigail R. Kimbell, former Chief, USDA Forest Service, February 15, 2008, letter to Forest Service National Leadership Team

a. Background

Ongoing climate change research has been summarized in reports by the United Nations Intergovernmental Panel on Climate Change (www.ipcc.ch), US Climate Change Science Program's Science Synthesis and Assessment Products and the US Global Change Research Program. Climate change studies specific to the Pacific Northwest have been conducted by the Climate Impacts Group at the University of Washington. These reports concluded that climate is already changing; that the change will accelerate in the future; and that human greenhouse gas emissions, primarily carbon dioxide emissions (CO₂), are the main source of accelerated climate change.

Projected global climate change impacts include air temperature increases, sea level rise, changes in the timing, location and quantity of precipitation, and increased frequency of extreme weather events such as heat waves, droughts, and floods. These changes will vary regionally and affect renewable resources, aquatic and terrestrial ecosystems, and agriculture. While uncertainties will remain regarding the timing and magnitude of climate change impacts, the scientific evidence predicts that continued increases in greenhouse gas emissions will lead to increased climate change.

In the summer of 2008, the University of Oregon Climate Leadership Initiative, in partnership with The National Center for Conservation Science & Policy and the MAPSS Team at the U.S. Forest Service Pacific Northwest Research Station, initiated a project to assess the likely consequences of climate change for the Rogue River Basin. A panel of scientists and land managers then assessed the likely risks posed by changing climate conditions to natural systems and made recommendations for increasing the capacity of ecosystems and species to withstand and adapt to those stressors.

Based on the analysis of the risks to natural systems, the policy panel identified the main risk in relation to infrastructure in the Rogue Basin is the potential for increased disruption and direct damage to transportation systems, buildings, and real estate from more flooding and wildfires.

In response to this risk, the policy panel made recommendations in regard to the infrastructure. In relation to travel management, these included:

- Permanent structures should be moved out of high risk floodplains, riparian areas and steep forested canyons if and when they are damaged by floods or fires and new development should be constrained in these critical landscape areas.
- Link public transportation systems as much as possible to facilitate movement of people and equipment in emergency situations.
- Expand road upgrading and maintenance such as the installation of larger culverts and regular culvert clean outs to prevent wash outs during major storms and floods.

The Forest is reviewing and implementing these recommendations as opportunities arise during reconstruction of existing facilities and the planning of maintenance activities.

b. Analysis Framework

As noted in the issue statement, there are two types of climate change effects for proposed projects to consider, as appropriate:

- **The effect of a proposed project on climate change** (greenhouse gas emissions and carbon cycling). Examples include: short-term greenhouse gas emissions and alteration to the carbon cycle caused by hazardous fuels reduction projects, greenhouse gas emissions from oil and gas field development, and avoiding large greenhouse gas emissions pulses and effects to the carbon cycle by thinning overstocked stands to increase forest resilience and decrease the potential for large scale wildfire.
- **The effect of climate change on a proposed project.** Examples include: effects of expected shifts in rainfall and temperature patterns on the seed stock selection for reforestation after timber harvest and effects of decreased snow fall on a ski area expansion proposal at a marginal geographic location, such as a southern aspect or low elevation.

Determining whether there is a cause-effect relationship is the first step in identifying a potential issue. Consideration was given as to whether some element of the proposal would result in direct, indirect, or cumulative effects on greenhouse gas emissions or the carbon cycle and the direction of effects (e.g., increase, decrease, or combination of both).

Scoping was used to determine if climate change issues are specifically related to the Proposed Action. While climate change was not dismissed as “outside the scope” of the analysis, the Interdisciplinary Team and other sources identified only minor potential for a cause-effect relationships (having to do with fossil fuel combustion and emissions) between this proposal and climate change.

c. Direct and Indirect Effects of Alternatives

Many proposed projects and programs would emit greenhouse gases (direct effect) and, thus, contribute to the global concentration of greenhouse gases that could affect climate (indirect effect). Since greenhouse gases mix readily into the global pool of greenhouse gases, it is not currently possible to ascertain the effects of emissions from single or multiple sources (projects).

Also, because Forest Service projects are extremely small in the global atmospheric CO₂ context, it is not presently possible to conduct quantitative analysis of actual climate change effects based on individual or multiple projects.

All alternatives considered with this proposal were identified to have minor cause-effect relationships to greenhouse gas emissions or the carbon cycle, and were determined to be of such a minor scale at the global or even regional scale, that the direct effects would be meaningless to a reasoned choice among alternatives.

Forests play a major role in the carbon cycle. The carbon stored in live biomass, dead plant material, and soil represents the balance between CO₂ absorbed from the atmosphere and its release through respiration, decomposition, and burning. Over longer time periods, indeed as long as forests exist, they will continue to absorb carbon.

The direct and indirect effects regarding these relationships are insignificant because there would be very minimal amounts of vegetation (no trees of any substantial diameters) and disposal of brush and slash associated with trail clearing or maintenance would be very minor under all alternatives.

d. Cumulative Effects

As greenhouse gas emissions are integrated across the global atmosphere, it is not possible to determine the incremental cumulative impact on global climate from emissions associated with any number of particular projects. Nor is it expected that such disclosure would provide a practical or meaningful effects analysis for local project decisions. Uncertainty in climate change effects is expected since it is not possible to meaningfully link individual project actions to quantitative effects on climatic patterns.

It is recognized that global climate change may affect human health, that there is scientific controversy surrounding the effects of human activity on climate change, that there is uncertainty and unknown risks associated with global climate change. The ultimate effects on climate change are indeed the results of incremental cumulative effects of many actions, most of which are outside of the Agency's control.

19. Wild and Scenic Rivers

Changes in this section between FEIS and DSEIS:

- Added Wild and Scenic Rivers analysis (*entire section is new information*)

Designated Rivers

a. Background

The Rogue River-Siskiyou N.F. has six designated Wild and Scenic Rivers that flow approximately 200 miles through the Forests. The establishment of these Wild and Scenic Rivers are pursuant to the National Wild and Scenic Rivers Act (WSRA) of 1968, as amended. The WSRA creates three river classifications: 1) Wild river segments; 2) Scenic river segments; and 3) Recreational river segments. Classification of rivers pursuant to these categories depends on the level of development in the immediate environment of a river corridor, with Wild segments having the least amount of development.

In particular, FSM 2300, Chapter 2354, section 42g, gives specific management guidance for the WSRA three river classifications. Changes to motorized roads and trails are the two proposed activities within designated river corridors. Therefore, road accessibility guidelines are used as an indicator of their effects:

- Wild River--Generally, accessible only by trail. Normally, do not permit motorized travel on the trail system in the river area.
- Scenic River--May be accessible in places by road. However, scenic rivers should not include long stretches of conspicuous and well-traveled roads closely paralleling the riverbank. Trails may be located and designed to accommodate motorized travel.
- Recreation River--Usually readily accessible by road. Roads are normally open to motorized travel but use may be regulated.

Under the WSRA, agencies managing designated rivers are required, in their activities, to protect and enhance a river's free-flowing condition, water quality and outstandingly remarkable values (ORV). Forest Service policy regarding management of designated rivers is found in FSM 2300, Chapter 2354. The river management plans, which are part of the Rogue River and Siskiyou National Forest's LRMPs, include management objectives, standards and guidelines to assure that activities are designed consistent with the requirements of the WSRA and with Forest Service policy. The proposed action and alternatives were all designed to be consistent with law, policy and the respective LRMPs. Therefore, the proposed action and alternatives will be evaluated to determine if they meet this direction for designated rivers.

All six designated Wild and Scenic Rivers have motorized roads and trails within the congressionally designated corridors. All six, except those sections designated as Wild or are within designated Wilderness Areas are open to motorized cross-county travel unless prohibited by the Wild and Scenic River Management Plans specific to each designated river. Of the six, only two will be impacted by measurable changes to the motorized roads and trails.

Therefore, the only changes to the Upper Rogue, Lower Rogue, Chetco, and Elk WSRs is closure to cross-country travel because the alternatives propose no changes to motorized roads or trails within those corridors.

The remaining two will have impacts associated with the alternatives being analyzed within this document because only two designated WSR corridors will experience a change from the existing level of motorized use within those corridors. In the Assumptions for Analysis at III-3, maintaining the current level of use does not constitute a measureable change to the current condition. Therefore, it does not constitute a new effect. Those river segments that will have measurable change because of a reduction or increase in motorized use are the Illinois and the North Fork of the Smith as identified in Table III-22 below.

Table III-32 List of Designated Wild and Scenic Rivers

Name	Motorized Roads & Trails	Decisions Affecting Motorized Roads & Trails	Classification	Outstandingly Remarkable Values
Illinois River	32.55 Miles	6.9 Miles	Wild, Scenic, Recreational	Water Quality, Fisheries, Scenery, Botanical Resources, Recreation
North Fork Smith	2.9 Miles	0.6 Mile	Wild, Scenic	Water Quality, Fisheries, Scenic Quality
Lower Rogue	34.3 Miles	0 Miles	Wild, Scenic, Recreational	Fisheries, Natural Scenic Qualities, Recreation
Upper Rogue	49.9 Miles	0 Miles	Wild, Scenic	Scenic, Geology, Cultural, Botanical, Water Quality
Chetco	16.5 Miles	0 Miles	Wild, Scenic, Recreational	Recreation, Fisheries, Water Quality
Elk	19.3 Miles	0 Miles	Wild, Recreational	Fisheries, Water Quality, Natural Features

Illinois River

General Background

The Illinois WSR protects approximately 50 miles of the river under the WSRA, starting from the Forest boundary near Selma and continuing downstream to its confluence with the Rogue River. The Illinois River's exceptionally rugged, undeveloped character, presents a rare opportunity to provide for an experience where the recreationist must depend upon one's self to a high degree. The Illinois River has extremely challenging whitewater boating experience in one of the most primitive settings in the Continental U.S.

Classifications

The Illinois WSR begins with the Scenic segment at the Forest boundary near Sauers Flat and extends 17.9 miles to Briggs Creek. The Wild section begins at Briggs Creek and extends 28.7 miles to Nancy Creek. The Recreational section begins at Nancy Creek and extends 3.8 miles to the confluence with the Rogue River.

The ORVs are Water Quality, Fisheries, Scenery, Botanical Resources and Recreation. Water quality is described as outstanding because of the color and clarity. The Illinois River poses a rich fishery and its tributaries offer superb spawning and rearing habitat for a variety of fish. The Illinois also provides an opportunity for a unique recreation experience because of the natural setting, void of the impacts of civilization. The flora in the canyon is abundant with diversity.

Existing Motorized Roads and Trails

There are approximately 32.55 miles of existing motorized roads and trails in the Illinois WSR. Only 6.9 miles of these routes have measurable impacts associated with the action alternatives. The following is a description of those road and trail segments being impacted by the action alternatives.

The Wild section of the Illinois WSR contains 4.9 miles of motorized trails. The Illinois River trail (#1161) travels 4.0 miles adjacent to the river. The Game Lake trail (#1169) travels 0.9 mile within the WSR corridor before heading up a ridge and exiting the WSR area to the southwest. The Illinois Wild and Scenic River Management Plan allows for motorized use of these trails within the Wild section of the WSR.

There is approximately 2.0 miles of proposed closure to a motorized road within the Scenic section of the Illinois WSR. Forest road 4201.016 parallels the Illinois River on the east bank near Eight Dollar Mountain area. This road is in the historical floodplain of the Scenic section, with the southern portion of the road beginning at the intersection with Forest road 4201 and connects outside the WSR corridor with Forest road 4103.

North Fork Smith

General Background

The 13-mile Oregon portion of the North Fork Smith River was identified for inclusion into the WSRA because of whitewater recreation, scenery and emerald hued water that greatly enhances and complements river values immediately downstream. From a systems approach, the Oregon portion is integral to the whole.

Classifications

The North Fork Smith is classified as Wild from the headwaters and extends 4.5 miles to Horse Creek. There is a Scenic segment beginning at Horse Creek and extending 6.5 miles to Baldface Creek. Then, from Baldface Creek to the Oregon/California border is a 2-mile Wild segment.

The ORVs are water quality, fisheries, and scenic quality. The North Fork Smith is known for its outstanding water quality and its ability to clear quickly following storms. Low turbidity and lack of pollutants contribute to the river's excellent habitat and high fisheries value. The scenic quality in the river corridor is a result of the combination of the colors, geology, water and vegetation. The scenic diversity includes large rocks, deep pools, exposed peridotite outcrops, a variety of vegetation and emerald-colored water.

Existing Motorized Roads and Trails

There are approximately 2.9 miles of existing motorized roads and no motorized trails in the North Fork Smith WSR. Only 0.6 mile of these routes have measurable impacts associated with the action alternatives. The following is a description of those road and trail segments being impacted by the action alternatives.

The Wild section contains all 0.6 mile of motorized roads. Road 4402-206 extends 0.3 mile into the corridor, providing motorized access to Sourdough Camp. Sourdough is a semi-primitive campground acknowledged by the 1988 WSRA as an exception to the preclusion of motorized development in the Wild section. There are two short roads within Sourdough Camp that provide access to campsites and the North Fork Smith. These are 4402-256 and 4402-259A. Both comprise another 0.3 mile of motorized access in and around Sourdough Camp, with access to the river. Access on these motorized roads is restricted to the dry season (June 1 to September 30) to reduce the risk of introduction and spread of *Phytophthora lateralis*.

b. Effects Mechanisms and Analysis Framework

It is not the purpose of this planning effort to decide whether wheeled motorized use within any of the Wild and Scenic River Areas (WSR) is appropriate. Those overarching decisions on allowable uses of wheeled motorized vehicles in WSRs were made in prior decision documents (LRMPs and River Management Plans) and are not being revisited here. As discussed above, WSRs will continue to be managed according to statutory laws, agency policy, LRMPs and the applicable River Management Plans.

The scope of this analysis is limited to motorized road and trail changes within WSRs. Many listed ORV values are discussed in other sections of this document. Specific effects to those resources are analyzed in the site-specific evaluations of the environmental effects elsewhere in this document and resolved in alternatives or through mitigations on a site-specific case-by-case basis. In particular, water quality is addressed with a full detailed analysis in DSEIS, Chapter III, section 1. Because that section includes specific analysis concerning impacts associated with any changes to motorized use of roads and trails, further discussion of water quality, aside from impacts to a WSR's ORV protection/enhancement, is unnecessary.

None of the alternatives proposes any modification of the WSR's river beds or banks. Since no road or trail construction is being proposed, no effects are occurring that will impact the WSR's free-flowing character. Therefore, the following effects analysis will not address free-flowing conditions.

Here, the analysis will focus on administration of WSR’s river corridors and segments to protect or enhance the ORVs and designated classifications identified in Table III-32 above.

There are a total of 155.45 miles of existing motorized roads and trails within these designated WSRs. There is a total land area based on GIS mapping of approximately 41,800 acres within these designated WSRs. The purpose of the analysis below is to analyze the effects to ORVs associated with changes to those road and trail segments mentioned above. The following table summarizes the change of motorized use within WSRs by alternatives.

Table III-33. Comparison of Alternatives – Designated Wild and Scenic Areas

Designated Wild & Scenic Areas	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Acres of cross-country travel	41,800	0	0	0	0
Miles of open roads	144.6	144.6	142.6	142	142.6
Miles of motorized trails	10.85	10.85	10.85	5.95	7.95

c. Direct and Indirect Effects

Summary

Under all alternatives varying levels of motorized use of existing NFS roads and trails within WSRs would continue. Of the six WSR’s, only two will experience measurable change per alternatives in the miles of road and trails being proposed for motorized use. However, the miles of motorized roads and trails per alternative vary only slightly. For example, the most restrictive alternative, Alternative 4, will reduce motorized use within corridors by 8 miles. While there is a measurable change between the current conditions and action alternatives, the potential impacts to ORVs will be very slight. Below is an analysis of impacts to ORVs by alternative. None of the alternatives propose new motorized road or trail construction within the WSRs.

Alternative 1

Under this alternative cross-country travel would still be allowed. This would provide 41,800 acres of WSRs open for motorized use. Cross-country travel would allow for continued impacts to ORVs. Because there would be no restriction on river crossings the following ORVs would be impacted by motorized use: water quality, fisheries, recreation, and scenic quality. Within the river corridors there would be the opportunity to engage in cross-country travel on uplands. The potential to create additional user-created routes within the corridor exists due to population growth and demand, which would impact the scenic quality and recreational ORVs. However, due to steep topography and heavy vegetation associated with these areas, it is estimated that significantly less acres are actually capable of supporting this use. Based on the analysis assumptions at III-3, it is not anticipated that this use would measurably change under any alternative.

Ongoing cross-country travel will likely impact solitude and primitive experience within the Wild sections of the WSRs; therefore, non-motorized recreation users could encounter sights and sounds evidencing motorized use of these less-developed areas. This could adversely affect or diminish scenic quality and recreation ORVs on those areas capable of cross-country travel. While the analysis assumptions estimate significantly less acres receive use due to terrain restrictions, OHV technology could provide for additional opportunities in the future, thus creating a risk for potential impacts to ORVs.

Impacts Common to Alternatives 1 and 2

A total of 155.45 miles of existing motorized roads and trails would continue to be open. These roads and trails are allowed within the WSRs pursuant to the WSRA and their respective river management plans. Therefore, the existing condition is compliant with the WSRA because it maintains the existing level of naturalness and vegetation at the time of designation. While these existing roads and trails do not enhance ORVs, they are consistent with law and policy for management of WSRs. Based on the analysis assumptions at III-3, the current condition does not constitute a measurable change; therefore, no impacts to ORVs are associated with motorized roads and trails in alternatives 1 and 2.

Impacts Common to Alternatives 2, 3, 4, and 5

Under these alternatives cross-country travel would be prohibited. This would close 41,800 acres of WSRs to motorized use. Eliminating motorized use off designated routes would help protect and enhance the rivers' outstandingly remarkable values by reducing resource impacts. Therefore, Alternatives 2, 3, 4, and 5 would reduce the current level of impacts and have less effect than Alternative 1 on ORVs. However, the difference is slight because there is little cross-country travel occurring in WSRs due to vegetation and topography. The physical impact is primarily on existing roads and trails. In Alternatives 3, 4, and 5 there will be a decrease in allowable motorized use of roads and trails. However, these alternatives only propose minor decreases in motorized use within the WSR corridors. Below is a detailed discussion of the different levels for motorized use being proposed by the alternatives.

Alternative 3

Aside from closing cross-country travel, this alternative will remove 2.0 miles of public motorized use of the 4201016 road within the Scenic section of the Illinois WSR. Closure of this portion of road will remove motorized use within the Illinois historic floodplain. This has the potential to reduce user-created routes to the river. This closure would potentially enhance water quality, botanical, and recreational ORVs. This is because the potential for access for motorized use would decrease, thus lowering impacts to water quality created by sedimentation from motorized disturbance of the river bed. This area is at the base of Eight Dollar Mountain area, which is a diverse botanical area. Therefore, removal of motorized use would enhance the quality of the botanical resources within and adjacent to the Illinois WSR. The recreational value of river rafting would be enhanced due to the decreased motorized sights and sounds along the river corridor. The potential for enhancement is slight, however, due to the proximity of additional road developments and private developments only a few miles downstream from this location.

No changes to ORVs will occur due to this alternative on the North Fork Smith WSR. This is because under Alternative 3, there are no other changes proposed to motorized activity that would impact ORVs. All other existing roads and trail would remain in their current condition. This would allow for a remaining 153.45 miles of motorized roads and trails within the WSR's corridors.

Alternative 4

In addition to closing cross-country travel, this alternative will remove motorized use on 7.5 miles of roads and trails within the WSR's. In particular, it proposes closure to motorized activity on 4 miles of trail 1161; 0.9 mile of trail 1169; 0.3 mile of Forest road 4402-206; 0.3 mile of Forest road 4402-256; and 2.0 miles of Forest road 4201.016 that will reduce impacts to the ORVs. This will have the most significant change to water quality, scenic quality, and recreation.

Over time, any user created routes would begin to re-vegetate. Roadways would slowly begin to be reclaimed by nature and further reduce visual impacts to the scenic quality. This would in turn increase and enhance the recreation experience within the WSR corridors. This is because the scenic quality leads to the enhanced recreational value of the remote and natural settings found within these WSRs.

However, Alternative 4 would require an additional plan amendment because this alternative proposes a change to the current Siskiyou N.F. LRMP and the North Fork Smith River Management Plan Standards and Guidelines. Since Alternative 4 closes all motorized use, Sourdough Camp would not be accessible by motorized users as a semi-primitive use area. This would conflict with current River Management Plan Standards and Guidelines at MA2-3N. Therefore, to implement this alternative, a plan amendment would be needed to implement this decision. While Alternative 4 would enhance certain ORVs it is not consistent with current plan direction because it would preclude motorized access to a semi-primitive motorized camp area.

Alternative 5

Aside from closing cross-country travel, this alternative will remove motorized use on 4.9 miles of roads and trails within the WSR's. In particular, this would close motorized use on 2 miles of trail 1161; 0.9 mile of trail 1169; 2.0 miles of Forest road 4201.016 within the Scenic and Wild sections of the Illinois WSR. However, 2.0 miles of trail 1161 would remain open within the Illinois Wild section of the WSR. In addition, Alternative 5 would allow for motorized use on all 2.9 miles of roads within the North Fork Smith WSR. This would provide management direction consistent with the Forest Plan and river management plan.

Under Alternative 5, there would be a potential for enhancement of water quality, fisheries, botanical, scenic quality and recreation ORVs because of the reduction in motorized use within the river corridors. Most notable is the reduced impacts associated with motorized use of trails within the Wild section of the Illinois WSR. This would have the opportunity to protect and enhance recreation and scenic quality values because of the reduction in motorized use adjacent to the river would lessen any visual impacts caused by motorized uses to non-motorized users of the river corridor. Since this segment of trail is adjacent to the Kalmiopsis Wilderness, there is a potential to enhance wilderness values with this alternative.

Removal of motorized use on a 2-mile segment of road 4201.016 will remove motorized use within the Illinois historic floodplain. This has the potential to reduce user-created routes to the river. This closure would potentially enhance water quality, botanical, and recreational ORVs. This is because the potential for access for motorized use would decrease, thus lowering impacts to water quality created by sedimentation from motorized disturbance of the river bed. This area is at the base of Eight Dollar Mountain area, which is a diverse botanical area. Therefore, removal of motorized use would enhance the quality of the botanical resources within and adjacent to the Illinois WSR. The recreational value of river rafting would be enhanced due to the decreased motorized sights and sounds along the river corridor. The potential for enhancement is slight, however, due to the proximity of additional road developments and private developments only a few miles downstream from this location.

d. Cumulative Effects

The WSR's are not likely to have been adversely impacted from major ground-disturbing actions in the past, nor are any actions anticipated or identified in the future. Minor impacts along WSR include activity from fire suppression, existing roads and trails, and suction dredging associated with mining activity. This activity, while consistent with the Siskiyou LRMP, does create short duration and localized turbidity. Other activities potentially affecting water quality and fisheries are discussed in other sections of Chapter III. When considering all of these activities, no cumulative effects that would conflict with protection and enhancement of the river's ORVs are identified or expected to occur.

The Action Alternatives for this project are expected to maintain or reduce effects from motorized use. No new road or trail construction is being proposed in WSRs from the Action Alternatives. Thus, no additive impact that might contribute to adverse cumulative effects on the protection/enhancement of ORVs is being proposed.

Alternatives 3, 4, and 5 would include a reduction in miles of routes open for public wheeled motor vehicle use within WSRs. The prohibition of cross-country travel would further reduce the potential for cumulative impacts. Therefore, the proposed alternatives would not create an additional or foreseeable risk from adverse cumulative effects. To the contrary, the proposed alternatives have the potential to improve ORVs in WSRs.

Eligible Rivers

a. Background

In addition to rivers included in the National Wild and Scenic Rivers System (NWSRS), the Forest contains 16 rivers and creeks that have been determined through studies and analysis to be eligible for inclusion in the National System. While these areas are considered eligible for inclusion based on their free-flowing character, water quality and ORVs, only Congress can designate rivers as part of the NWSRS. However, until Congress can make a determination for inclusion into the National System, the Forest Service manages these eligible rivers or creeks along with uplands within an approximate one-quarter mile corridor from either bank to protect the values identified for potential inclusion in the NWSRS. When each river or creek is analyzed under an eligibility study, a recommendation is made to place that river or creek into one or more of the three classifications: wild, scenic, or recreational. Each river segment recommendation is based upon current levels of development regarding water resource projects, shoreline development, and accessibility. The Forest Service Land and Resource Management Planning Handbook (FSH1909.12), Chapter 80, provides direction on interim management of eligible rivers and creeks. Section 8.12 states that management prescriptions for eligible or suitable rivers should provide protection in the following ways:

1. To the extent the Forest Service is authorized under law to control stream impoundments and diversions, the free-flowing characteristics of the identified river cannot be modified.
2. Outstandingly remarkable values of the identified river area must be protected and, to the extent practicable, enhanced.

3. Management and development of the identified river and its corridor cannot be modified to the degree that eligibility or classification would be affected (i.e. classification cannot be changed from wild to scenic or scenic to recreational).

Chapter 80, section 82.3, also gives specific management guidance for each of the river classifications. Changes to motorized roads and trails are the two proposed activities within eligible river corridors. Therefore, road accessibility guidelines are used as an indicator of their effects:

- Wild Rivers—Generally inaccessible except by trail. No roads or other provision for vehicular travel within the river area. A few existing roads leading to the boundary of the area are acceptable.
- Scenic Rivers—Accessible in places by roads. Roads may occasionally reach or bridge the river. The existence of short stretches of conspicuous or longer stretches of inconspicuous roads is acceptable.
- Recreational Rivers—Readily accessible by roads. The existence of parallel roads on one or both banks as well as bridge crossings and other river access points is acceptable.

Alternatives will be evaluated to determine if they meet this direction for streams eligible for wild and scenic river designation.

Of the 16 eligible rivers or creeks, 12 have existing motorized roads and trails. The only change to the remaining four is cross-country travel closure. Of the 12 eligible river corridors with existing roads, only seven will be impacted by measurable changes to the motorized roads and trails. Therefore, the only change to nine eligible river corridors is closure to cross-country travel because the alternatives propose no changes to motorized roads or trails within those corridors. The remaining seven will have impacts associated with the alternatives being analyzed within this document. These seven eligible river corridors will potentially experience a change from the existing level of motorized use of roads and trails within those corridors. In the Assumptions for Analysis at III-3, maintaining the current level of use does not constitute a measurable change from the current condition. Therefore, it does not constitute a new effect. Table III-34 on the next page summarizes the eligible corridors, the existing roads and trails, potential ORVs, and segment classification.

Table III-34. List of Eligible Wild and Scenic Rivers

Name	Motorized Roads & Trails	Decisions Affecting Motorized Roads & Trails	Proposed Classification	Proposed Outstandingly Remarkable Values
Johnson Creek	3.8 Miles	1.8 Miles	Scenic, Recreational	Fisheries
South Fork Coquille	0.8 Mile	0.8 Mile	Wild, Recreational	Recreation, Scenic, Ecological, Fisheries
Silver & Todd Creeks	0.5 Mile	0.5 Mile	Wild	Fisheries
Indigo & Snail Creeks	1.0 Mile	1.0 Mile	Wild	Fisheries
Canyon Creek	0.3 Mile	0.3 Mile	Scenic	Fisheries
Rough & Ready Creek	0.7 Mile	0.7 Mile	Scenic, Recreational	Botanical, Ecological, Wildlife
Bald Face Cr. & Tributaries	2.1 Miles	4.4 Miles	Wild, Scenic	Fisheries, Water Quality
Sucker Creek	4.6 Miles	0 Miles	Scenic	Fisheries
Sebastopol Creek	0 Miles	0 Miles	Scenic	Cultural, Historic
Muir Creek	2.3 Miles	0 Miles	Wild, Scenic	Scenery, Recreation, Geology, Water Quality
Hershberger Creek	5 Miles	0 Miles	Scenic	Scenery, Geology, Hydrology
Castle Creek	10.6 Miles	0 Miles	Scenic	Scenery, Recreation, Geology, Hydrology
Union Creek	24.9 Miles	0 Miles	Scenic	Scenery, Water Quality
Middle Rogue	13.12 Miles	0 Miles	Wild, Scenic	Scenery, Geology, Hydrology, Water Quality

* Motorized road or trail segments within proposed classifications are described in detail below

b. Effects Mechanisms and Analysis Framework

It is not the purpose of this planning effort to decide whether wheeled motorized use within any of the eligible Wild and Scenic corridors is appropriate. Those overarching decisions on allowable uses of wheeled motorized vehicles in eligible corridors were made in prior decision documents (ex. LRMPs) and are not being revisited here. As discussed above, eligible river corridors and segments will continue to be managed according to agency policy and LRMPs.

The scope of this analysis is limited to motorized road and trail changes within eligible river corridors. In addition, motorized roads and trails adjacent to eligible river corridors will be discussed where there is a potential to impact river values. Many listed ORV values are discussed in other sections of this document. Specific effects to those resources are analyzed in the site-specific evaluations of the environmental effects elsewhere in this document and resolved in alternatives or through mitigations on a site-specific case-by-case basis. In particular, water quality is addressed with a full detailed analysis in Chapter III, section 1. Because that section includes specific analysis concerning impacts associated with any changes to motorized use of roads and trails, further discussion of water quality, aside from impacts to an eligible river’s ORV protection/enhancement, is unnecessary.

None of the alternatives proposes any modification of the eligible’s river beds or banks. Since no road or trail construction is being proposed within eligible river corridors, no effects are occurring that will impact eligible rivers’ free-flowing conditions.

Here, the analysis will focus on administration of eligible river corridors and segments to protect or enhance the ORVs and recommended classifications identified in Table III-24 above.

There are a total of 69.72 miles of existing roads and trails within all eligible river corridors. There is a total land area calculated using GIS mapping is approximately 49,600 acres within all eligible river corridors. The purpose of the analysis below is to analyze the effects to ORVs and segment classifications associated with changes to those road and trail segments identified in Table III-34 shown above. Table III-35 below summarizes the change to motorized use within eligible river corridors by alternatives.

Table III-35. Comparison of Alternatives – Eligible Wild and Scenic Rivers

Eligible Wild & Scenic Areas	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Acres of cross-country travel	49,600	0	0	0	0
Miles of open roads	64.52	64.52	63.02	60.92	63.02
Miles of motorized trails	5.2	5.2	7.5 ¹⁰	3.4	2.6

c. Direct and Indirect Effects

Summary

Under all alternatives, motorized use of existing NFS roads and trails would continue within 12 eligible corridors. Of the 12 eligible corridors, only six corridors will experience measurable change per alternatives in the miles of road and trails being proposed for motorized use. Under all alternatives the remaining four corridors will not experience any change to motorized use on existing roads and trails. Alternative 4 has the greatest reduction in motorized roads and trails by reducing the current level to 64.32 miles, which will reduce motorized use within corridors by 4.6 miles. Alternative 3 will increase the baseline of motorized roads and trails to 70.52 miles, which will increase motorized use within corridors by .8 mile. Alternative 5, the preferred alternative, will reduce the current level to 65.62 miles, which will reduce motorized use within corridors by 4.1 miles. None of the alternatives propose new road or trail construction within the eligible river corridors.

Alternative 1

Under this alternative cross-country travel would still be allowed. This would provide 49,600 acres of eligible corridors open for motorized use. Cross-country travel would allow for continued impacts to ORVs. Because there would be no restriction on river crossings the following ORVs would be impacted by motorized use: water quality, fisheries, recreation, and scenic quality. Within the river corridors there would be the opportunity to engage in cross-country travel on uplands. The potential to create additional user-created routes within the corridor exists due to population growth and demand, which would impact the scenic quality and recreational ORVs. However, due to steep topography and heavy vegetation associated with these areas, it is estimated that significantly less acres are actually capable of supporting this use. Based on the analysis assumptions at III-3, it is not anticipated that this use would measurably change under either alternative.

¹⁰ Proposed conversion of road 4402.494 (ML1) to a motorized trail (Biscuit Hill) would increase miles of motorized trails above the base line by 2.3 miles.

Ongoing cross-country travel will likely impact solitude and primitive experience within the Wild sections of the eligible corridors; therefore, non-motorized recreation users could encounter sights and sounds evidencing motorized use of these less-developed areas. This could adversely affect or diminish scenic quality and recreation ORVs on those areas capable of cross-country travel. While the analysis assumptions estimate less acres receive use due to terrain restrictions, OHV technology could provide for additional opportunities in the future, thus creating a risk for potential impacts to ORVs.

Impacts Common to Alternatives 1 and 2

A total of 69.72 miles of existing motorized roads and trails would continue to be open within eligible corridors. Table III-25 above provides a detailed description of motorized road and trail segments within the eligible corridors. These roads and trails are allowed within the eligible river corridors pursuant to the LRMPs and Forest Service policy. Therefore, the existing condition is compliant with Forest management direction because it maintains the existing level of naturalness and vegetation at the time of eligibility studies. While these existing roads and trails do not enhance ORVs, they are consistent with the Wild and Scenic Rivers Act and policy for management of eligible river corridors. Based on the analysis assumptions at DSEIS, Chapter III-3, the current condition does not constitute a measurable change; therefore, no impacts to ORVs are associated with motorized roads and trails in Alternatives 1 and 2.

Impacts Common to Alternatives 2, 3, 4, and 5

Under these alternatives cross-country travel would be prohibited. This would close 49,600 acres of eligible river corridors to motorized use. Eliminating motorized use off designated routes would help protect and enhance the rivers' ORVs by reducing resource impacts. Therefore, Alternatives 3, 4, and 5 would reduce the current level of impact and have less affect from cross-country travel than Alternative 1 on ORVs. However, the difference is slight because there is little, if any, cross-country travel occurring in eligible river corridors due to heavy vegetation and steep topography. The physical impact is primarily on existing roads and trails. In Alternatives 4 and 5 there will be a decrease in allowable motorized use of roads and trails. However, the decrease is slight—1.9 miles of motorized roads and trails. Therefore, changes to impacts of ORVs would be minor between these alternatives. Below is a detailed discussion of the different levels for motorized use being proposed by the alternatives.

Alternative 3

In addition to closing cross-country travel, this alternative will remove a total of 2.5 miles of motorized use on roads and trails within eligible river corridors. In particular, it will remove .50 mile of motorized use within the proposed scenic section of Silver Creek; .30 mile of motorized use within the proposed scenic section of Canyon Creek; and .70 mile of motorized use within the proposed recreational section of Rough and Ready Creek.

Closure of these portions of road will remove motorized use within the riparian areas. Removal of motorized use would have the potential to enhance water quality, fisheries, botanical, and wildlife ORVs. This is because the potential for access of motorized use would decrease, thus lowering impacts to water quality created by sedimentation from motorized disturbance adjacent to water bodies. In turn, improved water quality would have the potential to enhance fisheries. Removal of motorized use would allow the existing road beds to naturally re-vegetate and propagate naturally occurring plant species. Because the serpentine soils are very shallow and sensitive in these areas, removal of motorized use would have a potential to increase soil stability and further increase plant diversity leading to enhanced ORVs. Limiting noise and visual disturbance caused by motorized use within corridors would enhance natural wildlife movements and contribute to potential re-colonization of species to the river corridors. Because the closure would be minimal in length, potential for enhancement is slight.

Alternative 3 proposes to open 2.30 miles of an existing ML 1 road 4402.494 to a motorized trail (Biscuit Hill trail) within the Bald Face Creek eligible corridor. This proposed motorized trail is located on a ridge adjacent to tributaries of the Bald Face Creek eligible corridor. Potential ORVs for Bald Face Creek are fisheries and water quality. This trail is along the ridge line and would not likely impact fisheries or water quality because of the distance between the trail and the streams. Any additional sedimentation would naturally filter into the soils prior to reaching the water bodies. This segment of the eligible corridor is classified as wild. Motorized use within a wild segment is generally prohibited, except for valid existing uses at the time of an eligibility study that are determined consistent with management direction. Therefore, opening this portion of the Biscuit Hill trail to motorized use would be in conflict with Forest Service policy contained in FSH 1909.12, Chapter 80, section 82.3. In addition to Forest policy, opening of the Biscuit Hill trail to motorized use would be in conflict with the June 1991 Settlement Agreement between the Forest Service and American Rivers Council, et al. This Agreement specifically requires the Forest Service to either defer projects within the eligible corridor that may adversely impact eligibility or accelerate the assessment so that final determination is made prior to a decision approving a project or activity.

In conclusion, while there is only a slight potential for impacts to fisheries and water quality associated with extending motorized use along this trail segment, there would be direct impacts to the eligible wild segment recommendation.

No changes to ORVs will occur due to this alternative on either Johnson or Indigo Creek eligible corridors. This is because under Alternative 3, there are no other changes proposed to motorized activity that would impact ORVs or segment classifications. All other existing roads and trails would remain in their current condition. This would allow for a remaining 67.42 miles of existing motorized roads and trails within all eligible corridors not impacted by this alternative.

Alternative 4

In addition to closing cross-country travel, this alternative will remove motorized use on 5.4 miles of roads and trails within eligible river corridors. In particular, it will remove .80 mile of motorized use within the proposed recreational section of South Fork Coquille; .5 mile of motorized use within the proposed scenic section of Silver Creek; .30 mile of motorized use within the proposed scenic section of Canyon Creek; .70 mile of motorized use within the proposed recreational section of Rough and Ready Creek; 1.0 mile of motorized use within the proposed wild section of Indigo Creek; and 2.10 miles of motorized use within the proposed wild section of Bald Face Creek.

Closure to motorized use under this alternative of these roads and trails will have the greatest potential to reduce impacts to ORVs. This will have the most significant impact to water quality, fisheries, botanical, wildlife and scenic quality ORVs. This is because the potential for access of motorized use would decrease, thus lowering impacts to water quality created by sedimentation from motorized disturbance adjacent to water bodies. In turn, improved water quality would have the potential to enhance fisheries. Removal of motorized use would allow the existing road beds to naturally re-vegetate and propagate naturally occurring plant species. Because the serpentine soils are very shallow and sensitive to disturbance, removal of motorized use would have a potential to increase soil stability and further increase plant diversity and lower stream sedimentation, leading to enhanced ORVs. Limiting noise and visual disturbance caused by motorized use within corridors would enhance natural wildlife movements and contribute to potential re-colonization of species to the river corridors. In addition to direct impacts, motorized closures have a potential to reduce indirect effects to the above-mentioned ORVs due to reduced user-created routes to the river. Because these motorized closures would be relatively short in length, potential enhancement is slight.

This alternative does not propose to open any additional motorized routes within eligible river corridors. In conclusion, this alternative has the potential to slightly enhance ORVs within the eligible river corridors listed above. No changes to ORVs will occur under this alternative to Johnson Creek. This is because under Alternative 4, there are no other changes proposed to motorized activity that would impact ORVs or segment classifications. All other existing motorized roads and trails would remain in their current condition. This would allow for a remaining 64.32 miles of existing motorized roads and trails within all eligible corridors not impacted by this alternative.

Alternative 5

In addition to closing cross-country travel, this alternative will remove motorized use on 4.1 miles of roads and trails within eligible river corridors. In particular, it will remove .80 mile of motorized use within the proposed recreational section of South Fork Coquille; 1.8 miles of motorized use within the proposed scenic section of Johnson Creek; .5 mile of motorized use within the proposed scenic section of Silver Creek; .3 mile of motorized use within the proposed scenic section of Canyon Creek; and .7 mile of motorized use within the proposed recreational section of Rough and Ready Creek.

Closure of these portions of roads and trails to motorized use will remove impacts to the following ORVs: water quality, fisheries, botanical, wildlife, cultural, and scenic quality. Because there is a potential for reduced motorized use within the corridors, water quality would be enhanced. In turn, improved water quality would have a potential to enhance fisheries. Removal would allow existing road beds to re-vegetate and propagate naturally occurring plant species. Removal of motorized use would have the potential to increase soil stability and further increase plant diversity and lower stream sedimentation, leading to enhanced ORVs. Limiting noise and visual disturbance caused by motorized use within corridors would enhance natural wildlife movements and contribute to potential re-colonization of species to the river corridor. In particular, Johnson Creek would experience potential beneficial enhancement to wildlife movements because this trail bisects a remote tract of forest without other incursions from motorized activity. Therefore, removal of motorized use would provide a travel corridor for wildlife migrating north or south through the interior of the forest. In addition to direct impacts, motorized closures have a potential to reduce indirect effects to the above-mentioned ORVs due to reduced user-created routes to the creek. Because these motorized closures would be relatively short in length, potential enhancement to ORVs is expected to be slight.

This alternative does not propose to open any additional motorized routes within eligible river corridors. In conclusion, this alternative has the potential to slightly enhance ORVs within the eligible river corridors listed above. No changes to ORVs will occur under this alternative to all other eligible river corridors. This is because under Alternative 5 there are no other changes proposed to motorized activity that would impact ORVs or segment classifications. All other existing motorized roads and trails would remain in their current condition. This would allow for a remaining 65.62 miles of existing motorized roads and trails within all eligible corridors not impacted by this alternative.

d. Cumulative Effects

The eligible river corridors are not likely to have been adversely impacted from major ground-disturbing actions in the past, nor are any actions anticipated or identified in the future. Minor impacts along eligible corridors include activity from fire suppression, existing roads and trails, and suction dredging associated with mining activity. This activity, while consistent with the Siskiyou LRMP, does create short duration and localized turbidity. Other activities potentially affecting water quality and fisheries are discussed in other sections of DSEIS, Chapter III. When considering all of these activities, no cumulative effects that would conflict with protection and enhancement of the river's potential ORVs are identified or expected to occur.

Alternative 3, while it proposes to open 2.30 miles of ML 1 road to motorized use as a trail, current conditions show motorized use along this route. Alternative 3 proposes to change this route to a motorized trail, which will provide routine maintenance to a ML 1 road. This routine maintenance has the potential to reduce environmental impacts to ORVs due to reduced sedimentation of surface waters. However, motorized activity within the proposed wild segment of the eligible corridor will detract from this segment classification. While there are existing motorized uses in the adjacent North Fork Smith River WSR, any added impacts to the proposed segment classification of the Bald Face eligible corridor would impact potential classification as wild by Congress.

Alternatives 4 and 5 for this project are expected to maintain or reduce effects from motorized use. No new road or trail construction is being proposed in eligible corridors from these Action Alternatives. Thus, no additive impact that might contribute to adverse cumulative effects on the protection/enhancement of ORVs is being proposed.

Alternatives 4 and 5 would include a reduction in miles of routes open for public wheeled motor vehicle use within eligible corridors. The prohibition of cross-country travel would further reduce the potential for cumulative impacts. Therefore, the proposed alternatives would not create an additional or foreseeable risk from adverse cumulative effects. To the contrary, the proposed action alternatives have the potential to improve ORVs in eligible corridors.

F. OTHER EFFECTS

The following is a summary of effects that were considered during the analysis process, not necessarily as issues, and not always totally quantifiable. All effects analyzed for all Action Alternatives were determined to be consistent with goals, objectives and Standards and Guidelines identified in the Rogue River and Siskiyou National Forest Land and Resource Management Plans as amended by the Northwest Forest Plan.

1. Relationships Between Local and Short-term Uses of the Human Environment and Maintenance or Enhancement of Long-term Productivity

Maintaining long-term site productivity is the basis for the ecosystem being able to meet the needs of the land and people through time. The maintenance of productivity is required through legislation: the Organic Act of 1897, the Multiple Use Sustained Yield Act of 1960, the National Environmental Policy Act of 1969, and the National Forest Management Act of 1976.

Long-term productivity and sustainability is the inherent potential of the land (ecosystem) to produce a certain level of vegetation and associated processes, such as wildlife, water, and clean air, indefinitely into the future.

Fixed components influencing productivity include local climate, topographic features, and soil type. Components affecting productivity that can be changed include: soil volume, porosity, water availability, chemistry, and biology. Management practices that can affect these components include: compaction and soil displacement from motor vehicle use off of designated routes; soil displacement from unauthorized routes; loss of soil organic matter; modification of the water table or moisture-holding capacity; and reductions in the functioning of soil organisms from compaction or displacement of substrate.

Proposals in this project have been designed to not only maintain long-term site productivity, but also assist in making sure conditions are maintained that are conducive for the ecosystem to be able to achieve a high level of potential.

2. Environmental Justice and Civil Rights

Changes in this section between the FEIS and this DSEIS:

- Revised section to clarify disclosure

Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations," directs federal agencies to integrate environmental justice considerations into federal programs and activities. Environmental justice means that, to the greatest extent practical and permitted by law, all populations are provided the opportunity to comment before decisions are rendered or are allowed to share in the benefits of, are not excluded from, and are not affected in a disproportionately high and adverse manner by government programs and activities affecting human health or the environment.

One goal of Executive Order 12898 is to provide, to the greatest extent practicable, the opportunity for minority and low-income populations to participate in planning, analysis, and decision-making that affects their health or environment, including identification of program needs and designs. This public involvement process for the Proposed Action has been conducted under Departmental regulation 5600-2, December 15, 1997, including the Environmental Justice Flowchart (Appendix E of the regulation). The Proposed Action, its Purpose and Need, and area of potential effect have been clearly defined. Scoping under the National Environmental Policy Act has utilized extensive and creative ways to communicate.

Potentially affected tribes have been consulted and effects on their rights and concerns considered within the analysis of alternatives. Tribal consultation was conducted with the seven federally-recognized Indian tribes whose traditional territory included all or a portion of the RRSNF. Government-to-Government consultation letters were mailed on August 18, 2008 to Confederated Tribes of Siletz Indians, Confederated Tribes of the Grand Ronde Community, the Klamath Tribes, Cow Creek Band of Umpqua Tribe of Indians, Smith River Rancheria, Coquille Tribal Council, and to the Quartz Valley Indian Tribe. American Indian populations would not be disproportionately impacted under any alternative with avoidance of heritage resources, consideration of traditional values, and reasonable access allowed through agreements, permits, and recognition of their sovereignty and legal rights.

There would be no adverse effects to human health and no alternative has been determined to disproportionately affect minority or low income populations. The Action Alternatives do not appear to have a disproportionately high or adverse effect on minority or low-income populations. Extensive scoping did not reveal any issues or concerns associated with the principles of Environmental Justice. No mitigation measures to offset or ameliorate adverse affects to these populations have been identified. All interested and affected parties will continue to be involved with the public involvement and decision process.

USDA Civil Rights Policy

The Civil Rights Policy for the USDA, Departmental Regulation 4300-4 dated May 30, 2003, states that the following are among the civil rights strategic goals: (1) managers, supervisors, and other employees are held accountable for ensuring that USDA customers are treated fairly and equitably, with dignity and respect; and (2) equal access is assured and equal treatment is provided in the delivery of USDA programs and services for all customers. This is the standard for service to all customers regardless of race, sex, national origin, age, or disabilities.

Disparate impact, a theory of discrimination, has been applied to the travel management planning process in order to reveal any such negative effects that may unfairly and inequitably impact beneficiaries regarding program development, administration, and delivery.¹¹ The objectives of this review and analysis are to prevent disparate treatment and minimize discrimination against minorities, women and persons with disabilities and to ensure compliance with all civil rights statutes, Federal regulations, and USDA policies and procedures.

Persons with Disabilities

Under section 504 of the Rehabilitation Act of 1973, no person with a disability can be denied participation in a Federal program that is available to all other people solely because of his or her disability. There is no legal requirement to allow people with disabilities use of motor vehicles on roads, trails, or other areas that are closed to motor vehicles. Restrictions on motor vehicle use that are applied consistently to everyone are not discriminatory. Wheelchairs are allowed on all NFS lands that are open to foot travel, and wheelchairs, including battery-powered, are specifically exempted from the definition of a motor vehicle by the Travel Management Rule. Opportunities for motor vehicle use exist under all alternatives.

¹¹ For more information on disparate impact theory, see The Evolution of Disparate Impact Theory of Discrimination, Harvard Journal of Legislation, vol. 44 2007 (http://www.law.harvard.edu/students/orgs/jol/vol44_2/gordon.pdf)

In the 2000 Census survey, people were defined as having a disability if one or more of the following conditions were true:

- They were aged 5 or older and responded “yes” to a sensory, physical, mental, or self-care disability.
- They were aged 16 years or older and responded “yes” to a disability affecting going outside the home.
- They were between the ages of 16 and 64 and responded “yes” to an employment disability.

The population with disabilities ranges from 34 to 49% in the counties intersecting the Rogue River-Siskiyou National Forest (see table below). For comparison, the rate for all of Oregon is 31% and the rate for the nation is 19%.

Table III-36. Percent of County Population with Disabilities

County	Total Population	Total Population with Disabilities	% with Disability
Coos (OR)	62,779	29,812	48%
Curry (OR)	21,137	10,365	49%
Del Norte (CA)	27,507	10,767	39%
Douglas (OR)	100,399	39,358	39%
Jackson (OR)	181,269	62,266	34%
Josephine (OR)	75,726	31,065	41%
Klamath (OR)	63,775	24,337	38%
Siskiyou (CA)	44,301	17,641	40%

*Total disabilities tallied for the civilian non-institutionalized population 5 years and over with disabilities.

Determination That a CRIA is not Needed

In spring of 2006 the Rogue River-Siskiyou National Forest embarked on a proposed action to improve management of motorized vehicle use on NFS lands within the Rogue River-Siskiyou NF in accordance with regulations at 36 CFR Parts 121, 251, 261, and 295, and as described in Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule (36 CFR Part 212 Subpart B). The Notice of Intent (NOI) initiating the scoping process was published in the Federal Register on August 26, 2008.

The Forest received more than 23,700 emails and letters during the public scoping period and DEIS comment period. The interdisciplinary team analyzed these emails and letters using an established analytical process known as content analysis. Comments are made by those who are interested in specific issues, favor an alternative, have concerns over the plan or analysis, or other concerns. People self-select to participate and are not required to provide any information concerning individual demographic information. Based on public comment, there were no issues raised that would suggest, or from which one may infer, that implementation of the travel management plan will affect groups or classes of persons, negatively, because of one or more prohibited bases.

Groups and classes of persons have been reviewed within the social analysis section of the EIS. No groups or classes or persons were found to be disproportionately negatively affected by this travel management decision. This travel management decision applies equally to all members of the public, and therefore is not discriminatory to any person or group.

Some comments received during the travel management planning process expressed concern that changes to motorized access would prevent future access to National Forest system lands for those with disabilities. In response to these comments, a review of the project alternatives has been conducted to ensure that they apply equally to all groups. Therefore, the travel management plan is not discriminatory towards persons with disabilities, because it applies equally to all groups.

Given that no adverse or disproportionate impacts are anticipated on women, minority groups, or persons with disabilities, a Civil Rights Impact Analysis and statement of findings are not needed.

Civil Rights Monitoring and Evaluation

It is the responsibility of the Deputy Chiefs for National Forest Systems to ensure that decision-makers are aware of this Civil Rights Impacts Analysis and that the alternatives and mitigations are considered. Any future travel management projects will be implemented only after an appropriate level of NEPA is completed and the decision documented. This project-level NEPA will be completed with adequate public involvement that will consider access and concerns from minorities, women, persons with disabilities, and low income populations.

The Forest will continue to: (1) consult early and often with Oregon Tribal Governments regarding Special Areas of Historic Tribal Significance for implementation of travel management plans and (2) design travel management planning and public involvement opportunities that consider access concerns from minorities, women, persons with disabilities, and low income populations.

3. Adverse Environmental Effects Which Cannot Be Avoided

The implementation of any of the Action Alternatives would result in some minor adverse impacts to the physical, biological, and human environments. Many of these impacts can be mitigated to acceptable levels using the Mitigation Measures specified by resource topic and alternative (see EIS Chapter II). The unavoidable adverse impacts summarized below are those that are expected to occur after the application of mitigation measures, or cannot be mitigated to a level approaching existing conditions.

Sediment delivery and water quality: Although mitigation measures (Best Management Practices) are expected to reduce the potential for accelerating sediment production to near baseline levels, there is a minimal risk for short-term indirect impacts to water quality as a result of implementing any of the Action Alternatives.

Soils/site productivity: Under the Action Alternatives, some detrimental soil impacts could occur as a result of the use of equipment to create or maintain roads and trails. Mitigation measures would limit the detrimental areas to meet R6 and Forest Standards and Guidelines for soil protection.

Wildlife: As a result of the motorized vehicle use designation, some wildlife species may be adversely impacted by disturbance. Mitigation measures and project design criteria are expected to minimize these impacts. Impacts specific to the species considered is discussed in detail in this Chapter.

4. Effects on Wetlands and Floodplains

Wetlands associated with Executive Order 11990, are likely to exist on Forest but do not exist within areas proposed for motorized vehicle use designations. If any wetlands were to be located during development, appropriate buffers would be provided in compliance with the Aquatic Conservation Strategy of the Northwest Forest Plan.

There would be no effects on floodplains associated with Executive Order 11988 as a result of implementing this proposal, as none would be affected. Any actions that come out of the this travel planning process would lead to a reduction in the occupation or modification of floodplains and wetlands by not designating roads or trails for motor vehicle use and allowing for their decommissioning under site-specific project level decisions.

5. Irreversible and Irrecoverable Effects

Irreversible commitment of resources refers to a loss of non-renewable resources, such as mineral extraction, heritage (cultural) resources, or to those factors, which are renewable only over long time spans, such as soil productivity. Publication of the MVUM does not create effects that are irretrievable and there are no substantial irreversible effects from the change being proposed under the Action Alternatives.

6. Effects on Prime Farmland, Rangeland and Forest Land

All alternatives are in keeping with the intent of Secretary of Agriculture Memorandum 1827 for prime farmland. The Forest does not contain any prime farmlands or rangelands. Prime forest land is not applicable to lands within the National Forest System. Under all alternatives, Forest system lands would be managed with coordination and sensitivity to the effects on adjacent lands.

7. Energy Requirements of Alternatives

The area of analysis for this issue, the affected environment, is at least regional in scope and cannot be defined solely for an individual National Forest. There are numbers of vehicles that drive on state and local highways that pass through the RRSNF as they travel to other destinations, commute, or vacation in the region. There are numbers of vehicles that drive to RRSNF access sites or drive on Forest Roads to access recreation opportunities. In addition, there are motor vehicles (OHVs, motorcycles, RVs, SUVs, etc.) that use the Forest Roads, trails, and areas.

The RRSNF and the other National Forests in southern Oregon (Umpqua and Fremont-Winema National Forests) attract many visitors every year and the amount of energy use associated with this travel has increased. Likewise, the numbers of highway vehicles and recreational motor vehicles that use the RRSNF have been increasing, although there is no quantifiable estimate of the numbers of these vehicles. The categories of energy-consuming activities directly or indirectly connected with recreational use of the RRSNF include: motor vehicle traffic that passes through the RRSNF on state and local highways, motor vehicle traffic to access RRSNF sites or drive on Forest Roads, and recreational motor vehicles that use the RRSNF.

People will continue to recreate on the RRSNF and consume energy for that purpose, regardless of the alternative that is implemented. Energy consumption from all choices, whether it is a decision to go to the RRSNF to recreate or to go to the mall and shop, should be seen in perspective.

Cumulatively, recreation use is expected to continue to increase on the RRSNF for the next 10 to 15 years. Factors such as population growth in the area, the increasing reputation of the RRSNF and surrounding area as a destination point, and peoples' increasing leisure time and disposable income contribute to this expected growth. None of the alternatives would affect these factors.

8. Executive Order 13443--Facilitation of Hunting Heritage and Wildlife Conservation

The purpose of this order is to direct Federal agencies that have programs and activities that have an effect on public land management, outdoor recreation, and wildlife management, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat. Agencies are to evaluate the effect of agency actions on trends in hunting participation and consider the economic and recreational values of hunting in agency actions, and manage wildlife and wildlife habitats on public lands in a manner that expands and enhances hunting opportunities, including through the use of hunting in wildlife management planning.

Specific to the Travel Management Plan, agencies are to ensure that agency plans and actions seek the advice of State and tribal fish and wildlife agencies.

This EIS has been reviewed by and commented on by the local Oregon Department of Fish and Game, the Oregon Hunter's Association, as well as other non-governmental groups and comments by those groups have been incorporated as appropriate. The Forest believes that the proposed action is consistent with the Order in that it continues to provide hunter access to Forest lands. The general closure of cross-country travel will reduce opportunities to retrieve game using OHVs. However, there are opportunities to maintain or increase motorized access in some areas, and also reduce direct and indirect effects to game species and their habitats, by restricting access in other areas and during critical breeding periods.

G. CONSISTENCY WITH FOREST PLAN DIRECTION

This Section considers and discloses the effect of proposed Forest Plan amendments on objectives, guidelines, and other contents of Forest Plans. It also provides the analysis that would be used by the Forest Supervisor to determine whether these amendments are significant for the purposes of the planning process.¹² FSM 1926 provides criteria for evaluation of significance. Content from this direction is summarized below:

Changes to the land management plan that are not significant can result from:

1. Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management.
2. Adjustments of management area boundaries or management prescriptions resulting from further on-site analysis when the adjustments do not cause significant changes in the multiple-use goals and objectives for long-term land and resource management.
3. Minor changes in standards and guidelines.
4. Opportunities for additional projects or activities that will contribute to achievement of the management prescription.

The following examples indicate circumstances that may cause a significant change to a land management plan:

1. Changes that would significantly alter the long-term relationship between levels of multiple-use goods and services originally projected (see section 219.10(e) of the planning regulations in effect before November 9, 2000).
2. Changes that may have an important effect on the entire land management plan or affect land and resources throughout a large portion of the planning area during the planning period.

Recent litigation concerning Forest Service Planning Regulations has affected the rule used to amend Forest Plans. The Forest Service is now under the 2000 planning rule as amended by subsequent interpretive rules. The 2000 planning rule allows the use procedures of the 1982 planning rule to be used to amend Forest Plans.

For evaluation of these proposed amendments, the Forest Service will conform to the 1982 Planning Rule as codified in 36 CFR 219. The 1982 planning rule and the 2000 planning rule as amended and clarified are available online at <http://www.fs.usda.gov/planningrule>.

For the RRSNF, there are two types of changes proposed as Forest Plan Amendments, overall **Forest-wide amendments** to the Forest Plans to enact the Travel Management Rule, and **route-specific amendments** in the form of changes to specific management direction and/or to Standards and Guidelines. Both types of amendments are needed under the various Action Alternatives and are proposed to allow a decision under these alternatives to be consistent with land management plan direction.

¹² 36 CFR 219.10(f)

For the Action Alternatives, new additional text, specific to each respective Forest Plan for the Rogue River-Siskiyou National Forest, would amend current management direction for motorized vehicle use. The specific wording of this changed text is contained in FEIS Appendix B (incorporated by reference).

1. Plan Amendments to Rogue River National Forest LRMP

Forest-wide Amendment to Implement Travel Rule

How this Proposed Amendment Changes the Forest Plan

The current Land and Resource Management Plan provides direction for portions of the Forest that are open to cross-country motorized vehicle use. Implementation of the Travel Management Rule requires a forest-wide amendment to the Forest Plan to provide direction as associated with the 2005 Travel Management Rule. Under this amendment, all roads, trails, and cross-country motorized use would be closed unless designated open to specific uses.

1. How this Proposed Amendment Affects Multiple Use Goals and Objectives for Long-Term Land and Resource Management

This proposed amendment affects Management Direction and Objectives, specifically for Recreation and Facilities, LRMP Chapter 4 (page 4-22 and 4-27 respectively). This amendment would allow conformance with and implementation of the Travel Management Rule (36 CFR 212 Subpart B: November 9, 2005). This proposed change would not impact long-term multiple use objectives because the change is being proposed near the next scheduled revision of the forest plan. Therefore, it is less likely to affect long-term objectives.

2. How this Proposed Amendment Affects Adjustments of Management Area Boundaries or Management Prescriptions and Opportunities for Additional Projects or Activities to Contribute to Achievement of the Management Prescription

This proposed amendment affects management prescriptions by implementation of the Travel Management Rule (36 CFR 212 Subpart B, November 9, 2005). This proposed change would not significantly impact management area boundaries or prescriptions because this change would only apply to this specific travel management decision and any changes to the MVUM that follow; no other actions are approved to utilize these amendments. Therefore, this amendment would not affect future decisions throughout the planning area.

3. How this Proposed Amendment Affects Standards and Guidelines

This proposed amendment affects Management Direction and Objectives, this amendment would not change or affect any Forest Plan Standards and Guidelines.

4. How this Proposed Amendment Affects the Long-Term Relationship between Levels of Goods and Services Provided by the Forest Plan

The amount of motorized use available on roads, trails and areas would change as little as less than one percent to as much as 3 percent, depending on the alternative selected. The affect of the proposed changes to forest plan direction and objectives would not change any relationships between levels of goods and services output as identified in the Rogue River LRMP. (See Chapter 4, pages 4-4 to 4-6).

The effect of the proposed amendment on levels of goods and services is based on conformance with the 2005 Travel Management Rule and not an affect of the proposed amendment itself as seen by the range of reduced motorized opportunities described in the alternatives. Therefore, this amendment would not change relationships between levels of goods and services.

5. How this Proposed Amendment Affects the Entire Forest Plan

While this amendment for management direction is applicable to the entire 1990 LRMP for the Rogue River National Forest, it will only affect a distinct portion of the land base. In particular, this amendment will impact approximately 275, 000 acres of available cross-country travel (across both the Rogue River and Siskiyou Planning areas) and up to 3 percent of available motorized routes (i.e. roads and trails) currently open for motorized use. Therefore, the proposed amendment will not have an affect on a large portion of the planning area.

Forest-wide Amendment for Backcountry Non-motorized (MS-3)

Currently, Forest Management Direction for Recreation, LRMP 4-24 regarding Backcountry Non-motorized Areas (MS-3) is conflicting with the Standards and Guidelines for MS 3 (LRMP 4-43). This Forest-wide Amendment is not included in FEIS Alternative 4.

How this proposed Amendment Changes the Forest Plan

This amendment would change management direction as documented under Recreation, page 4-24, to provide for existing and established motorized use. Wording at LRMP 4-24 would be changed to add “generally” prohibited as opposed to “prohibited”. This change is proposed for historical and ongoing motorized use on the Boundary Trail. This ongoing use was not recognized in the 1990 Forest Plan, although it has been occurring and intended to be authorized for over 40 years.

1. How this Proposed Amendment Affects Multiple Use Goals and Objectives for Long-Term Land and Resource Management

This proposed amendment affects Management Direction and Objectives, specifically for Recreation (LRMP 4-24). This amendment would allow for consistency for intended use of the Boundary Trail. This proposed change would not impact long-term multiple use objectives because the change is being proposed near the next scheduled revision of the Forest Plan. Therefore, it is less likely to affect long-term objectives. In addition, this change is merely an administrative change that will not affect current multiple use land allocations because motorized use of the Boundary Trail has been ongoing. There is effectively no change from current conditions; the amendment simply facilitates consistency with existing conditions.

2. How this Proposed Amendment Affects Adjustments of Management Area Boundaries or Management Prescriptions and Opportunities for Additional Projects or Activities to Contribute to Achievement of the Management Prescription

This proposed amendment will not impact management area boundaries or prescriptions because this change would only apply to existing use of the Boundary Trail. No other actions are approved to utilize these amendments. Therefore, this amendment would not affect future decisions throughout the planning area.

3. How this Proposed Amendment Affects Standards and Guidelines

This amendment changes the wording for management direction. It would then compliment the proposed change in Standards and Guidelines, Backcountry Non-motorized Areas (MS-3) to create consistency with the current conditions because motorized use of the Boundary Trail has been ongoing. This change would only apply to the trail corridor and connector trails; therefore it would only have minimal impacts to the Standards and Guidelines.

4. How this Proposed Amendment Affects the Long-Term Relationship between Levels of Goods and Services Provided by the Forest Plan

This amendment would not change relationships between levels of goods and services because motorized use of the Boundary Trail has been ongoing. There is effectively no change from current conditions; the amendment simply provides consistency with existing conditions. The affect of the proposed changes to the forest plan direction and objectives would not change relationships between levels of goods and services output as identified in the Rogue River LRMP (See Chapter 4, pages 4-4 to 4-6).

5. How this Proposed Amendment Affects the Entire Forest Plan

This amendment is applicable only to Backcountry Non-motorized Areas (MS-3), which is a discrete segment of the Land Management Planning area. The proposed amendment is intended to remedy historical and ongoing motorized use of the Boundary Trail. No other actions are approved to utilize this amendment; therefore, the Boundary Trail is the only area on the RRNF where this proposed amendment is needed to correct an inconsistency.

Forest-wide Amendment to Delete ORV Plan - Appendix C

How this proposed Amendment Changes the Forest Plan

This amendment would delete LRMP Appendix C; Off-road Vehicle Plan. In accordance with the Travel Management Rule, the Forest would publish an MVUM identifying all Forest roads, trails and areas that are designated open for motor vehicle use by the public, including for ORV use.

The MVUM would specify the classes of vehicles and, if appropriate, the times of year for which use is authorized. Since motorized use includes OHV use, the ORV Appendix C would be unnecessary and would be essentially replaced by the MVUM. This change would be done to implement the 2005 Travel Management Rule.

1. How this Proposed Amendment Affects Multiple Use Goals and Objectives for Long-Term Land and Resource Management

Deletion of the ORV Plan, Appendix C, to be replaced with the MVUM system, would not affect Multiple Use Goals and Objectives for Long-Term Land and Resource Management because this amendment is specific to Motorized Travel Management Project and does not impact any goals or objectives of the Forest Plan.

2. How this Proposed Amendment Affects Adjustments of Management Area Boundaries or Management Prescriptions and Opportunities for Additional Projects or Activities to Contribute to Achievement of the Management Prescription

This proposed amendment will not impact management area boundaries or prescriptions because this change would only apply to Motorized Travel Management and would not impact future projects or activities that contribute to achievement of the management prescriptions.

3. How this Proposed Amendment Affects Standards and Guidelines

This amendment would not affect Standards and Guidelines because it is intended to delete the OHV plan, which is inconsistent with direction contained in the 2005 Travel Management Rule, therefore it has no impact on Standards and Guidelines.

4. How this Proposed Amendment Affects the Long-Term Relationship between Levels of Goods and Services Provided by the Forest Plan

Deletion of the ORV Plan, Appendix C, to be replaced with the MVUM system, would not directly affect levels of goods and services because no commodity outputs are connected to the OHV plan.

5. How this Proposed Amendment Affects the Entire Forest Plan

While removal of Appendix C is applicable to the entire 1990 LRMP for the Rogue River National Forest, implementation of the 2005 Travel Management Rule will only impact existing uses on less than 3 percent of roads, trails, and designated motorized areas.

Specific Amendments for Boundary Trail: MS 3, MS 12 & MS 25

Note: This Specific Amendment is not included in DSEIS Alternative 4.

How this proposed Amendment Changes the Forest Plan

This amendment would change Standards and Guidelines as documented under MS 3 (Backcountry Non-motorized), MS 12 (Botanical Area) & MS 25 (Research Natural Area) to provide for existing motorized use on the Boundary Trail, this is a corridor change only. This historical and ongoing use was not recognized in the 1990 Forest Plan, although it has been occurring and authorized for over 40 years. The need for this amendment to remedy this inconsistency has been identified since the early 1990s.

1. How this Proposed Amendment Affects Multiple Use Goals and Objectives for Long-Term Land and Resource Management

This amendment would not change multiple use goals and objectives for long-term management because it is being proposed near the next scheduled revision of the Forest Plan, and this amendment is concerning a narrow trail corridor for motorized use of the Boundary Trail which has been ongoing.

2. How this Proposed Amendment Affects Adjustments of Management Area Boundaries or Management Prescriptions and Opportunities for Additional Projects or Activities to Contribute to Achievement of the Management Prescription

This proposed amendment will not impact management area boundaries or prescriptions because this change would only apply to Motorized Travel Management and would not impact future project or activities that contribute to achievement of the management prescriptions. These proposed amendments only affect a narrow corridor and is intended to correct inconsistent management direction to comply with intended authorized use.

3. How this Proposed Amendment Affects Standards and Guidelines

As noted above, this amendment is specific to Standards and Guidelines for three land management allocations. It changes wording at LRMP page 4-43, 4-149, and 4-292 to specifically recognize motorized use on the Boundary Trail. Therefore, this impact will be minor to the overall Standards and Guidelines for the three management allocations.

4. How this Proposed Amendment Affects the Long-Term Relationship between Levels of Goods and Services Provided by the Forest Plan

This amendment would not change relationships between levels of goods and services because motorized use of the Boundary Trail has been ongoing. There is effectively no change from current conditions. The amendment simply provides consistency with existing conditions. The affect of the proposed changes to the forest plan direction and objectives would not change relationships between levels of goods and services output as identified in the Rogue River LRMP (See Chapter 4, pages 4-4 to 4-6).

5. How this Proposed Amendment Affects the Entire Forest Plan

This amendment would affect only small discrete portions (an approximately 9 mile long narrow corridor) of existing trail located on the Grayback Ridge between the former Rogue River and Siskiyou National Forests. No other actions are approved to utilize this amendment; therefore, the Boundary Trail is the only area on the RRNF where this proposed amendment is needed to correct inconsistencies with management allocations.

2. Plan Amendments to Siskiyou National Forest LRMP

Forest-wide Amendment to Implement Travel Rule

How this Proposed Amendment Changes the Forest Plan

The current Land and Resource Management Plan provides direction for portions of the Forest that are open to cross-country motorized vehicle use. Implementation of the Travel Management Rule requires a forest-wide amendment to the Forest Plan to provide direction as associated with the 2005 Travel Management Rule. Under this amendment, all roads, trails, and cross-country motorized use would be closed unless designated open to specific uses.

1. How this Proposed Amendment Affects Multiple Use Goals and Objectives for Long-Term Land and Resource Management

This proposed amendment affects Forest Management Direction and Objectives, specifically for Resource Activities and Facilities, LRMP Chapter IV (page IV-7 and IV-18 respectively). This amendment would allow conformance with and implementation of the Travel Management Rule (36 CFR 212 Subpart B: November 9, 2005). This proposed change would not impact long-term multiple use objectives because the change is being proposed near the next scheduled revision of the forest plan. Therefore, it is less likely to affect long-term objectives.

2. How this Proposed Amendment Affects Adjustments of Management Area Boundaries or Management Prescriptions and Opportunities for Additional Projects or Activities to Contribute to Achievement of the Management Prescription

This proposed amendment affects management prescriptions by implementation of the Travel Management Rule (36 CFR 212 Subpart B, November 9, 2005). This proposed change would not significantly impact management area boundaries or prescriptions because this change would only apply to this specific travel management decision and any changes to the MVUM that follow; no other actions are approved to utilize these amendments. Therefore, this amendment would not affect future decisions throughout the planning area.

3. How this Proposed Amendment Affects Standards and Guidelines

This proposed amendment affects Management Direction and Objectives, this amendment would not change or affect any Forest Plan Standard and Guideline.

4. How this Proposed Amendment Affects the Long-Term Relationship between Levels of Goods and Services Provided by the Forest Plan

The amount of motorized use available on roads, trails and areas would change up to 3 percent, depending on the alternative selected. The affect of the proposed changes to forest plan direction and objectives would not change any relationships between levels of goods and services output as identified in the Rogue River LRMP. (See Chapter 4, pages 4-4 to 4-6).

The effect of the proposed amendment on levels of goods and services is based on conformance with the 2005 Travel Management Rule and not an affect of the proposed amendment itself as seen by the range of reduced motorized opportunities described in the alternatives. Therefore, this amendment would not change relationships between levels of goods and services.

5. How this Proposed Amendment Affects the Entire Forest Plan

While this amendment for management direction is applicable to the entire 1989 LRMP for the Siskiyou National Forest, it will only affect a discrete portion of the land base. In particular, this amendment will impact approximately 275, 000 acres of available cross-country travel (across both the Rogue River and Siskiyou Planning areas) and up to 3 percent of available motorized routes (i.e. roads and trails) currently open for motorized use. Therefore, the proposed amendment will not have an effect on a large portion of the planning area.

Forest-wide Amendment to Delete ORV Management Plan - Appendix E

How this proposed Amendment Changes the Forest Plan

This amendment would delete LRMP Appendix E; Off-road Vehicle Management Plan. In accordance with the Travel Management Rule, the Forest would publish an MVUM identifying all Forest roads, trails and areas that are designated open for motor vehicle use by the public, including for ORV use.

The MVUM would specify the classes of vehicles and, if appropriate, the times of year for which use is authorized. Since motorized use includes OHV use, the ORV Appendix E would be unnecessary and would be essentially replaced by the MVUM. This change would be done in conformance of the 2005 Travel Management Rule.

1. How this Proposed Amendment Affects Multiple Use Goals and Objectives for Long-Term Land and Resource Management

Deletion of the ORV Plan, Appendix E, to be replaced with the MVUM system, would not affect Multiple Use Goals and Objectives for Long-Term Land and Resource Management because this amendment is specific to Motorized Travel Management Project and does not impact any goals or objectives of the Forest Plan.

2. How this Proposed Amendment Affects Adjustments of Management Area Boundaries or Management Prescriptions and Opportunities for Additional Projects or Activities to Contribute to Achievement of the Management Prescription

This proposed amendment will not impact management area boundaries or prescriptions because this change would only apply to Motorized Travel Management and would not impact future projects or activities that contribute to achievement of the management prescriptions.

3. How this Proposed Amendment Affects Standards and Guidelines

This amendment would not affect Standards and Guidelines because it is intended to delete the OHV plan, which is inconsistent with direction contained in the 2005 Travel Management Rule; therefore, it has no impact on Standards and Guidelines.

4. How this Proposed Amendment Affects the Long-Term Relationship between Levels of Goods and Services Provided by the Forest Plan

Deletion of the ORV Plan, Appendix E, to be replaced with the MVUM system, would not directly affect levels of goods and services because no commodity outputs are connected to the OHV plan.

5. How this Proposed Amendment Affects the Entire Forest Plan

While removal of Appendix E is applicable to the entire 1989 LRMP for the Siskiyou National Forest, implementation of the 2005 Travel Management Rule will only impact existing uses on less than 3 percent of roads, trails, and designated motorized areas.

Specific Amendments for Boundary Trail: MA 3

Note: This Specific Amendment is not included in FEIS Alternative 4.

How this proposed Amendment Changes the Forest Plan

This amendment would change Standards and Guidelines as documented under MA 3 (Research Natural Area), to provide for existing motorized use on the Boundary Trail, this is a corridor change only. This historical and ongoing use was not recognized in the 1989 Forest Plan, although it has been occurring and authorized for over 40 years. The need for this amendment to remedy this inconsistency has been identified since the early 1990s. Motorized use in adjacent allocations for Backcountry Recreation and Botanical Area was not prohibited in the Forest Plan for the extent of this trail on the Siskiyou NF.

1. How this Proposed Amendment Affects Multiple Use Goals and Objectives for Long-Term Land and Resource Management

This amendment would not change multiple use goals and objectives for long-term management because it is being proposed near the next scheduled revision of the Forest Plan, and this amendment is concerning a narrow trail corridor for motorized use of the Boundary Trail which has been ongoing.

2. How this Proposed Amendment Affects Adjustments of Management Area Boundaries or Management Prescriptions and Opportunities for Additional Projects or Activities to Contribute to Achievement of the Management Prescription

This proposed amendment will not impact management area boundaries or prescriptions because this change would only apply to Motorized Travel Management and would not impact future project or activities that contribute to achievement of the management prescriptions. This proposed amendment only affects a narrow corridor and is intended to correct inconsistent management direction to comply with intended authorized use.

3. How this Proposed Amendment Affects Standards and Guidelines

As noted above, this amendment is specific to Standards and Guidelines for the Research Natural Area land management allocation. It changes wording at LRMP page IV-82 to specifically recognize motorized use on the Boundary Trail. Therefore, this impact will be minor to the overall Standards and Guidelines for this management allocation.

4. How this Proposed Amendment Affects the Long-Term Relationship between Levels of Goods and Services Provided by the Forest Plan

This amendment would not change relationships between levels of goods and services because motorized use of the Boundary Trail has been ongoing. There is effectively no change from current conditions. The amendment simply provides consistency with existing conditions. The affect of the proposed changes to the forest plan direction and objectives would not change relationships between levels of goods and services output as identified in the Siskiyou LRMP (See Chapter IV-6).

5. How this Proposed Amendment Affects the Entire Forest Plan

This amendment is applicable only to Research Natural Area (MA-3), which is only a segment of the Land Management Planning area. This amendment would affect only small discrete portions (an approximately 9 mile long narrow corridor) of existing trail located on the Grayback Ridge between the former Rogue River and Siskiyou National Forests. No other actions are approved to utilize this amendment; therefore, the Boundary Trail is the only area on the SNF where this proposed amendment is needed to correct inconsistencies with this management allocation.

Specific Amendment for Game Lake, Lower Illinois, and Silver Peak Hobson Horn Trails: MA 6

Note: This Specific Amendment is not included in FEIS Alternative 4.

How this proposed Amendment Changes the Forest Plan

This amendment would change Standards and Guidelines as documented under MA 6 (Backcountry Recreation), to provide for existing motorized use on the Game Lake, Lower Illinois, and Silver Peak Hobson Horn Trails. These trails were specifically authorized within the Wild River Area of the Illinois Wild and Scenic River Management Plan, October 31, 1985. As stated in the 1989 SNF LRMP IV-77, objectives for Wild River are defined in the individual river management plans and are not affected by the Forest Plan. Under this proposed amendment, motorized use of portions of the trails within the Non-motorized portions of Backcountry Recreation is recognized to make use of these trails consistent with management direction and Standards and Guidelines.

1. How this Proposed Amendment Affects Multiple Use Goals and Objectives for Long-Term Land and Resource Management

This amendment would not change multiple use goals and objectives for long-term management because it is being proposed near the next scheduled revision of the Forest Plan, and this amendment is concerning narrow trail corridors for motorized use, which has been ongoing.

2. How this Proposed Amendment Affects Adjustments of Management Area Boundaries or Management Prescriptions and Opportunities for Additional Projects or Activities to Contribute to Achievement of the Management Prescription

As noted above, this amendment is specific to Standards and Guidelines for the Backcountry Recreation land management allocation, specifically the “non-motorized Backcountry” portion of wording at LRMP page IV-98. This proposed amendment will not impact management area boundaries or prescriptions because this change would only apply to Motorized Travel Management and would not impact future project or activities that contribute to achievement of the management prescriptions. This proposed amendment only affects narrow corridors and is intended to correct inconsistent management direction to comply with intended authorized use.

3. How this Proposed Amendment Affects Standards and Guidelines

As noted above, this amendment is specific to Standards and Guidelines for the Backcountry Recreation land management allocation, specifically the “Non-motorized Backcountry” portion of wording at LRMP page IV-98. This proposed amendment only affects narrow corridors and is intended to correct inconsistent management direction to comply with intended authorized use. Therefore, this impact will be minor to the overall Standards and Guidelines for the management allocation.

4. How this Proposed Amendment Affects the Long-Term Relationship between Levels of Goods and Services Provided by the Forest Plan

This amendment would not change relationships between levels of goods and services because motorized use of these trails has been ongoing. There is effectively no change from current conditions. The amendment simply provides consistency with existing conditions. The affect of the proposed changes to the forest plan direction and objectives would not change relationships between levels of goods and services output as identified in the Siskiyou LRMP (See Chapter IV-6).

5. How this Proposed Amendment Affects the Entire Forest Plan

This amendment is applicable only to Backcountry Recreation (MA-6), which is only a segment of the Land Management Planning area. This amendment would affect only small discrete portions (less than 10 percent) of the existing trails. No other actions are approved to utilize this amendment; therefore, these trails are the only areas on the SNF where this proposed amendment is needed to correct inconsistencies with this management allocation.

H. REGIONAL INTERAGENCY EXECUTIVE COMMITTEE REVIEW

Background

The Record of Decision (and Standards and Guidelines) for *Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (1994) amended existing Forest Service and BLM management plans. The responsibility for implementing these Standards and Guidelines rests with the managers of the Forest Service and BLM units within the range of the spotted owl. The interagency structure identified in the *Memorandum of Understanding for Forest Ecosystem Management* designates the Interagency Steering Committee and Regional Interagency Executive Committee to assure the coordinated and effective implementation of these Standards and Guidelines, and to support the development and implementation of future or revised Land and Resource Management Plans.

Changes or adjustments to these Standards and Guidelines may be made through amendments to those plans required by regulations as described above. The authority to change or amend those plans remains as specified in the applicable regulations. The amendments will be reviewed by the Regional Interagency Executive Committee (RIEC) to assure consistency with the objectives of these Standards and Guidelines (from Standards and Guidelines, page E-18).

The Northwest Forest Plan (NWFP) Record of Decision and Standards and Guidelines provide for coordination and review by the RIEC of proposed changes to Standards and Guidelines and land allocations established under the NWFP and incorporated in Forest Service land management plans or BLM District plans.

Revised Process for RIEC Review of Proposed Plan Amendments

At their February 7, 2007 meeting, the RIEC approved a streamlined process for RIEC coordination and review. This process (Regional Interagency Executive Committee memo of August 27, 2007) applies to proposed FS and BLM plan amendments that involve changes to Standards and Guidelines and land allocations established under the NWFP. The RIEC rescinded the Regional Ecosystem Office memorandum dated May 14, 2003, thereby withdrawing prior delegations of authority with respect to review of such amendments.

Rationale for No RIEC Review Needed

Under the decision for the NWFP, changes require review. Not all adjustments or modifications to NWFP land allocations constitute a "change" subject to RIEC review pursuant to the NWFP. A "change" in this context is a management decision to replace one NWFP land allocation with another on federal land at a specific geographic location.

The proposed amendments in this DSEIS affect the management direction and wording of the Standards and Guidelines of the original Forest Plan land management allocations but do not affect NWFP land allocations. Proposed plan amendments for fire use do not involve mapping, data refinement, interpretation or correction of NWFP land allocations. Therefore proposed amendments do not constitute land allocation changes in this context, and therefore are not subject to provisions in the NWFP regarding RIEC review of changes to land allocations.