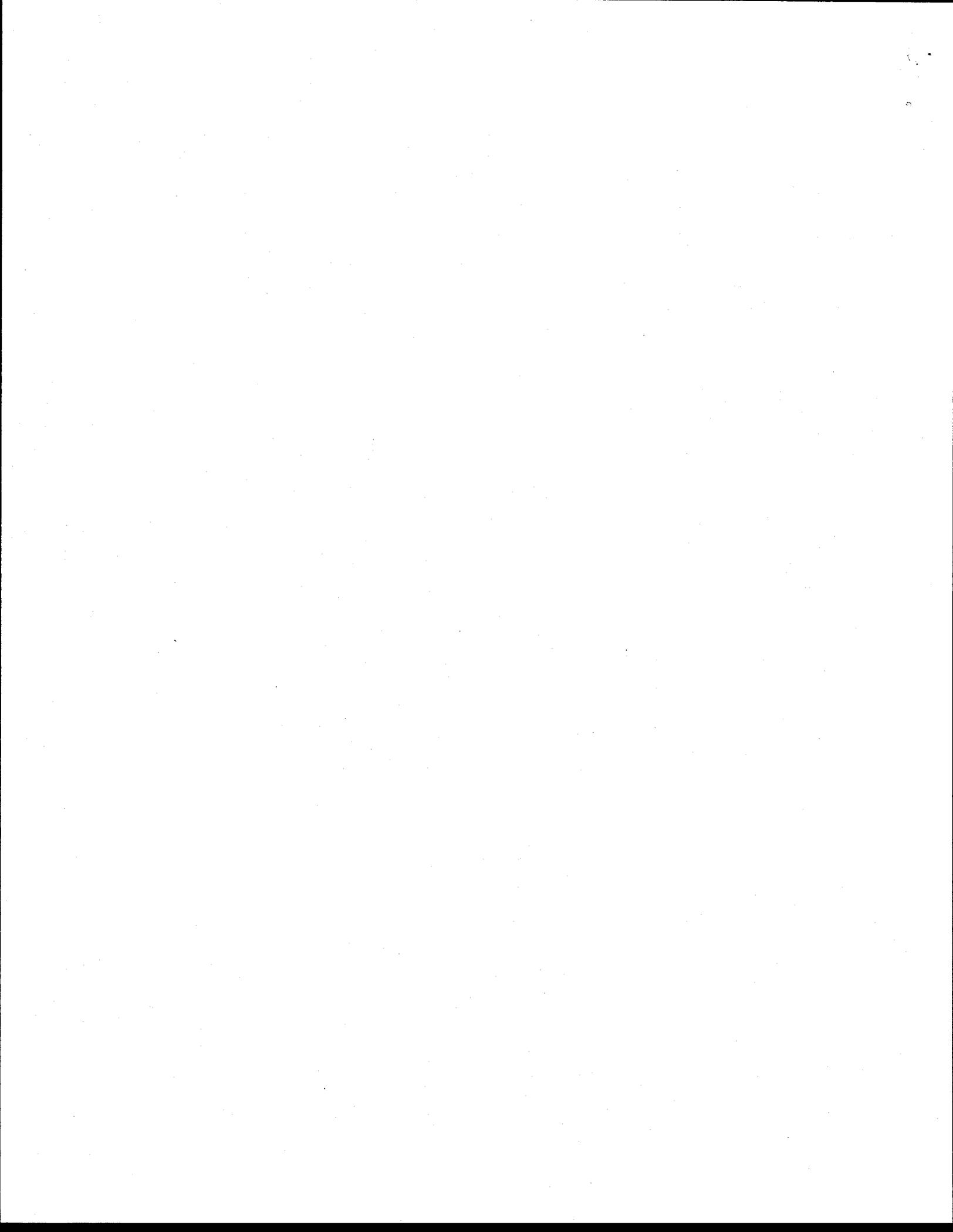


ASHLAND WATERSHED TRAILS
MANAGEMENT PROJECT

ENVIRONMENTAL ASSESSMENT

Ashland Ranger District
Rogue River National Forest
Jackson County, Oregon
June 2000



ASHLAND WATERSHED TRAILS MANAGEMENT PROJECT

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Ashland Ranger District
Rogue River National Forest

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ASHLAND WATERSHED TRAILS MANAGEMENT PROJECT ENVIRONMENTAL ASSESSMENT

Ashland Ranger District
Rogue River National Forest
June 2000

I. PURPOSE AND NEED FOR THE PROPOSED ACTION

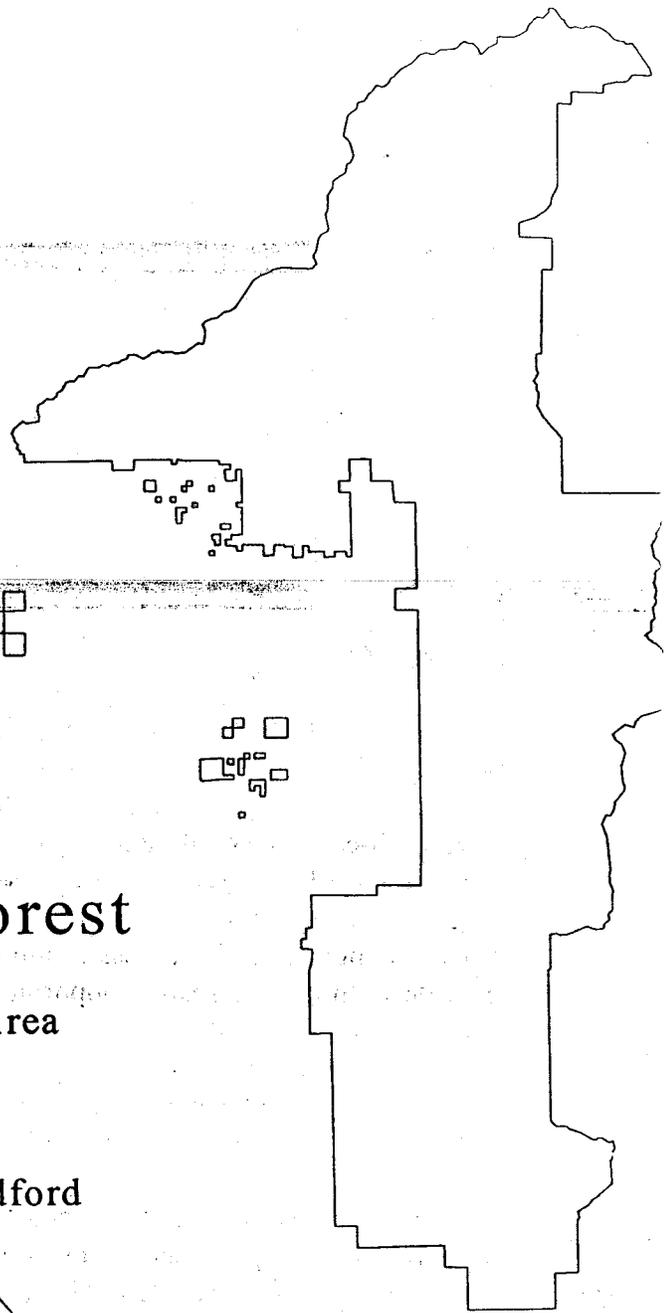
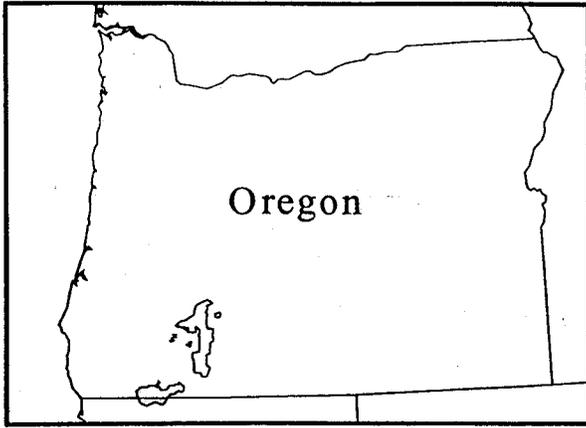
A. INTRODUCTION

The Ashland Ranger District of the Rogue River National Forest proposes to implement the Ashland Watershed Trails Management project. The Ashland Watershed Trails Management Project would manage access to existing recreation facilities, provide additional recreation opportunities, and would manage the recreation use type for existing and proposed facilities. The purpose of this Environmental Assessment (EA) is to summarize the analysis that has taken place to estimate the site-specific effects of implementing the proposed action. This environmental analysis process examined a proposal to manage current recreation use and to provide additional recreation opportunities within the Ashland Watershed and adjacent areas. This environmental analysis process focused on the resolution of site-specific issues that were identified to be associated with the implementation of the proposed action, and provided a basis for the analysis of the applicable direct, indirect, and cumulative effects.

The Ashland Watershed Trails Management Environmental Assessment provides the Responsible Official with the pertinent information regarding the environmental impacts of implementing the proposed action, displaying and comparing alternatives, defining the objectives and issues and providing a clear basis for an informed decision. This EA also ensures that the policies and goals of the National Environmental Policy Act (NEPA) are infused into the planning and analysis of the proposed Federal actions herein described. This EA documents the management requirements, mitigation measures, and constraints necessary to protect the environment.

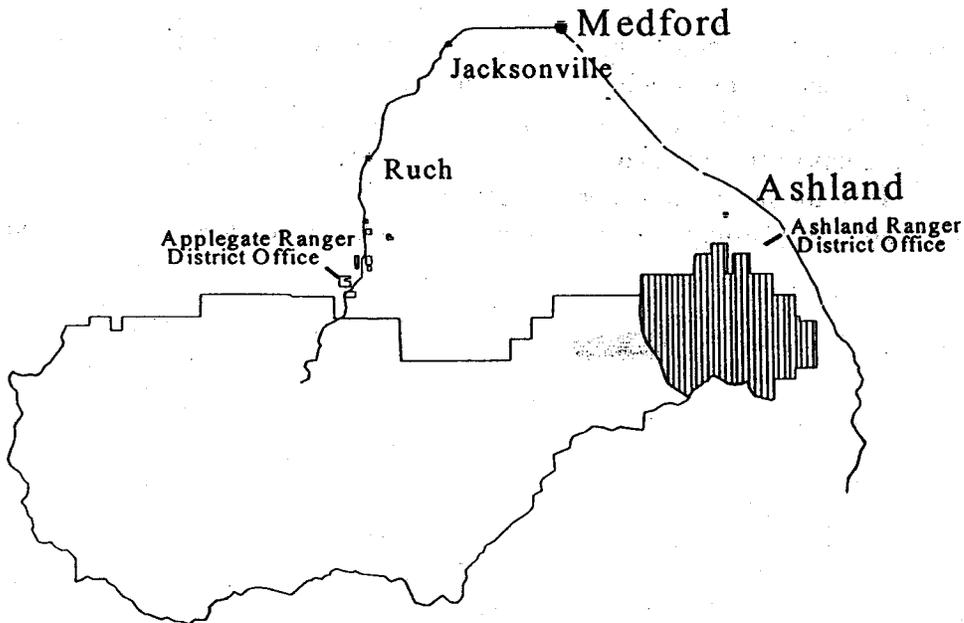
Vicinity Map

Map I-1



Rogue River National Forest

 Ashland Watershed Trails Planning Area



B. PURPOSE AND NEED FOR THE PROPOSED ACTION

1. Background

The project area is located in an area that has been referred to as the "Forest at Ashland's Doorstep" (Hess, 1986). The adjacency to the City of Ashland, and the urban/wildland interface, facilitates easy access to the area and has historically been used year round by a large number of local residents, tourists, and visitors. Uses occur in and adjacent to the project area on existing roads, and system and non-system trails. Heavy uses (estimated at 16,000 annual visitors) include mountain biking, hiking, and jogging. Other uses include horseback riding, hunting, recreational shooting/target practice, scenic driving, dog walking, Nordic skiing (when conditions allow), bird watching, and wildflower viewing. The areas closest to the city boundary are the most heavily used.

Currently 9.8 miles of managed system trails (including trails managed on existing roads) are located throughout the project area. Over the last two years, there has been an increase in unauthorized trail construction by a small group of people who use the area for mountain biking. This unauthorized trail construction activity does not take into consideration the need for protecting the multitude of resource values (i.e., rare plants and animals, geologically unstable areas, and erosive soils) occurring in the Watershed and surrounding areas. The use of mountain bikes and horses off of designated trails (especially on steep slopes and cut banks) is causing resource damage (rutting and erosion). With the increasing numbers of visitors to the area, there is an increase in resource damage as well as conflicts among various use types (mountain bikes versus horses on narrow steep trails).

Trail users of the Rogue Valley and Ashland community sponsored meetings during fall of 1997 and winter of 1998. The Forest Service was invited to attend these meetings to hear discussions concerning the community's desire for increased trail opportunities and ideas for addressing increased opportunities in the Ashland Watershed and adjacent drainages. Attendance at these meetings averaged around 80 to 100 people.

2. Purpose and Need for the Proposed Action

Currently, the recreation facilities in the Ashland Watershed, and adjacent watersheds of the urban/wildland interface area, are not meeting the needs associated with the level of recreation use in the project area. As a result, resource damage is occurring. There is a need to increase trail opportunities and associated trailhead facilities to better manage the use that is occurring in the project area.

The *Bear Watershed Analysis* (USDA 1995) and the *Mt. Ashland Late-Successional Reserve Assessment* (USDA 1996), completed in compliance of the Northwest Forest Plan identified a need to complete Access and Travel Management within the Ashland Creek Watershed and adjacent watersheds (all tributaries to Bear Creek). Recommendations were based on the need to protect, restore, and maintain water quality and quantity and Late-Successional Reserve function. The *Bear Watershed Analysis* and the *Mt. Ashland Late-Successional Reserve Assessment* are incorporated by reference to this EA.

Additionally, work is needed to repair trails damaged by the 1997 flood. Although most of the repairs have been made for the purpose of public safety, additional maintenance is needed to maintain the trails and protect resources over the long term.

The purpose of the Ashland Watershed Trails Management proposal is to respond to the community's desire for an increase in recreation trail and access opportunities, the Forest Service need to continue with maintenance of 1997 flood damaged trails, and the need to protect the City of Ashland's domestic water supply and Late-Successional Reserve values. Increasing the miles of trail in the project area would respond to public needs and would help deter future unauthorized trail construction activities. By managing trail use and access within the project area, the potential for resource damage from recreation use would be reduced.

C. PROPOSED ACTION DESCRIPTION

The Ashland Ranger District of the Rogue River National Forest proposes to reconstruct/maintain an estimated 7.3 miles of trail (includes conversion of existing roads to trails), construct an estimated 3.9 miles of trail, develop one trailhead in coordination with the City of Ashland, improve four trailheads, and would close about 7.5 miles of road year round (to all vehicle traffic except for that needed for administrative use) and 7.3 miles of road winter only. This project would also deactivate about 0.7 mile of unauthorized trail and would decommission about 2.6 miles of road. This project also involves the management of various uses to minimize user conflicts and to protect resources. This would be accomplished by designating the types of uses allowed for the trails proposed for construction or reconstruction/maintenance.

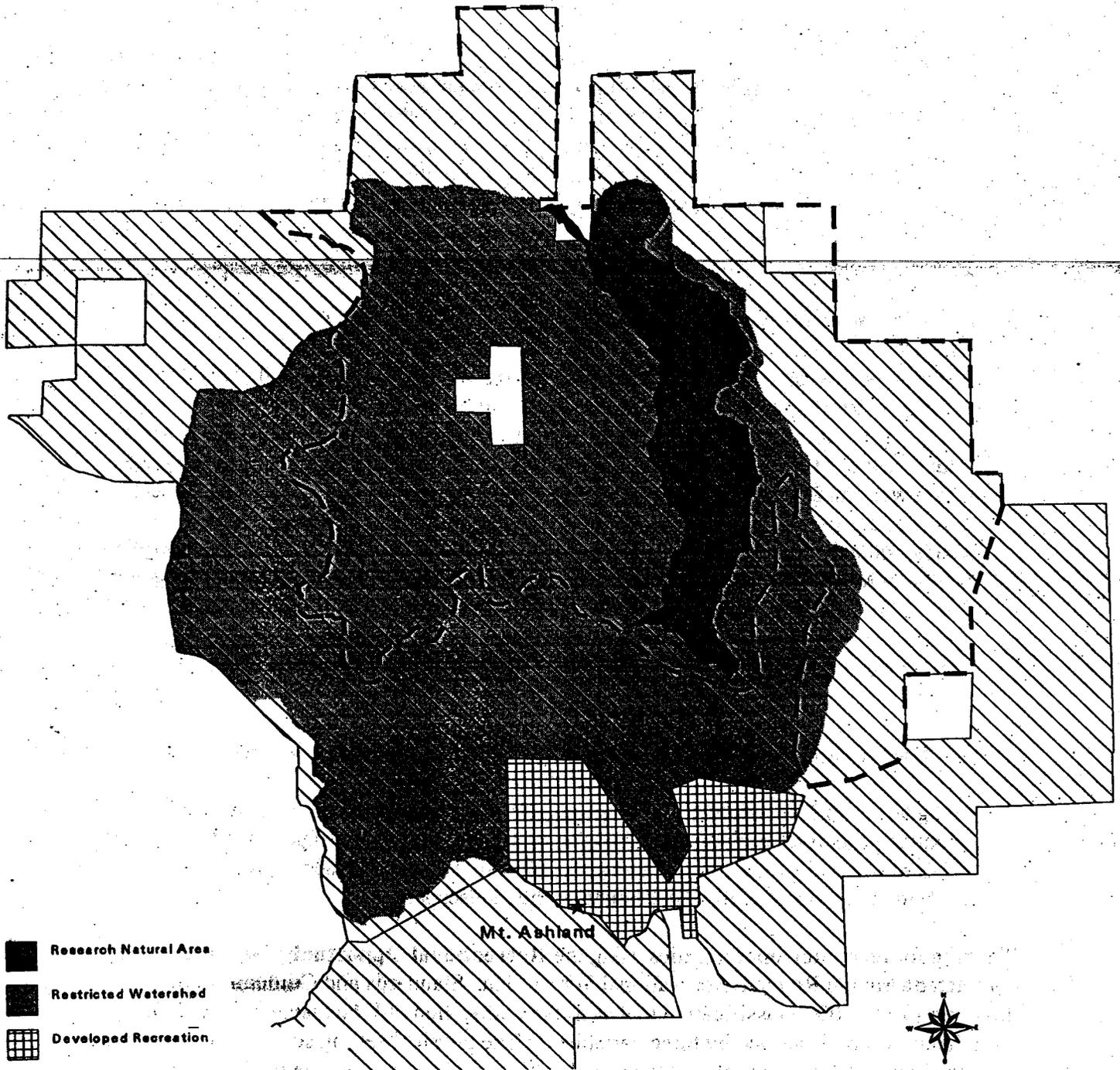
The project area is located in the eastern Siskiyou Mountains of the Klamath Geological Province, on the Ashland Ranger District of the Rogue River National Forest (Map 1). The project proposal is partially located within the Ashland Creek Watershed with portions located within the Neil Creek, Tolman Creek, and Hamilton Creek watersheds. The legal description is: T. 39 S., R. 1 E.; in sections 17, 20, 21, 27, 28, 29, 30, 31, 34, and 35; T. 40 S., R. 1 E.; in sections 1, 2, 3, 6, 10, 11, 15; Willamette Meridian; surveyed Jackson County, Oregon.

D. MANAGEMENT DIRECTION

The Rogue River National Forest Land and Resource Management Plan, as amended by the Northwest Forest Plan, specifies overall direction to manage the Forest, including; management goals and objectives, activity Standards and Guidelines, and management prescriptions for each land allocation. This analysis is based on site-specific direction for implementing the proposed action and the application of the intent of the land allocations associated with the Rogue River National Forest Plan.

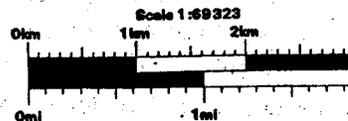
The project area is located on lands allocated by the Rogue River National Forest Land and Resource Management Plan to Restricted Watershed and Research Natural Area, and allocated by the Northwest Forest Plan to Late-Successional Reserve and Riparian Reserve (Map 2). In some cases concurrent direction applies, e.g., most of the Ashland Watershed was allocated to Restricted Watershed by the Rogue River National Forest Plan, and to Late-Successional Reserve by the Northwest Forest Plan.

Map I-2 Management Direction



-  Research Natural Area
-  Restricted Watershed
-  Developed Recreation
-  Mt. Ashland Late Successional Reserve
-  Ashland Watershed Trails Project Area

Mt. Ashland



The following list of the land allocations, associated with the project area, includes a brief description of the goals and objectives for each land allocation.

1. Rogue River National Forest Plan

a) Restricted Watershed (MA 22)

In 1990, the Rogue River National Forest Land and Resource Management Plan allocated the Ashland Watershed to Restricted Watershed (MA 22). The goal for this allocation is to provide water for domestic supply. Land management activities are largely restricted to watershed management and protection. Protection activities include: high priority for fire suppression response, the use of prescribed fire and other vegetation management activities to obtain desired fuel loading, and a high level of fire prevention activities. Recreation activities are to be managed in a manner to protect Municipal Watershed values. When conflicts arise between watershed management and other resources, the conflict will be resolved in favor of watershed management (USDA 1990).

b) Research Natural Area (MA 25)

The goal of this land allocation is to allow for research, observation and study of undisturbed ecosystems. The maintenance of natural processes within each Research Natural Area (RNA) is of prime consideration. The Ashland Research Natural Area was established in 1970 as a representation of seral ponderosa pine and Douglas-fir forests, which were maintained historically by repeated low intensity fire. Dispersed recreation activities are generally discouraged, but not prohibited within Research Natural Areas. Roads, trails, or other facilities are generally not permitted within RNAs. An exception is the Lamb Mine Trail, which existed prior to the establishment of the Ashland Research Natural Area. Coordination with Regional Research Natural Area Coordinators occurred in 1982 to ensure that trail maintenance and reconstruction would not be in conflict with Natural Resource Area Objectives. No objections to the continued use of the trail were raised.

c) Foreground and Middleground Partial Retention (MA 7 and MA 9)

The goal for this Management Strategy is to manage scenic resources to meet partial retention objectives in the foreground and middleground. Landscapes seen from selected travel routes and use areas are managed so that, to the casual observer, results of activities are evident but are visually subordinate to the landscape.

Planning for recreation opportunities using the **Recreational Opportunity Spectrum (ROS)** was completed with the Rogue River National Forest Plan. Standards and Guidelines provide direction for the ROS classification that each land allocation will be managed for. ROS classifications are described by three variables 1) The physical setting such as remoteness, size, and evidence of human activity; 2) the social setting, defined by how many visitors can be accommodated without reducing the quality of the recreational experiences; and 3) the kind and number of visitor controls needed to maintain the setting. The land allocations listed above are designated to be managed as "Roaded Natural to Semi Primitive Nonmotorized" ROS classification. These are defined as follows:

Roaded Natural: The area is within 0.5 mile of better than primitive roads, and characterized by predominantly natural appearing environments. There is moderate evidence of sights and sounds of human and resource modification and utilization practices are evident. Such evidences usually harmonize with the natural environment. There is an opportunity to have a high degree of interaction with the natural environment, and about equal probability of either contact with other user groups to isolation from sights and sounds of other humans.

Semi-Primitive Nonmotorized: The area is moderate to large size (2,500 acres) and 0.5 to 3 miles from roads. The area is characterized as predominantly natural or natural appearing environment. The area is managed in such a way that minimum site controls may be present but are subtle. Motorized use is not permitted. There is a high probability of experiencing isolation from sights and sounds of humans. Interaction with other users is low, but there is often evidence of other users. There is opportunity for independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.

2. Northwest Forest Plan

a) Late-Successional Reserve

Late-Successional Reserves are designated as areas to be managed to protect and enhance late-successional and old-growth forest ecosystems. A network of Late-Successional Reserves are designated across the range of the northern spotted owl to maintain connectivity of late-successional and old-growth forest ecosystems which serve as habitat (including migratory and dispersal) for late-successional and old-growth forest related species. Generally, dispersed recreation uses such as those associated with this trail management project, are consistent with Late-Successional Reserve objectives (USDA/USDI 1994).

b) Riparian Reserves

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 will also help to maintain and restore riparian structures and functions, conserve habitat for organisms dependent on the transition zone between riparian and upland areas, improve dispersal and travel corridors for terrestrial plants and animals, and provide for a greater connectivity of late-successional forests. Riparian Reserves occur within all land allocations and generally parallel the stream network. Unstable and potentially unstable lands, wetlands, and areas adjacent to lakes, ponds, and reservoirs are also designated as Riparian Reserves. Riparian Reserve widths vary by stream type.

Tier 1 Key Watersheds were established by the Northwest Forest Plan to serve as refugia for maintaining and recovering habitat for at risk stocks of anadromous salmonids and resident fish species. Although Ashland Creek is an important source of cold water to downstream fisheries, Hosler Dam at Reeder Reservoir prevents the passage of at risk anadromous fish stocks above the Reservoir. For this reason the Ashland Watershed was **not** designated as a Key Watershed. The project area is adjacent to but not located within the McDonald Peak Inventoried Roadless Area.

3. Agreements Between the Forest Service and the City of Ashland

A Cooperative Agreement between the City of Ashland and the Forest Service for the management of the Ashland Watershed was originally approved in 1929. An Interim Watershed Management Plan was drafted in 1979 providing direction for the protection of the Ashland Municipal Watershed, which was later replaced by the 1990 Rogue River National Forest Land and Resource Management Plan. A Memorandum of Understanding was drafted in 1985, and ~~updated in 1996 and 1998, which defined the roles and responsibilities of both the City of Ashland and the Forest Service in the management of the watershed.~~

Under these agreements the Forest Service has the responsibility to administer the Ashland Watershed consistent with conserving and protecting the City's water supply and to coordinate and communicate watershed management activities with the City of Ashland. This includes:

- Assessing fire danger levels during fire season;
- Administering, under the authority of the code of Federal Regulations, appropriate watershed closures (i.e., no camping in the watershed, no off-road vehicles, no open fires, implementing road closures, and during extreme fire danger complete watershed closure);
- Annually providing literature and training to City employees and volunteers concerning fire prevention and watershed policies and procedures;
- Involving the City in the planning and implementation of projects in the Ashland Watershed; and
- Providing resource specialists on a contractual basis to the City for projects influencing the Ashland Watershed.

The City of Ashland agrees to make staff available to provide input to the Forest Service during project planning, implementation, and management review; to make staff and personnel available to work in coordination on projects that achieve mutual objectives; to make personnel and volunteers available for watershed prevention and patrol activities and associated training; and to keep a record of watershed patrol activities.

This project proposal has been coordinated with the City of Ashland and integrated with trails management projects on adjacent lands administered by the City.

4. National Recreation Agenda

The National Recreation Agenda (draft version 7, January, 2000), a subcomponent of the Forest Service Natural Resource Agenda, places emphasis on watershed health and restoration, sustainable forest ecosystem management, forest roads, and recreation. The National Recreation Agenda outlines a strategy for protecting ecosystems to guarantee that special natural settings are available for future generations, increasing service satisfaction, increasing education of Americans about their public lands, building community connections to expand available resources, and for improving relationships and building partnerships to get the job done.

5. Ecosystem Management

Ongoing research and changing technologies have provided better insights regarding the consequences of traditional land management practices and the potential benefits of new approaches. In response to increasing public interest and improved scientific information, the Forest Service announced a new Ecosystem Management Policy on June 4, 1992. Ecosystem management promotes the use of an ecological approach to achieve the multiple-use management of National Forests and Grasslands by blending the needs of people and environmental values in such a way that National Forests and Grasslands represent diverse, healthy, productive, and sustainable ecosystems. Achieving desired future conditions is an integral part of the management philosophy.

An ecosystem is a community of organisms and associated physical and biological environment that function as an interdependent unit. Ecosystems occur at many different scales: ponds, forest stands, watershed, mountain ranges, etc. Ecosystems will be managed to sustain their diversity, health and productivity in both the short and long terms. Identification of desired future conditions will incorporate the biotic and abiotic influences on social and economic values of ecosystems. Cooperation with other agencies and extensive public involvement will be key ingredients in defining successful ecosystem management programs.

Ecosystem management recognizes that people are an integral part of ecosystems and that the social and economic needs of local communities should be balanced with environmental values. The Forest Service will insure equitable and sustainable access to resources for people who depend on the land for sustenance, livelihood, commerce, recreation, and spiritual growth.

Ecosystem management is consistent with current mandate for managing National Forest System Lands. It responds to recent advances in scientific knowledge about ecosystems and landscape ecology, as well as changing societal values on how to achieve the agency's multiple use mission.

6. Documents Tiered to and Incorporated by Reference

The following documents are incorporated by reference into this Environmental Assessment (pertinent details from these documents are included throughout this document):

USDA Forest Service. 1995. *The Bear Watershed Analysis*. On file with the Ashland Ranger District, 645 Washington Street, Ashland, OR.

USDA Forest Service. 1996. *The Mt. Ashland Late Successional Reserve Assessment*. On file with the Ashland Ranger District, 645 Washington Street, Ashland, OR.

USDI Bureau of Land Management and USDA Forest Service. August 1, 1996. *Rogue River/South Coast Biological Assessment*. On file with the Ashland Ranger District, 645 Washington Street, Ashland, OR.

USDI, Fish and Wildlife Service (FWS), October 18, 1996. *Biological Opinion on the August 1, 1996, Rogue River/South Coast Biological Assessment*, 1-7-96-F-392. On file with the Ashland Ranger District, 645 Washington Street, Ashland, OR.

USDC NOAA, National Marine Fisheries Service, August 11, 1997. Section 7 Informal Consultation, Forest Service and BLM Actions Affecting Southern Oregon/Northern California Coho Salmon in Oregon. On file with the Ashland Ranger District, 645 Washington Street, Ashland, OR.

E. DECISION TO BE MADE

The Ashland District Ranger, as the responsible official, will decide whether to implement the project as proposed or with the selection of one of the alternatives considered (including the No-Action Alternative), or combination of alternatives considered. The decision will also include a determination of the significance of effects, if any, and whether or not to prepare an Environmental Impact Statement. As required by the National Forest Management Act and implementing regulations, the decision will also include consistency with the Forest Plan and the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (Northwest Forest Plan).

F. SCOPING AND ISSUES

1. Scoping

A letter requesting comments on the proposed action was sent September 21, 1998 to adjacent land owners, neighboring agencies, local government, and to individuals and organizations who have expressed an interest in projects of this nature or projects in this particular area. A letter was sent December 10, 1999 to provide those interested in this project proposal an update of the planning process and additions to the proposed action. This project also appeared since spring of

1998 in quarterly editions of the Schedule of Proposed Actions, contained in the Rogue River National Forest newsletter *Rogue River Currents*. A public information meeting was held October 8, 1998 to share information concerning the project proposal as well as the purpose and need for the project. An estimated 20 to 25 people attended this meeting.

In addition, the following also occurred in support of the scoping process:

- Briefings with City of Ashland officials;
- Upon invitation, the Forest Service also presented information to the Ashland Forest Commission, the Ashland Bike and Pedestrian Commission, and the Ashland Watershed Partnership;
- The Forest Service participated in monthly meetings of Ashland Trail Users Coalition to gain an understanding of recreation user needs and issues associated with recreation use in the project area;
- A standing invitation or "open door policy" for anyone interested to make an appointment with the Ashland District Ranger or other Forest Service specialists to discuss the project; and
- Local Media Briefings.

2. Issues

This section discusses issues that were identified during the scoping process and determined to be relevant to the proposed action. Issues associated with this project proposal were identified by an interdisciplinary team (IDT) through a scoping process. This process included review and evaluation of information gathered through specialist input and public correspondence received. These issues serve as the basis for developing and analyzing alternatives, and for developing necessary management requirements and mitigation measures. While some issues may have variable effects associated with the implementation of various alternatives, others are equally mitigated for all action alternatives. This list is also presented in a format that intends to answer the question "what action may have what effect, on what resource or value?"

Physical Environment

There is a potential for adverse impacts on water quality within the Ashland, Hamilton, Tolman, and Neil Creek Watersheds as a result of implementing this trail management proposal.

- Expanded human use associated with additional trail opportunities in the project area could increase the potential for introduction of bacteria, adversely affecting water quality in the affected watersheds;
- Trail management activities (construction and reconstruction) could increase sediment production, thus affecting water quality in the East Fork of Ashland Creek Watershed;
- Implementation of the Ashland Watershed Trails Management project may have the potential to contribute to an increased risk for adverse cumulative watershed effects, considering this and other foreseeable actions.

There is a potential for adverse impacts on **long-term site productivity** as a result of implementing this project proposal.

Biological Environment

Increasing trail access in the Ashland Watershed and interface has the potential to **increase fire risk** by increasing access routes and the number of people who use the area, and by increasing the access points for unauthorized camping, gatherings (evening and weekend beer parties). Increased access (mainly vehicle) can also be associated with increased risk from arsonist activity.

There is a potential for adverse impacts upon **Threatened, Endangered, and Sensitive species**.

There is a potential for adverse impacts upon **Northwest Forest Plan Survey and Manage and Protection Buffer Species**.

There is a potential for adverse impacts on **late-successional associated animal species** of concern within the Mt. Ashland LSR.

There is a potential for adverse impacts on other botanical resources (locally rare and species of interest to the Oregon Natural Heritage program).

There is a potential to **increase the spread of non-native species and noxious weeds** by increasing the miles of system trails within the project area.

Consideration for the potential for adverse impacts on the quality of spawning and rearing habitat for **resident trout populations and downstream habitat for anadromous fish populations** (including fish species listed under ESA).

Human Environment

There is a potential for **impacts associated with proposed road closures** and reducing vehicle access to National Forest System lands. Specific to the project area, closing road 2060 from the Forest Boundary (Morton Street access) to Four Corners, and the 2080200 road from Bull Gap to Four Corners may:

- decrease trail use opportunities for those with disabilities or for those wanting to go for a short hike, by limiting access for vehicles to Lamb Mine Trailhead;
- decrease vehicle access for hunting, scenic driving, wildlife watching, mushroom hunting, etc;
- limit opportunities for local educators (Southern Oregon University, Ashland schools) who often visit sites within the project area for science based field studies;
- increase the potential for adverse impacts on adjacent private landowners by concentrating users at the White Rabbit Trail location;
- delay emergency vehicles to the restricted areas in cases of accident related injuries to non-motorized users.

By increasing the miles of system trails there is potential to **reduce the level of administrative services for existing system trails** (trail maintenance, enforcement of trail use objectives, etc.) due to limited funding sources and workforce. The Forest Service needs to demonstrate an ability to manage the current use before expanding use areas. Trail use enforcement policies in this project area need to be consistent between the Forest Service and the City of Ashland.

There is a potential to increase **conflicts among the various uses** (mt. bikes, hiking, jogging, horses, dog walking, vehicles on roads) as a result of the implementation of this project proposal.

There is a potential for adverse impacts associated with human values placed on the use of the **unauthorized trail from Lamb Mine Trail Head to Reeder Reservoir**. Many trail users share the opinion that Reeder Reservoir is a publicly owned facility and should be open to the general public. Since the trail has been used for some time without any recorded adverse impacts to the water supply, they do not agree that access to the reservoir jeopardizes the City's water supply.

Enhancing the trail use system by increasing the miles of trails has the potential to increase vehicle traffic on roads providing access to trail heads (specifically Tolman Creek Road, Terrace, Granite, and Morton Streets). This could have adverse impacts on residents living along these roads.

CHAPTER II. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

A. INTRODUCTION

This chapter identifies and compares in detail a range of three alternatives, including a No-Action Alternative, for managing trails and road access in the Ashland Watershed and urban/wildland interface area. Each action alternative provides for accomplishing access and travel management needs within the Project Area.

This Environmental Assessment (EA) is prepared in accordance with the regulations for implementing the procedural provisions of the National Environmental Policy Act (40 CFR Parts 1500-1508). The range of alternatives has been developed to address Forest Service and public concern, and to provide the decision-maker and the public with a clear basis for choice. Alternatives have been designed to address the project purpose and need and relevant issues identified in Chapter I.

B. ALTERNATIVES AND ACTIONS CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

NEPA requires that Federal agencies explore all reasonable alternatives and briefly discuss the reasons for eliminating any alternatives that were explored but not developed in detail (40 CFR 1502.14 (a)). The following alternatives or actions within alternatives have been eliminated from detailed study for the reasons stated and/or because they did not meet the purpose and need for this project. Eliminating these alternatives or actions from detailed study at this time does not preclude their consideration in future recreation planning projects.

1. Alternatives Considered but Eliminated from Detailed Study

One alternative considered a complete closure of the Watershed to all recreational use to protect watershed values threatened by indiscriminate unauthorized trail construction, unauthorized camping and campfires, illegal dumping, and potential arson fires mainly associated with vehicle access. This alternative was eliminated from detailed study since it would not meet one aspect of the purpose and need for the project, which is to provide increased recreation opportunities. Although this would be one means of providing greater protection for Watershed values and resources, it would not be in the spirit of providing for multiple-use of National Forest System lands. Providing recreation opportunities and the administration of recreation use creates opportunities to work together with community and various groups to provide sound land stewardship.

2. Actions Considered but Eliminated from Detailed Study

This section discusses specific actions within possible alternatives that were considered as options, but have been eliminated from detailed study. These actions are considered by the Forest Service Responsible Official as additional or optional ways of providing features which meet the purpose and need.

- One action, considered as a component of one or more of the action alternatives, would have been to install restroom facilities at Trailhead B development. This action was eliminated from detailed study at this time since staff and funding levels would not allow

for the maintenance of this facility; this site is located within 30 minutes of town, and based on the level of use associated with this site, there is ample space for visitors to disperse use away from roads or waterways.

- An action was considered to construct approximately 3.5 miles of trail linking Horn Gap with Wagner Gap. This action was eliminated from detailed study at this time to allow for Access and Travel Management planning to be conducted for the Little Applegate River Watershed. An understanding of the access and travel management issues and needs for the adjacent watershed is needed prior to conducting detailed study of implementing this trail connection.
- The opportunity to develop two additional trails was identified and explored during the environmental analysis process. One trail would run north/south along the McDonald Peak—Wagner Butte Ridge connecting the Pacific Crest National Scenic Trail with the Wagner Butte Trail (#1011), and the second would run from Grouse Gap north to the Forest Road 2060 at Winburn Ridge. Both trails also involved the development of Trailheads on the southside of the Siskiyou Crest, located on the Klamath National Forest. Preliminary scoping conducted with specialists on the Klamath National Forest identified additional needs for site design and survey work that would need to be conducted following snowmelt. Consideration of these opportunities has been eliminated from detailed analysis at this time in order to gain a better understanding of access and travel management needs and potential issues associated with the Siskiyou Crest and adjacent watershed to the south. Continued coordination with the Klamath National Forest is ongoing to explore future development and environmental analysis of these trail opportunities.

C. ALTERNATIVES CONSIDERED IN DETAIL

Two action alternatives and a No-Action alternative are analyzed in detail in this EA. This includes an alternative described as the Proposed Action, Alternative 2. Detailed descriptions of each alternative are presented along with mitigation measures, management requirements, and constraints.

1. Assumptions Common to All Alternatives

a) Closures and Orders

The Project Area located mostly within the Ashland Municipal Watershed and entirely within the Mt. Ashland Late-Successional Reserve would continue to be managed in a manner consistent with the goals and objectives of these land allocations (see Chapter I). Pursuant to 36 CFR Sec. 261.50 (a)(b), the following closure or prohibition orders would continue to be enforced for the purposes of protecting the Ashland Municipal Watershed:

- Under Order Number 2018, camping is prohibited in the Ashland Creek Watershed (36 CFR 262.58);
- Under Order Number 2026, building, maintaining, attending or using a fire, campfire, or stove fire in the Ashland Creek Watershed is prohibited (36 CFR 261.52);

- Under Order Number 2043, no vehicles (including bicycles) are allowed off of roads or trails authorized for vehicle use (36 CFR 261.56); and
- Order Number 2046 is enacted during periods of high fire danger (normally occurring late summer to early fall) prohibiting all travel (pedestrian and vehicular) within the Ashland Creek Watershed (36 CFR 261.52 (e), 261.54 (e), and 261.55 (a)).

Additionally, fire hazard reduction activities would continue as authorized in compliance of the NEPA process for the protection of Municipal Watershed and Late-Successional Reserve values. All activities (Forest Service and contract) would consider and mitigate concerns for public safety during operations, and would operate in compliance of State and Federal Occupational Safety and Health (OSHA) codes. All Forest Service project operations would be guided by FS Handbook 6709.11 (Health and Safety Code Handbook).

The activities described above may involve temporary closures of recreation trails and road access for public safety.

b) Vehicle Access to Closed Watershed Roads

Currently, a system is in place that allows vehicle access by permit onto roads with gated closures in the Ashland Watershed. This permit system is established to allow access for the purposes of research, education, and for public review of management proposals and actions in the Watershed. Current District Policy does not provide permits for vehicle access to closed roads in the Ashland Watersheds for the purposes of game retrieval. The main reason for this policy is that hunting season is usually accompanied by periods of wet weather and vehicles are prohibited from entering watershed roads during extended periods of wet weather (except for emergency access needs). Other reasons contributing to this policy include: maintaining a watershed road closure provides a more challenging hunting experience, which is preferred by some hunters; with increases in pedestrian recreation use along watershed roads, minimizing traffic improves safety; and the challenge of managing keys for access when most access may be needed on weekends and evenings.

2. The No-Action Alternative

As required by NEPA, a No-Action alternative is included and analyzed in this EA as a baseline against which the action alternatives can be compared. This alternative represents the current level of management within the Project Area with no additional trail project proposals or access management.

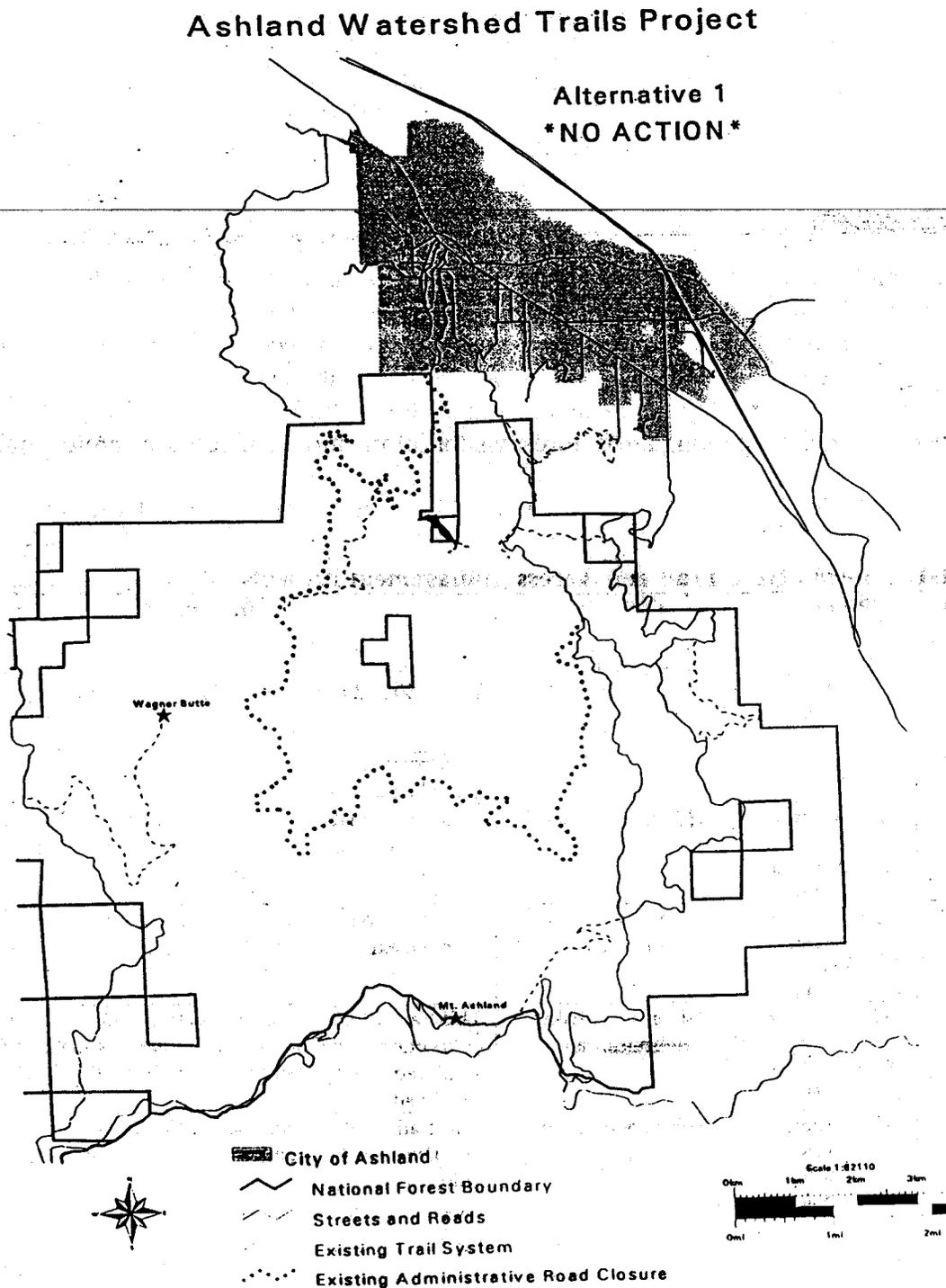
a) Alternative 1 (No-Action)

This alternative represents no change from the existing condition and is used as a baseline against which to compare other alternatives. Chapter III Environmental Consequences section provides some discussion of existing baseline conditions within the project area.

Under Alternative 1, No-Action, no new trails would be constructed, reconstructed, or added to the trail system. No seasonal or year round gated closures of roads would occur; no road decommissioning would occur; and no deactivation of unauthorized trails would occur.

Currently there are approximately 9.8 miles of system trails within the Ashland Creek Watershed and urban/wildland interface area. Additionally, 19.6 miles of Forest Road 2060 are closed year round to vehicle traffic except for administrative use. This road receives heavy mountain bike and hiking use as well as some equestrian use. Routine trail maintenance and management on existing system trails and roads would continue under the No-Action Alternative.

Map1 II-1: Alternative 1 (No-Action)



3. The Action Alternatives

This section describes in detail the two action alternatives. Each alternative represents a different combination of actions for conducting access and trail management within the project area.

a) Alternative 2 (Proposed Action)

Alternative 2 responds to public desire for increased recreation facilities providing the most miles of trail opportunities improving pedestrian and mountain bike recreation experience in the project area. Alternative 2 would implement a combination of trail construction, trail reconstruction, and gated road closures to reduce conflicts between motorized vehicles and recreation users. Although administrative vehicle traffic would still occur on the gated roads, the amount of traffic would be reduced. The overall recreation experience and public safety would be improved by reducing vehicle traffic, and associated dust and noise, and by providing additional trail connections and trail loop opportunities.

This Alternative would construct 3.9 miles of new trail, reconstruct 7.3 miles of existing trail, and would implement year-round gated road closures to vehicle access on 6.9 miles of existing roads, and winter only closures on 7.3 of roads (except for administrative use). This alternative would also deactivate about 0.7 mile of unauthorized trail and decommission 2.6 miles of existing road. One trailhead would be developed in coordination with the City of Ashland on lands administered by the City; four existing trailheads on National Forest System lands would be enhanced to improve parking areas, forest visitor information, and resource protection.

The following table provides a detailed summary of the projects included under this alternative.

Table II-1. Alternative 2 Trail and Access Management Projects

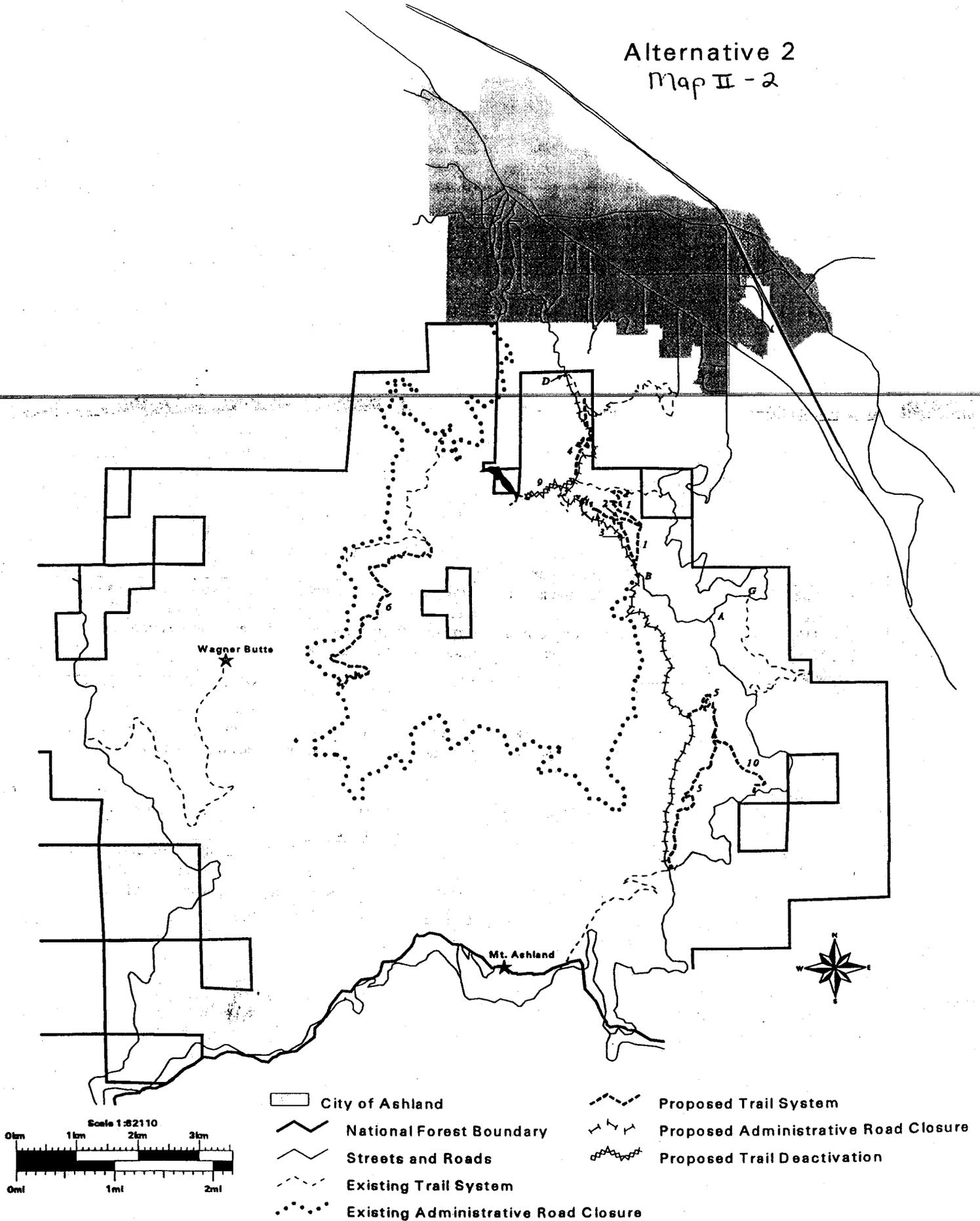
Project Identifier	Proposed Miles/Acres	Objective	Description
Trail #1	Construction 0.4 mile Reconstruction 1.0 mile	Hiker, Mtn. Biker, Equestrian	This trail would connect the existing Toothpick Trail with Rd. 2060 and proposed Trailhead B, located at Four Corners.
Trail #2	Reconstruction 0.3 mile	Hiker, Mtn. Biker, Equestrian	This trail would connect proposed trails #1 and #3 providing a short loop option.
Trail #3	Construction 0.3 mile Reconstruction 1.0 mile	Hiker, Mtn. Biker, Equestrian	This trail would connect proposed Trailhead B located at Four Corners with Rd. 2060 near the existing Lamb Mine Trailhead.
Trail #4	Construction 0.8 mile Reconstruction 0.4 mile	Hiker, Mtn. Biker, Equestrian	This trail would connect the existing Lamb Mine Trailhead with the existing White Rabbit Trail.
Trail #5	Construction 1.8 miles Reconstruction 0.8 mile	Hiker, Mtn. Biker, Equestrian	This trail would extend the existing Bull Gap Trail. A trail connection would be made from the existing Bull Gap Trailhead to Rd. 2080200, one mile south of proposed Trailhead B.
Trail #6	Construction 0.6 miles Reconstruction 2.8 miles	Hiker, Mtn. Biker, Equestrian	This trail would extend the existing Horn Gap Trail. Road 2060200 (used currently for administrative vehicle access only) would provide most of the additional length, with a 0.6-mile single-track connection to Rd. 2060 to complete the loop.

Table II-1 (continued)

Project Identifier	Proposed Miles/Acres	Objective	Description
Trail #9	Deactivation 0.7 mile	Watershed Protection	This is a user built non-system trail used to access the East Fork of Ashland Creek and Reeder Reservoir. This trail would be deactivated and the area naturalized to prevent further use.
Trail #10	Reconstruction 1.0 mile	Hiker, Mtn. Biker, Equestrian	This project would convert 1.0 mile of Rd. 2080400 to system trail, connecting Rd. 2080 with proposed trail #5. Rd. 2080400 is one of several roads proposed for decommissioning.
Trailhead A	Reconstruction 0.25 acre	Winter use	Designated parking for winter use during the seasonal closure of Rds. 2080 and 2080600.
Trailhead B	Reconstruction 0.3 acre	Summer use	Designated parking for summer recreation use of existing closed roads and proposed trails.
Trailhead D	Reconstruction 0.3 acre	Year round use	Enhance the existing White Rabbit Trailhead by adding parking space and room to turn around for vehicles with trailers.
Trailhead E	Construction 0.5 acre	Year round use	Cooperative project between the Forest Service and the City of Ashland involving the conversion of an existing rockpit located on City of Ashland lands into a trailhead. This Trailhead would provide designated parking for those accessing Forest Rd 2060 from Granite Street.
Trailhead G	Reconstruction 0.25 acre	Summer use	Designate and improve parking in the existing Lower Eastview Trailhead.
Road Closure Rd. 2080200	3.9 miles	Administrative closure to motorized use, year round	Gated closure of Rd. 2080200 to motorized vehicles from Four Corners to Bull Gap. Administrative vehicle use and non-motorized recreation activities would still occur.
Rds. 2080270, 2080400, 2080410, 2080415, 2080420	Total 2.6 miles	Decommission and convert portions to trail system	This proposal would decommission five system roads in an area northeast of Bull Gap. Portions of road 2080400 are proposed for trail reconstruction and construction in association with trail 10.
Road 2060	3.0 miles	Administrative closure to motorized use, year round	This proposal would close Rd. 2060 to motorized vehicles from the forest boundary at the existing White Rabbit Trailhead to Four Corners. Administrative vehicle use and non-motorized recreation activities would still occur.
Road 2080600	1.3 miles	Administrative closure to vehicle use, winter only	This proposal would implement a winter closure of Rd. 2080600 to vehicles from the Rd. 2080 junction to Four Corners. Administrative vehicle use and winter recreation activities would still occur.
Road 2080	6.0 miles	Administrative closure to vehicle use, winter only	This proposal would extend the existing winter closure of Rd. 2080 to vehicles during from Bull Gap to the Rd. 2080600 junction. Administrative vehicle use and winter recreation activities would still occur.

Ashland Watershed Trails Project

Alternative 2
Map II - 2



b) Alternative 3

Alternative 3 would respond to the need for increased trail opportunities while responding to the issue of impacts associated with decreasing vehicle access to National Forest Lands.

Alternative 3 would function to respond to the needs for increased trail opportunities by constructing 3.9 miles of trail, reconstructing 7.8 miles of existing trail, constructing one trailhead in coordination with the City of Ashland (on lands administered by the City), and would reconstruct 3 existing trailheads on National Forest System lands. This alternative would also deactivate about 0.7 mile of unauthorized trail and decommission 2.6 miles of system roads. Alternative 3 would function to minimize impacts associated with decreasing roaded access to National Forest System Lands by eliminating the proposed road closures of Forest Service roads 2060 from the forest boundary to Four Corners; road 2080200 from Four Corners to Bull Gap; the winter closure of road 2080 from the intersection of 2080600 to Bull Gap, and the winter closure of road 2080600, from the intersection of 2080 to Four Corners.

The following table provides a detailed summary of the trail and road access projects proposed under this Alternative.

Table II-2. Alternative 3 Trail and Road Access Projects.

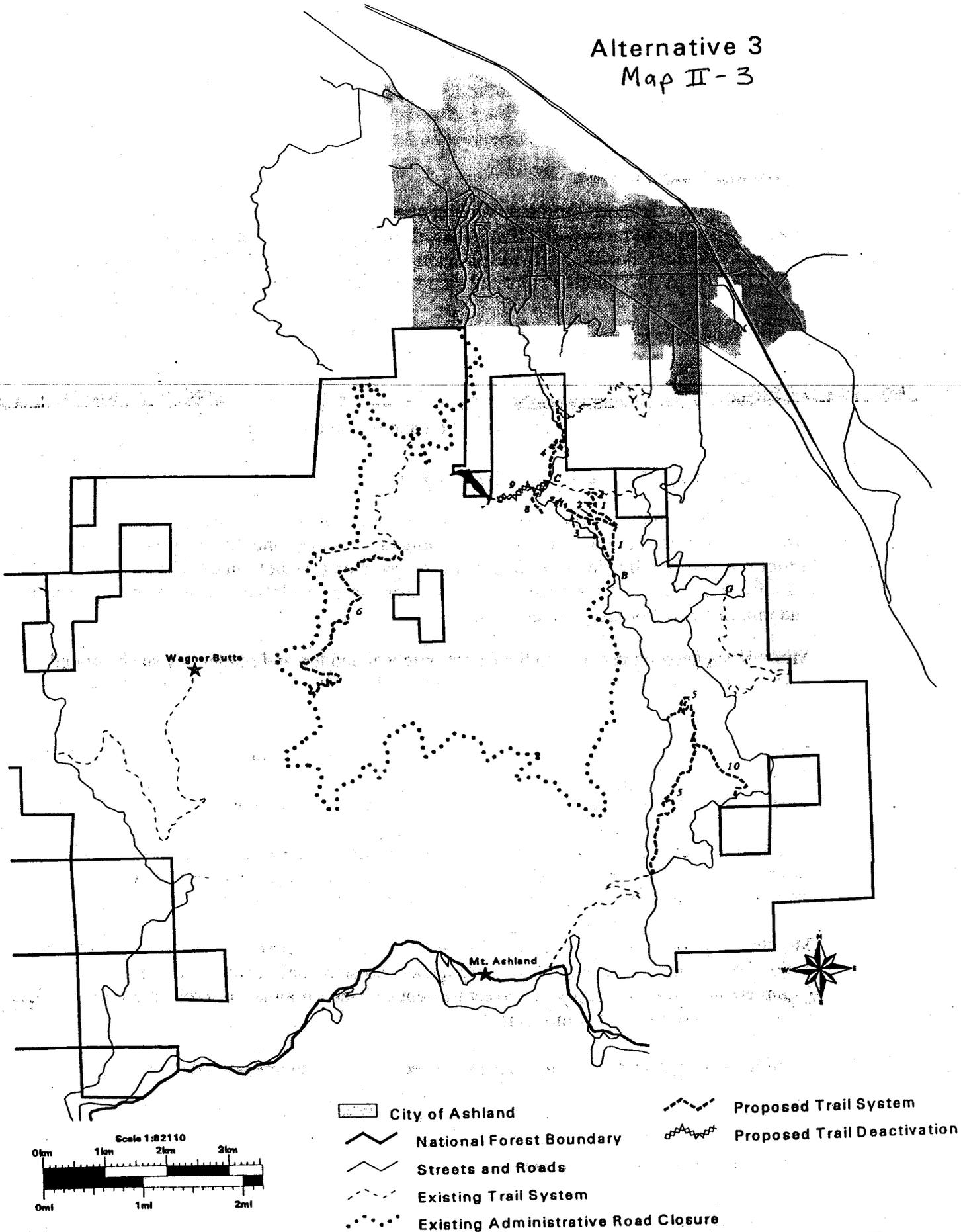
Project Identifier	Proposed Miles/Acres	Objective	Description
Trail #1	Construction 0.4 mile Reconstruction 1.0 mile	Hiker, Mtn. Biker, Equestrian	This trail would connect the existing Toothpick Trail with Rd. 2060 and proposed Trailhead B, located at Four Corners.
Trail #2	Reconstruction 0.3 mile	Hiker, Mtn. Biker, Equestrian	This trail would connect proposed trails #1 and #3 providing a short loop option.
Trail #3	Construction 0.3 mile Reconstruction 1.0 mile	Hiker, Mtn. Biker, Equestrian	This trail would connect proposed Trailhead B located at Four Corners with Rd. 2060 near the existing Lamb Mine Trailhead.
Trail #4	Construction 0.8 mile Reconstruction 0.4 mile	Hiker, Mtn. Biker, Equestrian	This trail would connect the existing Lamb Mine Trailhead with the existing White Rabbit Trail.
Trail #5	Construction 1.8 miles Reconstruction 0.8 mile	Hiker, Mtn. Biker, Equestrian	This trail would extend the existing Bull Gap Trail. A trail connection would be made from the existing Bull Gap Trailhead to Rd. 2080200, one mile south of proposed Trailhead B.
Trail #6	Construction 0.6 miles Reconstruction 2.8 miles	Hiker, Mtn. Biker, Equestrian	This trail would extend the existing Horn Gap Trail. Road 2060200 (currently for administrative vehicle access only) would provide most of the additional length, with a 0.6-mile single-track connection to Rd. 2060 to complete the loop.
Trail #8	Reconstruction 0.5 mile	Hiker, Mtn. Biker	This involves minor reconstruction of Lamb Mine Trail to provide barrier free access.
Trail #9	Deactivate 0.7 mile		This is a user built non-system trail used to access the East Fork of Ashland Creek and Reeder Reservoir. This trail would be deactivated and the area naturalized to prevent further use.

Table II-3 (continued)

Project Identifier	Proposed Miles/Acres	Objective	Description
Trail #10	Reconstruction 1.0 mile	Hiker, Mtn. Biker, Equestrian	This project would convert 1.0 mile of Rd. 2080400 to system trail, connecting Rd. 2080 with proposed trail #5. Rd. 2080400 is one of several roads proposed for decommissioning.
Trailhead C	Reconstruction 0.3 acre	Year round use	Involves minor reconstruction of Lamb Mine Trailhead to provide barrier free parking and access to Lamb Mine Trail .
Trailhead B	Reconstruction 0.3 acre	Summer use	Designated parking for summer recreation use of existing closed roads and proposed trails.
Trailhead E	Construction 0.5 acre	Year round use	Conversion of an existing rockpit owned by City of Ashland would provide designated parking for those accessing Forest Rd 2060 from Granite Street.
Trailhead G	Reconstruction 0.25 acre	Summer use	Designate and improve parking in the existing Lower Eastview Trailhead
Rds. 2080270, 2080400, 2080410, 2080415, 2080420	2.6 miles (total)	Decommission	This proposal would decommission five system roads in an area northeast of Bull Gap.

Ashland Watershed Trails Project

Alternative 3
Map II-3



4. Mitigation Measures, Management Requirements, and Monitoring

This section discusses mitigation measures that apply to the action alternatives (Alternatives 2 and 3). National Environmental Policy Act (NEPA) and Council of Environmental Quality (CEQ) regulations (CFR 40 1508.20) require that all relevant, reasonable mitigation measures that could improve the project be identified. Standards and Guidelines of the Rogue River National Forest Management Plan as amended by the Northwest Forest Plan are incorporated by reference as required mitigation measures.

Mitigation Measures designed for the protection of soils and water quality are generally referred to as Best Management Practices (BMPs) as described in *General Water Quality Best Management Practices*, Pacific Northwest Region, November 1988. Where applicable the associated BMP reference number is listed behind the listed mitigation measure.

a) Mitigation Measures, Management Requirements, and Monitoring for Alternatives 2 and 3

The following Mitigation Measures, Management Requirements, and Constraints are organized by the resource needing protection and the objective to be met.

Soils, Geology, Water Quality and Aquatic Habitat

Install adequate drainage along the trails proposed for construction and reconstruction utilizing water bars, drain dips, trail out-sloping (as feasible), and diversion ditches. Rock armor or other stabilization devices should be used along the bottom of drain dips to stabilize soils. Lop and scatter slash or rocks along water outlets as needed to stabilize soils and minimize erosion from water runoff.

Minimize vegetation removal to the extent practical and lop and scatter any slash created along trails for erosion control; ensure slash has adequate soil contact to reduce offsite soil movement.

Utilize soil stabilization methods where needed along steep pitches or switchback sections to reduce rutting and erosion. Methods to consider include soil additives to increase the soil cohesiveness, surfacing with rock aggregate, or articulated concrete blocks.

Evaluate post construction and reconstruction to assess the need for additional erosion control (revegetation or approved soil stabilization techniques). Seeding for erosion control would be accomplished with a seed mix approved by the Forest Botanist.

Monitor trail construction and reconstruction closely for the first 2 to 3 years, and following major storm events, to ensure water drainage and erosion control work is effective.

Complete any work necessary to correct inadequate water drainage or erosion control work to prevent off site sediment movement.

Continue long-term trail maintenance as needed prevent resource degradation.

Requirements for the proper handling of gas and oil products used with handheld power equipment would be enforced (including maintaining a 100 foot distance from surface water when refueling or use an absorbent matt).

Follow mitigation listed above for soils protection to minimize the potential for accelerating erosion and sediment production.

Botanical

The Forest Botanist will oversee the final flagging and staking for the alignment of Trails #2 and #3 prior to construction and reconstruction taking place to avoid or minimize impacts to sensitive plant species.

During reconstruction of Lamb Mine Trail, complete the last 0.1 mile (south end) of trail following completion remaining sections to avoid the spread of Dalmatian toadflax, and clean tools when done. Hand-pull any Dalmatian toadflax growing near the trail the following year.

To prevent the further spread of star thistle into the Ashland Watershed, the Forest Service and/or the City of Ashland will control star thistle within 100 feet of vehicle parking spaces in the proposed Trailhead G parking area.

Wildlife/Fish

Restrict operations within 1000 feet of the osprey nest site from March 1 to August 31 (trail deactivation from Lamb Mine Trailhead to Reservoir).

Protect any northern spotted owl activity centers during all project activities, restricting operations within 0.25 mile of activity center (C6.25) between March 1 and July 15.

Use interpretive signs along trails and trailheads to conduct natural resource education concerning the Mt. Ashland Late-Successional Reserve land allocation and its function associated with wildlife conservation.

Adhere to mitigation measures and management requirements for protection of water quality to protect fish species.

Fire and Fuels

Lop and scatter slash generated from the tree removal for erosion control needs.

Handpile and burn concentrated slash near roads, trails, and trailheads; pull slash away from improvements (signs, barrier posts, etc.) when piling for slash treatment.

Operation of equipment (i.e., chainsaws) will adhere to fire restrictions based on fire precaution levels during the period of operations.

Use interpretive signs along trails and trailheads to conduct natural resource education concerning the fire ecology and fire management of the Ashland Watershed and adjacent drainages.

Public and Worker Safety

Coordination with City of Ashland emergency services will continue to ensure that access for medical or other emergencies behind closed gates will not be impeded.

Utilize signing, press releases, and recreation opportunity guides to redirect recreation activities to other areas during trail construction and reconstruction activities.

Coordinate trail construction and reconstruction activities and trail management with fire hazard reduction activities that are likely to be implemented in the project area.

Signs will be posted along roads proposed for gated closures under Alternative 2 to alert recreation users of the possibility of administrative vehicle traffic.

All project activities (Forest Service and contract) would comply with State and Federal Occupational Safety and Health (OSHA) codes. All Forest Service project operations would be guided by FS Handbook 6709.11 (Health and Safety Code Handbook).

CHAPTER III. ENVIRONMENTAL CONSEQUENCES

This section summarizes the baseline environment in terms of the physical, biological, and human environments, and the environmental effects of implementing each of the alternatives. In describing these effects, short-term effects are defined as being equal to the life of the project (1 to 3 years), while long-term effects are those that extend beyond the life of the project.

This analysis of environmental effects is based on the alternatives compliance with federal laws, national policies, regional Standards and Guidelines, and compliance with the Rogue River National Forest Land and Resource Management Plan, as amended by the Northwest Forest Plan.

A. EFFECTS OF IMPLEMENTATION: RELEVANT ISSUES

This section discusses issues that were identified during the analysis process and the site-specific resolution of these issues. While some issues may have variable effects associated with the implementation of various alternatives, others are equally mitigated for all action alternatives. This is the scientific and analytical basis for the comparison of alternatives.

1. Impacts on Water Quality and Hydrologic Function

Watershed Setting

The project area occupies portions of eight watersheds including the East Fork of Ashland Creek, West Fork of Ashland Creek, the tributary area below Reeder Reservoir, and the headwaters of Roca, Hamilton, Tolman, Clayton, and Neil Creeks. All of these ultimately enter into Bear Creek. Reeder Reservoir, located mostly on City of Ashland property, collects the waters of both the East Fork and West Fork of Ashland Creek and serves as Ashland's domestic water supply.

Four of the affected watersheds are predominantly National Forest System lands; these are East Fork Ashland Creek, West Fork Ashland Creek, Ashland Creek below Reeder Reservoir, and the west headwaters of Neil Creek. The other four watersheds (Roca Creek, Hamilton Creek, Tolman Creek and Clayton Creek) are predominantly privately owned or lands administered by the City of Ashland, with only a small proportion of their headwater basins located on National Forest System lands.

The **climate** within the project area is characterized by hot dry summers and mild wet winters. Precipitation here ranges from about 25-55 inches annually, increasing with elevation. Precipitation occurs primarily as rain below 3,500 feet elevation, and primarily as snow above 5,000 feet. The 3,500 to 5,000 foot elevation band is the transient snow zone. Summer thunderstorms are common, bringing high intensity short-duration hail and rain to localized areas. Maximum precipitation rates vary from 1 to 2 inches per hour.

Geology: Granitic rocks of the Mt. Ashland pluton underlie the project area. The project area ranges in elevation from about 2,500 to 5,700 feet. Soils weathered from the bedrock are coarse-grained silty sands that contain very little cohesive clay materials. Soil depths range from approximately one to four feet. The majority of the proposed action is located in relatively stable areas along existing roads, upper slope and ridge areas, and along existing unauthorized trails. Proposed trail #1 is partially located in an area characterized by smooth, generally planar

slopes ranging from 40 to 60 percent in localized areas, weakly dissected by ephemeral drainages. An ancient debris slide channel is located to the west of this trail location.

Water Quality

Ashland Creek below the project area and beyond the Forest boundary (from the Ashland City limits to its mouth) has been identified by the Oregon Department of Environmental Quality (DEQ) as a Section 303(d) Water Quality Limited water body for **bacteria**. Bear Creek, from its mouth to Neil Creek (downstream of the project area and National Forest System lands), is identified as a 303(d) listed water body for **flow, habitat modifications, summer temperatures, and bacterial levels**. Neil Creek, downstream of National Forest System lands, is listed as a section 303(d) Water Quality Limited water body from its mouth to Interstate 5 for water temperature.

Streams within the watersheds affected by the trails management proposal exhibit good water temperatures. Summer water temperatures rarely exceed 60 degrees F for extended periods of time; the maximum 7-day average temperature recorded in the East Fork of Ashland Creek was 64.4 degrees F. during the extreme low flow resulting from the 1994 drought. The 1997 - maximum stream temperature measured for Neil Creek within National Forest System lands was 59.7 degrees F.

High summer temperatures in Bear Creek and lower Neil Creek are related to a complexity of factors including removal of streamside shade, water withdrawals, and irrigation return flows. Ashland Creek, on National Forest System lands, contributes water to Bear Creek with good summer water temperatures. Neil Creek on National Forest System lands also contributes water to lower Neil Creek with good summer water temperatures. The Ashland Watershed Trails Management project would not remove any stream shade under any of the alternatives considered, and would have no-effect on water temperatures for any streams within or downstream of the project area.

Bacteria levels in lower Ashland Creek and Bear Creek are influenced by downstream activities including pasture use in proximity to streams; return irrigation flows, failing septic systems, and periodic failures associated with effluent treatment facilities. These primary causes of high bacteria levels originate on lands downstream of National Forest System lands. No bacteria concerns (above natural levels) have been identified above the city limits where dispersed recreation activities have traditionally occurred.

No additional activities are being proposed under any of the alternatives that would introduce new sources of bacteria into the Watershed; therefore, **this project would have no measurable effect on bacteria levels in Ashland Creek within the project area, lower Ashland Creek or Bear Creek**. Additionally, there would be no changes affecting bacteria levels in Reeder Reservoir. The reasons for the low concern for bacteria are the nature of the recreational activities taking place. Trails use is essentially a low-density activity, in that a large geographic area is being utilized that disperses impacts. The trails are generally on ridges or high on the slopes, away from most stream courses, springs, and surface water bodies (Reeder Reservoir); this provides a natural buffering system for waste generated from humans and domestic animals such as dogs and horses. Another factor considered is that trail system use occurs as a day use activity; thus, minimizing the potential accumulations of human or animal wastes that can be a concern in some wilderness camp settings.

Within the project area, the only Section 303(d) listed water body is Reeder Reservoir, which is listed for **sediment**. This is largely due to the highly erosive and unstable granitic terrain that occupies large portions of the Ashland Creek Watershed.

The risk for this project proposal to result in increased **sediment** in Reeder Reservoir is directly correlated to increased risk of activating landslides and increased area with disturbed and exposed soils. Potential for sediment to enter waterways is also dependent on the proximity of disturbance to streams, the presence of vegetation buffers to filter water entering streams, and the type of erosion occurring.

Under Alternative 1, No-Action, no new ground disturbance would occur that would increase potential sediment delivery to streams. However, with the limited authorized trail opportunities that currently exist for the area, the potential for unauthorized trail construction by users would likely continue. The risk for degradation of resources including potential for sediment delivery to streams would be higher than Alternatives 2 and 3 where carefully designed and mitigated trail opportunities would be implemented.

Both Alternatives 2 and 3 were reviewed by the Forest geologist for the potential for adverse effects associated with accelerating slope instability. The majority of the project components are located along existing roads, upper slopes, and ridge areas where there would be little or no risk for accelerating landslide activity for any of the alternatives considered. Trail #1 is located in an area adjacent to naturally occurring ancient debris slide channel. The portion of the trail that switchbacks its way down the slope is located on a convex slope between drainages. Because of the convex form of the slope, water would be evenly dispersed and there would be no concerns for concentrating water and accelerating erosion. The location of the trail would not be affected by, nor would it adversely impact the long-term stability of the naturally occurring landslide channel to the west of the trail.

Minor portions of proposed Trail #1 (about 0.13 mile or 0.26 acre), Trail #2 (about 0.05 mile or 0.06 acre), Trail #5 (about 0.05 mile or 0.06 acre), and Trail #10 (about 0.09 mile or 0.11 acre) are located in Landslide Hazard Zone 1 areas, also designated as Riparian Reserves under the Northwest Forest Plan. The portion of Trails #1 and #2 that pass immediately adjacent to or within Landslide Hazard Zone 1 exist along unauthorized trails that are proposed for reconstruction. Reconstruction work proposed is designed to ensure water dispersion from the trail track to avoid concentrating water in sensitive areas. Proposed reconstruction work involves only minor disturbance and would have no adverse effects on slope stability in these areas. Reconstruction work proposed for Trail #10 occurs along existing Forest road 2280400 that would be decommissioned and removed from the road system. Proposed decommissioning work would ensure adequate drainage from the existing road and would help to stabilize soils. A minor portion of Trail #5 proposed for construction along the edge of Landslide Hazard Zone 1. The proposed trail design would ensure adequate water dispersion to avoid concentration water; therefore, there would be no adverse impacts to slope stability from this minor disturbance.

Riparian Reserves

Riparian Reserves are lands along all streams, reservoirs, and unstable and potentially unstable lands. Widths of Riparian Reserves within the project area are 150 feet of each side of the stream channel of nonfish-bearing streams and Reeder Reservoir, and 300 feet each side of the stream channel of fish-bearing streams. For wetlands less than 1 acre in size and unstable and

potentially unstable lands (Landslide Hazard Zone 1), the Riparian Reserve is mapped to their extent. Activities within Riparian Reserves are subject to Standards and Guidelines under the Northwest Forest Plan designed to conserve aquatic and riparian dependent species. Riparian Reserves within the project area have remained largely intact, providing stream shade, coarse woody material, and connectivity of aquatic systems on National Forest System lands. This is particularly true of the East Fork and West Fork of Ashland Creek.

An estimated 0.2 mile (0.24 acre) of trail deactivation is located within the Riparian Reserve of Reeder Reservoir. Another 0.32 mile (0.39 acre) of trail reconstruction on an existing road is located in the Riparian Reserves of nonfish-bearing streams. Together this represents 0.02 percent of the streamside Riparian Reserves in the Ashland, Neil, Clayton, Tolman and Hamilton Creek Watersheds. Mitigation measures including lop and scattering existing down woody material, rock armoring drain outlets, locating water drainage outlets in areas where water would adequately dispersed, seeding disturbed areas as recommended by the Forest botanist with recommended native seed stocks would prevent most if not all sediment produced from disturbance from entering waterways. The proposed Ashland Watershed Trails project would result in little to no effects to water quality from sediment delivery.

Past, current, and reasonably foreseeable actions were reviewed for the potential for adverse cumulative effects. The Mt. Ashland Ski Expansion proposal and the Ashland watershed Protection Project would remove vegetation within Riparian Reserves; Mt. Ashland Ski Expansion would enter 15.5 acres and the Ashland Watershed Protection Project would enter about 15 acres to thin from below. Combined with the Ashland Watershed Trails Management project slightly less than one percent of the streamside Riparian Reserves in the Ashland, Neil, Clayton, Tolman and Hamilton Creek Watersheds would be affected. Based on the small percentage of the Riparian Reserves affected, no adverse impacts on the function of Riparian Reserve network are anticipated within the project area or watershed scale.

Under Alternative 2, the proposed 6.9 miles of year around road closures and 7.3 miles of winter road closures, except for administrative traffic, would reduce road maintenance needs and would have a minor decrease in sediment produced from these roadways during mild to moderate weather conditions. However, these roads would likely continue to contribute to sediment delivery near current levels during heavy rain and flooding events.

Hydrologic Function--Timing and Distribution of Flow

Maximum peak flows have resulted from rain-on-snow events. When rainfall and snowmelt are synchronized, there is often a substantial increase in peak flow, and flooding may occur. In comparison to summer thunderstorms, winter storms have historically brought the most devastating flooding in southwest Oregon. The most severe floods occurred in 1853, 1861, 1890, 1927, 1948, 1955, 1964, 1974, and 1997. The most recent (New Years Day 1997) flood was a 25 to 30 year event.

Channel maintenance and peak flows with short return intervals are not expected to change as a result of implementing the trails management proposal. Peak flows are largely influenced by increases in hydrologically immature vegetation, roading, and compaction. The Ashland Watershed Trails Management Project does not propose any activities with any of the alternatives considered that would increase the proportion of the watersheds in hydrologically immature vegetation or road density. Activities leading to compaction over current levels would be minor with the implementation of this project. The majority of the new trail construction

proposed occurs along existing old skid roads, system and non-system roads, and areas where existing unauthorized trails already occur, 3.9 mile (about 4.7 acres) of trail is proposed in a previously undisturbed area. This represents about 0.024 percent of National Forest System Lands within the Ashland, Neil, Hamilton, Tolman, Clayton, and Roca Watersheds. An estimated 0.7-mile of trail is proposed for deactivation; however, areas of existing compaction would take around 45 years to return to predisturbed levels. Because of the very minor and insignificant change in area disturbed by this project, there would be *no* measurable change in peak flows, or in the timing and magnitude of flood events as a result of implementation of any of the alternatives considered. Flood events have occurred in the Ashland Watershed many times under essentially pristine conditions and will occur again.

Low flows in Bear Creek (**Flow Modification**) have been identified by DEQ as a consequence of water withdrawals from that stream for such things as irrigation and domestic use. Since activities influencing low flows originate on lands downstream of National Forest System lands, and since no water withdrawals from tributaries of Bear Creek are proposed with any alternatives being considered with this project proposal, **this project would have no effect on downstream low flows in Bear Creek.**

Watershed Condition

The Cumulative Watershed Effects (CWE) analysis procedure *Determining the Risk of Cumulative Watershed Effects Resulting from Multiple Activities, Endangered Species Act Section 7* was used to describe the **current (baseline) watershed conditions, channel conditions, and overall watershed conditions** for the watersheds within the project area. By assessing baseline conditions for these watershed parameters, the relative risk for adverse cumulative watershed effects can be assessed.

The current watershed condition (or watershed risk rating) is determined by two key indicators: road density and percent of a watershed covered in hydrologically immature vegetation. This is generally equivalent to vegetation less than 30 years old (stands defined as less than 11 inch dbh and stands greater than 11 inch dbh with less than 50 percent canopy closure). Water temperatures and percent fine sediment in the stream substrate are used as indicators of the current channel condition rating. **An overall watershed condition rating is then determined by combining the watershed risk rating with the channel condition rating (Table III-1).**

- East Fork of Ashland Creek Watershed in good condition except for moderate amounts of surface fines within the channel, which contribute to a *fair* Overall Watershed Condition.
- West Fork of Ashland Creek is in overall *good* condition owing to its relatively pristine setting.
- Ashland Creek below Reeder reservoir is rated as *poor* overall Watershed Condition. Factors contributing to this rating include a relatively high percentage of the watershed occupied by hydrologically immature vegetation and high road densities. This is predominantly a result of urbanization beyond the National Forest boundary, within and surrounding the City of Ashland.

- Roca, Hamilton, Tolman, Clayton, and Neil Watersheds are all rated as *poor* Overall Watershed Condition based on relatively high road densities and proportion of the watersheds occupied by hydrologically immature vegetation, as well as poor channel conditions from sedimentation.

Table III-1: Current Watershed Condition by Watershed

Watershed	Current Watershed Condition			Channel Condition Rating			Overall Watershed Condition
	Percent Veg. < 30 yrs	Road Density mi/sqmi	Watershed Risk Rating	Water Temp (1)	%Fines	Channel Condition Rating	
E. Fk. Ashland	9.5	2.1	Mod	Good	16.5	Fair	Fair
W. Fk. Ashland	6.0	1.7	Low	Good	9.8	Good	Good
Ashland Ck. (2) (below Reeder)	25.5	6.0	High	Fair	Fair (3)	Fair	Poor
Roca (4)	25.2	3.91	High	*	*	Poor (5)	Poor
Hamilton (4)	23.1	0.66	Mod	*	*	Poor (5)	Poor
Tolman (4)	17.1	3.75	High	*	*	Poor (5)	Poor
Neil	17.9	2.6	High	Poor (6)	>30	Poor	Poor
Clayton(4)	47.4	2.7	High	*	*	Poor (5)	Poor

- (1) Temperature ratings are based on the DEQ max 7-day average of 64 degrees F and USFS temperature ranges for good, fair, and poor per the CWE analysis process.
- (2) Ashland Creek Watershed below Reeder Reservoir includes USFS, Ashland City, and private lands from Hosler Dam to the confluence of Ashland Creek with Bear Creek.
- (3) Percent fines was not measured. This relative rating is based on personal observations and conclusions based on studies (e.g. Hegdahl, 1988).
- (4) Forest Service responsibility is minimal in these watersheds (44 acres in Roca Creek; 228 acres in Hamilton Creek; 718 acres in Tolman Creek). The moderate percentage of forest stands <30 years age and high road densities are primarily a result of urban growth on land downstream of the Forest boundary.
- (5) USFS data is not available for channel conditions in these three channels since they are downstream of the Forest boundary in the Ashland City limits. However, anecdotal observations of channel conditions indicate poor channel conditions (sediment, pool frequency, and coarse woody material) in the lower reaches of these watersheds.
- (6) Maximum measured stream temperature(1997) on National Forest System Lands was 59.7 degrees F.; Maximum measured stream temperature below National Forest System lands was 73 degrees F.

Cumulative Watershed Effects

The relative risk of adverse cumulative watershed effects (CWE) relating to **flow, temperatures, and sedimentation** was evaluated for this proposed action, together with past, current, proposed, and reasonably foreseeable actions in the CWE analysis area. The protocol "*Determining the Risk of Cumulative Watershed Effects Resulting from Multiple Activities*", Endangered Species Act (ESA), Section 7 CE Process, Final Version 1993, was used to assess the risk for adverse cumulative watershed effects. The Mt. Ashland Ski Area Expansion (Alternative 2), the Mt. Ashland Ski Area Wastewater Treatment Facility Project, the Ashland Watershed Protection Project, the Ashland Research Natural Area Prescribed Underburning Project, the City of

Ashland's fuel reduction activities, and fuels reduction activities on private lands were all included in this evaluation. The CWE process provides the decision-maker with an assessment of the *relative degree of risk* of cumulative effects from multiple projects and information about the probable causes (i.e., existing conditions, projects, or a combination). More detailed documentation of the CWE analysis completed for East Fork, West Fork, and Ashland Creek Below Reeder Reservoir is contained in Appendix A.

Briefly, this **cumulative watershed effects analysis** uses the following process to derive conclusions:

Step 1. Determine the "**Watershed Condition Rating**." This rating is based on two key indicators: **road density** and the percent of the watershed that is covered with "hydrologically immature" vegetation (for example, **stands under 30 years old**).

Step 2. Determine the "**Channel Condition Rating**." This rating is based on two key variables from the following list as indicators of channel and habitat conditions: **primary pools, temperature, sediment, and/or large woody debris**. The variables are selected based on best available data. For this analysis the variables selected were **temperature and sediment**.

Step 3. Determine the "**Overall Condition Rating**" by combining the "Watershed" and "Channel" condition ratings described above. This rating is used as one of the major criteria for determining the risk of adverse cumulative effects to aquatic systems. The second criterion is the level of project risk.

Step 4. Conduct "**Individual Project Risk Assessment**". Every project or activity within the watershed will be evaluated for its influence on sediment and temperature. A relative risk rating of low, moderate, or high is tabulated for each project.

Step 5. Determine **Risk of Adverse Cumulative Effects**. Given the above information (steps 1-4), a high, moderate, or low risk of cumulative effect is generated for the watershed.

The Ashland Watershed Trails Management Project would *not* contribute to an increase of acres of hydrologically immature vegetation or an increase in road density. Environmental analysis for other proposed or recently completed activities in the affected watersheds (Mt. Ashland Ski Expansion, Mt. Ashland Waste Water Treatment Facility, and Ashland Watershed Protection Project) identify a minor increase in hydrologically immature vegetation (0.6 to 2.0 percent of each affected watershed). Because this change affects such a small proportion of the affected watersheds there would be ***no*** change to the **Watershed Condition** rating for any of the watersheds affected by this project proposal. Thus, **change (if any) to base flow or channel maintenance and peak flow would be minor**.

This risk for adverse cumulative effects for all affected watersheds was then determined by obtaining an **Overall Condition Rating** by combining the **Watershed and Channel Condition Ratings**. Considering all reasonably foreseeable activities, the **Overall Watershed Condition Ratings** would be the same for both their current and post project condition. **Based on this, no additional risk is incurred in implementing the project proposal or alternatives considered.**

Assessing the “**Individual Project Risk**” is a second major criterion for determining the risk of adverse cumulative effects for increases in water temperature and sediment. Any ground disturbing activity has some level of risk of having damaging effects on the aquatic system. The degree of risk depends on project design, mitigation measures, current condition and proximity to aquatic systems. Relative risk of increasing temperature is determined by considering the distance from a perennial stream to project activities and the amount of shade reduction. Relative risk of increasing sediment delivery to stream channels is determined by considering the dominant landform (e.g., glaciated mountain ridge-tops, dissected mountain slopes, etc. and slope positions (e.g., upper, middle lower, ridge, etc.). The total acres of moderate and high risk within the project area are then combined with the **Overall Watershed Condition Rating** to determine the risk for adverse cumulative effects.

The Individual Project Risk Assessment for relative risk of increasing water temperatures and sediment delivery to streams for all components of the *Ashland Watershed Trails Project* is **considered low**. This low rating is based on the slope position, landform, and juxtaposition to streams for each project component. This project proposes to deactivate 0.7 mile of trail located in dissected mountain terrain in the upper, middle, and lower thirds of the slope. The remainder project components are located along existing roads, upper third slope position, and ridgetops. No stream shade would be removed with this project proposal.

Other activities occurring within the watersheds affected are also assigned with an Individual Project Risk. By combining the proportion of the watershed with high or moderate risk projects proposed with Overall Watershed Condition, the relative risk for adverse cumulative effect can be determined for the watersheds, and is summarized below.

Based on this analysis, the risk to incur adverse cumulative watershed effects (temperature or sediment) based on foreseeable actions is **low** for West Fork of Ashland Creek (Appendix A).

For the East Fork of Ashland Creek Watershed, there is a **moderate** risk for adverse cumulative watershed effects for sediment, and a **low** risk for adverse cumulative watershed effects to water temperature (Appendix A).

Although no moderate or high risk project acres are proposed that would incur additional risk in Tolman, Hamilton, Neil, and Roca Creek watersheds, these watersheds are already in **poor overall watershed condition** placing these watersheds in category of **moderate to high** risk for adverse cumulative watershed effects (sediment) based on their current conditions. Since no project units are within 200 feet of a perennial stream, the risk for additional adverse cumulative watershed effects to water temperature is **low**.

For Ashland Creek below Reeder Reservoir, the risk for adverse cumulative watershed effects for sediment is **high**. Since no project units are within 200 feet of a perennial stream, the risk for adverse cumulative watershed effects to water temperature is **low** (Appendix A).

It is important to recognize that this process for assessing the potential risk of cumulative watershed effects assumes that all foreseeable actions are implemented simultaneously. This is not usually the case for the projects assessed. An estimated

104 acres are identified at moderate risk in the East Fork Watershed as a result of the Ashland Research Natural Area Prescribed Underburn project. Another 633 acres are identified as moderate and high risk in Ashland Creek Watershed (below the Reeder Reservoir) as a result of implementing the Ashland Watershed Protection Project. These projects would occur over a 5 to 12 year period, thus, reducing the potential risk for adverse cumulative watershed effects as identified in this analysis.

Mitigation and avoidance of potential impacts are expected to greatly reduce potential sediment impacts to waterways. Best Management Practices (Chapter II, Mitigation), would be implemented to reduce the potential for sediment to enter waterways.

2. Impacts Associated With Decreasing Vehicle Access to National Forest System Lands.

Under Alternatives 1 and 3 there would be no adverse impacts associated with decreasing vehicle access on National Forest System Lands since no new road closures would occur.

Alternative 2 proposes to close 6.9 miles of forest roads year round, and 7.3 miles of forest roads winter only. The Forest as a whole provides areas for a variety of recreation uses that are both motorized and non-motorized. Areas are managed to avoid multi-user conflicts as well as to minimize resource degradation. There are many miles of roads open to the public for vehicle access across the Rogue River National Forest as well as adjacent forests. An additional 6.9 miles of year round road closures (in addition to 19.9 miles existing Rd. 2060 closure), and 7.3 miles of winter road closures (in addition to an estimated 3 miles existing Rd. 2080 winter closures), to protect watershed values will impact some individuals preferences; however, it is not expected to have significant adverse impacts on the overall quality of the human environment.

a) closing road 2060 from the Forest Boundary (approximately 1 mile south of Morton Street access) to Four Corners may decrease trail use opportunities for those with disabilities or for just wanting to go for a short hike by limiting access for vehicles to Lamb Mine Trailhead.

Under alternative 1, no change would occur to the existing trailhead facility. Currently the Lamb Mine Trailhead does not offer accessible facilities for persons with disabilities. Trail use opportunities would not be affected.

Under alternative 2, vehicle access to the trailhead would be limited by the closure of Rd. 2060 at the Forest Boundary. Short (< 1.0 mile) hiking opportunities would still be available from the White Rabbit Trailhead and from the proposed trailhead at "4 Corners". Recreation opportunities for persons with disabilities remains unchanged since the Lamb Mine Trailhead does not offer accessible facilities.

Under alternative 3 the Lamb Mine Trailhead and Trail would be redesigned to offer universal access for all users including persons with disabilities. Vehicle access to the Lamb Mine Trailhead would not change from current condition.

b) closing road 2060 from the Forest Boundary (approx. 1 mile south of Morton Street access) to Four Corners may decrease road access for hunters and viewing scenery, and limit opportunities for local educators (SOU, Ashland Schools) who use the area regularly for course work.

Under all alternatives non-motorized access for hunting, viewing scenery, and for educational purposes would not change from the current situation.

Under alternatives 1 and 3 no change would occur for motorized vehicle road access to hunt, view scenery, and utilize the area for outdoor education on the existing open road system.

Under alternative 2 proposed road closures would restrict motorized vehicle use. Non-motorized opportunities for hunting, viewing scenery, and outdoor education would continue. Those needing access for uses other than administrative (i.e. natural resource education, research, or reviewing management proposals/actions) within closed portions of roads would apply for access at the Ashland Ranger Station. Application for entry would be reviewed and access granted on a case-by-case basis.

c) closing road 2060 from the Forest Boundary (approximately 1 mile south of Morton Street access) to Four Corners may increase the potential for adverse impacts on adjacent private landowners by concentrating users at the White Rabbit Trailhead location;

Under alternatives 1 and 3 no change or additional impacts are expected in existing use patterns and trends with respect to concentrating users at the White Rabbit Trailhead.

Under alternative 2 there is likely to be a slight increase in the number of vehicles parked at the White Rabbit Trailhead with the closure of Forest Road 2060. The indirect effects may include an increase in trash dumping and vandalism. These activities occur occasionally under current conditions; however, under Alternative 2 they would be concentrated over a smaller section of road between Morton Street and the Forest boundary, mainly on private or City administered lands. The proximity to private property and lack of vehicle escape routes (created by the gated closure) should increase the chances of violators being observed by witnesses or watershed patrols, increasing citations for illegal activities. This may help to deter these types of activities over time.

d) Closing road 2060 from the Forest Boundary (approximately 1 mile south of Morton Street access) to Four Corners may delay emergency vehicle response to medical emergencies that may occur behind locked gates.

Under all alternatives there would be no change in current response times for medical emergencies. Personnel with the City of Ashland Fire and Rescue have keys to Watershed gates for response to emergencies. Continued coordination with the City would occur to ensure keys are updated during periodic lock changes. Forest visitors recreating in the project area also need to be aware of the risks that are associated with recreating in a forest environment away from immediate medical response and take responsibility for his or her own health and safety the same as when recreating in any other remote area.

e) Closing road 2060 from the Forest Boundary (approximately 1 mile south of Morton Street access) to Four Corners has potential to increase use of the Lower Toothpick Trailhead located on private land.

Under alternatives 1 and 3 no change or additional impacts are expected from current use patterns and trends at the Lower Toothpick Trailhead.

Under alternative 2 there may be a slight increase in use at the Lower Toothpick Trailhead related to closure of Forest Road 2060. However, based on observations by Forest Service recreation staff, most people who utilize the Lamb Mine Trailhead hike the Lamb Mine Trail or the unauthorized trail to the East Fork and Reeder Reservoir. It is anticipated that the majority of use displaced from the Lamb Mine Trailhead would move to the White Rabbit trailhead. Monitoring of use at the lower Toothpick Trailhead and coordination with the owner of the private land would occur to ensure any unanticipated adverse impacts would be identified and mitigated as needed.

f) There is a concern for closing the 2080200 road from Bull Gap to Four Corners because it may potentially reduce access for viewing scenery, hunting, and other forest uses such as wildlife watching, mushroom hunting, etc;

Under all alternatives non-motorized access for hunting, viewing scenery, and other forest uses is not expected to change from the current situation.

Under alternatives 1 & 3 no change would occur for motorized vehicle road access to hunt, view scenery, and utilize areas for wildlife watching, mushroom hunting, and berry picking on the existing open road system.

Under alternative 2 proposed road closures would restrict motorized vehicle use. Non-motorized opportunities for hunting, viewing scenery, wildlife watching, mushroom hunting, and berry picking would continue. Those needing access for uses other than administrative (i.e. natural resource education, research, or public review of management proposals/actions) within closed portions of roads would apply for access at the Ashland Ranger Station. Application for entry would be reviewed and access granted on a case-by-case basis.

3. Effects Associated with increase fire risk due to increased access

The majority of the project area is located in areas of moderate, high, and extreme *fire risk* and moderate to high *fire hazard*. *Fire hazard* is defined as vegetation that forms a threat for fire ignition, rate of spread, and resistance to control, based on the vegetation type, arrangement, volume, condition, and location (aspect, percent slope, elevation). *Fire risk* is defined as the chance of various ignition sources (lightning or human-caused) causing a fire that threatens valuable resources, life, and/or property (USDA 1995) (USDA 1996).

The project area of the Ashland Watershed Trails Management project overlaps the project area for the Ashland Watershed Protection Project, a project designed for reducing fire hazard in the Ashland Watershed. Fire hazard reduction is needed for the protection of values associated with the Watershed including municipal water supply, water quality and aquatic habitat, Late-Successional Reserve, and a variety of other important resource values.

Dispersed recreation as well as unauthorized camping and campfires are on the increase within the Ashland Watershed, occurring along existing system roads and trails, unauthorized trails, and old skid roads. There also continues to be an increase in unauthorized trail construction in the project area. Increases in the level of human activities in the watershed (especially illegal or unauthorized uses) leads to an increase in fire risk associated with an increase in potential for human-caused fire ignitions.

The Forest Service works to deactivate unauthorized trail construction as soon as possible after they are discovered as possible to discourage the practice and to focus the use on the existing system trails. However, unauthorized trail construction continues to be a problem in the watershed. Enforcement efforts have focused on education and building cooperative relationships with user groups to deter unauthorized trail construction activity with some success.

There is concern that increasing access and promoting recreation in the Watershed would increase the potential arson fires and incidents of unauthorized camping and campfires in the watershed, thus, increasing the risk of wildfire ignitions. Managing human access and its influence on fire risk is an important aspect of protecting multiple values associated with the watershed. The following closure or prohibition orders pursuant to 36 CFR Sec. 261.50 (a)(b), would continue to be enforced under all alternatives considered for the purpose of protecting the Ashland Municipal Watershed:

- Under Order Number 2018, camping is prohibited in the Ashland Creek Watershed (36 CFR 262.58);
- Under Order Number 2026, building, maintaining, attending or using a fire, campfire, or stove fire in the Ashland Creek Watershed is prohibited (36 CFR 261.52);
- Under Order Number 2043, no vehicles (including bicycles) are allowed off of roads or trails authorized for vehicle use (36 CFR 261.56); and
- Order Number 2046 is enacted during periods of high fire danger (normally occurring late summer to early fall), which prohibits all travel (pedestrian and vehicular) within the Ashland Creek Watershed (36 CFR 261.52 (e), 261.54 (e), and 261.55 (a)).

Under Alternative 1, no additional trail opportunities would be provided and no road closures would occur. Unauthorized trail construction and unauthorized off-road use would continue at similar to increasing rates. Unauthorized camping and campfires would also continue in the Watershed at similar to increasing rates as populations increase in local communities. Continued and possibly stronger enforcement tactics would be needed to control unauthorized off-road activities, camping, and campfires for the protection of watershed values.

Alternatives 2 and 3 would deactivate an estimated 0.7-mile of existing unauthorized trail from Lamb Mine Trail head to Reeder Reservoir. Deactivating this trail would reduce the incidents of unauthorized access (including camping and campfires) onto City administered lands surrounding Reeder Reservoir. This action would have a positive long-term effect on fire risk in the project area.

Under both alternatives 2 and 3, additional trail opportunities would be provided, including trail head parking and signing improvements. By increasing the miles of system trails opportunities, it is hoped that trends in unauthorized trail construction would decrease. Focusing human use to managed system roads and trails would reduce the potential for human-caused fire ignitions in higher fire hazard areas. Slash from trail and trailhead construction and reconstruction would be lopped and scattered for erosion control, or hand-piled and burned where concentrations of slash occur to mitigate concerns for increasing fire-hazard. Increased signing associated with trailhead development to inform recreation users of fire ecology and management issues in the Watershed would also have a positive effect on fire risk in the project area.

Under Alternative 2, the year round closure of Forest roads 2060, from the Forest Boundary up to Four Corners, and 2080200 from four corners to Bull Gap would occur. Activities associated with risk for human-caused fires such as arson, unauthorized camping and campfires, and beer parties (usually accompanied by unauthorized campfires) are generally associated with vehicle access. The proposed road closures would reduce motorized vehicle access into the watershed and would reduce the risk of human-caused fire ignitions (on closed roads) that are generally associated with vehicle access. However, these activities may be displaced to lower elevations beyond the Forest boundary and may still pose some risk to vehicle associated human-caused fires threatening the watershed.

Under Alternative 3, year round road closures would not occur. The risk of fire ignitions associated with humans and vehicle access in the watershed would continue at current levels and would gradually increase as populations in the local communities increased.

4. Effects associated with reduced levels of administrative services for existing system trails (trail maintenance, enforcement of trail use objectives, etc.).

Two key points guiding new trail proposals are recognized by trail planners on the Rogue River National Forest. First, it makes sense to provide trail facilities where there is quick and easy access and use is high. A clear strategy for new trails should be considered that goes beyond just where the people are...but where people might want to be if we could get them there. This is not a challenge to put trails everywhere but rather to provide a reasonable cross-section of experiences for all user groups from a Regional/Forest perspective. (Maintaining equity in opportunities is supported by survey results in the 1994 Oregon Outdoor Recreation Plan. Respondents indicate a disparity in accessibility and availability of semi-primitive and primitive settings, as opposed to rural/urban settings, for dispersed recreation such as nature study, wildlife observation, hiking, mountain biking, horseback riding, hunting, and driving for pleasure.)

Second, it is prudent to consider naturalizing/deactivating an equivalent number of miles of trails as the mileage of new trails proposed. Otherwise, the trails program would collapse from the weight of un-maintainable facilities. Trail systems across the Forest are carefully scrutinized to eliminate trail systems that are no longer cost beneficial to maintain, and old or poorly designed trails are phased out or replaced by well designed trails that better meet the public needs. This results in having fewer, but higher quality and better-used trails, rather than a lot of mediocre trails.

To meet long-term enforcement and trail monitoring needs, a cooperative agreement is currently in place with City of Ashland that utilizes volunteers and a paid city employee to patrol and monitor use in the watershed. Through this agreement, consistent enforcement and monitoring of recreation use is expected.

Long-term maintenance of new facilities is typically part of planning new developments. To meet this need, several options are usually considered and used in various combinations depending on local interest, trail objectives, and financial opportunity for meeting maintenance needs. They include use of existing appropriated funding to hire trail crews and contractors, grant opportunities and partnerships, establish donation vaults, use of volunteers instead of paid crews, and development of fee systems. Up until the early 1970's, the Forest Service maintained almost the entire trail system within existing appropriated budgets. In the last ten years however, regional recreation budgets have decreased by 41% resulting in the need to utilize other options for maintenance.

Under all alternatives enforcement needs are likely to increase as local populations and recreation use increase.

Under alternative 1, there would be no change to current trail maintenance schedules.

Under alternatives 2 & 3, an estimated 11.2 miles of trail (constructed, reconstructed, or converted to trail from existing roads) would be added to the forest trail system. Associated with the new miles of trail would be the long-term maintenance and administration needs.

Concurrent planning is underway to deactivate several remote system trails (about 17.2 miles) on the Rogue River National Forest in areas of low demand, as well as for the construction of about 7 miles of new trail. This would result in a net gain of 1 mile of trail Forest wide. An estimated one mile increase of system trails on the Rogue River National Forest could be administered within existing recreational staffing levels.

5. Impacts associated with conflicts among the various trail uses (mt. bikes, hiking, jogging, horses, dog walking, vehicles on roads)

The Ashland Watershed Trails Management project area is located close to the population center of Ashland and historically been used on a year-round basis by a large number of both local residents and tourists. Heavy uses (estimated at 16,000 annual visitors) include mountain biking, hiking and jogging. Other uses include pleasure driving, dog walking, horseback riding, hunting, fishing, Nordic skiing (when conditions allow), bird watching, wildflower viewing, and recreational shooting/target practice. Unauthorized camping sometimes occurs, most often in the lower reaches of the project area. Mountain biking, running, and ski races are held under special use permit throughout the project area.

The project area is characterized as "roaded natural" within the Recreation Opportunity Spectrum, a classification based on the blend of natural and man made surroundings, and the experience offered. The project area is predominantly natural appearing with the opportunity for a high degree of interaction with the environment. It is estimated that trail users would encounter other user groups or be affected by the sights and sounds of human activity about half of the time.

Under Alternative 1, encounters between trail users would not change except for increases associated with population growth and tourism. Conflicts between users seeking thrills and challenge and users seeking a more leisurely experience would also not change.

Under Alternative 2, with increased trail miles and closed roads, use is expected to be dispersed over a larger area resulting in fewer encounters between trail users and between vehicles and pedestrians on roads. Potential conflicts would be slightly reduced, especially as users travel further from Ashland.

Under Alternative 3, with increased trail miles, use is expected to be dispersed over a larger area resulting in fewer encounters between trail users, but not to the same degree as Alternative 2 since fewer non-motorized routes would be available. Conflicts between vehicles and pedestrians on roads would continue near the same level since no road closures would occur.

6. Effects on humans associated with removing the trail from Lamb Mine Trailhead to Reeder Reservoir

Many trail users share the opinion that Reeder Reservoir is a publicly owned facility and that the public should have access. Since the trail has been used for some time without any recorded adverse impacts to the water supply, they do not agree that access to the reservoir jeopardizes the City's water supply.

An unauthorized trail locally known as the East Fork Trail, begins at the Lamb Mine Trailhead on Forest Service Rd. 2060 and leads to a sediment pond on the East Fork arm of Reeder Reservoir. Although un-maintained by Forest Service trail crews, users have maintained this trail for several years. The trail is not marked or promoted like the nearby Lamb Mine Trail #1015. Local knowledge of the trail location and destination currently exists with majority of use by local residents. Some use occurs by chance because of the close proximity of the trail to the Lamb Mine Trail entrance (about 10 feet). Use of the East Fork Trail is high during the summer, mostly due to the attraction of Reeder Reservoir.

Reeder Reservoir is located on City-administered land where a City ordinance restricts access. Regardless of the ordinance, there is increasing use of the trail with increasing incidence of vandalism within the restricted area. This has raised concerns by City of Ashland officials for the protection of the City's water supply.

Under alternative 1, there would be no change to current conditions. Use of the unauthorized trail to Reeder Reservoir would likely continue.

Under alternative 2, the unauthorized trail would be deactivated and blocked from further use, reducing trespass into the restricted area (per City ordinance) around Reeder Reservoir. In addition, Forest Service Road 2060 would be closed to motorized traffic from the Forest boundary (near the White Rabbit Trailhead) to Four Corners. This would further discourage use of the trail into Reeder Reservoir.

Under alternative 3 the unauthorized trail currently in place would be deactivated and blocked from further use, reducing trespass into the restricted area (per city statute) around Reeder Reservoir. Forest Service Road 2060 would remain open to motorized traffic. With road 2060

remaining open, it is expected that attempts to reopen or relocate a new trail to the reservoir are more likely to occur than under Alternative 2.

Under alternatives 2 and 3, an increased level of enforcement would be needed to prevent the unauthorized reopening or relocation of this trail in a new area by users. Coordination with City of Ashland law enforcement and watershed patrols would continue to occur for providing consistent enforcement across property lines.

7. Impacts on residents living along roads used to access national Forest System Lands (Granite, Morton, Terrace Streets, and Tolman Creek Road).

The proximity of National Forest to a community the size of Ashland is relatively unique. Access by city residents and tourists is within 2 miles of most doorsteps. Recreationists frequently utilize city streets and roads (Granite, Morton, Terrace, and Tolman), and formally designated trails (White Rabbit) to gain access to the existing national forest road and trail system. Other routes are also used that are more locally known and generally prohibited. This is an issue discussed by various groups such as Ashland Trail User's Coalition, Ashland Forest Commission, Ashland Parks Commission, City of Ashland Public Works, and Ashland Parks and Recreation to develop plans and strategies for alternate access or development. The White Rabbit Trail is an example of development used to help resolve issues related to trespass on private land by trail users. Formal designation of this route reduced private property trespass by over 60% (Epstein 1996).

Under all alternatives recreation use is expected to increase as a result of population growth and tourism. Consequently, the effects of vehicle traffic (dust and noise) on local property owner's living adjacent to National Forest System lands is likely to increase also. However, the majority of recreationists (hikers, mtn. bikers, joggers, and horse back riders), generally stage trips either from their homes, from local parks, or existing trailhead parking areas. Under all alternatives there is likely to be gradual increase in recreation use as trail systems become more developed and advertised within the community. However, vehicle traffic is not expected to increase beyond design standards of affected roads, primarily because most users will travel from "doorstep to forest" by non-motorized means.

Under Alternative 2, with the administrative closure of road 2060 (from the Forest boundary to Four-Corners), vehicle use is expected to remain about the same, with perhaps a slight increase. Based on observations by Forest Service recreation staff, most trail users parking at Lamb Mine Trailhead currently utilize Morton Street and Forest road 2060 for round trip access; however, some return to town by way of Forest road 2080. Under Alternative 2, vehicle access from the White Rabbit Trailhead through to Forest road 2080 would no longer be available, resulting in minor increase in round-trip traffic on Forest road 2060 and Morton Street.

Under Alternative 2, with the closure of road 2060 to vehicle access to the Lamb Mine Trailhead, illegal activities that occasionally occur (camp fires, camping, trash dumping, target shooting) would likely be displaced to other locations. Sites such as the White Rabbit Trailhead on Forest road 2060 near the Forest boundary, and the Eastview Trailhead on Forest road 2080 would likely be used more frequently for these activities. For the White Rabbit Trailhead site, there is a higher probability of observations by witnesses to occur (higher traffic area) resulting in heightened law enforcement response. Since vehicles must travel back down Morton street and no vehicle escape routes would exist, there could be increased success with enforcement

activities to deter unauthorized or illegal activities. Therefore, it is anticipated that adverse effects from these types of activities would decline over time. The Eastview trailhead is located further from town than the Lamb Mine or White Rabbit Trailheads, making enforcement activities more challenging. However, it is also further from adjacent private landowners and located outside of the Ashland Watershed and area covered by Closure Orders 2018 and 2026 (see Effects Associated with increase fire risk due to increased access).

8. Effects on Threatened, Endangered, and Sensitive animal species

Consultation with U.S. Fish and Wildlife Service

Formal consultation for this project was conducted with the U.S. Fish and Wildlife Service for Threatened and Endangered Species and the findings are reported in the Rogue River/South Coast Biological Assessment (1996). This document contains mandatory and recommended mitigation measures, also known as Project Design Criteria (PDCs), that were designed to minimize the potential detrimental effects to proposed or listed species as a result of project activities.

Bald Eagle (Federal threatened)

The bald eagle was proposed to be removed from the Federal List of Endangered and Threatened Wildlife under the Proposed Rule dated July 6, 1999 by the USDI Fish and Wildlife Service. The Final Rule on this delisting has not been released.

There are no known bald eagle nest sites within or near the project area. The nearest bald eagle nest site is located on private land southwest of Emigrant Lake. Bald eagles are known to use Emigrant Lake for foraging. The only potential bald eagle foraging habitat within the Ashland Watershed is at Reeder Reservoir, however, eagles have not been reported foraging there. In addition, this project would not alter any potential habitat for the bald eagle. Alternatives 1, 2, or 3 are not expected to effect bald eagles or any potential habitat. No recommendations or mitigation is needed.

Northern Spotted Owl (Federal threatened)

A detailed account of taxonomy, ecology, and reproductive characteristics of the spotted owl can be found in the Interagency Scientific Committee Report (Thomas et al. 1990).

Historical surveys for spotted owls date back to 1986 and complete protocol surveys were conducted between 1991 and 1994. Twenty-six pairs or resident single spotted owls were located in the Mt. Ashland Late-Successional Reserve (9 pairs and 2 single spotted owls in the Klamath NF portion and 13 pairs and 2 singles Ashland Ranger District portion). For a complete account of all survey efforts, see the Mt. Ashland Late-Successional Reserve Assessment (USDA, 1996).

The project area is located within spotted owl Nesting, Roosting, and Foraging (NRF) habitat and dispersal habitat. It is also located within the Mt. Ashland LSR (#RO-248) and within a Critical Habitat Unit (CHU OR-76). Thirteen spotted owl pairs are known to be within 1.3 miles of the project area. The project area also lies between the Ashland/Oak Knoll LSR and the Soda Mountain LSR.

Alternative 1 - Under this alternative, no activities would occur so there would be no impact to spotted owls or their habitat.

Alternatives 2 and 3 - Under these alternatives, the cutting of both live and dead hazard trees and trees within the trail bed would *not* alter the structure and function of spotted owl NRF habitat or dispersal habitat since they are scattered across the entire project area. Due to the fact that trails are linear and trailheads are less than a half-acre in size, they would not disrupt the movement of dispersing owls or the connectivity within and between the Mt. Ashland LSR or adjacent LSRs. Some of the standing live and dead trees, used as prey habitat, would be cut, however, felled snags and live trees would be left on site to add to the present downed woody component of the habitat. In addition, numerous larger trees and snags are adjacent to the project area and provide all the necessary components of spotted owl NRF habitat.

Road closures would not harm or benefit any additional owl pairs within a ¼ mile of roads since these owls are currently protected by existing road closures. No owls are known to be within ¼ mile of proposed trail heads. There is, however, one owl pair (#013) within 0.13 miles of Trail # 6. The PDCs under the Rogue River/South Coast Biological Assessment (1996) require a seasonal restriction on the use of motorized equipment within 0.25 mile of the nest site or activity center between March 1-June 15. March 1-June 15 is considered the early nesting period, however, based on site specific conditions this restriction can be extended (e.g. late nesting attempt, etc.). Additional human activity within a ¼ mile of owl site #013 is not expected to disturb nesting owls. For the above reasons, this project is not expected to affect spotted owls, their NRF, or dispersal habitat.

Should a new spotted owl nest site or activity center be discovered within 0.25 mile of project activities, the district biologist should be notified immediately.

Marbled Murrelet (*Federal Threatened*)

The project area is outside of the geographic range of this species.

Canada Lynx (*Federal Proposed*)

The Canada lynx is a boreal forest species that is highly dependent on the snowshoe hare as it's primary prey species. They live primarily in coniferous forests above 4,000 feet elevation with average snow depths of at least four feet, to preclude competing predators such as coyote and bobcat. Mature to late-successional forest provides denning and cover habitat for lynx. Stands with dense, young trees and shrubs provide habitat for snowshoe hare. The presence of lynx denning habitat adjacent to snowshoe hare habitat, and water, are necessary to provide for the needs of lynx. In addition, lynx also prefer heavy cover for travel between forage areas and will not usually cross open areas greater than 100 meters (USDA Forest Service, 1999).

A few historical sightings of lynx have occurred in Oregon although most have been in northeast Oregon. Two unconfirmed sightings of lynx have occurred in SW Oregon; one in 1992 in the Applegate Valley and one in 1983 in the Sky Lakes Wilderness. Several unconfirmed sightings were reported in recent years in the south Cascades. The Deschutes National Forest has recently

confirmed lynx with the use of remote cameras and the use of scent marking stations that collect hair for DNA analysis.

Surveys were conducted on the Rogue River National Forest, using hair snare/scent stations, in the fall of 1999. Some unidentified mammal hair was collected from these stations and has not yet undergone DNA analysis. Portions of the project area are within potential denning and foraging habitat for lynx, however, the structure and function of this habitat would not be altered by the proposed project. Human disturbance would be increased in some areas, especially where new trail and trailhead construction occurs; however, some roads would be decommissioned and under alternative 2, the entire watershed would be closed to motorized vehicles, thus reducing disturbance.

Considering the southern proximity of the Rogue River National Forest, that there are no confirmed sightings of lynx on the Forest (large bobcats can be easily misidentified as lynx), and that the Forest is not considered to be part of the lynx' historical range, none of the proposed project alternatives are expected to affect the lynx or its habitat.

Peregrine Falcon (*Region 6 Sensitive*)

The Peregrine Falcon was removed from the Federal List of Endangered and Threatened Wildlife on August 25, 1999 by the USDI Fish and Wildlife Service Federal Register, and is now managed as a Region 6 Sensitive Species by USDA Forest Service Region 6 (Regional Forester's Letter dated July 19, 1999).

Peregrine Falcons are known to use cliffs and rock outcroppings as nesting habitat and riparian areas for foraging. No peregrine falcon nests sites, or potential nesting habitat, is known within or adjacent to the project area. The nearest peregrine nest site is located approximately 22 miles to the southwest of the project area. Peregrines may use habitats within and adjacent to the project area for foraging, however, none have been sighted. This project would not alter the structure and function, of any potential foraging habitat; therefore, Alternatives 1, 2, or 3 are not expected to affect the peregrine falcon or its habitat. No recommendations or mitigation is needed.

California Mt. Kingsnake (*Region 6 sensitive*)

This snake inhabits moist woods including coniferous and mixed hardwood-conifer forests, woodland, and chaparral. It is often found near well-lit rocky streams in wooded areas under rotting logs or rocks (Stebbins, 1985).

This snake is known to occur at lower elevations within the Ashland Watershed and possibly in lower elevations within the Mt. Ashland LSR. Ground and substrate disturbance, as well as disturbance of down woody material within riparian areas could potentially effect this species.

Disturbance of ground, substrate, and downed woody material would occur in riparian habitat under Alternatives 2 and 3. Proposed trail construction, reconstruction, and deactivation would cross riparian habitat in some portions of the project and the kingsnake could be directly affected. However, the high visibility of this snake, due mainly to its colorful body, would make avoidance of this species possible. Downed woody material in these areas may be displaced from its original location due to trail excavation, however, it would be left intact and continue to

provide potential habitat. Trailhead reconstruction and road decommissioning is not expected to affect these snakes because these sites are normally located outside of riparian areas. Road closures would have a neutral affect on the kingsnake.

Affects to this species and its habitat under any of the proposed alternatives would most likely be minimal. To mitigate any potential direct affects to the kingsnake, it is recommended that caution be used in riparian areas when disturbing ground or substrate and disturbing downed woody material. The biologist would inform the crew leader, inspector, or COR on how to identify this species so individuals can be avoided if found.

Northwestern Pond Turtle (*Region 6 sensitive*)

This turtle inhabits marshes, sloughs, lakes, ponds, and slow-moving portions of creeks and rivers. They generally require emergent logs for basking sites and seem to be associated with sites providing underwater refuge, such as undercut banks, submerged boulders and roots. They are found almost exclusively near water, but also use terrestrial habitats for nesting, over-wintering, and dispersal. Females leave the water May through July to nest. Nest sites occur in sunny locations with sparse vegetation (usually short grasses and forbs) and are typically excavated in compact, dry soils with a high percentage of clay or silt. They can be found from 10 to over 1300 feet away from water on generally south or west-facing slopes. Slope varies from 0-60 degrees, but most are on slopes less than 25 degrees (Holland, 1994). Dispersing individuals have been known to occasionally wander into and through the uplands away from the riparian corridors.

Pond turtles have been found in lower portions of the watershed along Ashland Creek, in Reeder Reservoir, and the ponds in Lithia Park. Reeder Reservoir is adjacent to the proposed project area. A field reconnaissance of the lower portion of Trail #9 (Lamb Mine Trailhead to Reeder Reservoir) revealed that no potential nesting habitat is present within or adjacent to the project area. Juveniles dispersing in or out of Reeder Reservoir, or over-wintering turtles, may be using habitat adjacent to the project area.

Alternatives 2 and 3 propose to deactivate Trail #9, which would benefit the turtles by reducing disturbance from hikers accessing Reeder Reservoir from the Lamb Mine Trailhead. To mitigate potential direct affects to any dispersing juvenile turtles, it is recommended to use caution and watch for turtles during the deactivation of Trail #9 (Alt. 2 & 3). Avoid them if found. Trail deactivation would occur in the late spring or during the summer so no over-wintering turtles would be affected. No affects to the pond turtle or its habitat under any of the proposed alternatives are expected to occur.

Red-legged Frog (*Region 6 sensitive*)

Habitat not present within or adjacent to project area.

Spotted Frog (*Region 6 sensitive*)

Project area is outside of the geographic range of the species.

Siskiyou Mountain Salamander (*Region 6 sensitive*)

Project area is outside of geographic range of species and no habitat is present.

Ferruginous Hawk (*Region 6 sensitive*)

Project area is outside of the geographic range of the species.

White-footed vole (*Region 6 sensitive*)

Project area is outside of geographic range of species.

Greater Sandhill Crane (*Region 6 sensitive*)

Project area is outside of geographic range of species.

California Wolverine (*Region 6 sensitive*)

The California wolverine inhabits dense coniferous forests and are known to use open sub-alpine forests up to and beyond timberline. They are associated with rocky outcrops, steep mountainous areas, and transition zones between primary cover types. Den sites in Idaho were associated with caves, rock outcrops, or talus fields, and are typically above timberline. Large, remote areas with little to no human activity appear to be essential to wolverines, as they are very sensitive to even small amounts of human disturbance (USDA Forest Service, GTR RM-254, 1994). Forested riparian zones likely are important forage habitats for these furbearers. Riparian zones provide a higher density and diversity of small mammals which attract predators, such as furbearers (Mamone, 1994). These riparian zones are typically forested and provide relatively safe travel corridors that allow for animals to move within and between watersheds. Habitat loss as a result of timber harvest, roads, landscape fragmentation, and human disturbance have been principle factors affecting this species.

Over the last 30 years, a few unconfirmed sightings of wolverine have occurred in the Siskiyou Mountains, in the South Cascades, within the Marble Mountains to the south of the project area, and in some areas of Siskiyou County. Wolverines have extremely large home ranges (100-600km²) and are difficult to detect and inventory. During a furbearer study on Ashland and Applegate Ranger Districts in 1994-1996, as well as snow transects in the same area, no wolverine evidence was documented. An ongoing wolverine detection project using cameras in the Crater Lake National Park has yet to detect any wolverine. Surveys for several species of furbearers have been conducted in the Ashland Watershed, but no evidence of wolverine was detected.

The western portions of the project area have some of the characteristics of potential foraging or denning habitat. The mosaic of mature habitats, riparian areas, and high elevation meadows occurring adjacent to the project area could provide potential foraging opportunities. Considering the lack of evidence for presence of wolverine, the current level of human activity, and the fact that trail construction activities would not remove or degrade any potential wolverine habitat, no further effects to wolverine or its habitat are expected under any of the project alternatives. No Recommendations or Mitigation needed.

Townsend's Big-eared Bat (*Region 6 sensitive*)

Townsend's big-eared bat inhabits caves, mines, boulder fields, and buildings for roosting purposes, including maternity roosts, and hibernacula (Burt and Grossenheider, 1976; Ingles, 1965). Human disturbance can cause roosts to be permanently abandoned by bats (Maser, et.al., 1981).

Potential habitat for Townsend's big-eared bat is located adjacent to the project area in the Lamb Mine and the Ashland Loop Mine; however, current levels of human disturbance within these mines may cause them to be avoided by this species (especially the Lamb Mine which is readily accessible to the public). Cross et.al. (1997) surveyed these mines for bats in 1996. He captured 4 species of bats in Lamb Mine and 2 species in Ashland Loop Mine, however, the Townsend's big-eared bat was not captured (Cross et.al., 1997). If human disturbance were eliminated, according to Cross et.al. (1997), these mines could serve as roosting sites and hibernacula for the Townsend's big-eared bat.

~~Under Alternative 3, additional disturbance to potential habitat for this species could occur.~~

Trail #8, and its associated Trailhead C, under Alternative 3 would be reconstructed and would most likely increase human activity within the Lamb Mine. As stated above, current levels of human activity within these mines (esp. the Lamb Mine) may preclude Townsend's big-eared bats from using this habitat. It is recommended that, should alternative 3 in particular or any of the proposed alternatives be selected, these mines be closed through gating to protect bat species from additional and current levels of human disturbance. See also Protection Buffer bat species in the Ashland Watershed Trails Project EA. Winter surveys of these mines are also recommended to determine if they are being used as hibernacula.

Other than the above, trail construction, reconstruction, and deactivation, as well as trail head reconstruction activities are not expected to affect bats under any of the proposed alternatives. Microclimates inside the caves would not be altered by the removal of trees, and implementation activities occurring outside the mines are not expected to disturb bats. Road decommissioning under Alternatives 2 and 3 would have a neutral effect on bats. The proposed road closure of the 2060 road from the Forest boundary to four corners, under Alternative 2, would most likely benefit bats by reducing disturbance through reducing access to the caves.

9. Effects on Northwest Forest Plan Protected and Survey and Manage animal species, and Management Indicator Species

a. Survey and Manage, and Protection Buffer Species

Survey and Manage Standards and Guidelines are directed by the Northwest Forest Plan to provide benefits to amphibians, mammals, birds, bryophytes, mollusks, vascular plants, fungi, lichens, and arthropods. A complete list of species covered by these Standards and Guidelines including a schedule for the implementation is contained in the Northwest Forest Plan. Standards and Guidelines for Survey and Manage Species contain four survey strategies, and species fall under one or more of the strategies.

Red Tree Vole

The red tree vole is an arboreal rodent normally associated with mature and old growth Douglas fir stands, but they have also been known to use younger stands. Their nests are built in the lower canopy of Douglas-fir trees and are composed mainly of resin ducts from the Douglas fir needles, which are their primary food source. Fragmentation of forest habitat and maintaining connectivity of habitat between populations is of definite concern for this species. Red tree voles are suspected to occur in the Ashland Watershed, however, surveys conducted in the fall of 1999 in the Ashland Watershed for the Ashland Watershed Protection Project, did not reveal any potential red tree vole nests. Red tree vole surveys were also conducted within projects on the adjacent Applegate Ranger District and none were found. Potential red tree vole nests were also not sighted while conducting surveys for other species on this project. Most likely red tree voles are not located within or adjacent to the project area, and therefore, individuals or their habitat would not be affected by any of the proposed alternatives.

Siskiyou Mt. Salamander

Outside of the range of the species and no habitat is present for this species.

Mollusks

Mollusk surveys were conducted according to protocol on 90% of the proposed project involving new ground disturbance during the spring and fall of 1999. The 2nd survey of Trail #5 was conducted during the late summer of 1999 when suitable conditions resulted after 3-5 days of heavy thunderstorms. These surveys were done independently on trail segments or as part of the Ashland Watershed Protection Project when trails were present within proposed units. These surveys resulted in the detection of one Papillose taidropper (*Prophyseon dubium*) and its location has been flagged on the ground in orange and white striped flagging.

The Papillose taidropper has been found to be locally common in this area. Surveys on the two larger projects in the Ashland Watershed (Ashland Watershed Protection Project and the Mt. Ashland Ski Expansion Project) resulted in approximately 187 individuals (170 sites). In the adjacent Little Applegate Watershed, 375 individuals (58 sites) were found during surveys of the Little Applegate II Timber Sale. Other surveys, and general field reconnaissance revealed that this species is also well distributed in other watersheds in the Applegate Valley. Numerous sites have been found on adjacent lands managed by the Medford District BLM. Approximately 2,000 sites are on the District and 700 of those are on the Ashland Resource Area. Management recommendations (Strategy 3) are to maintain the likelihood of persistence within a habitat area where they are common or well-distributed. To maintain persistence of this species, it is recommended to avoid areas where individuals are found.

Mollusk surveys are not recommended on the remainder of the project for the following reasons:

1. Trails, in general, are linear nature and involve minimal ground disturbance to the overall landscape.
2. Trailhead reconstruction involves primarily existing, previously disturbed openings and new ground disturbance would only occur only on the periphery.
3. The surveys that were conducted on trails involving new ground disturbance, only resulted in one Papillose taidropper being found; however, this species is known to

be locally common and well-distributed in the Ashland Watershed and adjacent watersheds.

4. New trails are normally located in a way that would avoid habitat for this species and no habitat would be removed during any project activities, only displaced.
5. More habitat would be created during trail construction/reconstruction by the felling and leaving of hazard trees, etc. on the ground.
6. Direct impacts to individuals would probably not occur since project implementation would likely occur during the dry-summer months when slugs would retreat further underground or deeper into large downed woody material.

For the above reasons, Alternatives 2 or 3 of this project are not expected to impact mollusks or their habitat and may actually benefit them by creating more habitat.

b. Other Species Protected Under the Northwest Forest Plan

Great Gray Owl

Great gray owls prefer to hunt in open areas and their nests are normally within 1,000 feet of meadows or man-made openings. They will nest in basically any stand that has suitable nesting sites such as broken top trees, mistletoe brooms, and old raptor nests that are large enough to hold the female and eggs. The proposed project area is within great gray owl habitat. Surveys of suitable habitat were conducted according to protocol in 1996, 1997, and 1998 in the Ashland Watershed, as part of the Ashland Watershed Protection Project and the Mt. Ashland Ski Expansion Project. No owls were detected during these surveys. In addition, Alternatives 2 and 3 would not cut any trees having characteristics suitable for nesting, therefore, these alternatives are not expected to impact great gray owls or their habitat.

Protection Buffer Bat Species

Five of these species, i.e. Fringed myotis (*Myotis thysanodes*), Silver-haired bat (*Lasiorycteris noctivagans*), Long-eared myotis (*Myotis evotis*), and the Long-legged myotis (*Myotis volans*) and Pallid Bats (*Antrozous pallidus*) rely on standing snags and large mature trees with cracks for roosting habitat. There is strong association with ridges and roosting sites. Another component important when considering the management of habitat for these species is the availability of open water for drinking. Three species (*M. evotus*, *M. volans*, and *M. thysanodes*) are associated with mines and caves for breeding, feeding and drinking (if standing water is present), and hibernacula during the winter.

In 1996, bat surveys were conducted by Cross et. al. (1997) in the Ashland Research Natural Area (ARNA). Three protection buffer bat species (*M. evotus*, *M. volans*, and *M. thysanodes*) were found in the Lamb Mine, which is immediately adjacent to the project area. These bats are most likely using the site for breeding, feeding, and drinking (approx. 4 inches of standing water is inside the mine). One, possibly two, of these bat species (*M. thysanodes* and *Myotis* sp.) was found within the Ashland Loop Mine. They most likely are using this mine for breeding, roosting, feeding, and drinking (some standing water is present).

Reeder Reservoir is the largest standing body of water adjacent to the proposed project area. Possibly 3 species (*M. evotus*, *M. volans*, and *M. thysanodes*) were located using bat detectors while drinking and feeding at Reeder Reservoir during 1996 surveys (Cross et al., 1997). These

same species, in addition to the silver-haired bat (*Lasionycteris noctivagans*), were captured in mist nets at other ponds in the ARNA. The Pallid bat was not located, however according to Cross et. al. (1997), this species may use the lower end of the Ashland Research Natural Area near Reeder Reservoir, where large ponderosa pines are available for roosting.

Under Alternative 3, reconstruction of the existing Lamb Mine Trailhead and Trail #8 would increase public use of this trail and would most likely cause increased disturbance to bats within the Lamb Mine. Alternative 2 would probably benefit bats by reducing disturbance within both the Lamb Mine and the Ashland Loop Mine since vehicular access to the caves would be eliminated by road closures. It is recommended that under any of the alternatives, including the no action alternative, that these mines be closed through gating to protect bat species from additional, and current, levels of human disturbance. See also recommendations under the Townsend's big-eared bat.

Other than the above, project activities are not expected to affect bats or their habitat under any of the proposed alternatives. No large trees providing potential roost sites for bats would be cut under any proposed alternative. Microclimates inside the caves would not be altered by any removal of trees and the implementation of activities outside the mines are not expected to disturb bats. Road decommissioning under Alternatives 2 and 3 would have a neutral effect on bats.

White-headed Woodpecker and Flammulated Owl

High quality habitat for these species is available, within the Ashland Watershed and corresponding Mt. Ashland LSR, due to the presence of large snags providing nesting and foraging habitat. The proposed project area may contain some of this habitat, however, only snags less than 14 inch dbh would be cut. No large snags would be cut in connection with this project under any of the alternatives, therefore, these species and their habitat would not be affected.

c. Management Indicator Species

Management indicator species listed in the *Rogue River Land and Resource Management Plan* are: Blacktail deer, Roosevelt elk, pine marten, northern spotted owl, pileated woodpecker, and all other woodpeckers.

Blacktail deer

Blacktail deer are residents of the watershed and rely on a mosaic of early and late successional forest habitats in close proximity to water to provide for their needs. Does and fawns utilize the ridge tops shortly after fawning and forage in these areas during the summer and fall. Bucks move into the steeper headwaters for summer growth and join the does in the late summer and fall at lower elevations. Alternatives 2 and 3 may increase human disturbance to deer by making areas more accessible to hikers, mountain bikers, etc. through construction and reconstruction of trails and trailheads. However, under Alternative 2, a year round road closure to motorized vehicles would occur on 6.9 miles of road and 1.0 mile of road would be decommissioned thus reducing human disturbance to deer within the entire watershed. Overall, Alternative 2 would have a beneficial affect to deer by making the watershed less accessible to humans, even though some areas would have increased disturbance due to hikers and mountain bikers.

Roosevelt elk

No resident Roosevelt elk are found in the Watershed. However, a herd that winters in the Colestine area of California typically enters into the watershed in mid-summer seeking the cooler conifer stands above the 2060 road and west of the 2080 road. Forage for these animals is provided by the meadows and glades above the 2060 road. Alternatives 2 and 3 may increase disturbance to this species by making areas more accessible to humans through the construction and reconstruction of trails and trailheads. However, under Alternative 2, a year round road closure to motorized vehicles would occur on 6.9 miles of road and 1.0 mile road would be decommissioned. This closure and decommissioning of roads would reduce human disturbance to elk by controlling vehicle access to the entire watershed. Overall, Alternative 2 would have a beneficial affect on elk by reducing human disturbance and accessibility to the watershed, even though some areas would have increased disturbance due to hikers and mountain bikers on trails.

Pileated Woodpecker and Other Woodpeckers

This species has been observed throughout the Watershed and adjacent to the project area. Pileated woodpeckers use large forage on snags and down woody material (>6 inches diameter) and excavate cavities in larger diameter snags (>17 inches) for nesting purposes. Other woodpeckers' needs are typically evaluated by looking at the number of snags across the landscape. These needs are presently being met at a high level with existing snags and the continual natural recruitment of new snags annually.

Some standing snags and trees, however, they are too small to be utilized for foraging and nesting by these species, and under Alternative 2 and 3, they would be felled and left on the ground to provide additional foraging habitat for these species. For this reason, Alternatives 2 and 3 would benefit woodpeckers more than Alternative 1.

American Marten and Fisher

Surveys were conducted within the Ashland Watershed from 1993-1996 and no marten or fisher have been located, however, the Watershed does offer habitat for these species. Large trees, snags, and downed logs associated with late-successional forests provide important denning and resting sites, however, no large trees or snags would be cut under any of the proposed alternatives. A portion of a large downed log may be cut and rolled out of an existing or proposed trail bed, however, most of the log would remain intact to serve as potential denning or resting habitat. Felled green trees and snags under Alternatives 2 and 3 would also be left on the ground, adding to the existing downed woody material which would benefit the prey base for these species. For these reasons, none of the proposed alternatives are expected to impact the marten and fisher or their habitat.

10. Effects on late-successional associated and Other Animal Species of Concern within the Mt. Ashland LSR.

The *Mt. Ashland Late-Successional Reserve Assessment* provides a detailed listing of wildlife species with potential habitat, or species known to occur within the Mt. Ashland Late-Successional Reserve (including the portion located on the Klamath National Forest). The species list is not specific to late-successional associates and is extensive, but not all-inclusive.

For more detailed information concerning these species, refer to the *Mt. Ashland Late-Successional Reserve Assessment*. Some wildlife species known to occur in the Ashland Watershed are considered to be important indicator species. The indicator species were selected as representatives of larger groups of species that may potentially occur in the project area. These representative species were also selected to assess the affects of this project on those species groups. The indicator species used are the **silver-haired bat, northern flying squirrel, dusky footed woodrat, tailed frog, pileated woodpecker, and the northern spotted owl**. The northern spotted owl was discussed under Threatened Endangered and Sensitive Species, the silver haired bat was discussed under protection buffer species, and the pileated woodpecker was discussed under management indicator species.

Tailed frog

The tailed frog is specialized for life in cold, clear, mountain streams. It frequents rocky streams in humid, deciduous or coniferous forests of northwest California, western Oregon and Washington, and western Montana. Tailed frogs can be found in the headwaters of Ashland Creek in cold seeps and streams. Although there are no documented sightings, anecdotal sightings are reported in the East Fork of Ashland Creek both above and below Forest road 2060 (Abbas 1999). This species is likely to also be found in the West Fork of Ashland Creek. Sedimentation and increased stream temperatures can be detrimental to this species.

Project activities under any of the proposed alternatives are not expected to affect this species or its habitat. A small amount of sedimentation may enter stream courses where proposed trails cross streams but its duration would be short and it would dissipate quickly. Affects to tree canopy would be minimal so stream temperatures would not be affected.

Northern flying squirrels

Northern flying squirrels are arboreal mammals and nest in cavities of both live and dead trees. This species is known to be an important prey species for forest predators, including the northern spotted owl. Northern spotted owl pellet analysis conducted on the Klamath National Forest, from 1984 through 1991, determined that northern flying squirrels made up 35 percent of the diet. These squirrels have a broad distribution throughout coniferous forests and are found throughout the Ashland Watershed.

Only live trees and snags below 14 inches dbh would be cut under any of the proposed alternatives, therefore, the impact to this species and its habitat is expected to be minimal. These smaller trees and snags would most likely not provide adequate nesting habitat for this species, and larger, more suitable, nesting habitat is abundant in areas adjacent to the proposed project. None of the propose alternatives are expected to impact northern flying squirrels or their habitat.

Woodrats

Woodrats are associated with abundant understory vegetation and coarse woody material associated with older forest stages. This species is an important prey species of forest predators. The northern spotted owl pellet analysis conducted on the Klamath National Forest, 1984 through 1991, determined this species to make up 37.5 percent of the diet. Older forested areas

of the project area, in combination with hardwoods, provide suitable habitat for this species. This species has been observed and collected in the watershed.

Most of the wood rat nest sites are located, elevationally, below the project area. Woodrat nests are usually large, conspicuous accumulations of sticks up against the bole of a tree. Woodrats nests are not known to be within the immediate project area, however, it is recommended that if a potential nest is found, the biologist should be notified and the nest should be avoided.

Considering the above recommendation, no impacts to woodrats or their habitat are expected under any of the proposed alternatives.

Other Species

Osprey: An osprey nest site is located just south of Reeder Reservoir outside of the proposed project area. The pair is known to feed in Reeder Reservoir and Emigrant Lake. Potential nest trees or perch trees are not located with the project area and any trees cut would be too small to serve as nesting habitat. Therefore, none of the proposed alternatives are expected to affect the habitat for this species. In addition, these osprey would not be affected if motorized equipment is not used within a ¼ mile of an active nest site between March 1 and August 31.

Northern goshawk: No goshawk nest sites are not known to occur within or adjacent to the project area, and no goshawk sightings have occurred; however, portions of the proposed project are located within goshawk habitat. No trees greater than 14 inches diameter breast height would be cut under any of the proposed alternatives; therefore, this project is not expected to affect any habitat for this species. Affects to the overall tree canopy would be minimum. For the above reasons, this project is not expected to affect goshawks or their habitat.

11. Effects on Threatened, Endangered, and Sensitive Plant Species

The project area has no known or suspected occurrences, or potential habitat for species listed or proposed under the Federal Endangered Species Act. A population of *Horkelia tridentata* occurs along proposed trails #2 and #3. Trail construction could cause the loss of some individuals of this population; however, the number of individuals that could be lost is not likely to affect the long-term viability of this species in the Ashland Watershed. Assistance from the Forest botanist to route the trail around occurrences of this species would be required to reduce or avoid impacts to individuals of this population.

12. Effects on Northwest Forest Plan Survey and Manage and Protection Buffer Plant Species.

Survey and Manage Standards and Guidelines are directed by the Northwest Forest Plan to provide benefits to amphibians, mammals, birds, bryophytes, mollusks, vascular plants, fungi, lichens, and arthropods. A complete list of species covered by these Standards and Guidelines is contained in the Northwest Forest Plan. Standards and Guidelines for Survey and Manage contain four survey strategy components, and species fall under one or more of the components. At this time, project specific work is focused on Component 1 (manage known sites) and 2 (survey prior to ground disturbing activities) guidelines. Component 3 and 4 requirements focus on conducting broad surveys to gain better information on certain species and do not require surveys prior to ground-disturbing activities.

There is no potential for Component 2 fungi, lichens, or bryophytes to be impacted by either Alternative 2 or 3, since habitat does not occur in the project activity locations or because the project is outside of the expected range of these species.

There is potential for the following protection buffer fungi species to be present in the project area: *Aleuria rhenana*, *Otidea leporine*, *Otidea onotica*, *Otidea smithii*, and *Sarcosoma mexicana*. *Sarcosoma mexicana* fruited abundantly in spring of 1998, appears to be throughout most of our true fir forests, and is not a conservation concern. The other protection buffer fungi species listed above do not appear above ground every year and it is impractical to survey for these species. Therefore, active reconnaissance was not conducted specifically for these species. Under the preferred Alternative (Alternative 1) for the *Draft Supplemental Environmental Impact Statement for Amendment to the Survey and Manage, Protection Buffer and Other Mitigating Measures Standards and Guidelines*, pre-disturbance surveys for these species would no longer be required. *Otidea leporine*, *Otidea onotica*, and *Otidea smithii* would be managed as known sites if located through other field reconnaissance activities.

Field surveys were completed for *Buxbaumia viridis* and *Ulotia megalospora*, protection buffer bryophyte species, and for *Cypripedium fasciculatum* and *Allotropa virgata*, Component 2 vascular plant species. No Northwest Forest Plan Species were found in the project area.

13. Effects associated with increasing the potential spread of non-native species and noxious weeds

Most of the project area is dominated by native vegetation. Non-native grasses and forbs have invaded, and sometimes dominate, some of the open south slopes at lower elevations of the Watershed. They also are frequently found along roads and other disturbed areas. Non-natives and noxious weeds beginning to encroach on the project area, include star thistle (at a city-owned quarry) and Dalmatian toadflax (a large infestation along Lamb Mine Trail in the Ashland Research Natural Area). Mitigation measures proposed (Chapter II, Mitigation) to help prevent the spread of non-native species under both action alternatives can reduce the risk of spreading these species, but cannot eliminate it.

14. Effects on resident trout populations and downstream anadromous fish populations (including fish species listed under ESA).

a. Aquatic Habitat

East and West Forks of Ashland Creek, Neil Creek, Tolman Creek, Hamilton Creek, Roca Creek, Clayton Creek drainages are steep and dissected in the project area. The stream channels in the project area are predominantly "B3 and A3" types as defined by Rosgen (1994). Three valley types dominate the analysis area: alluviated, colluvial, and bedrock canyons (Frissell, 1986). Descriptions of the stream channel types and canyon types can be reviewed in the 1995 *Bear Watershed Analysis*.

Both Forks of Ashland Creek provide good examples of pristine salmonid fish habitat in the Siskiyou Mountains. The East and West Forks of Ashland Creek are important analog sites used to compare with stream channel conditions in other streams of similar geomorphology in the Siskiyou Mountains. The Riparian Reserves contain a high percentage of mature and late-

successional conifer forest, providing an excellent long-term supply of large wood to the stream channels and numerous benefits to riparian-dependent species.

A field review of stream conditions following the 1997 New Year's Day flood revealed that although some large wood had been flushed through the stream system, the stream segments showed habitat to be in good condition and comparable to pre-flood conditions. Excellent water quality for fish exists because of the cold summer stream temperatures. During the summer of 1994 (record drought), high stream temperatures were at 64.4 degrees Fahrenheit. Maximum seven-day average high stream temperature for 1993-1995 and 1997 (no data for 1996) is 60.8, 64.4, 52.3, and 60.2 degrees Fahrenheit, respectively.

Reeder Reservoir serves as a rearing area for large trout. These fish are unable to spawn up the East and West Forks of Ashland Creek due to small dams at the mouth of each creek, which prevent fish passage. Unnamed tributaries, which flow into Reeder Reservoir, serve as spawning areas for fish that reside in the reservoir.

The stream substrate within the East and West Forks and their tributaries can accumulate high amounts of fines due to unstable and highly erodible granitic terrain (see Impacts to Water Quality). Following the 1997 New Years Day Flood, some bank erosion was evident. Much of the sediment was flushed throughout the Ashland Watershed and deposited into Reeder Reservoir.

USFS and BLM contracted macroinvertebrate surveys during 1994-5 in West and East Forks of Ashland Creek with Bob Wisseman, Aquatic Biological Associates, Inc. He stated in his report "The East and West Forks of Ashland Creek above the reservoir can serve as reference sites for the region, and more specifically for granitic watersheds in the area. These can also be classified as Old-Growth control sites, though there has been some logging/roading activity in the Watershed in the past." Mr. Wisseman describes in his report high quality habitat conditions: "What this site, and a hand full of others in SW Oregon, demonstrates; is that a granitic watershed, where stream channels are naturally storing and transporting high amounts of coarse, granitic sand, can display and maintain very high biotic integrity" (Wisseman 1995).

Bear Creek has been identified by the Oregon Department of Environmental Quality as a Section 303(d) Water Quality Limited water body. One water quality parameter contributing to this listing is Habitat Modification. The decrease of salmonid habitat in Bear Creek (**Habitat Modification**) is due to urban and agricultural development, resulting in direct alteration of that channel and the denuding of its adjacent riparian habitat.

Under Alternative 1, No-Action, there would be no direct, indirect or cumulative effects to aquatic habitat from the trails management proposal.

Alternatives 2 and 3 would construct and reconstruct trails in locations approved by resource specialists with appropriate design and mitigation measures to avoid or minimize the risk of sediment production to streams. By providing well-designed recreation opportunities, combined with user education and enforcement, potential sources of sediment from unauthorized trail construction and off trail use should be reduced. This trail management proposal would contribute to positive *long-term* effects on aquatic habitat within the affected watersheds. Except for 0.22 mile of proposed trail deactivation, all proposed trail management activities are located outside of Riparian Reserves of fish-bearing streams. An estimated 0.32 miles of trail

would be constructed in the Riparian Reserves of nonfish-bearing streams and less than 0.1 mile of road would be decommissioned and converted to a trail within the Riparian Reserve of a nonfish-bearing stream. Under Alternative 2, an estimated 0.2 mile of road would be closed year round (administrative use only) within the Riparian Reserves nonfish-bearing streams. This trail management proposal would affect approximately 1 acre or 0.05 percent of the Riparian Reserves in the Ashland Creek Watershed. This represents a very minor proportion of Riparian Reserves within the watershed, with the majority of the project actions located along upper slopes and ridge areas. Additionally, the nature of trail construction (affecting less than 0.5 acre) and reconstruction seeks to maintain large trees and minimize vegetation removal, and trail and road decommissioning and road closures would have a positive long-term effect on Riparian Reserve system. Mitigation designed to reduce and avoid impacts to water quality from sediment delivery also protect aquatic habitat. Based on these factors there would be little or no risk to aquatic habitat as a result of implementing the proposed trails management project for either Alternative 2 or 3.

Since this project proposal is located 3 to 5 miles upstream from Bear Creek, no activities considered with the proposed action or alternatives would enter the stream channel of Bear Creek or its associated riparian area. Additionally, the proposed action or alternatives would not remove downed large woody material or standing potential large woody material within any Riparian Reserves or stream channels, and would therefore have no impact on delivery of large wood from project area stream channels to Bear Creek. **This project would have no direct or indirect impacts on the habitat modification listed for Bear Creek.**

The potential for adverse cumulative effects on Riparian Reserves from multiple activities (Mt. Ashland Ski Area Expansion and the Ashland Watershed Protection Project) in the Ashland Creek Watershed were evaluated. The proportion of Riparian Reserves affected by multiple projects in the Ashland Watershed would be 1.4 percent. Based on the small area of Riparian Reserves affected by multiple activities and the spatial distribution of activities (microsites scattered throughout the greater than 14,000 acre watershed), there is little if any risk for adverse cumulative effects to Riparian Reserve function or aquatic habitat within the Ashland Creek Watershed.

b. Fish Species

The project area occupies portions of eight watersheds including East and West Forks of Ashland Creek, which flows into Reeder Reservoir, an unnamed tributary below Reeder Reservoir, and the headwaters of Roca, Hamilton, Tolman, Clayton, and Neil Creeks. All of these watersheds eventually enter into Bear Creek. Bear Creek is a fifth field watershed; Federal Lands within the Bear Creek Watershed are not designated as key watershed under the Northwest Forest Plan. Bear Creek supports anadromous fish populations of Southern Oregon Northern California (SONC) coho salmon, Southern Oregon Coastal California (SOCC) chinook salmon, and Klamath Mountain Province (KMP) steelhead trout, and resident fish populations of coastal cutthroat trout and rainbow trout.

Granite Street Reservoir (above Lithia Park) is a barrier to anadromous and resident fish migration in Ashland Creek, approximately 3 miles upstream from the mouth of Ashland Creek, a tributary of Bear Creek within the Rogue River basin. There are no fish species proposed or listed under the Endangered Species Act (ESA) above Granite Street Reservoir or in the

headwaters of Roca, Hamilton, Tolman, Clayton, and Neil Creeks. Therefore, no proposed or listed fish populations exist within the project area.

Downstream of Granite Street Dam, Ashland Creek contains anadromous fish species listed under the ESA. Southern Oregon Northern California coho salmon are listed as threatened under the ESA by the National Marine Fisheries Service (NMFS) (May 6, 1997, 62 FR 42588). Klamath Mountain Province steelhead are a candidate species. Both of these fish species are included on the Regional Forester's Sensitive Species list. Neil Creek contains KMP steelhead trout up to T40S, R01E, Section 13 within National Forest System Lands, and rainbow and cutthroat trout occur throughout the stream. Tolman Creek and Clayton Creek contain SONC coho salmon and KMP steelhead trout approximately 0.75 mile and 1.0 miles, respectively, up from their mouth. Fish barriers occurring as a result of the Interstate 5 (I-5) crossings of these two streams prevent the upstream movement of fish above I-5. Hamilton Creek contains SONC coho salmon and KMP steelhead trout approximately 250 feet up from its mouth; fish barrier at bedrock falls. Roca Creek does not contain fish populations.

~~East and West Forks of Ashland Creek and Ashland Creek below Hosler Dam, Neil Creek,~~
Tolman Creek, Clayton Creek, and Hamilton Creek also contain resident rainbow and coastal cutthroat trout populations. Rainbow and resident coastal cutthroat trout do not have any special status under the ESA or Regional Forester's Sensitive Species list.

Under the No-Action Alternative, there would be no additional risk to fish species within or below the project area from trail management activities.

Based on the analysis of potential adverse effects to aquatic habitat (discussed above), Alternatives 2 and 3 would be expected to maintain essential aquatic habitat functions, and should not impede recovery of SONC coho salmon and their critical habitat, or KMP steelhead trout. Alternatives 2-3 would maintain habitat conditions in full compliance with Rogue River National Forest Land and Resource Management Plans, Northwest Forest Plan, Aquatic Conservation Strategy and Standards and Guidelines.

This project is categorized as a programmatic federal action described in Table 1 of the August 11, 1997 Letter of Concurrence issued by the National Marine Fisheries Service as "trail construction and maintenance" and "trailhead site construction and maintenance". Actions described as programmatic under the aforementioned letter of concurrence are determined to be actions that are "Not Likely to Adversely Affect" SONC coho or KMP steelhead. No further informal consultation or conferencing is required for this project under the Endangered Species Act.

B. OTHER EFFECTS

1. Relationships between local, short-term, uses of the human environment and long-term productivity.

Analysis by the IDT indicates that long-term production and quality of water, maintenance and development of late-successional habitat, and protection of Late-Successional Reserve values would not be adversely effected by the implementation of this trails management proposal.

Soil compaction is an increase in soil bulk density, a decrease in soil porosity, or an increase in soil strength caused by application of mechanical forces such as weight and vibration. Data collected in association with the Ashland Watershed Protection Project shows the current soil bulk densities in the Ashland Watershed area average (1.1 to 1.25 gr/cc). R6 soil quality standards classify an increase in bulk density of more than 15 percent at 4 to 12 inch soil depths as detrimental compaction.

Under Alternative 1, No-Action, no new trails would be constructed as proposed; therefore there would be no increase in area of compaction from proposed activities. Unauthorized trail construction could continue to contribute to increased compacted areas within the project area. Enforcement of unauthorized off-road use would be needed to reduce potential for resource impacts from unauthorized activities.

Under Alternatives 2 and 3, the construction of trails and subsequent trail use in previously undisturbed areas could increase soil bulk densities resulting in detrimental soil conditions. Currently an estimated 110 miles of system roads (some used as trails also) and 5.4 miles of system trails occur on Forest Service lands within the Ashland Creek (East Fork, West Fork and below Reeder Reservoir), Neil, Tolman, Hamilton, and Clayton Creek Watersheds. This equates to about 273 acres or 1.4 percent of National Forest System Lands within the Ashland Creek (East Fork, West Fork and below Reeder Reservoir), Neil, Tolman, Hamilton, and Clayton Creek Watersheds. Alternative 2 and 3 would result in an increase of 3.9 miles of newly disturbed area, an increase of 0.024 percent detrimental soil compaction over current conditions.

The potential for adverse cumulative effects to site productivity from past, current and reasonably foreseeable future activities was evaluated. The proposed Mt. Ashland Ski Area expansion could increase the area in detrimental soil compaction by 7.7 acres, and the Ashland Watershed Protection Project could increase the area in detrimental soil conditions by up to 19 acres. This, combined with current conditions and proposed new trail construction, represents 1.56 percent of National Forest Lands within the Ashland Creek (East Fork, West Fork and below Reeder Reservoir), Neil, Tolman, Hamilton, and Clayton Creek Watersheds. Based on the minor percentage of watersheds affected, it was determined that long-term productivity would be maintained.

2. Irreversible or irretrievable commitments of resources.

Irreversible commitment of resources refers to non-renewable resources, such as cultural resources, or those resources that are renewable only over long periods of time, such as site productivity recovering from detrimental soil compaction. This project would result in an additional 4.7 acres of area in detrimental soil compaction from new trail construction, representing 0.024 percent of National Forest System Lands in the Ashland Creek (East Fork, West Fork and below Reeder Reservoir), Neil, Tolman, Hamilton, and Clayton Creek Watersheds (also see discussion under previous section). No other irreversible commitments of resources are anticipated.

Irretrievable commitment of resources applies to losses of production or use of renewable natural resources. For example, designating the Ashland Creek Watershed as Restricted Watershed and later as Late-Successional Reserve resulted in an irretrievable loss of timber production capability while this area is being managed for other resources. There are no

additional irretrievable commitments of resources identified as a result of implementing any of the alternatives.

3. Environmental justice

Environmental Justice means that, to the greatest extent practicable and permitted by law, all populations are provided the opportunity to comment before decisions are rendered on, 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 affect their health or environment, including identification of program needs and designs.

This proposed action has been conducted under Departmental regulation 5600.2, December 15, 1997, including the Environmental Justice Flowchart (Appendix E). 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.

This proposed action does 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 would continue to be involved with the review, comment, and decision process.

4. Effects on prime farmland, rangeland, and forestland.

All alternatives are in keeping with the intent of Secretary of Agriculture Memorandum 1827 for prime farmland. The project area does not contain any prime farmlands or rangelands. Prime forestland is not contained within the National Forest system. In all alternatives, Forest Service lands would be managed with sensitivity to the impacts on adjacent lands.

5. Adverse environmental effects which cannot be avoided

Restricted vehicle access: Under Alternative 2, an estimated 6.9 miles of road would be closed year round to vehicle traffic except for administrative use. This closure would prohibit access to vehicles for recreational purposes to areas that have been historically accessed by vehicle. Access by permit for education, research, and for public review of management proposals and actions would be allowed on a case-by-case basis (see Chapter II, section C.2, Vehicle Access to Closed Watershed Roads). Forest wide, many forest roads remain open to the public to access the forest for various recreation use types. The year round administrative closure of 6.9 miles of forest roads is considered minor when viewed at the Forest scale.

Compaction/site productivity: Under Alternatives 2 and 3, an additional 4.7 acres of soil compaction would occur where new trails are constructed in previously undisturbed areas. The majority of activities planned with this trails management proposal would utilize existing

unauthorized trails, skid roads, and roads. The nature of the project, which would construct narrow trail-track for hiking, mountain biking, and equestrian use is expected to be well within the R6 Standards and Guidelines for soil protection.

Air Quality: The project area is adjacent to the Medford-Ashland Air Quality Management Area. Under Alternatives 2 and 3, minor amounts of particulate would be produced associated with smoke from slash burning. Mitigation planned for soil and watershed protection would lop and scatter the majority generated slash for erosion control. The project also incorporates the use of existing downed or generated wood to stabilize slopes along trail construction and reconstruction areas. Project design focuses on minimizing vegetation removal, which would also reduce the amount of slash generated. Areas where slash is concentrated to levels, which create fire hazard concerns would be handpiled and burned. All prescribed fire operations associated with any slash treatments would be conducted in compliance of Oregon Smoke Management Guidelines administered by Oregon Department of Environmental Quality.

Noise: Under Alternatives 2 and 3, noise from chainsaws operating in the project area would likely be heard by those recreating in the project area. Noise generated from project operations would be the most noticeable in the immediate area(s) where work is occurring. Any adverse effects would only occur during project implementation and would be short-term.

6. Recreation Opportunity Spectrum

The area of consideration is within the "semi-primitive" and "roaded natural" Recreation Opportunity Spectrum classifications. The existing classifications would not be changed with the implementation of any alternative.

7. Effects on Wetlands and Floodplains

Wetlands associated with Executive Order 11990 and **floodplains** associated with Executive Order 11988 are normally confined within a narrow corridor associated with stream channels. This corridor usually ranges from several feet to several tens of feet in width, and is typically well within one tree height or 150 feet of channels. Some smaller seep areas may be associated with geologically unstable areas (Landslide Hazard Zone 1), which are included in the Riparian Reserve land base. The narrow confinement of wetlands and floodplains to stream channels is typical in areas such as this of moderate to steep topography with moderate to well entrenched channels.

Since trails are generally located along ridgetops and upper slopes, there would be no effects on Wetlands or Floodplains as a result of implementing any alternative considered with this trail management proposal

8. Cultural Resources

Cultural Resource reconnaissance surveys were conducted for the Ashland Watershed Trails Management Project. Four previously undocumented cultural resource sites were found during the 1999 survey; none of the sites are eligible for the National Register of Historic Places. All activities planned with this trail management proposal would have no impact on any significant or potentially significant cultural resource. The Ashland Watershed Trails Management project

is determined to be a "no historic properties" undertaking that will have no effect on significant cultural resources as per 36 CFR 800.

9. Public and worker safety

All project activities (Forest Service and contract) would comply with state and federal Occupational Safety and Health (OSHA) codes. All Forest Service project operations would be guided by FS Handbook 6709.11 (Health and Safety Code Handbook). No adverse impacts on public or forest worker safety are anticipated.

10. Consistency with Northwest Forest Plan and Rogue River National Forest Plan

a) Northwest Forest Plan

Late-Successional Reserve:

Late-Successional Reserves are designated as areas to be managed to protect and enhance late-successional and old-growth forest ecosystems. As required by the Northwest Forest Plan, a Late-Successional Reserve Assessment (LSRA), including a fire management plan, was completed which provides a framework for conducting management activities within the Mt. Ashland Late-Successional Reserve. The need to complete access and travel management within the Mt. Ashland Late Successional Reserve was identified in the LSRA. The Ashland Watershed Trails Management project is proposed in response to a need to manage existing recreation use in the area, and would only serve to improve Late-Successional Reserve function by carefully managing the movement of people throughout the Late Successional Reserve. This project meets an identified need for the long-term maintenance of the Mt. Ashland Late Successional Reserve function.

This EA documents the analysis of potential impacts to late-successional associated species known or suspected to occur in the project area. No impacts were identified that could not be avoided through mitigation. Additionally, only minor vegetation removal would occur (mostly small understory trees). Any larger trees that may pose a public hazard may be felled and left on-site to meet LSR large woody material needs. This project would have no adverse impacts on late-successional habitat or Late-Successional Reserve function. Activities considered under all action alternatives analyzed under this EA are consistent with Standards and Guidelines for Late-Successional Reserve land allocation of the Northwest Forest Plan.

Riparian Reserves - Aquatic Conservation Strategy Objectives

The Aquatic Conservation Strategy of the Northwest Forest Plan was developed to restore and maintain the ecological health of watersheds and aquatic systems on public lands. The Northwest Forest Plan identifies nine objectives for meeting the intent of the Aquatic Conservation Strategy. This trails management proposal was analyzed using these nine objectives. It was determined that Alternatives 2 and 3 would be consistent with the Aquatic Conservation Strategy Objectives. A more in-depth discussion of the objectives in relation to the action alternatives follows:

Objective #1: Landscape scale features were considered during project design. Physical features of the project area were analyzed for potential impacts, including: Riparian Reserves (streams, springs and wetlands) and unstable areas, geomorphic terrain types, location and kind of mass wasting, soil types and erosion potential (Chapter III, Affected Environment and Environmental Consequences). The nature of the trails management proposal, which would utilize to the extent possible existing trail tracks, skid roads and roads, would result in minor disturbance to 4.7 acres of previously undisturbed sites. Considering project design and mitigation measures (Best Management Practices), no alternatives would impact the distribution, diversity, and complexity of these watershed and landscape features. Aquatic systems to which species, populations, and communities are uniquely adapted to in the project area would be maintained.

Objective #2: This project should have no impact on movement of riparian-dependent species either spatially or temporally for the following reasons: the action alternatives considered would not create any additional instream barriers beyond what already occurs (Hosler Dam); except for the deactivation of 0.2 mile of trail within the Riparian Reserve of Reeder Reservoir, 0.32 mile of trail reconstruction within Riparian Reserves of intermittent streams, and 0.32 mile of trail reconstruction in potentially unstable Riparian Reserves, the Riparian Reserve network would remain virtually intact. Mitigation measures or Best Management Practices would be implemented to avoid or minimize any risk of erosion or sedimentation. No activities within stream channels would occur. The deactivation of unauthorized trail within the Riparian Reserve of Reeder Reservoir would have positive effect on the movement of species near this section of the Reservoir by reducing harassment from humans. No trail construction or reconstruction is planned within the Riparian Reserves of perennial or fish bearing streams.

Objective #3: Alternatives 2 and 3 would not degrade the physical integrity of the aquatic system within the project area. This project does not propose activities that would result in any direct impact to shorelines, banks, and bottom configurations. Considering project design and mitigation measures (Best Management Practices), it is unlikely that the minor ground disturbance associated with trail and trailhead construction, reconstruction, or deactivation activities would result in any additional amount of sediment to the stream system over current baseline levels (EA Chapter III, Impacts on water quality and hydrologic function within Ashland Creek and adjacent watersheds).

Objective #4: No activities are planned that would adversely impact water quality. Streamside shade would be maintained; therefore, there would be no affect on water temperatures. There would be little if any potential for increase in sediment deliver to streams (see objective 3 above). Mitigation measures (Best Management Practices) would protect water quality in the project area (EA Chapter III, Impacts on water quality and hydrologic function within Ashland Creek and adjacent watersheds).

Objective #5: Watersheds of the project area are comprised of granitic rock types, and transport high amounts of sediment under natural conditions. Debris landslides are one of the primary mechanisms for the delivery of coarse sediment to streams within the project area and Reeder Reservoir. Based on project design, which locates the majority of planned activities along ridge-tops, upper slopes, existing roads, trails, and skid roads; only about 0.32 acres of trail reconstruction would occur in the Riparian Reserves of

potentially unstable areas. There would be little if any risk for any of the action alternatives to accelerate landslide activity. The potential for increased sediment production from soil disturbance and erosion for all action alternatives would be very low and short-term (1 to 3 years). For all action alternatives, the timing, volume, rate, and character of sediment input, storage and transport for which aquatic ecosystems evolved, would be maintained.

Objective #6: The potential for adverse impacts to flow were analyzed and included an analysis of cumulative watershed effects (CWE) considering all foreseeable activities in the CWE analysis area (Chapter III, Impacts to Water Quality and Hydrologic Function). For both alternatives, the potential for any changes (if any) to the timing and distribution of flow including peak flows and channel maintenance events would be minor. Large scale floods as occurred in 1853, 1861, 1890, 1927, 1948, 1955, 1964, 1974, and 1997, are due to unusual rain-on-snow events coinciding with saturated ground conditions; they have thus occurred in the Ashland Watershed many times under essentially pristine or near pristine conditions and will occur again. The effects of these large-scale floods would not be increased by this trail management proposal.

Objective #7: Floodplains and wetlands are typically confined to a narrow corridor adjacent to stream channels, well within one tree height of the channels (Affected Environment). Since Riparian Reserves would generally not be entered with this project proposal (except for minor amount of trail deactivation near the Reservoir or trail reconstruction associated with Riparian Reserves of intermittent streams), and since instream flows would not change (see Objective 6 and Impacts to Water Quality and Hydrologic Function), the duration of floodplain inundation and water table elevation in wetlands would be maintained under both action alternatives.

Objective #8: All perennial (and most intermittent) Riparian Reserves, including floodplains and wetlands, are retained virtually intact for all action alternatives. An estimated 0.32 miles of trail reconstruction would occur in the Riparian Reserves of intermittent streams; .22 mile of trail deactivation would occur in the Riparian Reserve of Reeder Reservoir; and .32 mile of trail reconstruction would occur within the Riparian Reserve of potentially unstable areas. This minor disturbance of about 1 acre of Riparian Reserve would not impact Riparian Reserve function at the project or watershed scale. By maintaining Riparian Reserves intact, the structural diversity and plant species composition would be maintained. Riparian Reserves would continue to function in a manner that would maintain the ecological health of watersheds and aquatic systems at both the project area and watershed scale.

Objective #9: The potential for impacts to wildlife and botanical resources were analyzed for all alternatives considered. Only minor disturbance is planned with this trails management proposal and no adverse impacts to habitat within the watershed were identified. For the project area and Watershed scale, habitats would be maintained to support well distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species (Chapter III, Affected Environment and Environmental Consequences).

b) Rogue River National Forest Land and Resource Management Plan

Restricted Watershed

The goal for this allocation is to provide a continuous supply of high quality water for the City of Ashland's domestic use. The Standards and Guidelines for Restricted Watershed land allocation, of the Rogue River National Forest Land and Resource Management Plan (USDA 1990 p. 4-269, 4-273, and 4-274) provide direction for managing recreation in a manner that will meet the goals and objectives of Restricted Watershed. All action alternatives analyzed under this EA are consistent with Standards and Guidelines for Restricted Watershed land allocation of the RRNF LRMP.

CHAPTER IV. CONSULTATION WITH OTHERS

A letter requesting comments on the proposed action was sent September 21, 1998 to adjacent land owners, neighboring agencies, local government, and to individuals and organizations who have expressed an interest in projects of this nature or projects in this particular area. A letter was sent December 10, 1999 to provide those interested in this project proposal an update of the planning process and additions to the proposed action. This project also appeared since spring of 1998 in quarterly editions of the Schedule of Proposed Actions, contained in the Rogue River National Forest newsletter *Rogue River Currents*. A public information meeting was held October 8, 1998 to share information concerning the project proposal as well as the purpose and need for the project. An estimated 20 to 25 people attended this meeting.

In addition, the following also occurred in support of the scoping process:

- Briefings with City of Ashland officials;
- Upon invitation, the Forest Service also presented information to the Ashland Forest Commission, the Ashland Bike and Pedestrian Commission, and the Ashland Watershed Partnership;
- The Forest Service participated in monthly meetings of Ashland Trail Users Coalition to gain an understanding of recreation user needs and issues associated with recreation use in the project area;
- A standing invitation or "open door policy" for anyone interested to make an appointment with the Ashland District Ranger or other Forest Service specialists to discuss the project; and
- Local Media Briefings.

The following organizations and agencies were notified of the proposed project and responded or participated in the planning and scoping efforts:

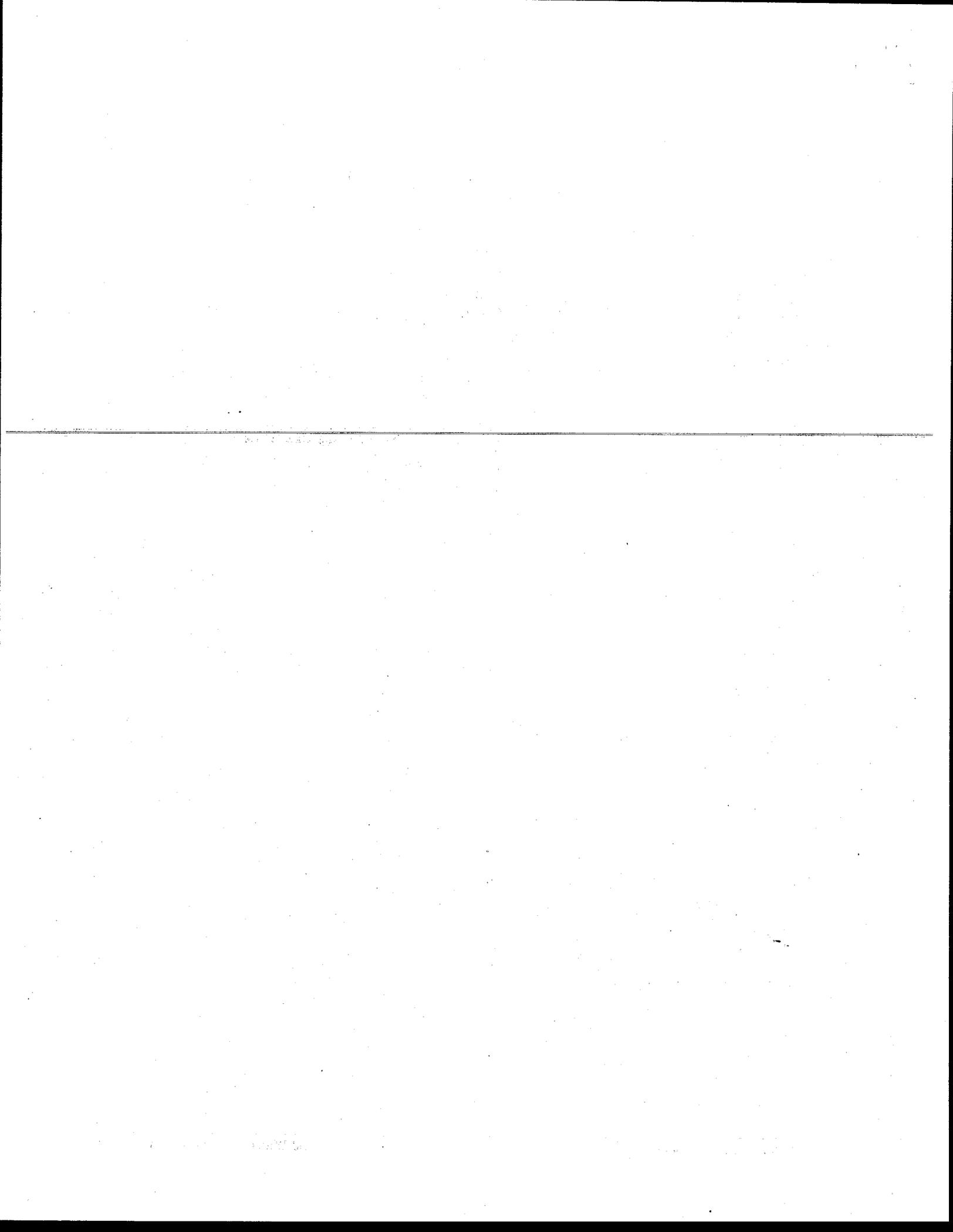
- Oregon Natural Resources Council
- Rogue Group Sierra Club
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- City of Ashland Parks and Recreation
- Ashland Bike and Pedestrian Commission
- Ashland Trail Users Coalition
- Ashland Watershed Partnership
- Ashland Forest Commission

In addition, many interested individuals responded.

The following Forest Service specialists participated on the Interdisciplinary Team or provided input for the analysis:

Linda Duffy
Mike Ricketts
Kristi Mastrofini
Dave Riant
Mario Mamone
Gail Ribble
Dave Clayton
Pete Jones
Mike Zan
Su Maiyo
Wayne Rolle
Brent Hasty
Dave Green
Jeff Lalande

Ashland District Ranger, Responsible Official
IDT Leader, Project Planner
NEPA Coordinator, EA Writer & Editor
Fire/Fuels Specialist
Wildlife Biologist
Wildlife Biologist
Wildlife Biologist
Geologist
Hydrologist
Fisheries Biologist
Forest Botanist
Geographic Information Systems
Engineering; Transportation Planner
Forest Archaeologist



APPENDICES

APPENDIX A: HYDROLOGY

APPENDIX B: FISHERIES

APPENDIX C: WILDLIFE

APPENDIX D: BOTANY

APPENDIX E: HERITAGE RESOURCES

ALGEBRA

CHAPTER I

DEFINITIONS

APPENDIX A: HYDROLOGY

**Ashland Watershed Protection Project
Cumulative Watershed Effects Analysis
West Fork Ashland Creek**

(Prepared by Debra Whittall, RRNF Hydrologist. April, 1999)

Potential for Adverse Watershed Cumulative Effects

Effects from land-use changes and channel modifications can lead to adverse cumulative effects within a watershed. The potential for them to occur and their magnitude will depend on the number, type, and location of changes (activities), watershed sensitivity, existing channel/habitat condition, and/or existing watershed condition ("Determining the Risk of Cumulative Watershed Effects Resulting from Multiple Activities", ESA-Section 7 CE Process, Final Version 1993).

Relative Risk

For the purpose of this project analysis, the **relative risk** of incurring adverse cumulative effects has been determined (below) based on field verified data and pertinent documentation including the 1995 Bear Watershed Analysis and previous documentation on the "Hazred" Project. The area analyzed is the West Fork of Ashland Creek, a watershed 7,466 acres in size.

Watershed Condition Rating

The process used will result in an index of current and potential (based on foreseeable actions) watershed condition based on two key indicators which influence the hydrologic functions of a landscape. The two key indicators are road density and the percent of the watershed which is covered with "hydrologically immature" vegetation, defined as stands less than 11 inch diameter breast height (dbh) and stands greater than 11 inch dbh with less than 50% canopy closure (based on "mature habitat" definition, RRNF 1988 Vegetation Update, W.K. Bruckner).

The following table reflects the percent of hydrologically immature vegetation (as determined by Geographic Resource System (GRS) data):

Percent of Hydrologically Immature Vegetation within the East Fork of Ashland Creek		
1995 Bear WA*	Current Condition	Potential Condition+
4.5%	6.0%	6.8%

* Percentage as reported in the 1995 Bear Watershed Analysis was determined using PMR satellite data and based on vegetated stands less than 30 years old.

+ Potential condition was calculated based on implementation of the following **proposed** activities; prescribed underburn units, and Ashland Watershed Protection Project units (Alternative X, potentially most impactive to resources).

Relative condition ratings are as follows; "Good" indicates less than 15% of the watershed contains: stands less than 11 inch diameter breast height (dbh), barren ground, and stands greater than 11 inch dbh with less than 50% canopy closure, "Fair" would indicate 15%-30% of the watershed contains less than 50% canopy closure, and a "Poor" rating would indicate greater than 30% of the watershed contains less than 50% canopy closure.

Therefore, the West Fork of Ashland Creek will maintain a "Good" condition rating based on hydrologically immature vegetation through the implementation of all foreseeable actions.

Road Density, is expressed here as miles of road per square mile of the West Fork Ashland watershed. Miles per square mile of road, in conjunction with watershed slope provides an index of the overall potential for roads to affect watershed function.

The following table presents a generalization about the effects on watershed condition of various road densities relative to gross watershed slope:

General Watershed Condition Based on Road Densities Relative to Watershed Slope

Condition Rating	Road Density (mi/sq mi) Watershed Slope > 30%	Road Density (mi/sq mi) Watershed Slope < 30%
Good	< 2	< 3
Fair	2.1 - 3.5	3.1 - 4.5
Poor	> 3.6	> 4.6

Current road density within the West Fork of Ashland Creek is 1.7 road miles per square mile and post-proposed project implementation remains the same. The average watershed slope is 12.4%.

Therefore, the condition rating for both the current and post-proposed project implementation for the West Fork of Ashland Creek is "Good."

A "Watershed Condition Rating" is determined by plotting the percent of hydrologically immature vegetation against road density in Figure 1. The result is a "Low" risk rating for the West Fork Ashland watershed both in its current condition and post-proposed project implementation.

Channel Condition Rating

Habitat and channel features integrate all natural processes occurring upslope from any given point. The key elements chosen for this analysis include temperature (stream shade) and sediment (measured as percent surface fines - less than 2mm diameter substrate).

Temperatures throughout the West Fork stream system are well-moderated and nearly optimum for resident fish. Average stream shade for the West Fork is 81.5%.

Therefore, the West Fork of Ashland Creek maintains a "Good" rating for stream temperature.

Stream substrate (bedrock, small and large boulders, cobbles and gravels) are generally embedded with fine and coarse sediment throughout most of the stream system. However, the stream system above Road 2060 is likely to resemble historic levels of stream embeddedness.

Wolman Pebble Count data shows an average of 9.8% surface fines, indicating a "Good" rating.

The Channel Condition Rating combines the two variables discussed above and is rated in "Good" condition.

Overall Condition Rating

An "Overall Condition Rating" is determined by combining the Watershed and Channel Condition Ratings determined above. The rating may be considered a major criteria for determining the risk of adverse cumulative effects to resident fish populations in the West Fork of Ashland Creek.

Overall Condition Rating for the West Fork of Ashland Creek both in its current condition and post-proposed project implementation is "Good." Therefore, no additional risk is incurred in implementing the proposed actions.

Individual Project Risk Assessment

The second major criteria for determining the risk of adverse cumulative effects to fish populations is the level of project risk.

Virtually any activity runs the risk of creating damaging effects to the aquatic system. The degree of risk depends on project design, mitigation measures, current condition and proximity to aquatic systems. Please refer to the AWPP EIS document and the Ashland Watershed Trail Project EA for specific design features and mitigation measures.

The following proposed activities, Alternative 5 of the Ashland Watershed Protection Project (AWPP) and the Ashland Watershed Trail Project are evaluated for their influence on sediment and temperature.

The relative risk of increasing temperature is determined by considering the distance from a perennial stream to the project (e.g., thinning units, trails, etc.) and the amount of shade reduction.

The relative risk of sedimentation is determined by considering the dominant landform type (e.g. glaciated mountain ridge-tops, dissected mountain slopes, etc.) and slope

position (e.g., upper, middle, lower, ridge, etc.). These factors are used to estimate the probability of sediment delivery to stream channels.

Ashland Watershed Protection Project:

Units 33, 34, 35, 39, HH, 11, and K are located on the ridge-tops of the "mountain slope" landform. Units FF, M are located in the upper and middle (respectively) slope position of the "mountain slope" landform. Unit L is located within the lower slope position of a stream terrace. All of the preceding units are considered "Low" risk for sedimentation.

Units I, J and X are located in either the middle or lower slope position of the "dissected mountain slope" landform. These units (116.3 acres total) are considered "High" risk for sedimentation.

~~There are no units within this project within 200 feet of a perennial stream. Therefore, the relative risk of increasing temperature is considered "Low".~~

Ashland Watershed Trail Project:

Within the West Fork of Ashland Creek there is approximately 2.5 miles of existing trail. This existing trail is located either within an existing road or along a lateral ridgetop of the mountain slope landform. About 2.1 miles of new trail is proposed along a mountain ridgetop connecting 2.0 miles of trail located within existing FSR2060-200 along Wagner Butte. Trail coinciding with FSR2060-200 is proposed to install additional drainage improvements. Therefore, these trails are considered LOW risk for sedimentation.

No new trail will be constructed within 200 feet of a perennial stream. Therefore, the relative risk of increasing temperature is considered LOW.

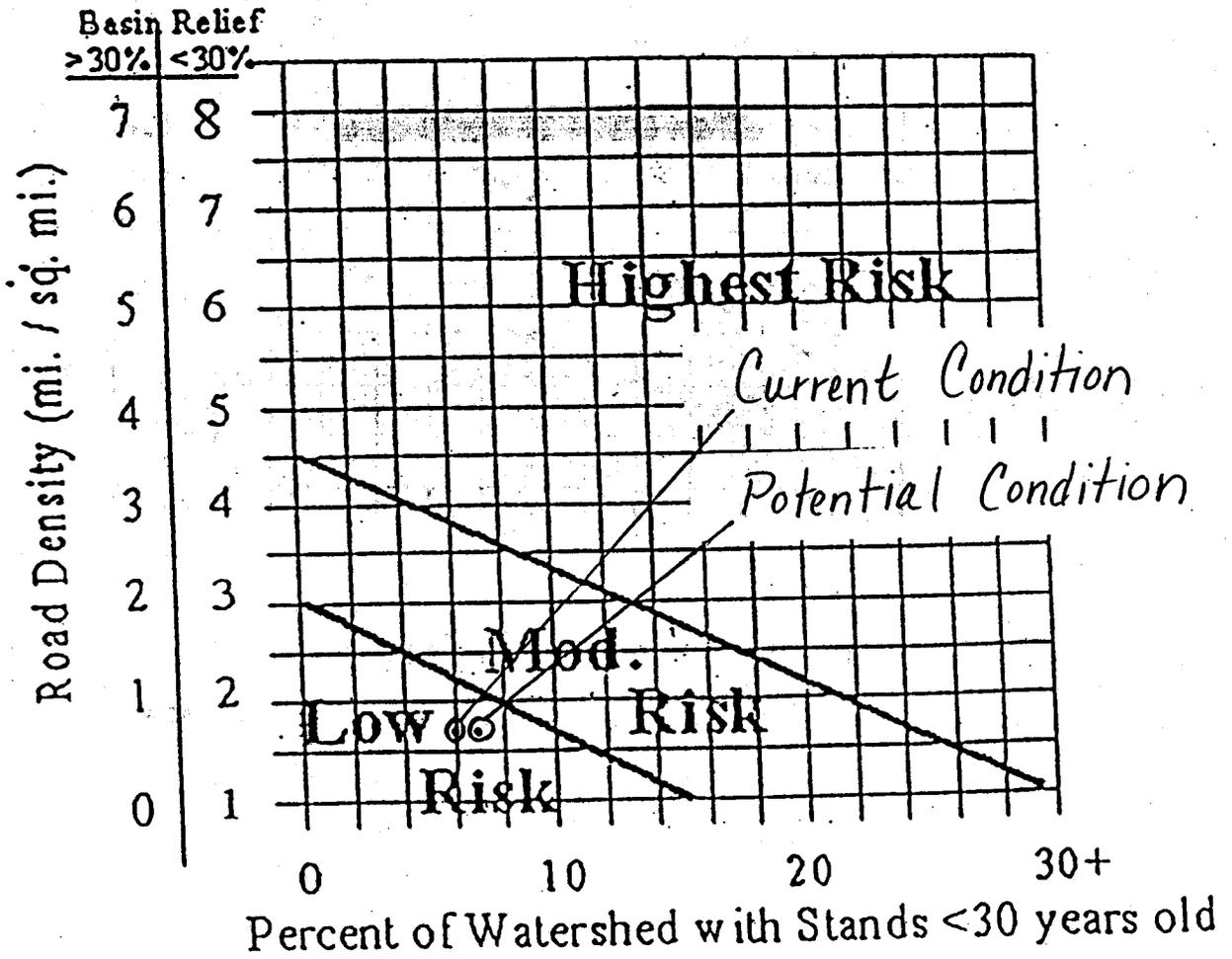
Risk of Adverse Cumulative Effects

Given the above information, a High, Medium, or Low risk of cumulative effect can be determined for the West Fork Ashland Creek Watershed. The Overall Condition Rating of "Good" is combined with the percentage of the watershed which has High or Moderate risk projects (1.6%) to determine the relative risk of adverse cumulative effects (Figure 2).

Risk of Adverse Cumulative Effects based on foreseeable actions in the West Fork of Ashland Creek is LOW.

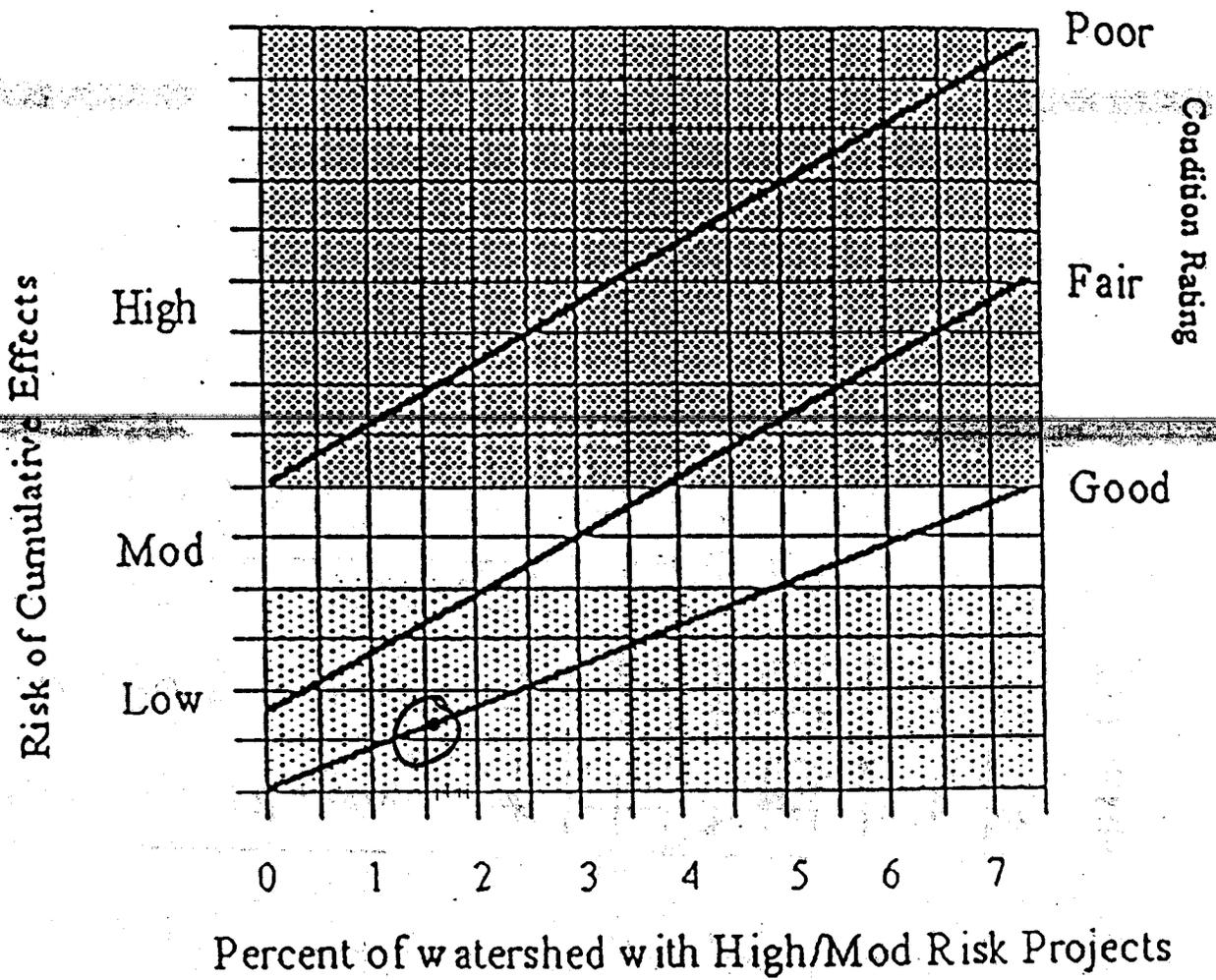
West Fork of Ashland Creek

Figure 1 Watershed Risk Rating



West Fork of Ashland Creek

Figure 2. Risk of Cumulative Effects



**Ashland Watershed Protection Project
Cumulative Watershed Effects Analysis
Lower Ashland Creek (below Hosler Dam)**
(Prepared by Debra Whittall, RRNF Hydrologist. April, 1999)

Potential for Adverse Watershed Cumulative Effects

Effects from land-use changes and channel modifications can lead to adverse cumulative effects within a watershed. The potential for them to occur and their magnitude will depend on the number, type, and location of changes (activities), watershed sensitivity, existing channel/habitat condition, and/or existing watershed condition ("Determining the Risk of Cumulative Watershed Effects Resulting from Multiple Activities", ESA-Section 7 CE Process, Final Version 1993).

Relative Risk

The protocol, "Determining the Risk of Cumulative Watershed Effects Resulting from Multiple Activities", Endangered Species Act (ESA)-Section 7 CE Process, Final Version 1993, was developed to analyze the relative risk of multiple projects within forested watersheds. Because a large portion of lower Ashland Creek (below Hosler Dam) contains urbanized area within the City of Ashland this analysis displays the current condition at "high risk." This determination is based on parameters indicative of watershed health for wildlands and is not intended for urbanized areas. Therefore, while this analysis allows comparison of parameters between forested and non-forested watersheds it does not accurately portray limiting factors within an urbanized setting (i.e. flood potential, ability of infrastructure to handle flood flows, water quality, etc.).

A more appropriate, urban analysis was conducted after the January, 1997 storm event by Otak, Inc. The City of Ashland contracted with Otak to assess flooding potential and to recommend improvements to the existing "conveyance capacity" of Ashland Creek. A hydrologic study was undertaken to estimate the magnitudes of flood events for various return periods on Ashland Creek in the City of Ashland. The study states that, "While typical non-storm releases from Reeder Reservoir contain little suspended sediment... during winter and spring, rain-on-snow storm events at mid-elevations (3,500'-5,000') can contribute to high runoff and surface erosion."

As a result of Otak's hydrologic analysis, design recommendations were made to improve the conveyance capacity of the creek channel where hydraulic analysis indicated that capacity deficiencies existed (Otak, Inc., October, 1997). Several recommendations have already been approved and implemented (i.e., the new Winburn Way bridge crossing, Lithia Park flood wall, etc.) Additionally, the City of Ashland is currently updating their stormwater management plan.

For the purpose of this project analysis, the relative risk of incurring adverse cumulative effects has been determined (below) based on field verified and anecdotal information as well as pertinent documentation including the 1995 Bear Watershed Analysis, 1991 FEIS for the Mt. Ashland Ski Area, 1987 Origins and Characteristics of Sedimentation in Reeder Reservoir, and previous documentation on the "Hazred"

Project. The area analyzed is Lower Ashland Creek (below Hosler Dam), a watershed approximately 3,080 acres in size.

Watershed Condition Rating

The process used will result in an index of current and potential (based on foreseeable actions) watershed condition based on two key indicators which influence the hydrologic functions of a landscape. The two key indicators are road density and the percent of the watershed which is covered with "hydrologically immature" vegetation, defined as stands less than 11 inch diameter breast height (dbh) and stands greater than 11 inch dbh with less than 50% canopy closure (based on "mature habitat" definition, RRNF 1988 Vegetation Update, W.K. Bruckner).

The following table reflects the percent of hydrologically immature vegetation (as determined by Geographic Resource System (GRS) data):

Percent of Hydrologically Immature Vegetation within the East Fork of Ashland Creek		
1995 Bear WA* 5.6%	Current Condition 25.5%	Potential Condition+ 27.5%

* Percentage as reported in the 1995 Bear Watershed Analysis was determined using PMR satellite data and based on vegetated stands less than 30 years old. Data for this analysis was only available one mile beyond the Forest Service boundary (excludes City of Ashland).

+ Potential condition was calculated based on implementation of the following proposed activities; prescribed underburn units, and Ashland Watershed Protection Project units (Alternative 5, potentially most impactive to resources). Data for this analysis includes all but 120 acres in the lower end of the watershed (includes City of Ashland).

Relative condition ratings are as follows; "Good" indicates less than 15% of the watershed contains: stands less than 11 inch diameter breast height (dbh), barren ground, and stands greater than 11 inch dbh with less than 50% canopy closure, "Fair" would indicate 15%-30% of the watershed contains the above stated conditions, and a "Poor" rating would indicate greater than 30% of the watershed contains the above stated conditions.

Therefore, Lower Ashland Creek will maintain a "Fair" condition rating based on hydrologically immature vegetation through the implementation of the AWPP and proposed prescribed underburn units.

Road Density, is expressed here as miles of road per square mile of Lower Ashland Creek watershed. Miles per square mile of road, in conjunction with watershed slope provides an index of the overall potential for roads to affect watershed function.

The following table presents a generalization about the effects on watershed condition of various road densities relative to gross watershed slope:

General Watershed Condition Based on Road Densities Relative to Watershed Slope

Condition Rating	Road Density (mi/sq mi) Watershed Slope > 30%	Road Density (mi/sq mi) Watershed Slope < 30%
Good	< 2	< 3
Fair	2.1 - 3.5	3.1 - 4.5
Poor	> 3.6	> 4.6

Current road density within Lower Ashland Creek is 6.0 road miles per square mile (includes City of Ashland) and post-proposed project implementation remains the same. The average watershed slope is 4%.

Therefore, the condition rating for both the current and post-proposed project implementation for Lower Ashland Creek is "Poor."

A "Watershed Condition Rating" is determined by plotting the percent of hydrologically immature vegetation against road density in Figure 1. The result is a "High" risk rating for the Lower Ashland Creek watershed both in its current condition and post-proposed project implementation.

Channel Condition Rating

Habitat and channel features integrate all natural processes occurring upslope from any given point. The key elements chosen for this analysis include temperature and sediment.

Temperature data throughout Lower Ashland Creek is sporadic and anecdotal in nature. A 1972 investigation by Southern Oregon University (SOU) students measured temperature below the dam (near the first bridge below Hosler Dam) for one year. Temperatures ranged from a low of 36 °F (January) to a high of 65 °F (July). Another SOU study conducted by Darrell Hegdahl in 1988 measured temperature at four sampling sites along Lower Ashland Creek from the upper-end of Lithia Park to the Ashland Sewage Treatment Plant. The 1988 study duration was from September through April. Highest temperatures were recorded during the month of September and ranged from 58 °F at Site 1 near the upper-end of Lithia Park to 68 °F near the Ashland Sewage Treatment Plant.

Based on the above information, Lower Ashland Creek may likely maintain a "Fair" rating for stream temperature.

Embeddedness data is not available for Lower Ashland Creek. However, personal observation of the channel indicates a high level of embeddedness with fine and coarse grained sediments.

Studies have been conducted on sediment delivery and routing through the Lower Ashland Creek watershed, specifically related to periodic sluicing events to maintain reservoir capacity (USFS, 1987 and Hegdahl, 1988). Hegdahl's 1988 study concluded, "Even though there is still a lot of sediment in the creek, the data collected in this study regarding the occurrence of aquatic organisms and the activities of those organisms now using the creek shows that the creek is returning to normal." This conclusion suggests that periodic sluicing events can temporarily degrade habitat conditions for aquatic organisms when compared to "normal" circumstances (interpreted as baseline conditions). Aquatic habitat conditions can also be temporarily degraded by increasing the fine sediment load during and after large storm events, such as the January 1997 storm.

It is anticipated that both sluicing and large storm events will continue to create short-term effects on aquatic habitat conditions. ~~It is unknown whether these events will in the long-term, degrade aquatic habitat conditions.~~ Based on the above information, Lower Ashland Creek will most likely maintain a "Fair" habitat condition rating for sediment.

The Channel Condition Rating combines the two variables discussed above and is rated in "Fair" condition.

Overall Condition Rating

An "Overall Condition Rating" is determined by combining the Watershed and Channel Condition Ratings determined above. The rating may be considered a major criteria for determining the risk of adverse cumulative effects to fish populations in Lower Ashland Creek.

Overall Condition Rating for Lower Ashland Creek both in it's current condition and post-proposed project implementation is "Poor." Therefore, no additional risk is incurred in implementing the proposed actions.

Individual Project Risk Assessment

The second major criteria for determining the risk of adverse cumulative effects to fish populations is the level of project risk.

Virtually any activity runs the risk of creating damaging effects to the aquatic system. The degree of risk depends on project design, mitigation measures, current condition and proximity to aquatic systems. Please refer to the AWPP EIS documents for specific design features and mitigation measures.

The following proposed activity, the Ashland Watershed Protection Project (AWPP) units are evaluated for their influence on sediment and temperature.

The relative risk of increasing temperature is determined by considering the distance from a perennial stream to the project (e.g., thinning units, trails, etc.) and the amount of shade reduction.

The relative risk of sedimentation is determined by considering the dominant landform type (e.g. glaciated mountain ridge-tops, dissected mountain slopes, etc.) and slope position (e.g., upper, middle, lower, ridge, etc.). These factors are used to estimate the probability of sediment delivery to stream channels.

Ashland Watershed Protection Project:

Units 1, 3, 5, 7, 23, 24, and 25 are located on the ridge-tops of the "mountain slope" landform. All of the preceding units are considered "Low" risk for sedimentation.

Units 9, 22, A, AA, BB, DD, EE, GG, N, Q, S, and V are located in the upper slope position of the "dissected mountain slope" landform. These units (300.6 acres) are considered at "Moderate" risk for sedimentation.

Units 4, 6, B, CC, G, O, P, R, T, U, W and Y are located in either the middle or lower slope position of the "dissected mountain slope" landform. These units (332.8 acres) are considered at "High" risk for sedimentation.

There are no units within this project within 200 feet of a perennial stream. Therefore, the relative risk of increasing temperature is considered "Low".

Ashland Watershed Trail Project:

Within the Lower Ashland Creek watershed approximately 0.4 mile of existing trail is located within FSR2060-200. About 0.2 mile of existing trail is proposed for obliteration and is located in the lower slope position within the dissected mountain slope landform. Additionally, 0.4 mile of new trail is proposed along the ridgetop of the mountain slope landform. Therefore, the remaining trails are considered to be LOW risk for sedimentation.

No new trail will be constructed within 200 feet of a perennial stream. Therefore, the relative risk of increasing temperature is considered LOW.

Implementation of this project is expected to decrease an existing source of sediment through the obliteration of 0.2 mile of trail leading to the reservoir.

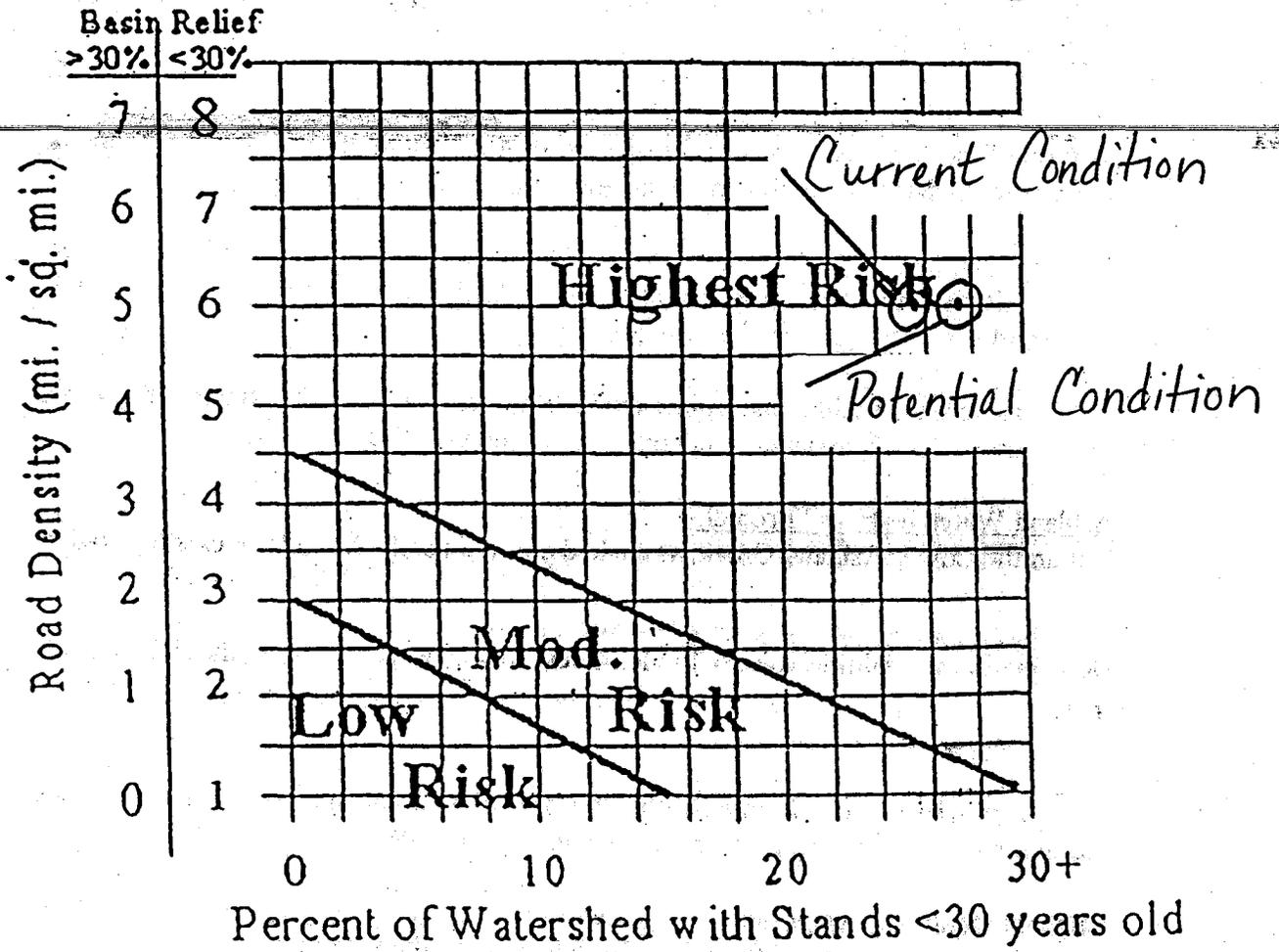
Risk of Adverse Cumulative Effects

Given the above information, a High, Medium, or Low risk of cumulative effect can be determined for the Lower Ashland Creek watershed. The Overall Condition Rating of "Poor" is combined with the percentage of the watershed which has High or Moderate risk projects (20.6%) to determine the relative risk of adverse cumulative effects (Figure 2).

Risk of Adverse Cumulative Effects based on foreseeable actions in Lower Ashland Creek is HIGH.

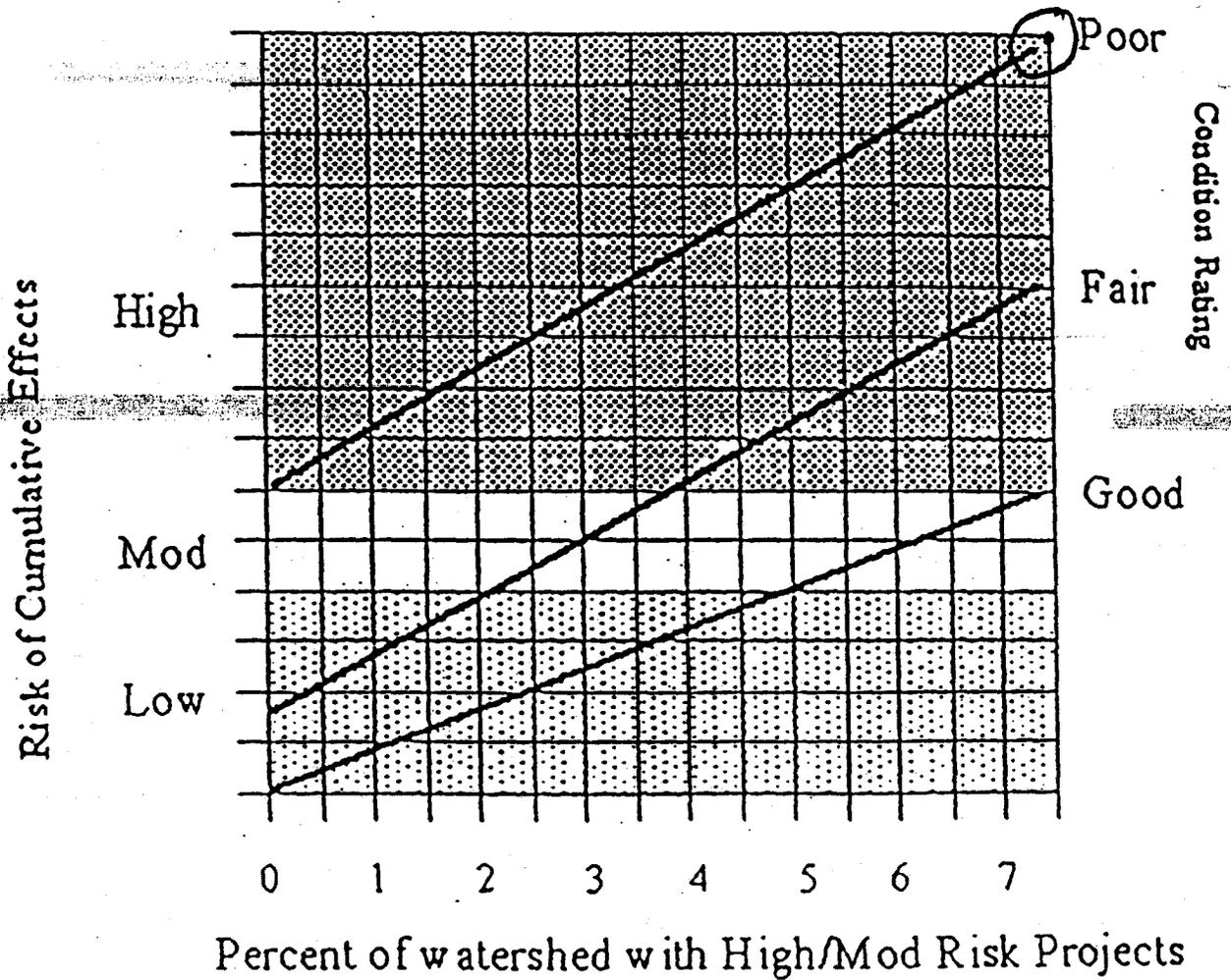
Ashland Creek, below Reeder Reservoir

Figure 1 Watershed Risk Rating



Ashland Creek, below Reeder Reservoir

Figure 2. Risk of Cumulative Effects



**Mt Ashland Ski Area Expansion Project
Cumulative Watershed Effects Analysis
East Fork Ashland Creek**

(Prepared by Debra Whittall, RRNF Hydrologist. April, 1999)

Potential for Adverse Watershed Cumulative Effects

Effects from land-use changes and channel modifications can lead to adverse cumulative effects within a watershed. The potential for them to occur and their magnitude will depend on the number, type, and location of changes (activities), watershed sensitivity, existing channel/habitat condition, and/or existing watershed condition ("Determining the Risk of Cumulative Watershed Effects Resulting from Multiple Activities", ESA-Section 7 CE Process, Final Version 1993).

Relative Risk

For the purpose of this project analysis, the relative risk of incurring adverse cumulative effects has been determined (below) based on field verified data and pertinent documentation including the 1995 Bear Watershed Analysis and the FEIS for the expansion of the Mt Ashland Ski Area. The area analyzed is the East Fork of Ashland Creek, a watershed 5,232 acres in size.

Watershed Condition Rating

The process used will result in an index of current and potential (based on foreseeable actions) watershed condition based on two key indicators which influence the hydrologic functions of a landscape. The two key indicators are road density and the percent of the watershed which is covered with "hydrologically immature" vegetation, defined as stands less than 11 inch diameter breast height (dbh) and stands greater than 11 inch dbh with less than 50% canopy closure (based on "mature habitat" definition, RRNF 1988 Vegetation Update, W.K. Bruckner).

The following table reflects the percent of hydrologically immature vegetation (as determined by Geographic Resource System (GRS) data):

Percent of Hydrologically Immature Vegetation within the East Fork of Ashland Creek		
1995 Bear WA*	Current Condition	Potential Condition+
4.2%	9.5%	11.5%

* Percentage as reported in the 1995 Bear Watershed Analysis was determined using PMR satellite data and based on vegetated stands less than 30 years old.

+ Potential condition was calculated based on implementation of the following proposed (or approved but not yet implemented) activities; ski area wastewater treatment facility, ski run expansion (Alternative 2), Research Natural Area (RNA) prescribed underburn units, Ashland Watershed Protection Project units, and the Ashland Watershed Trails Project.

Relative condition ratings are as follows; "Good" indicates less than 15% of the watershed contains stands less than 11 inch diameter breast height (dbh) and stands greater than 11 inch dbh with less than 50% canopy closure, "Fair" would indicate 15%-30% of the watershed contains less than 50% canopy closure, and a "Poor" rating would indicate greater than 30% of the watershed contains less than 50% canopy closure.

Therefore, the East Fork of Ashland Creek will maintain a "Good" condition rating based on hydrologically mature vegetation through the implementation of all foreseeable actions.

Road Density, is expressed here as miles of road per square mile of the East Fork Ashland watershed. Miles per square mile of road, in conjunction with watershed slope provides an index of the overall potential for roads to affect watershed function.

The following table presents a generalization about the effects on watershed condition of various road densities relative to gross watershed slope:

General Watershed Condition Based on Road Densities Relative to Watershed Slope

Condition Rating	Road Density (mi/sq mi) Watershed Slope > 30%	Road Density (mi/sq mi) Watershed Slope < 30%
Good	< 2	< 3
Fair	2.1 - 3.5	3.1 - 4.5
Poor	> 3.6	> 4.6

Current road density within the East Fork of Ashland Creek is 2.1 road miles per square mile and post-proposed project implementation is 2.2 road miles per square mile. The average watershed slope is 12.8%.

Therefore, the condition rating for both the current and post-proposed project implementation for the East Fork of Ashland Creek is "Good."

Additional Parameters

In addition to road density, consideration must also be given to where roads are located on the hillslope (upper, middle or lower third), the number of stream crossings, and the miles of road within the transient snow zone. These additional parameters are important hydrologically because roads function in two specific ways; 1) as surface flowpaths able to channel appreciable volumes of runoff and, 2) as an integrated component of the stream network (Wemple, 1994).

The total current road miles within this watershed is 17.5. 15 miles of the 17.5 miles correspond to Road 2060. Road 2060 is located primarily mid-slope and has eight stream crossings. Over 50% of the road miles are located within the transient snow

zone, the elevation band from 3,500-5,000 feet, where rain-on-snow-events are most likely to occur. Approximately a half mile of new road will be constructed within the proposed Ski Area Expansion project, where portions of the existing maintenance road will be connected and brought to the Skier Services Building. This road is located in the upper portion of the hillslope in a snow-dominated precipitation zone.

The midslope position of Road 2060 creates a large potential for intercepting subsurface flow along road cutbanks and routing it along ditches and through culverts to pre-existing and/or new channels. The road's hillslope position also runs a moderate risk of incising new channels below some culvert outlets. All of these effects were demonstrated during the January, 1997 storm event. Four culverts failed during the storm (this represents 4 of the 8 stream crossings) causing overland flow along the roadway, eventually incising new channels (gullies) and/or causing road failure.

The following post-flood restoration efforts were implemented along or adjacent to Road 2060:

- Clean one 18 inch culvert, remove and end haul slide debris from draw, re-establish ditchline and road template, and replace lost surfacing aggregate.
- Clean two culverts and haul out sediment, remove slide material and end haul, revegetate raw soil areas, and replace two damaged 18 inch culvert ends.
- Clean catchbasin above road, open and clean 24 inch culvert, key in class 10 riprap at base of fill slope, place class 7 riprap for shoulder armor, 120 cubic yards of embankment for fill washout, and aggregate surfacing.
- Clearing and grubbing for road realignment, realignment excavation and end haul material, class 4 riprap for fill slope protection, and revegetate raw soil areas.
- Apply class 4 riprap for fill slope protection, 110 cubic yards embankment fill, and construct key for riprap.

Implementation of this road rehabilitation work has decreased sediment production from Road 2060 caused by the January, 1997 storm to the East Fork of Ashland Creek. It will not, however, eliminate the potential for increased sediment production from future storm events.

A "Watershed Condition Rating" is determined by plotting the percent of hydrologically immature vegetation against road density in Figure 1. The result is a "Moderate" risk rating for the East Fork Ashland watershed both in its current condition and post-proposed project implementation.

Channel Condition Rating

Habitat and channel features integrate all natural processes occurring upslope from any given point. The key elements chosen for this analysis include temperature and sediment (measured as percent surface fines - less than 2mm diameter substrate).

Temperatures throughout the East Fork stream system are well-moderated and nearly optimum for resident fish. Temperatures recorded in the East Fork of Ashland Creek just above Reeder Reservoir in 1998 had a seven day average high of 60.3 degrees F.

Therefore, the East Fork of Ashland Creek maintains a "Good" rating for stream temperature.

Stream substrate (bedrock, small and large boulders, cobbles and gravels) are generally embedded with fine and coarse sediment throughout most of the stream system. However, the stream system above Road 2060 is likely to resemble historic levels of stream embeddedness.

Wolman Pebble Count data shows an average of 16.5% surface fines, indicating a "Fair" rating.

The Channel Condition Rating combines the two variables discussed above and is rated in "Fair" condition.

Overall Condition Rating

An "Overall Condition Rating" is determined by combining the Watershed and Channel Condition Ratings determined above. The rating may be considered a major criteria for determining the risk of adverse cumulative effects to resident fish populations in the East Fork of Ashland Creek.

Overall Condition Rating for the East Fork of Ashland Creek both in it's current condition and post-proposed project implementation is "Fair." Therefore, no additional risk are incurred in implementing the proposed actions.

Individual Project Risk Assessment

The second major criteria for determining the risk of adverse cumulative effects to fish populations is the level of project risk.

Virtually any activity runs the risk of creating damaging effects to the aquatic system. The degree of risk depends on project design, mitigation measures, current condition and proximity to aquatic systems. Refer to the Ski Area Expansion SEIS or AWPP EIS documents for specific design features and mitigation measures.

Each of the following **proposed or approved but not yet implemented** activities; ski area wastewater treatment facility, ski run expansion (Alternative 2), Ashland Watershed Protection Project units (Alternative 5), RNA underburn units, and Ashland Watershed Trail project are evaluated for their influence on sediment and temperature.

The relative risk of increasing temperature is determined by considering the distance from a perennial stream to the project (e.g. ski runs, thinning units, etc.) and the amount of shade reduction.

The relative risk of sedimentation is determined by considering the dominant landform type (e.g. glaciated mountain ridge-tops, cirque basins, dissected mountain slopes, etc.)

and slope position (e.g., upper, middle, lower, ridge, etc.). These factors are used to estimate the probability of sediment delivery to stream channels.

Ski Area Wastewater Treatment Facility:

Because the project will not expose or perpetuate loose, unconsolidated bare mineral soil within 500 feet of the closest stream course in the East Fork Ashland Creek watershed neither an increase in temperature nor sediment delivery is expected. Thus, this project is rated as LOW risk.

Ski Area Expansion (Alternative 2):

The majority of project acres are located in the upper slope position of the following dominant landforms; glaciated mountain slopes and cirque basins. Approximately 15.5 project acres are located within the stream bottom landform. Therefore, 15.5 acres are considered at HIGH risk of sedimentation.

Approximately 15.5 project acres are located within Riparian Reserve boundaries (within 150 feet of streams or wetlands larger than one acre). Within these 15.5 acres shade is not expected to be reduced to the stream course by more than 10%. Therefore, The relative risk of increasing temperature is LOW.

Ashland Watershed Protection Project:

The units within this project are located in either the ridge or upper slope position of the "mountain slope" dominant landform. Therefore, the relative risk of sedimentation is considered LOW.

There are no units within this project within 200 feet of a perennial stream. Therefore, the relative risk of increasing temperature is considered LOW.

Research Natural Area Prescribed Underburn Units:

The units within this project are located within the upper, middle and lower slope position of the "mountain slope" dominant landform. Units located in the upper and middle slope position are considered to be at LOW risk for sedimentation. Approximately 104 acres are located within the lower slope position and considered to be at MODERATE risk for sedimentation.

There are no units within this project within 200 feet of a perennial stream. Therefore, the relative risk of increasing temperature is considered LOW.

Ashland Watershed Trail Project:

Within the East Fork of Ashland Creek 0.6 mile of existing trail is proposed for reconstruction and is located in the upper third of the mountain slope landform. About 0.7 mile of existing trail is proposed for obliteration and is located within the upper, middle and lower slope position of dissected mountain terrain. Additionally, 0.7 mile of new trail is proposed to be constructed primarily along the ridgetop with a small portion midslope. Therefore, remaining trails are considered to be LOW risk for sedimentation.

No new trail will be constructed within 200 feet of a perennial stream. Therefore, the relative risk of increasing temperature is considered LOW.

No net change in actual trail mileage will occur within this watershed. Implementation of this project is expected to decrease existing and potential sediment sources created from these trails.

Risk of Adverse Cumulative Effects

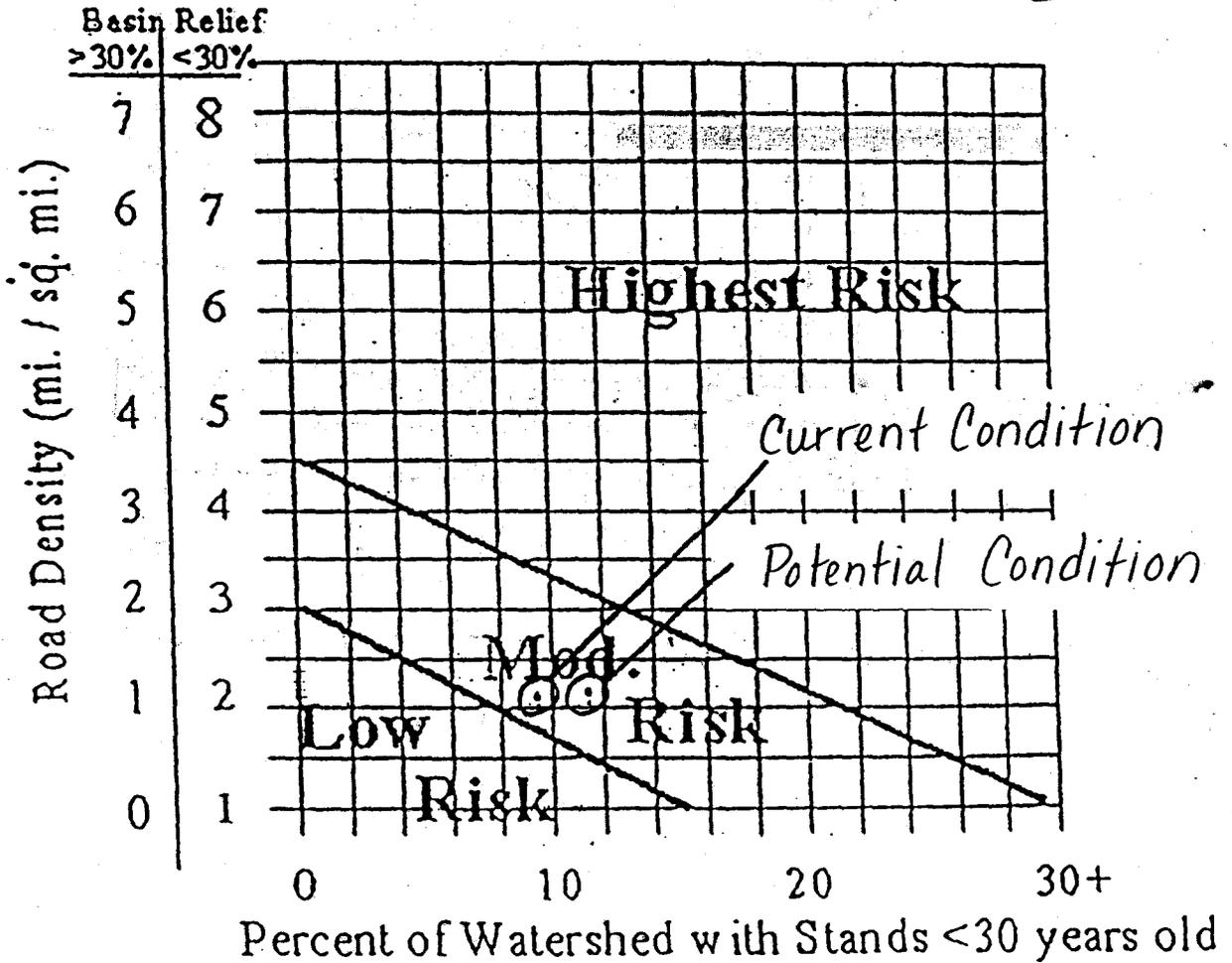
Given the above information, a High, Medium, or Low risk of cumulative effect can be determined for the East Fork Ashland Creek Watershed. The Overall Condition Rating of "Fair" is combined with the percentage of the watershed which has High or Moderate risk projects (2.3%) to determine the relative risk of adverse cumulative effects (Figure 2).

It is important to recognize that this process for assessing the potential risk of cumulative watershed effects assumes that all foreseeable actions are implemented simultaneously. This is not the case for this watershed. The 104 acres identified at moderate risk in the RNA Prescribed Underburn project will occur over a 5 to 10 year period, thus reducing the potential risk for adverse cumulative watershed effects as identified in this analysis.

Risk of Adverse Cumulative Effects based on foreseeable actions in the East Fork of Ashland Creek is MODERATE.

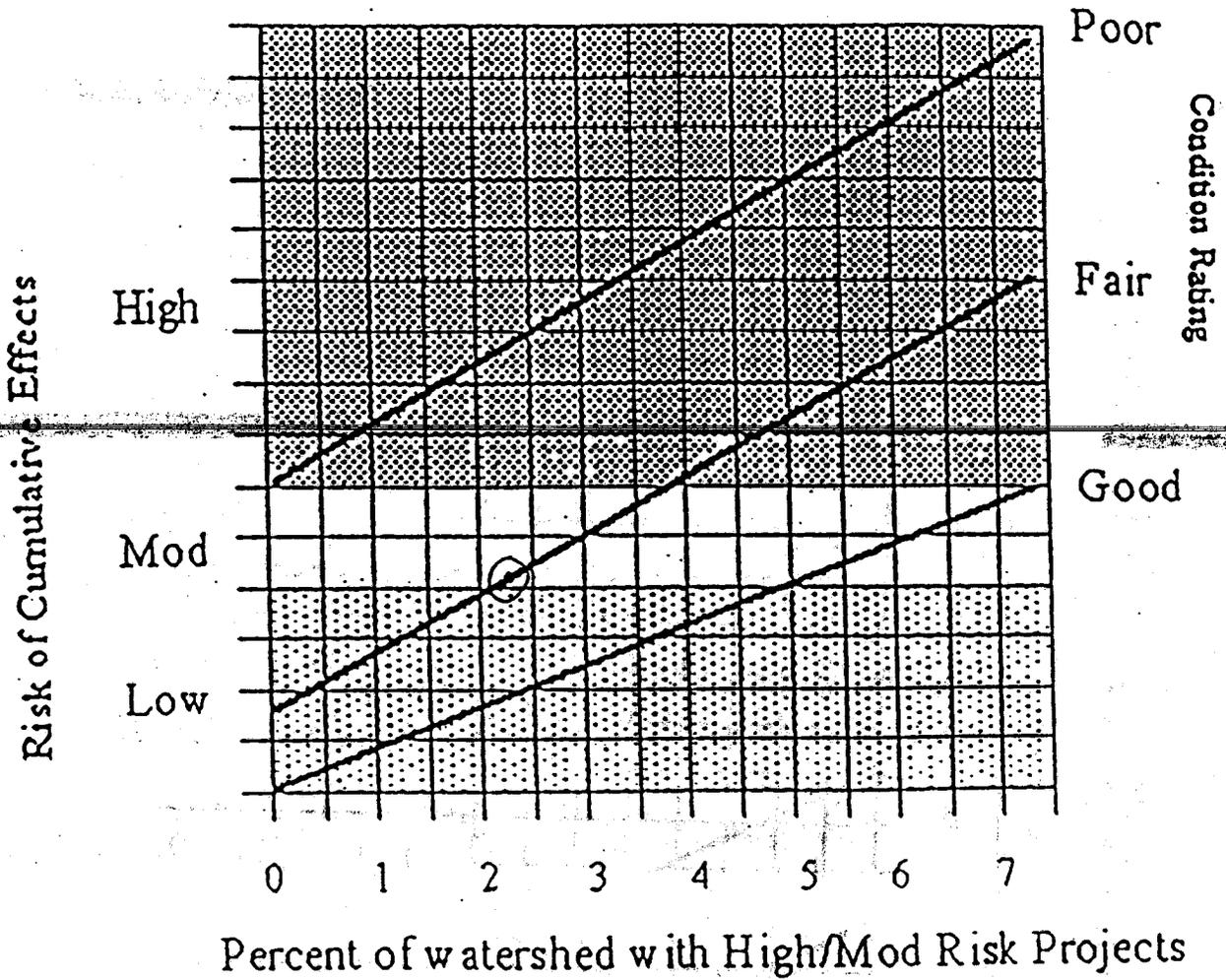
East Fork of Ashland Creek

Figure 1 Watershed Risk Rating

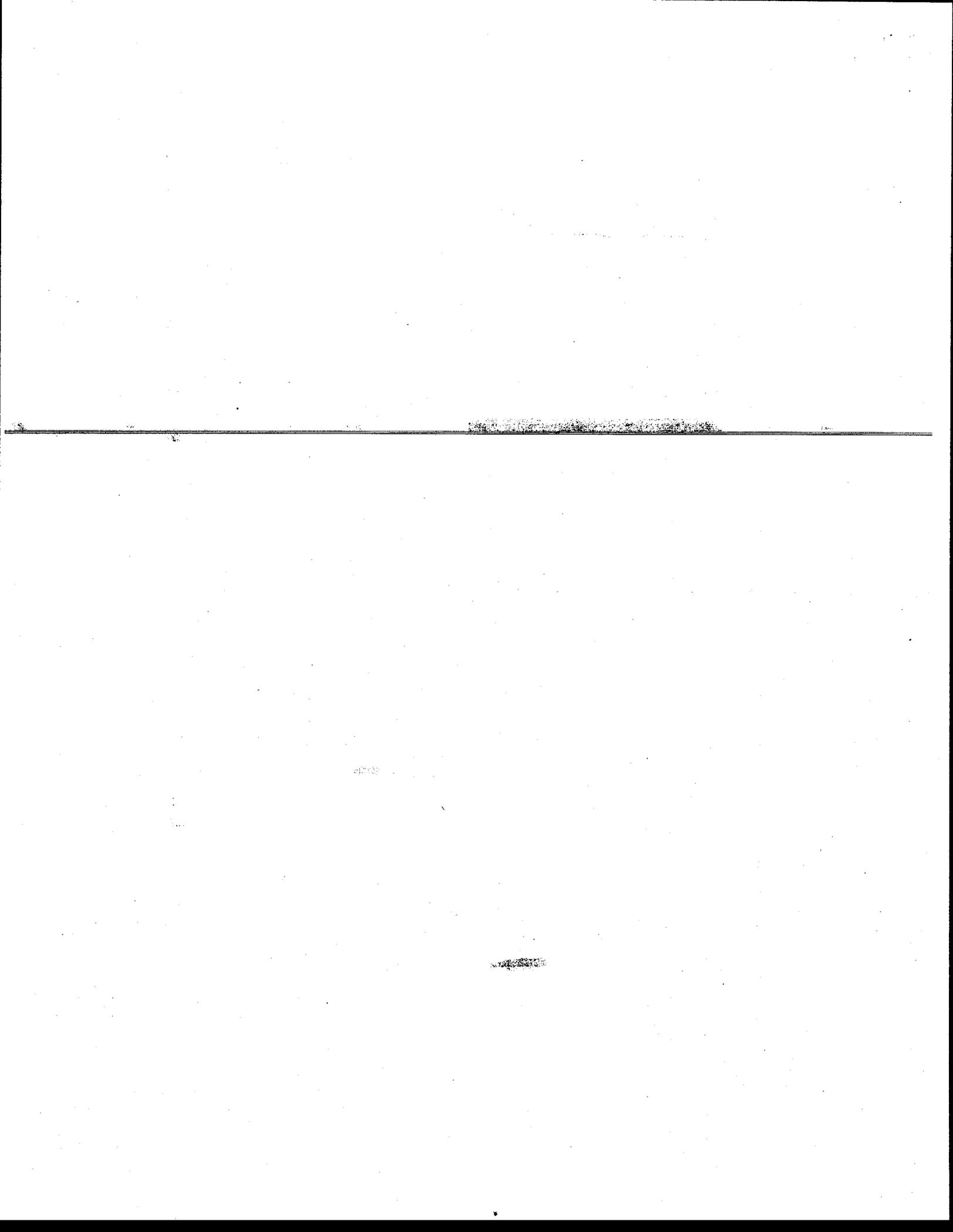


East Fork of Ashland Creek

Figure 2. Risk of Cumulative Effects



APPENDIX B: FISHERIES



DATE: May 15, 2000

REPLY TO: 1950 Planning

SUBJECT: Ashland Watershed Trails Management Project

TO: Linda L. Duffy, Ashland District Ranger

Introduction

Physical, biological, hydrological or ecological elements have been reviewed to evaluate the impact of the proposed action(s) on species listed, proposed, and candidate under the Endangered Species Act (ESA) or designated as sensitive by USFS Region Six. These species include Southern Oregon/Northern California coho salmon (SONC) (Oncorhynchus kisutch), listed as threatened; Klamath Mountain Province steelhead trout (KMP) (O. mykiss), a candidate species; and Southern Oregon/Northern California Coastal (SONCC) chinook salmon, a nonwarranted species under the Endangered Species Act (ESA). All of these fish species are included on the Regional Forester's Sensitive Species list. No special status exists for resident Southern Oregon/California Coastal (SOCC) cutthroat trout and rainbow trout.

This evaluation supports the Ashland Watershed Trails Management Project NEPA documentation and provides a basis for formal consultation/conferencing requirements with other Federal Agencies.

Purpose and Need for the Proposed Action

The discovery of unauthorized trail construction, and maintenance needs resulting from the flood of 1997, and the community's desire for an increase in recreation trails and access opportunities has lead to the need to complete access and travel management planning for the project area to protect Municipal Watershed and Late-Successional Reserve values (Also refer to EA Chapter I, Purpose and Need for the Proposed Action).

Watershed Overview

The project area occupies portions of eight watersheds including East and West Forks of Ashland Creek, which flows into Reeder Reservoir, an unnamed tributary below Reeder Reservoir, and the headwaters of Roca, Hamilton, Tolman, Clayton and Neil Creeks. All of these watersheds eventually enter into Bear Creek. Bear Creek is a fifth field nonkey watershed under the Northwest Forest Plan and supports anadromous fish populations of SONC coho salmon, SOCC chinook salmon, and KMP steelhead trout, and resident fish populations of SOCC cutthroat trout and rainbow trout.

Findings for the Endangered Species Act

The Ashland Watershed Trails Management Project proposes actions to improve watershed conditions by reducing resource degradation occurring due to unauthorized trail construction and completing maintenance needed as a result of the 1997 Flood. A detailed description of the Proposed Action and Alternatives is contained in the EA Chapter II, Alternatives Considered in Detail. Actions consider under this trails management proposal were analyzed for the potential for adverse direct, indirect, and cumulative impacts to water quality, hydrologic function, overall watershed condition, aquatic habitat, and fish species listed under

the Endangered Species Act. Actions considered with this trails management proposal involve the construction and reconstruction of trails in locations approved by resource specialists; appropriate design and mitigation measures are included to avoid or minimize the risk of sediment production to streams. Although there is a slight potential for minor short-term (1 to 3 years) sedimentation to occur, if sediment were to reach waterways, it would be difficult to separate from baseline levels of turbidity and sediment already occurring as a result of the predominately decomposed granitic terrain. Therefore, no anticipated change is expected in channel morphology, e.g., decrease in stream depth and increase in stream width, which could lead to increased stream temperature. Although minor disturbance would occur within a small portion of Riparian Reserves (about 0.24 acre of trail deactivation and about 0.39 acre of trail reconstruction on an existing road), the project would not remove vegetation or stream shade in these areas; therefore, no adverse impacts to water temperatures would occur. No project actions are proposed that would reduce existing or potential large wood recruitment to streams; therefore, no impacts to the instream structure, complexity of habitat, or stream bank stability would occur. ~~The project design should have negligible, if any, short-term effects from sediment, and no long-term adverse effects to threatened SONC coho salmon and their critical habitat, and non-listed salmonids downstream.~~ These actions will result in overall reduced erosion and sedimentation to the stream system, providing long-term beneficial effects.

Additionally, this project does not propose any actions that would influence parameters for which Bear Creek, Neil Creek or Lower Ashland Creek are listed as 303(d) water quality limited water bodies. No further impairment of Reeder Reservoir, listed as a 303(d) water quality limited water body for sediment, is anticipated since mitigation measures and project design would avoid or reduce the potential for erosion and sedimentation (See EA Chapter III, Impacts to Water Quality and Hydrologic Function). By providing well-designed recreation opportunities, combined with education and enforcement, potential sources of sediment from unauthorized trail construction would be reduced.

If the No-Action Alternative were selected, increased sediment could result. Increased sedimentation within a stream can decrease aquatic production by reducing habitat quality and loss of habitat. It is important from an aquatic standpoint that measures are taken to repair, deactivate, and reconstruct existing trails (resulting from unauthorized construction) in locations and with design criteria to reduce the potential for erosion and sedimentation.

This project was reviewed for consistency with Aquatic Conservation Strategy Objectives; detailed documentation of this assessment is contained in the EA (see EA Chapter III, Other Effects, Consistency with Northwest Forest Plan).

In summary: the nine objectives of the Aquatic Conservation Strategy are designed to ensure that physical and biological processes occurring within a watershed are maintained in properly functioning conditions to support well distributed populations of native riparian dependent organisms. Analysis determined that there would be:

- no adverse impacts to landscape scale geologic or hydrologic features;
- no adverse impacts on the connectivity of riparian and aquatic habitat since no actions are planned that would result in vegetation removal or barriers for the movement of organisms through the aquatic and riparian systems;

- no adverse impacts to the physical of streams, wetlands, or shorelines;
- no adverse effects on water temperatures since no stream shade would be removed;
- little or no risk of accelerating sedimentation above current baseline conditions considering project design and mitigations to avoid or reduce erosion and sediment;
- little to no risk of adverse impacts on hydrologic function, instream flow, duration of floodplain inundation, and water table elevation in wetlands would be maintained;
- no adverse impacts on structural diversity and complexity of riparian or aquatic habitat since no standing or down large wood is proposed for removal, and little or no vegetation removal would occur within Riparian Reserves.

Physical and biological watershed processes would be maintained in properly functioning conditions and riparian and aquatic habitats would be maintained to support well distributed populations of terrestrial and aquatic riparian-dependent organisms.

At worst case this project maintains conditions in fish-bearing streams. A finding of **No Effect** determination was made for SONC coho salmon, and **No Impact (NI)** determination for KMP steelhead trout and SONCC chinook salmon under the Endangered Species Act. No formal consultation or conferencing under the ESA is required with the National Marine Fisheries Service for listed species with a "No Effect" determination.

This project is consistent with the Rogue River National Forest Plan and Northwest Forest Plan and is expected to maintain or partially restore essential aquatic habitat functions, and should not impede recovery of SONC coho salmon, KMP steelhead trout or SONCC chinook salmon population in Bear Creek watershed if the project design criteria descriptions in the EA are adhered to.

Recommended Project Design Criteria

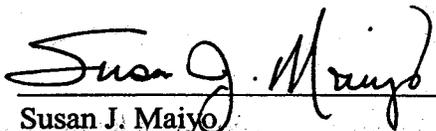
There are no expected impacts on either fish or habitat following the recommendations and mitigations below.

1. Minimize vegetation removal from cutslopes and mechanical or foot traffic on cutslopes of Forest Service Roads during road decommissioning. If disturbance to cutslopes occurs, assess the need for bank stabilization (native grass seeding or other approved erosion control) based on location, site conditions (topography), adjacency to surface water and risk for sediment to enter waterways.
2. Adhere to Hydrologist and Geologist recommendations for further sediment control and promotion of riparian/stream processes (EA, Chapter II, Mitigation).

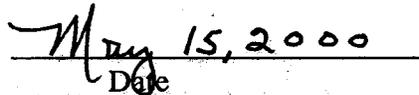
Monitoring

Monitoring stations have been established in the East Fork and West Fork of Ashland Creek for the objective of monitoring trends over time of stream conditions. The objective of trend monitoring is to provide data over time that can be used to assess how management activities are influencing the physical processes within a watershed, which influence instream conditions and aquatic habitat. The following parameters are monitored in East Fork and West Fork of Ashland Creek and are indicators, utilized for baseline data and reveal upward or downward trends in stream conditions and fish habitat.

- Pebble Count (changes in streambed substrate, sedimentation)
- Macroinvertebrate assemblages and abundance (biological integrity).
- Stream Temperature (trends in water quality) at one location in East Fork of Ashland creek, just above Reeder Reservoir (two additional sites have been proposed in association with the Mt. Ashland Ski Expansion and Ashland Watershed Protection Project, one just above Forest Service road 2060, and one below the lower wetland crossing within the expansion area).
- Permanent stream channel cross-sections (changes in bank stability and channel morphology).
- Photo Points (trends in riparian vegetation, channel condition)
- Monitoring of East and West Forks of Ashland Creek fish habitat will be ongoing as these streams, and serve as reference streams for assessing the health of other Siskiyou Mountain streams in granitic geology.



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Applegate/Ashland Ranger Districts
Rogue River National Forest


Date

APPENDIX C: WILDLIFE

**ASHLAND WATERSHED TRAILS PROJECT
TERRESTRIAL WILDLIFE SPECIES
BIOLOGICAL EVALUATION**

**ASHLAND RANGER DISTRICT
ROGUE RIVER NATIONAL FOREST**

February 2000

Prepared by:

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Reviewed by:

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District Wildlife Biologist**

REPORT OF THE COMMISSIONER OF THE GENERAL LAND OFFICE

LAND IN THE DISTRICT OF

EXECUTIVE SUMMARY

The Ashland Watershed Trails Project Biological Evaluation (BE) has a finding of "No Affect" to any Proposed, Endangered, Threatened, and Sensitive (PETS) species or their habitat. This "No Affect" finding is based on the mitigation measures and project description as stated in this BE.

INTRODUCTION

Proposed activities addressed in the Environmental Assessment (EA) for the Ashland Watershed Trails Project may impact Proposed, Endangered, Threatened and Sensitive species (PETS) or their habitat. This requires a Biological Evaluation to be completed (FSM 2671.44) to determine the possible effects the proposed activities would have on:

A. Species listed, or Proposed (P) to be listed, as Endangered (E) or Threatened (T), by the USDI Fish and Wildlife Service.

B. Species listed as Sensitive (S) by USDA Forest Service, Region 6.

A updated list (dated 2/1/00) of the PETS species was requested and received from the USDI Fish and Wildlife Service. This species list covers the area of the Rogue River National Forest. Formal consultation with the U.S. Fish and Wildlife Service was conducted for potential effects of this project on Threatened and Endangered species and the findings are reported under the Rogue River/South Coast Biological Assessment (1996). This document contains mandatory and recommended mitigation measures, also known as Project Design Criteria (PDCs), designed to minimize the potential detrimental effects to proposed or listed species as a result of project activities.

PROJECT AREA DESCRIPTION

The proposed project is located within the Klamath/Siskiyou Physiographic Province and would occur on the Ashland Ranger District of the Rogue River National Forest. Land allocations within the project area are identified in the Ashland Watershed Trails Project EA and Standards and Guidelines within those allocations are discussed in the Record of Decision (USDA/USDI, 1994) for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, and the Rogue River National Forest Land and Resource Management Plan (USDA, 1990).

Elevations within the proposed project area range from approximately 2,500 to 7,000 feet. The basic timber type is mixed-conifer with mountain hemlock and Shasta fir in the higher elevations. Wetland and riparian plant communities are found scattered within the area. In the upper elevations, there are various sub-alpine herbaceous and shrub communities (i.e. manzanita and snowbrush). Forest stands surrounding the project area range from late-successional to early successional forest habitats. Perennial and intermittent streams are found within and adjacent to the project area and provide riparian habitat and a year-round water source.

PROPOSED PROJECT

The proposed project consists of new trail construction, reconstruction, and deactivation, trailhead reconstruction, road closure, and road decommissioning. This project will involve ground excavation of the trail bed for existing and proposed trails, the cutting of trees posing a hazard to trail users (estimated to be within 100 feet vertical distance), and cutting of trees within the clearing limits of the trail bed. These trees will consist of both live and dead hardwoods and conifers \leq 14 inches dbh. It is estimated that 125 trees (ranging from 8-14 inches dbh) would need to be cut over the entire project area, in addition to sub-merchantable trees (1-7 inches dbh) within proposed trail beds. Any felled trees would be left on site since the project area is located within a Late-Successional Reserve.

The Ashland Watershed Trails Project EA provides a detailed description of the proposed alternatives. The three alternatives proposed to achieve trail management objectives for Ashland Watershed Trails Project are summarized below:

Alternative 1 is the "No Action" alternative in which no trail construction or related activities are proposed to occur.

Alternative 2 proposes to construct 7.8 miles of new trail, 11.3 miles of trail reconstruction, 0.7 mile of trail deactivation, 2.1 acres of trailhead reconstruction, and 2.6 miles of open road would be decommissioned (1.6 miles would be converted to trails). In addition, approximately 14.2 miles of road would be closed to motorized vehicles. Approximately 6.9 miles of road would be closed year-round and approximately 7.3 miles of road would be closed during the winter only. These roads would be open for Administrative Use Only.

Alternative 3 is the same as Alternative 2, with the exception of an additional 0.5 mile of trail reconstruction and 0.58 acre of trailhead reconstruction would occur, and there would be no road closures.

V. PETS SPECIES POTENTIALLY OCCURRING WITHIN THE PROJECT AREA

Table 1 displays PETS species considered in this BE. It also gives the potential for these species and their habitat to occur within the project area. All species potentially occurring are further discussed in the next section.

Table 1. Potential for PETS Species to occur in the project area.

SPECIES NAME	POTENTIAL FOR OCCURRENCE
FEDERAL ENDANGERED	
None	
FEDERAL THREATENED	
Bald Eagle Northern Spotted Owl (<i>Strix occidentalis caurina</i>) Marbled Murrelet (<i>Brachyramphus marmoratus</i>)	Low- Potential foraging habitat adjacent but no recorded sightings. No nesting habitat known to occur within or adjacent. High- Habitat and species present. None-Outside of habitat range.
FEDERAL PROPOSED	
Canada Lynx (<i>Lynx canadensis</i>)	Low-Potential habitat present but no recorded sightings.
REGION 6 SENSITIVE	
Peregrine Falcon (<i>Falco peregrinus anatum</i>) California Mountain Kingsnake (<i>Lampropeltis zonata</i>) Northwestern Pond Turtle (<i>Clemmys marmorata marmorata</i>) Red-legged Frog (<i>Rana aurora aurora</i>) Spotted Frog (<i>Rana pretiosa</i>) Siskiyou Mountain Salamander (<i>Plethodon stormi</i>) Ferruginous Hawk (<i>Buteo regalis</i>) Greater Sandhill Crane (<i>Grus canadensis tabida</i>) White-footed vole (<i>Arborimus albipes</i>) California Wolverine (<i>Gulo gulo luteus</i>) Townsend's Big-eared Bat (<i>Corynorhinus townsendi townsendi</i>)	Low- Potential foraging habitat present but no recorded sightings. No nesting habitat known to occur within or adjacent. Low- Potential habitat present but no recorded sightings. High- Habitat and species adjacent. None- No habitat present. None- Outside of range/No habitat. None- Outside of range/No habitat. None- Outside of range. None- Outside of range. None- Outside of range. Low- Potential habitat adjacent but no recorded sightings Low- Potential habitat adjacent but no recorded sightings.

THREATENED AND ENDANGERED SPECIES:

Bald eagle

The bald eagle was proposed to be removed from the Federal List of Endangered and Threatened Wildlife under the Proposed Rule dated July 6, 1999 by the USDI Fish and Wildlife Service. The Final Rule on this delisting has not been released.

There are no known bald eagle nest sites within or near the project area. The nearest bald eagle nest site is located on private land southwest of Emigrant Lake. Bald eagles are known to use Emigrant Lake for foraging. The only potential bald eagle foraging habitat within the Ashland Watershed is at Reeder Reservoir, however, eagles have not been reported foraging there. In addition, this project would not alter any potential habitat for the bald eagle. Alternatives 1, 2, or 3 are not expected to effect bald eagles or any potential habitat. No recommendations or mitigation is needed.

Northern Spotted Owl

A detailed account of taxonomy, ecology, and reproductive characteristics of the spotted owl can be found in the Interagency Scientific Committee Report (Thomas et al. 1990).

Historical surveys for spotted owls date back to 1986 and complete protocol surveys were conducted between 1991 and 1994. Twenty-six pairs or resident single spotted owls were located in the Mt. Ashland LSR (9 pairs and 2 single spotted owls in the Klamath NF portion and 13 pairs and 2 singles Ashland RD portion). For a complete account of all survey efforts, see the Mt. Ashland Late-Successional Reserve Assessment (USDA, 1996).

The project area is located within spotted owl Nesting, Roosting, and Foraging (NRF) habitat and dispersal habitat. It is also located within the Mt. Ashland LSR (#RO-248) and within a Critical Habitat Unit (CHU OR-76). Thirteen spotted owl pairs are known to be within 1.3 miles of the project area. The project area also lies between the Ashland/Oak Knoll LSR and the Soda Mountain LSR

Alternative 1- Under this alternative, no activities will occur so there will be no impact to spotted owls or their habitat.

Alternatives 2 & 3- Under these alternatives, the cutting of both live and dead hazard trees and trees within the trail bed would *not* alter the structure and function of spotted owl NRF habitat or dispersal habitat since the cut trees are scattered across a very large project area. Due to the fact that trails are linear and trailheads are less than a half acre in size, they would not disrupt the movement of dispersing owls or the connectivity within and between the Mt. Ashland LSR or adjacent LSRs. Some of the standing live and dead trees to be cut, may serve as habitat for spotted owl prey species; however, felled snags and live trees would be left on site to add to the present downed wood component of the habitat. In addition, numerous larger trees and snags are adjacent to the project area and provide all the necessary components of spotted owl NRF habitat.

Road closures would not harm or benefit any additional owl pairs within a ¼ mile of roads since these owls are currently protected by existing road closures. No owls are known to be within ¼ mile of proposed trail heads. There is, however, one owl pair (#013) within 0.13 miles of Trail # 6. The PDCs under the Rogue River/South Coast Biological Assessment (1996) require a seasonal restriction on the use of motorized equipment within 0.25 mile of the nest site or activity center between March 1-June 15. March 1-June 15 is considered the early nesting period, however, based on site specific conditions this restriction can be extended (e.g. late nesting attempt, etc.). Additional human activity within a ¼ mile of owl site #013 is not expected to disturb nesting owls. For the above reasons, this project is not expected to affect spotted owls, or their NRF or dispersal habitat.

Should a new spotted owl nest site or activity center be discovered within 0.25 mile of project activities, the district biologist should be notified immediately.

Canada Lynx

The Canada lynx is a boreal forest species that is highly dependent on the snowshoe hare as it's primary prey species. They live primarily in coniferous forests above 4,000 feet elevation with average snow depths of at least four feet, to preclude competing predators such as coyote and bobcat. Mature to late-successional forest provides denning and cover habitat for lynx. Stands with dense, young trees and shrubs provide habitat for snowshoe hare. The presence of lynx denning habitat adjacent to snowshoe hare habitat, and water, are necessary to provide for the needs of lynx. In addition, lynx also prefer heavy cover for travel between forage areas and will not usually cross open areas greater than 100 meters (USDA Forest Service, 1999).

A few historical sightings of lynx have occurred in Oregon although most have been in northeast Oregon. Two unconfirmed sightings of lynx have occurred in SW Oregon; one in 1992 in the Applegate Valley and one in 1983 in the Sky Lakes Wilderness. Several unconfirmed sightings were reported in recent years in the south Cascades. The Deschutes National Forest has recently confirmed lynx with the use of remote cameras and the use of scent marking stations that collect hair for DNA analysis.

Surveys were conducted on the Rogue River National Forest, using hair snare/scent stations, in the fall of 1999. Some unidentified mammal hair was collected from these stations and has not yet undergone DNA analysis. Portions of the project area are within potential denning and foraging habitat for lynx, however, the structure and function of this habitat will not be altered by the proposed project. Human disturbance will be increased in some areas, especially where new trail and trailhead construction occurs; however, some roads will be decommissioned and under alternative 2, the entire watershed would be closed to motorized vehicles, thus reducing disturbance.

Considering the southern proximity of the Rogue River National Forest, that there are no confirmed sightings of lynx on the Forest (and large bobcats can be easily misidentified as

lynx), and that the Forest is not considered to be within the lynx' historical range. None of the project alternatives are expected to affect the lynx or its habitat.

REGION 6 SENSITIVE SPECIES

Peregrine falcon

The Peregrine Falcon was removed from the Federal List of Endangered and Threatened Wildlife on August 25, 1999 by the USDI Fish and Wildlife Service Federal Register, and will be managed as a Sensitive Species by USDA Forest Service Region 6 (Regional Forester's Letter dated July 19, 1999).

Peregrine falcons are known to use cliffs and rock outcroppings as nesting habitat and riparian areas for foraging. No peregrine falcon nests sites, or potential nesting habitat, is ~~known within or adjacent to the project area. The nearest peregrine nest site is located~~ approximately 22 miles to the southwest of the project area. Peregrines may use habitats within and adjacent to the project area for foraging, however, none have been sighted. This project would not alter the function, or prey species diversity, of any potential foraging habitat, therefore, Alternatives 1, 2, or 3 are not expected to affect the peregrine falcon or its habitat. No recommendations or mitigation is needed.

California mountain kingsnake

This snake inhabits moist woods including coniferous and mixed hardwood-conifer forests, woodland, and chaparral. It is often found near well-lit rocky streams in wooded areas under rotting logs or rocks (Stebbins, 1985).

This snake is known to occur at lower elevations within the Ashland Watershed and possibly in lower elevations within the Mt. Ashland LSR. Ground and substrate disturbance, as well as disturbance of down woody material within riparian areas could potentially effect this species.

Disturbance of ground, substrate, and downed woody material will occur in riparian habitat under Alternatives 2 and 3. Proposed trail construction, reconstruction, and deactivation will cross riparian habitat in some portions of the project and the kingsnake could be directly affected. However, the high visibility of this snake, due mainly to its colorful body markings, would make avoidance of this species possible. Downed woody material in these areas may be displaced from its original location due to trail excavation, however, it will be left intact and continue to provide potential habitat. Trailhead reconstruction and road decommissioning is not expected to affect these snakes because these sites are normally located outside of riparian areas. Road closures would have a neutral affect on the kingsnake.

Affects to this species and its habitat under any of the proposed alternatives will most likely be minimal. To mitigate any potential direct affects to the kingsnake, it is recommended that caution be used in riparian areas when disturbing ground or substrate and disturbing downed

woody material. The biologist will inform the crew leader, inspector, or COR on how to identify this species so they can be avoided if found.

Northwestern pond turtle

This turtle inhabits marshes, sloughs, lakes, ponds, and slow-moving portions of creeks and rivers. They generally require emergent logs for basking sites and seem to be associated with sites providing underwater refuge, such as undercut banks, submerged boulders and roots. They are found almost exclusively near water, but also use terrestrial habitats for nesting, overwintering, and dispersal. Females leave the water May through July to nest. Nest sites occur in sunny locations with sparse vegetation (usually short grasses and forbs) and are typically excavated in compact, dry soils with a high percentage of clay or silt. They can be found from 10 to over 1300 feet away from water on generally south or west-facing slopes. Slope varies from 0-60 degrees, but most are on slopes less than 25 degrees (Holland, 1994). Dispersing individuals have been known to occasionally wander into and through the uplands away from the riparian corridors.

Pond turtles have been found in lower portions of the watershed along Ashland Creek, in Reeder Reservoir, and the ponds in Lithia Park. Reeder Reservoir is adjacent to the proposed project area. A field reconnaissance of the lower portion of trail #9 (Lamb Mine Trailhead to Reeder Reservoir) revealed that no potential nesting habitat is present within or adjacent to the project area. Juveniles dispersing in or out of Reeder Reservoir, or overwintering turtles, may be using habitat adjacent to the project area..

Alternatives 2 and 3 propose to deactivate Trail #9 which would benefit the turtles by reducing disturbance from hikers accessing Reeder Reservoir from the Lamb Mine Trailhead. To mitigate potential direct affects to any dispersing juvenile turtles, it is recommended to use caution and watch for turtles during the deactivation of Trail #9 (Alt. 2 & 3). Avoid them if found. Trail deactivation will occur in the late spring or during the summer so no overwintering turtles will be affected. No affects to the pond turtle or its habitat under any of the proposed alternatives are expected to occur.

California wolverine

The California wolverine inhabits dense coniferous forests and are known to use open sub-alpine forests up to and beyond timberline. They are associated with rocky outcrops, steep mountainous areas, and transition zones between primary cover types. Den sites in Idaho were associated with caves, rock outcrops, or talus fields, and are typically above timberline. Large, remote areas with little to no human activity appear to be essential to wolverines, as they are very sensitive to even small amounts of human disturbance (USDA Forest Service, GTR RM-254, 1994). Forested riparian zones likely are important forage habitats for these furbearers. Riparian zones provide a higher density and diversity of small mammals which attract predators, such as furbearers (Mamone, 1994). These riparian zones are typically forested and provide relatively safe travel corridors that allow for animals to move within and between watersheds. Habitat loss as a result of timber harvest, roads, landscape fragmentation, and human disturbance has been principle factors affecting this species.

~~Over the last 30 years, a few unconfirmed sightings of wolverine have occurred in the~~ Siskiyou Mountains, in the South Cascades, within the Marble Mountains to the south of the project area, and in some areas of Siskiyou County. Wolverine have extremely large home ranges (100-600km²) and are difficult to detect and inventory. During a furbearer study on Ashland and Applegate Ranger Districts in 1994-1996, as well as snow transects in the same area, no wolverine evidence was documented. An ongoing wolverine detection project using cameras in the Crater Lake National Park has yet to detect any wolverine. Surveys for several species of furbearers have been conducted in the Ashland Watershed, but no evidence of wolverine was detected.

The western portions of the project area have some of the characteristics of potential foraging or denning habitat. Potential foraging opportunities could be provided by the mosaic of mature habitats, riparian areas, and high elevation meadows occurring adjacent to the project area. Rock outcroppings located above timberline, adjacent to portions of proposed trail #7 (extending from the Mt. Ashland access road to McDonald Peak to Wagner Glade Gap), offer some potential for denning habitat. However, this route is currently known to be used by hikers to access the Wagner Butte trail and even this small amount of human disturbance may preclude this species from using any adjacent potential habitat. Considering the lack of evidence for presence of wolverine, the current level of human activity, and the fact that trail construction activities will not remove or degrade any potential wolverine habitat, no effects to wolverine or its habitat are expected under any of the project alternatives. No Recommendations or Mitigation needed.

Townsend's big-eared bat

Townsend's big-eared bat inhabits caves, mines, boulder fields, and buildings which they use for roosting purposes, including maternity roosts, and hibernacula (Burt and Grossenheider, 1976; Ingles, 1965). Human disturbance can cause roosts to be permanently abandoned by bats (Maser, et.al., 1981).

Potential habitat for Townsend's big-eared bat is located adjacent to the project area in the Lamb Mine and the Ashland Loop Mine, however, current levels of human disturbance

within these mines may cause them to be avoided by this species (especially the Lamb Mine which is readily accessible to the public). Cross et.al. (1997) surveyed these mines for bats in 1996. He captured 4 species of bats in Lamb Mine and 2 species in Ashland Loop Mine, however, the Townsend's big-eared bat was not captured (Cross et.al., 1997). If human disturbance were eliminated, according to Cross et.al. (1997), these mines could serve as roosting sites and hibernacula for the Townsend's big-eared bat.

Under Alternative 3, additional disturbance to potential habitat for this species could occur. Trail #8, and its associated Trailhead C, under Alternative 3 will be reconstructed and will most likely increase human activity within the Lamb Mine. As stated above, current levels of human activity within these mines (esp. the Lamb Mine) may preclude Townsend's big-eared bats from using this habitat. It is recommended that, should alternative 3 in particular or any of the proposed alternatives be selected, these mines be closed through gating to protect bat species from additional and current levels of human disturbance. See also Protection Buffer bat species in the Ashland Watershed Trails Project EA. Winter surveys of these mines are also recommended to determine if they are being used as hibernacula.

Other than the above, trail construction, reconstruction, and deactivation, as well as trail head reconstruction activities are not expected to affect bats under any of the proposed alternatives. Microclimates inside the caves will not be altered by the removal of trees, and implementation activities occurring outside the mines are not expected to disturb bats. Road decommissioning under Alternatives 2 and 3 will have a neutral effect on bats. The proposed road closure of the 2060 road from the Forest boundary to four corners, under Alternative 2, would most likely benefit bats by reducing disturbance through reducing vehicular access to the caves.

Cumulative Effects

After analysis of other projects occurring within the Ashland Watershed, i.e. the Ashland Watershed Protection Project and the Mt. Ashland Ski Expansion Project, no additional cumulative effects are expected to occur as a result of the proposed Ashland Interface Trails Project under any alternative.

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APPENDIX D: BOTANY

BIOLOGICAL EVALUATION (B.E.) FOR THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES

PROJECT: Ashland Watershed Trails Project
DISTRICT: Ashland
PREPARED BY: Wayne Rolle
DATE PREPARED: Sept. 17, 1999

NOTES:

1. Northwest Forest Plan (NWFP) species (Survey & Manage, and Protection Buffer species) are discussed in a separate document.
2. For many projects I create yet another document to address ALL botanical resources, including locally rare species, special plant communities, non-native species, etc. In this case, I am submitting no other documents other than a short note to Mike Ricketts and Kristi Mastrofini requesting noxious weed mitigation along the Lamb Mine Trail and alerting them to the mitigation outlined in this B.E.

STEP #1: PRE-FIELD REVIEW: The project area has no known or suspected occurrences, or potential habitat, for plant species listed or proposed under the Federal Endangered Species Act.

There are known occurrences of the following Forest Service Region 6 sensitive plant species in the immediate vicinity of proposed trails and trail work: *Hazardia whitneyi* ssp. *discoidea*, *Tauschia howellii*, *Horkelia tridentata*, and *Horkelia hendersonii*.

There is potential habitat for one other sensitive species, *Cypripedium fasciculatum*, in the project area. There is also potential habitat for a number of non-sensitive locally rare species.

STEP #2: FIELD RECONNAISSANCE:

Field reconnaissance has been done on many portions of this project area in previous years for other projects, by myself, Gretchen Vos, and Tom Maier. Some specific trail routes were looked at. Also, rare plant field reconnaissance in the nearby Hazred project covered some of the same areas.

New field reconnaissance was conducted by myself on one day in January 1999 and on numerous days in July of this year while conducting reconnaissance on the Ashland Watershed Protection Project (Hazred). The January day was a bryophyte survey day and many of our sensitive vascular plants could not have been identified that day. The July days were a good time for these species to be visible and easy to detect.

I found no new sensitive plant occurrences in my 1999 field reconnaissance. The previously known occurrences are along the routes for proposed trails #2, 3, and 7. I also found no occurrences of non-sensitive locally rare species.

STEP #3: CONFLICT DETERMINATION AND ANALYSIS OF SIGNIFICANCE OF EFFECTS:

There is a conflict along the route for trails #2, 3, and particularly trail #7 (the McDonald Ridge trail).

Along trails #2, and 3 is a population of *Horkelia tridentata* that could lose individuals during trail construction. The number of *Horkelia tridentata* individuals that could potentially be lost is probably not enough to affect the long term viability of this species in the Ashland watershed. However, mitigation is proposed below that will reduce or eliminate negative effects on individual plants.

Along trail #7 (McDonald Ridge trail) are populations of *Hazardia whitneyi* ssp. *discoideus*, *Horkelia hendersonii*, and *Tauschia howellii*. The *hazardia* is fairly rare in Oregon but relatively common and secure in California. The *tauschia* and *Henderson's horkelia* are narrow Klamath Mtn. endemics.

The *tauschia* is particularly rare and all known populations are important for its viability. If not properly routed away from populations, new trail construction here could cause soil erosion and eventual

elimination of two *Tauschia* populations. This would have a severe effect on the viability of *Tauschia howellii* over its entire range.

Trail construction on the north end of proposed trail could cause the loss of some *Horkelia hendersonii* individuals. That might have some negative effect on range-wide viability of *Horkelia hendersonii*.

Trail construction on trail #7 could cause the loss of some *Hazardia* plants. This could affect the viability of this species in the immediate local area, but would have little or no effect on viability of this species in Oregon, and none over its entire range.

Mitigation is proposed below that will eliminate any threat to viability of any of these species at any geographic scale.

RECOMMENDATIONS:

1. I recommend that I help select the final routes of Trails #2, 3, and particularly #7, to avoid most of the *Horkelia tridentata*, and all of the *Tauschia howellii*, *Hazardia Whitneyi*, and *Horkelia hendersonii* locations.

/s/ Wayne Rolle

Wayne Rolle, Forest Botanist, Rogue River National Forest

ASHLAND WATERSHED TRAILS PROJECT
REPORT ON NORTHWEST FOREST PLAN SPECIES;
SURVEY & MANAGE COMPONENT 1 & 2, AND PROTECTION BUFFER SPECIES
FUNGI, LICHENS, BRYOPHYTES, AND VASCULAR PLANTS

From Wayne Rolle, Sept. 17, 1999

NOTES:

Survey and Manage components 3 and 4 are not discussed. We have no local responsibility for these species. Many are quite common. Several that could occur in the project area are common in southwestern Oregon and there is no conservation concern.

KNOWN OCCURRENCES PRIOR TO FIELD RECONNAISSANCE

A couple species are known in the Ashland watershed and general vicinity but none are known to be immediately adjacent to, or in the path of, any of the proposed trail routes.

SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Note: I've limited this discussion to those species which have potential to be in the immediate vicinity of proposed trail routes

Fungi

Component 1 species: Several. I didn't try to identify these individually.

Component 2 species: None (habitat is not present in trail route locations).

Protection Buffer species: *Aleuria rhenana*, *Otidea leporina*, *Otidea onotica*, *Otidea smithii*, *Sarcosoma mexicana*

Lichens

Component 1 species: Maybe one or two. I didn't try to identify these individually.

Component 2 species: None (outside the expected range of any component 2 lichens)

Protection Buffer species: none (there are no lichens in the protection buffer category)

Bryophytes

Component 1 species: Maybe one or two. I didn't try to identify these individually.

Component 2 species: None (habitat is not present in trail route locations).

Protection Buffer species: *Buxbaumia viridis*, *Ulota megalospora*

Vascular plants

Component 1 species: [all these are also classified as component 2 (next line

Component 2 species: *Allotropa virgata*, *Cyripedium fasciculatum*

Protection buffer species: None (there are no vascular plants in the protection buffer category)

SPECIES SELECTED FOR FIELD RECONNAISSANCE

Component 1 species:

The NW Forest Plan does not require surveys for these species and I did not conduct them. However, I elected to watch for any component 1 species I could recognize, during my field reconnaissance for sensitive and rare vascular plants and the NW Forest Plan species listed at the bottom of this section.

Component 2 and Protection Buffer Species:

The fungi listed above do not appear above ground every year. Therefore it is impractical to survey for them. One of them, *Sarcosoma mexicana* fruited in abundance in spring 1998 and appears to be throughout most of our true fir forests. It is not a conservation concern.

Therefore, the final list of NW Forest Plan species I designed my field reconnaissance to detect includes only the bryophytes *Buxbaumia viridis* and *Ulota megalospora*, and the vascular plants *Allotropa virgata* and *Cypripedium fasciculatum*.

FIELD RECONNAISSANCE RESULTS

I conducted the field reconnaissance on one day in January 1999 and a couple days in July 1999. I did not survey trail routes where trails or old roads already exist, or where the canopy had been removed by past logging, burns, etc. These areas were not considered suitable habitat.

No NWFP species were found. Also, I did not find any other unusual bryophytes or lichens during my field reconnaissance.

DISCUSSION OF PROJECT EFFECTS ON THE SPECIES THAT WERE FOUND

No NWFP species were found so there are no project effects on those species.

RECOMMENDATIONS

1. I recommend no mitigation for Northwest Forest Plan bryophytes, lichens, fungi, or vascular plants.
2. See my proposed mitigation for FS sensitive vascular plants and for noxious weeds (other documents).

ISI Wayne Rolle

Wayne Rolle, Forest Botanist, Rogue River National Forest

APPENDIX E: HERITAGE RESOURCES



United States
Department of
Agriculture

Forest
Service

Rogue River
National
Forest

333 W. 8th Street
P. O. Box 520
Medford, OR 97501-0209

Reply To: 2360

June 25, 1999

Subject: Cultural resource survey report for the "Ashland Interface and Watershed Trails Project

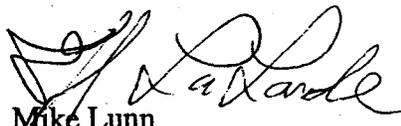
To: State Historic Preservation Officer
1115 Commercial Street, N.E., Suite 2
Salem, Oregon 97301-1002
ATTN: Le Gilson

Enclosed is a copy of a report by our Forest archaeologist detailing archaeological and historical survey done this year for a proposed recreational trail system project on the Ashland Ranger District. (In addition to the 1999 survey report are copies of relevant portions of previous survey reports that deal with the project area.)

Four previously undocumented cultural resource sites were found during the 1999 survey; none of them are eligible to the National Register of Historic Places. The proposed project (which involves ground-disturbing construction of narrow-tread hiking/biking/equestrian trails, several small trailheads [i.e., widening of existing roads for increased parking], and obliteration of some existing user-built trails) will have no impact on any significant or potentially significant cultural resources.

The Ashland Interface and Watershed Trails Project is *determined to be a "no historic properties" undertaking that will have no effect on significant cultural resources as per 36 CFR 800.*

Please contact Jeff LaLande (541 858-2200) if you should have any questions or comments. Thank you.


for Mike Lunn
Acting Forest Supervisor

encl.

cc: Ricketts:01
Mastrofini:02
Johnson:02 (for Job file RR-1146)
LaLande



Project Review for Heritage Resources
under the terms of the
1995 Programmatic Agreement between ACHP, SHPO, and USFS R6
(Consultation PA, 3/95)

FOREST: Fogus River RANGER DISTRICT: Ashland COUNTY: Jackson
UNDERTAKING/PROJECT NAME: Ashland Interface/Watershed Trails Project
USGS QUADS: Ashland (15') PROPOSED IMPLEMENTATION DATE: 1999-2000

By signing this document, the Forest Specialist certifies that for this project the Forest complies with Section 106 of the National Historic Preservation Act, under the terms of the above Programmatic Agreement (PA). This form shall be kept on file with the project NEPA analysis file as supporting documentation.

PROGRAMMATIC REVIEW (Stipulation III.A) SHPO CONSULTATION NOT REQUIRED:

The undertaking named above meets the conditions listed in Appendix A and will be excluded from case-by-case review.

The undertaking named above meets the conditions listed in Appendix B and will be excluded from case-by-case review. Inspection and/or monitoring documentation is attached.

STANDARD CASE-BY-CASE REVIEW (Stip. III.B) DOCUMENTATION TO SHPO AS NOTED:

NO HISTORIC PROPERTIES: An appropriate inventory has been conducted for this undertaking and no properties potentially eligible for the National Register of Historic Places (NRHP) have been located; therefore, the undertaking meets the criteria given in Stip. III.B.1 of the PA. The undertaking may proceed. A COPY OF THE DOCUMENTATION WILL BE FORWARDED TO SHPO FOR INFORMATION WITHIN 60 DAYS.

NO EFFECT: An appropriate inventory has been conducted for this undertaking and property(s) which may be eligible for inclusion in the NRHP have been located. Avoidance measures will be implemented per Stip. III.B.2(a-d), if necessary; therefore the undertaking meets the criteria given in Stip. III.B.2 of the PA. The undertaking may proceed. A COPY OF THE DOCUMENTATION WILL BE FORWARDED TO SHPO FOR INFORMATION WITHIN 60 DAYS.

NO ADVERSE EFFECT: An appropriate inventory has been conducted for this undertaking and property(s) which may be eligible for inclusion in the NRHP have been located which may be affected by the undertaking. DOCUMENTATION WILL BE FORWARDED TO SHPO PER STIP. III.B.5(a). The undertaking may proceed in 30 calendar days if SHPO does not object.


Forest Specialist

6/24/99
Date

FOR SHPO USE

For NO ADVERSE EFFECT undertakings, please indicate your opinion of our determination by marking the appropriate line below, then sign and return this form to us.

I Concur with NO ADVERSE EFFECT Signed _____

I Do Not Concur, because in my opinion:
 This undertaking will have an ADVERSE EFFECT _____ Date _____
 This undertaking will have NO EFFECT _____

Remarks: