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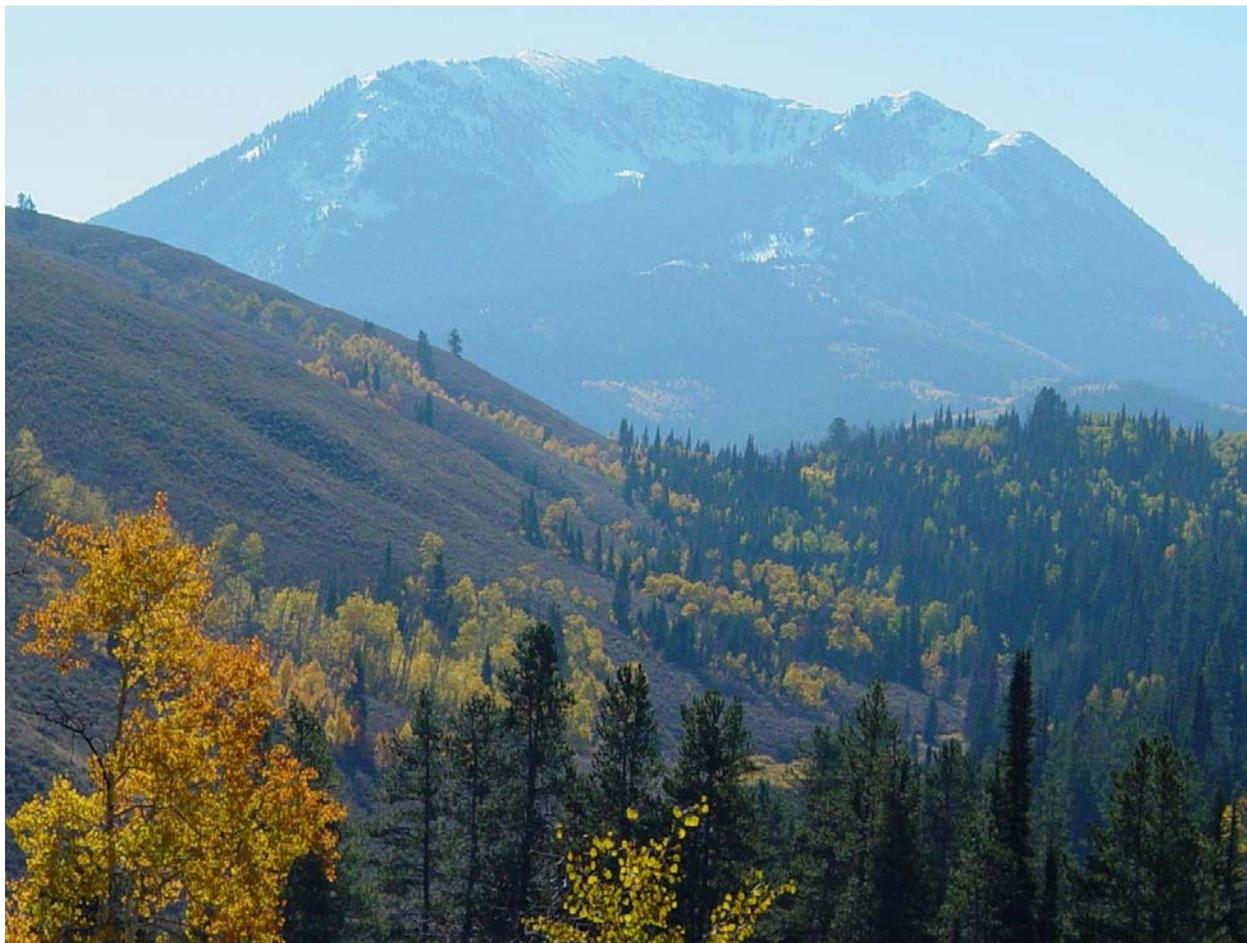
October 2008



## Environmental Assessment

# Winschell Dugway Trail System

Soda Springs Ranger District  
Caribou-Targhee National Forest  
Bonnevile County, Idaho



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**Abstract:** This Environmental Analysis describes the management alternatives for the Winschell Dugway Trail System Environmental Analysis. The Winschell Dugway project is located 20 miles northeast of Henry, Idaho. Alternatives include No Action and three Action Alternatives. The Proposed Action (Alternative 2) constructs and reconstructs ATV and non-motorized trail.

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# Table of Contents

**Summary ..... i**

**Introduction ..... 1**  
Document Structure ..... 1

**Chapter One ..... 2**  
Purpose and Need ..... 2  
Proposed Action ..... 5  
Scope of the Proposed Action ..... 11

**Chapter Two ..... 19**  
Alternatives ..... 19  
Alternative One, No Action ..... 20  
Alternative Two, Proposed Action ..... 23  
Alternative Three, Dugway Route as an ATV Trail ..... 25  
Alternative Four, Winschell Dugway Non-motorized Trail ..... 25  
Conclusions ..... 28

**Chapter Three ..... 30**  
Affected Environment and Environmental Consequences ..... 30  
Past Actions ..... 30  
Present Activities ..... 31  
Reasonable Foreseeable Actions ..... 32  
Available Information for Analysis ..... 32  
Issues ..... 33  
Affected Environment ..... 35

**Environmental Consequences ..... 39**  
Definitions and Assumptions ..... 39  
Alternative One: No Action ..... 41  
Alternative Two: Proposed Action ..... 42  
Alternative Three ..... 44  
Alternative Four ..... 45

**Environmental Consequences ..... 49**  
Potential Extraordinary Circumstances ..... 49

**Alternative One – No Action ..... 51**

**Effects Common to All Action Alternatives ..... 51**

**Alternative Two ..... 52**

**Alternative Three ..... 53**

**Alternative Four ..... 53**

**Comparison of Alternatives ..... 53**

**Conclusions ..... 54**  
Issue Three: Fish Habitat and Aquatic Species ..... 54

**Environmental Consequences for Fish Habitat and Aquatic Species ..... 58**  
Alternative One – No Action ..... 58  
Alternative Two ..... 59  
Alternative Three ..... 60

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Alternative Four .....	60
Conclusions .....	60
Issue Four: Caribou City Roadless Area’s Wilderness Characteristics and Roadless Values .....	61
<b>Environmental Consequences for Roadless Areas.....</b>	<b>67</b>
Direct and Indirect Effects of All Alternatives .....	67
Alternative One, No Action.....	67
Alternative Two .....	68
Alternative Three .....	69
Alternative Four .....	69
Conclusions.....	69
Issue Four: Recreation Uses and Settings.....	70
Existing Condition for Recreation Use .....	70
<b>Environmental Consequences for Recreation Use and Setting.....</b>	<b>71</b>
Alternative One – No Action .....	71
Alternative Two .....	72
Alternative Three .....	73
Alternative Four .....	74
Conclusions.....	74
Cultural Resources.....	74
Environmental Consequences .....	78
Alternative One- No Action .....	79
Alternative Two .....	79
Alternative Three .....	80
Alternative Four .....	80
Cumulative Effects.....	80
Threatened, Endangered, and Sensitive Plants.....	81
Wildlife.....	81
Forest Plan Direction .....	82
Existing Condition.....	82
<b>Environmental Consequences .....</b>	<b>84</b>
Alternative One, Direct and Indirect Effects .....	84
Alternative Two, Direct and Indirect Effects .....	85
Alternative Three, Direct and Indirect Effects .....	86
Alternative Four, Direct and Indirect Effects.....	87
Conclusion.....	87
Noxious Weeds.....	87

## Summary

The Soda Springs Ranger District proposes to construct and reconstruct an ATV trail and hiking trail in association with the historic Winschell Dugway wagon road, to relocate sections of the Eagle Creek ATV trail in the vicinity of Caribou Mountain. The project area includes approximately 47,900 acres of National Forest System lands within the Barnes, Anderson Gulch, Bilk, Jackknife, Tincup and the North Fork of Eagle Creek drainages. This EA discloses the direct, indirect and cumulative environmental impacts that would result from the proposed action and alternatives with mitigation measures and monitoring.

The interdisciplinary team analyzed four alternatives, including the no action alternative. The proposed action includes the construction of an ATV trail using the southern portion of the wagon road, but departing north to the ridgeline, and reaching Caribou City via the Bilk Creek drainage. The proposed action also includes reconstructing the northern portion of the Dugway from Jackknife Basin to Caribou City as a non-motorized system trail. Additional alternatives considered include reconstructing the entire Winschell Dugway as an ATV trail and reconstructing the entire Winschell Dugway as a non-motorized trail. The non-motorized trail would allow mountain bike travel, hiking and stock use. Each action alternative includes trail design criteria, mitigation measures and monitoring.

The Environmental Assessment discloses the environmental effects of each alternative. The scope of the decision is limited to the proposed action and its alternatives subject to the goals, objectives, standards and guidelines set forth in the 2003 Land and Resource Management Plan for the Caribou portion of the Caribou-Targhee National Forest. A vicinity and project area map is included in Chapter One of this EA.

This EA is not a decision document. It describes existing resource conditions, discloses effects and compares alternatives for the District Ranger to consider in reaching a course of action for the management of the Winschell Dugway and associated travel routes. If the District Ranger determines that the proposed action would not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27), an Environmental Impact Statement will not be prepared. The Ranger's decision will be stated and explained in a Decision Notice and Finding of No Significant Impact.



# Introduction

## Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts:

- **Chapter One: Introduction.** The section includes information on the history of the proposed action and the purpose and need for the action. This section also details how the Forest Service informed the public of the proposed action.
- **Chapter Two: Comparison of the Proposed Action and Alternatives with Mitigation.** This section provides a more detailed description of the agency's proposed action as well as alternatives to achieving the purpose and need. Alternatives were developed based on the issues raised by the public and others. This section includes a description of mitigation measures, design features and monitoring for each alternative. Finally, this chapter provides a comparison and summary of the environmental consequences associated with each alternative.
- **Chapter Three: Affected Environment and Environmental Consequences.** This chapter is organized by resource area. Within each resource section, the affected environment is described first followed by the effects of the No Action Alternative. This establishes a baseline for evaluating and comparing the action alternatives. Effects from action alternatives are then analyzed and compared to the no-action alternative.
- **Agencies and Persons Consulted.** This section provides a list of preparers and agencies consulted during the development of the environmental assessment.

Additional documentation of the process, including more detailed analyses of project-area resources, may be found in the planning record located at the Soda Springs Ranger District Office in Soda Springs, Idaho.

## **CHAPTER ONE**

### **Purpose and Need**

#### **Introduction**

The Forest Service has prepared this Environmental Assessment (EA) to fully disclose the effects of constructing and reconstructing an ATV trail and hiking trail in the vicinity of the Winschell Dugway wagon road and relocating sections of the Eagle Creek trail in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. The project area lies along the slopes of Caribou Mountain and is administered by the Soda Springs District of the Caribou-Targhee National Forest. It includes 47,929 acres of National Forest System lands within the Barnes, Anderson Gulch, Bilk, Jackknife, Tincup and the North Fork of Eagle Creek drainages. This EA discloses the direct, indirect and cumulative environmental impacts that would result for the proposed action and alternatives to the proposed action.

This EA is prepared according to the format established by the Council of Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508). Chapter One explains the purpose and need for the proposed action, discusses how the proposed action relates to the Land and Resource Management Plan for the Caribou Forest (USDA FS 2003), and identifies potential issues with the proposed action. Chapter Two describes the proposed action and alternatives, comparing them within the framework of these issues. Chapter Three describes the natural and human environments potentially affected by the proposed action and alternatives and the potential effects that are anticipated. Chapter Four contains the list of preparers, the EA distribution list and literature cited. This EA incorporates documented analyses by summation and reference including the Caribou Forest Plan Revision FEIS (USDA-FS 2003) and the Caribou Travel Plan Revision FEIS (USDA-FS 2005).

The Interdisciplinary Team used a systematic approach for analyzing the environmental effects of the proposed action and alternatives. The planning process complies with NEPA and the CEQ regulations. Planning was coordinated with the appropriate federal, state, and local agencies and governments. Notification and consultation was done with local federally recognized tribes.

Additional documentation is available in the project record located at the Soda Springs Ranger District office in Soda Springs, Idaho. These records are available for public review upon written request.

## **Background**

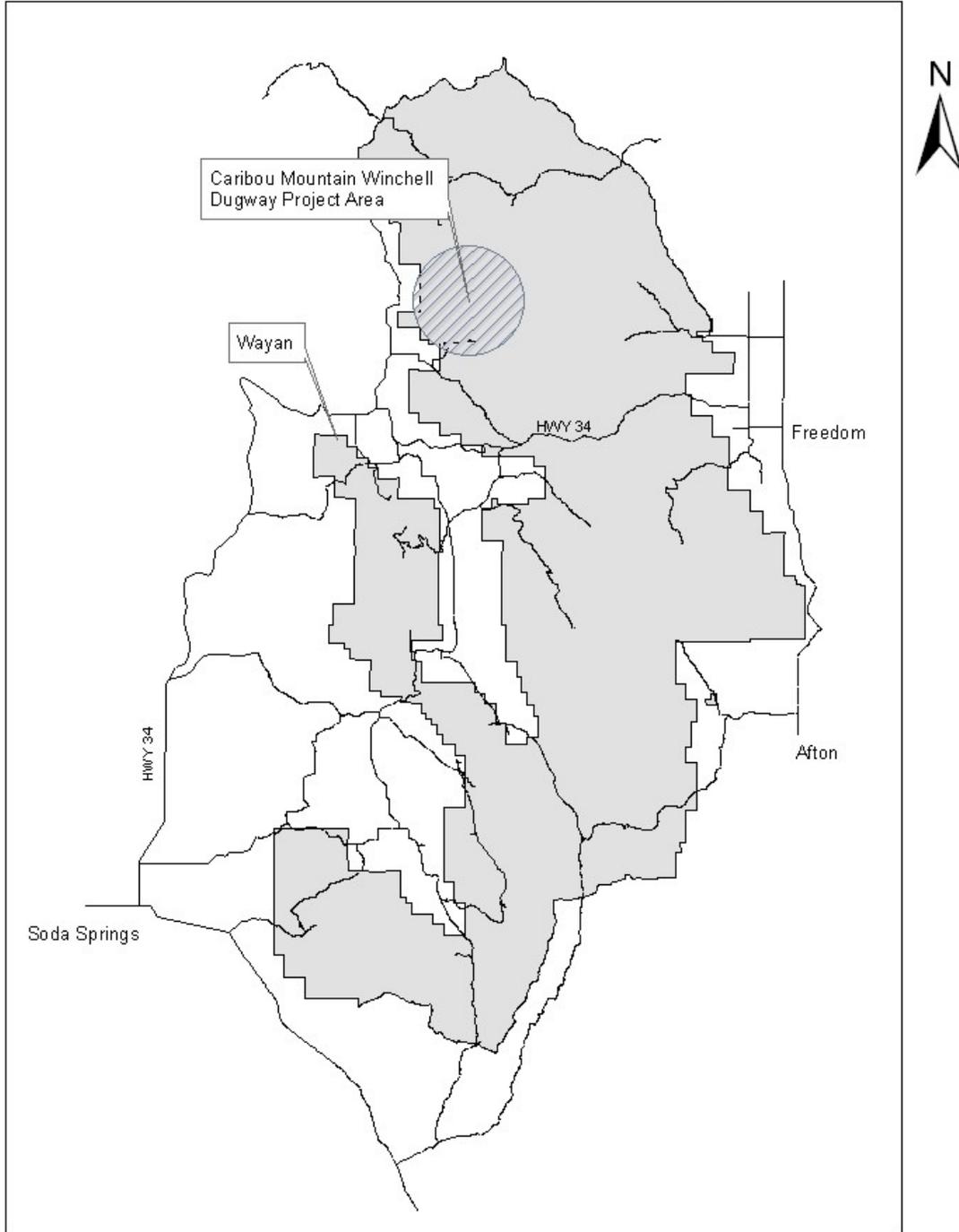
Forest Plans describe the desired conditions for forest resources and programs. Forest Plans prescribe management parameters and actions that will move resources and programs towards these conditions. The Forest Plan includes goals, objectives, standards and guidelines for forest resources and programs; along with monitoring methods to determine the progress of plan implementation. The Caribou-Targhee National Forest is a combined forest. The northern districts are managed under the 1997 Targhee Revised Forest Plan. The southern districts of Soda Springs, Montpelier and Westside are managed under the 2003 Revised Caribou Forest Plan.

In 1972, the President issued Executive Order No. 11644, which requires each federal agency to designate “areas and trails” for off-road vehicle use or restriction. The Forest Service initiated travel planning in 1982 to control motorized travel on Forest System lands. While the Caribou Forest Plan sets standards, guidelines for travel on the forest, it does not determine the management of individual roads and trails. A forest’s Travel Plan and Map identify which roads and trails allow what type of travel and the time of year travel routes are open for use. Individual road and trail management and snow season travel management was determined by the Caribou Travel Plan Revision EIS and decision in 2005. This NEPA process analyzed management alternatives for the 2,443 miles of road and trail on the Soda Springs, Montpelier and Westside districts, excluding the Curlew National Grasslands. The Record of Decision for the travel plan stated that management of the non-motorized trail that occurs on portions of the Winschell Dugway wagon road would be analyzed at a later date (USDA- FS 2005). Preliminary field work for the Winschell Dugway analysis began in 2006 in cooperation with Idaho Fish and Game, Idaho Department of Parks and Recreation and Bonneville County Parks and Recreation.

## **Project Location**

The project area is located in Bonneville County, on Caribou Mountain east of Grey’s Lake Wildlife Refuge and approximately 45 miles northeast of Soda Springs, Idaho. The legal descriptions for proposed actions are Range 44E, Township 4S Sections 2, 3, 4, 7, 9, 10, 11, 14, 15, 18, 22 and 27.

# Winchell Dugway Project Area Caribou-Targhee N.F. Soda Springs Ranger District



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## **Bonneville County Proposal**

Bonneville County has been a partner with the Caribou-Targhee National Forest in managing and maintaining forest trails and roads within the county. County commissioners and County park and recreation staff have proposed additional ATV opportunities and improvements within the project area. Additional ATV opportunity within the area is also supported by the Idaho Department of Parks and Recreation.

## **Historic Motorized Use and Public Interest**

The Winschell Dugway wagon road was constructed in the late 1880s as a freight route to transport supplies to the mining town of Caribou City (Idaho State Historical Society). According to local residents, the southern portion of the wagon road was traveled by full-sized passenger vehicles up to the 1980s, when the route was “closed” to motorized travel by the Soda Springs District Ranger. The route was closed to full-sized vehicles due to wet, muddy conditions. (Varilone, 2005). Many trail enthusiasts would like to travel the Dugway. Public comments during the Forest Plan process and the travel plan process included strong interest in managing the wagon road as a non- motorized trail and strong interest in managing the wagon road as a motorized trail.

## **Implement the Caribou Revised Forest Plan**

The desired condition for the Caribou Mountain Special Emphasis Area states that management allows Forest visitors to experience the mining history of the area in a roaded natural to semi-primitive motorized setting and provides educational opportunities for the public (USDA-FS 2003, page 4-28). Currently there is little interpretation or educational resources available that tell the story of the area; however the Forest Plan directs the forest to complete an interpretive plan specifically for the Caribou Mountain Area by 2008. The only motorized access directly into Caribou City is on a full-sized high clearance road (FR #165). The proposal and alternatives would improve and diversify access to the Dugway and to Caribou City. The Forest Plan does not prohibit building new trail; however, the plan includes a guideline to rehabilitate existing trails before building new trails (USDA-FS 2003, pg 3-36). New motorized and non-motorized trail construction would provide the opportunity of traveling the old wagon road by means of hiking, biking, horseback-riding and using a motorcycle or ATV. The proposed action of building new trail would provide a unique recreation experience within the Caribou Mountain Special Emphasis Area and help visitors directly experience the mining history of the mountain.

## **Existing Trail Segments are Causing Sedimentation**

An objective of this project is to identify and correct sources of sedimentation and erosion caused by poorly designed motorized travel routes within the project area.

## **Proposed Action**

The Soda Springs Ranger District of the Caribou-Targhee National Forest, proposes to construct and reconstruct motorized and non-motorized trails within the Caribou Mountain Special Emphasis Area and adjacent prescription areas (See project area map). The proposed actions would not occur within the Caribou Mountain Recommended

Wilderness prescription area. The proposed actions would not occur on private patented lands within the project area.

The Proposed Action includes:

- Construction/reconstruction of approximately 7.8 miles of ATV trail from Morgan Meadow to Caribou City. Approximately 2.1 miles of the proposed route coincide with the southern end of the historic Winschell Dugway wagon road (Trail #092, currently not a system trail). The proposed route diverts from the Winschell Dugway at Jackknife Creek traveling north to the ridgeline and then to an abandoned mining road in the upper reaches of Bilk Creek, the route reaches Caribou City via the Bilk Creek drainage. The proposed route would include construction of stream crossing structures (bridges) necessary for the safety of users and to minimize erosion. The ATV trail would be closed to ATV and motorcycle travel from mid-November to the end of May due to wet conditions and snow.
- Reconstruction the northern portion of the historic Winschell Dugway route (3.7 miles from Jackknife Creek to Caribou City) as single-track non-motorized system trail (Trail #092, currently not a system trail).
- Relocate approximately three miles of the North Fork of Eagle Creek ATV trail (Trail #451) within the Caribou Mountain Special Emphasis Area and the Bridge Creek prescription area. The existing designated ATV trail along the North Fork of Eagle Creek would be relocated to eliminate numerous undeveloped water crossings. Eleven ford crossings would be replaced with two bridges.
- Maintenance on sections of the Barnes Creek Road, (RD #381) to improve surface drainage.
- Create and implement a co-operative agreement and plan for signing, public information and enforcement for travel within the project area. Cooperators include Bonneville County Parks and Recreation and Idaho Department of Parks and Recreation. All partners would agree to terms and conditions within a Memorandum of Agreement to manage trail uses within the project area.
- Archeological surveys have been completed in compliance with National Historic Preservation Act and other cultural resource laws and in consultation with the Idaho Historic Preservation Office (SHPO).
- Biological assessments or evaluations have been completed and mitigation will be implemented for plants, animals and fish as required by the Endangered Species Act and agreements with the United States Department of Interior Fish and Wildlife Service.
- Forest Plan direction and Best Management Practices for Forest Service Sensitive Species, Management Indicator Species, vegetation, soils, riparian areas

and trails has been identified in this analysis and will be applied during project implementation.

### **Decision Framework**

Based on the analysis in this EA, the District Ranger will decide whether or not to construct and reconstruct system trail and improve/replace road drainages and culverts in the vicinity of the Winschell Dugway historic wagon road.

### **Relationship to Forest Plan and Travel Plan**

Forest planning takes place on several levels: national, regional, forest and project specific. An EA is generally a project-specific analysis. Its scope is confined to addressing the issues and consequences of the proposed action. The analysis does not attempt to re-address decisions made at higher levels.

The Forest Plan embodies the provisions of the National Forest Management Act, its implementing regulations, and other guidance. The Forest Plan sets forth the direction for managing resources and programs of the Caribou portion of the Caribou-Targhee National Forest.

### **Forest-wide Direction for Roads and Trails and Recreation**

Forest-wide goals for roads, trails and access include:

- National Forest Service roads and trails needed for long-term objectives are maintained in a manner that provides for user safety and minimizes impact to forest resources. Roads and trails not needed for long-term objectives are decommissioned, stabilized, and restore to a more natural state.
- Forest roads and trails are managed to maintain or improve watershed condition.
- The forest transportation system is developed and maintained at the minimum level necessary to effectively and efficiency manage natural resources, provide user access, protect capital investments, provide for user health and safety and protect the environment.
- The Forest and local governments work cooperatively towards resolution of R.S. 2477 assertions. (RFP-III-36)

Forest -wide goals for recreation include:

- Developed and dispersed recreation facilities, access, and programs are consistent with the desired ROS setting and other resource goals of the area in which they are located.

Forest-wide standards and guidelines for roads and trails include:

- Roads Analysis shall be used to inform road management decisions; including construction, reconstruction or obliteration of roads. (Standard)
- Minimize construction of new transportation routes, evaluate existing routes, and reconstruct or relocate those routes not meeting management goals. (Guideline)
- Design and construct roads to a standard appropriate to their intended use, considering safety, cost and resource impacts, emphasizing protection of water quality. (Guideline)
- Open Motorized Route Density (OMRD) shall not exceed the levels identified on the Plan ORMD Map. OMRD is defined as the miles of designated motorized roads and trails per square mile within a specific prescription area polygon. (Standard)
- The construction of new or maintenance of existing motorized and non-motorized access routes should be consistent with the ROS class in which they are located. (Guideline) (RFP III-36-38)
- Operations, maintenance and rehabilitation of existing trails should be the priority over new construction.

Plan direction for specific resources is discussed under each resource section within this assessment. See Table of Contents for resource listing and page.

## **Management Prescription Direction**

The Forest Plan uses management prescriptions to define the uses and activities within a given prescription area. The 47,929 acre analysis area consists of three prescription areas; the Caribou Mountain Special Emphasis Area, the Tincup Rangeland prescription area, and the Bridge Creek Winter Range prescription area. The prescribed open motorized route density ceiling for each prescription area would not be exceeded in any of the action alternatives.

### **Prescription 2.1.4(b) Caribou Mountain Special Emphasis Area**

This management prescription applies to the western portion of Caribou Mountain and includes the majority of the project area. Most of the proposed trail construction and reconstruction is within this prescription area. Management is focused on allowing visitors to experience the mining history of the area in a roaded natural, semi-primitive motorized and non-motorized setting. Evidence of past and current mining activities

such as ditches, tailings, piles and building are visible. This area provides a spectrum of recreational opportunities in a natural setting. Access ranges from surfaced roads, to trails, to none. The amount of human activity will vary, depending upon your location. Prescription area direction includes:

- Management protects the unique cultural, historic, ecological, botanical, geologic and zoologic resources of the area (goal).
- The historic values associated with Caribou Mountain are maintained and interpreted to the public (goal).
- Natural disturbances and processes are allowed to play their natural role in ecological succession, except where resource value will be adversely affected (goal).
- Within five years of signing the ROD, complete a plan for interpretation of the historic mining areas (objective).
- Site-specific areas may have snags removed for human safety and other resource management needs (wildlife guideline).
- Motorized use is allowed only on designated roads and trails during the snow-free season. Cross country motorized use is allowed during the snow season (access standard).

### **Prescription 6.2(b) Tincup Rangeland Management Area**

The purpose of this management prescription is to achieve and maintain healthy rangelands for livestock forage production and watershed conditions. This area is included in the project area to include the Tincup drainage and to assess related recreation uses within this prescription area. This prescription focuses on maintaining and restoring rangeland ecosystem processes and functions to achieve sustainable resource conditions. Lands included in this prescription are mostly non-forested. Activities include a full range of land and resource treatment activities designed to achieve restoration goals, including but not limited to watershed restoration, thinning, prescribed fire, wildfire for resource benefit, and noxious weed treatments. Restoration goals are also requirements of wildlife, riparian, watershed, water quality, or other goals. Domestic livestock can often be seen. Important seasonal ranges for big game animals exist in these areas. Range improvements, such as fencing, corrals, and water developments are present. Roads, trails, and stock facilities exist. Herders, range riders, camps and transport vehicles may be seen at various times and places. Dispersed recreation activity occurs throughout these areas. Prescription area direction includes:

- Maintain and restore ecological processes and functions of rangeland ecosystems (goal).
- Provide forage on a sustained-yield basis that meets rangeland value and wildlife habitat (goal).

- Support economic activity important to rural and tribal communities and local governments (goal).
- Achieve restoration objectives in an efficient and cost effective way (goal).
- Maintain snags at greater than or equal to 40% biological potential for woodpeckers (wildlife standard).
- Motorized use is allowed only on designated roads and trails during the snow free season. Cross country motorized use is allowed during the snow season (access standard).

### **Prescription 2.7.2 (d) Bridge Creek Elk and Deer Winter Range Area**

This management prescription emphasizes management actions and resource conditions that provide quality elk and deer winter range habitat. The North Fork of Eagle Creek reconstruction work would occur within the prescription area. Habitats are managed for multiple land use benefits, to the extent, these land uses are compatible with maintaining or improving elk and deer winter range.

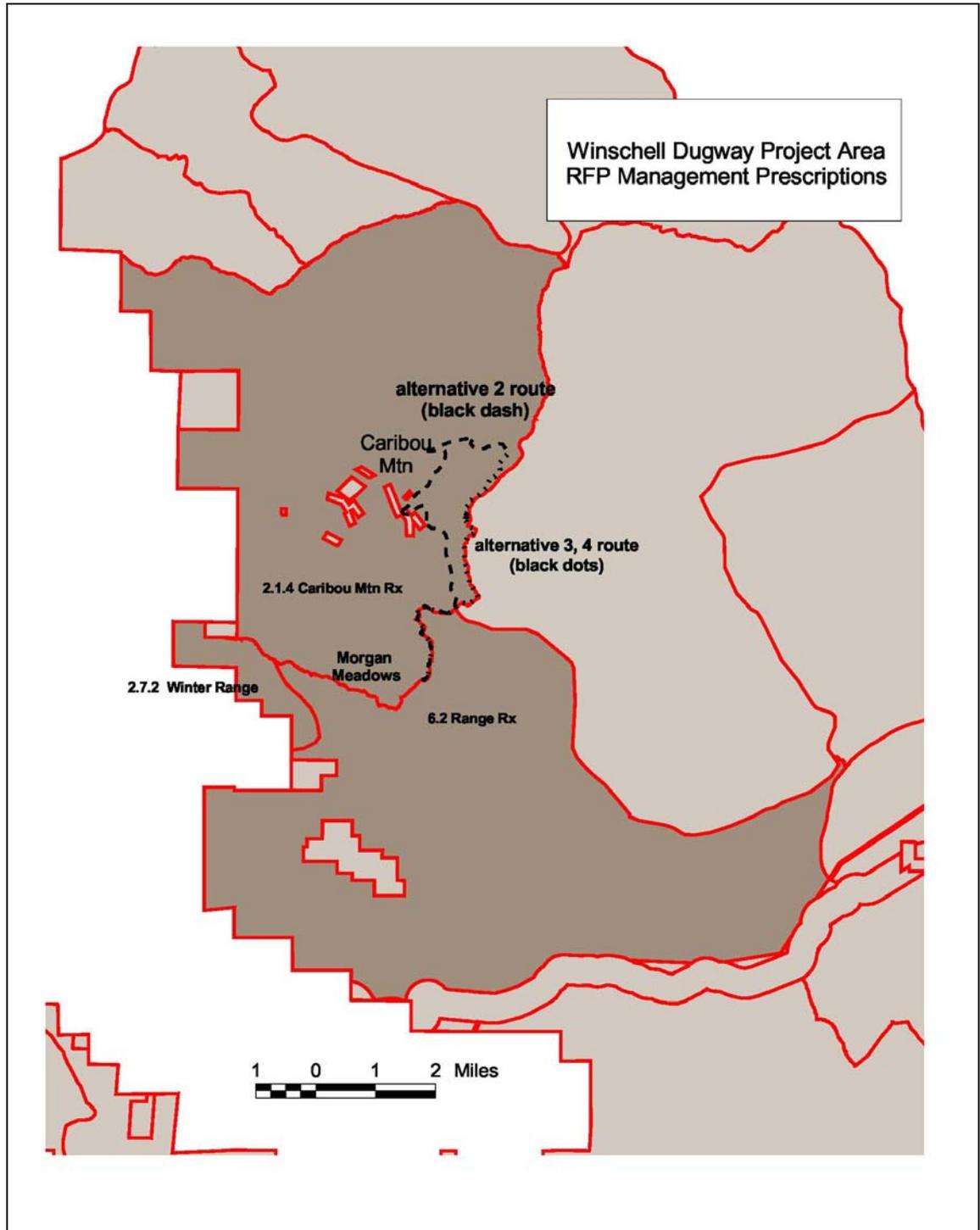
These areas are natural winter ranges for deer and elk. They represent the winter range areas that contribute to a population's ability to maintain it over the long-term. Moose may also be present.

Vegetation management occurs to maintain or improve winter habitat conditions. Winter range forage is adequate, includes a good mixture of grasses, forbs and shrubs, and is well-distributed throughout the area. Cover is maintained and well-distributed.

Access is managed or restricted to provide security for wintering elk and deer. Summer and winter motorized travel is restricted to designated roads and trails.

Livestock grazing, timber management, recreation, and other resource management activities can occur as long as desired vegetation and security conditions are being maintained. Prescription area direction includes:

- Provide quality elk and deer winter range (goal).
- Livestock grazing is managed to insure forage conditions are compatible with big game winter range goals (goal).
- Vegetation is managed to maintain or improve cover or forage conditions needed for wintering deer and elk (goal).
- Human disturbance to wintering big game animals is minimized (goal).
- Motorized use is allowed only on designated roads and trails year round (access standard).



## **Scope of the Proposed Action**

Section 40 CFR 1508.25 of the NEPA implementation regulations provides guidance for the interdisciplinary team in determining the proper scope of the EA. The proposed actions are limited to the project area and are specific to the management, use and monitoring of roads and trails within the 47,929 acre analysis area (See Project Area Map, p. 4)

The project area includes Caribou Mountain Special Emphasis prescription area, the Tincup Rangeland prescription area and the Bridge Creek Winter Range prescription area (Caribou Forest Plan Map #8)), Idaho Fish and Game Unit 66A within Bonneville County, Idaho. Trail construction/reconstruction is proposed within the Caribou Mountain Special Emphasis prescription area. Trail realignment of the North Fork of Eagle Creek Trail is proposed within the Bridge Creek Winter Range prescription. The Tincup Rangeland prescription area is included within the project area to include the Tincup drainage and associated recreation uses and non-motorized settings into the analysis. The project would provide road and trail management for the next 10 to 15 years. After 15 years it is likely that a new forest plan would provide opportunities to change management emphasis of forest resources and programs on the portion of the Caribou managed under the 2003 Forest Plan.

## **Tribal Consultation**

In compliance with Executive Order 13175, a meeting to discuss the proposed action, alternatives, mitigation measures and potential impacts was held with the Shoshone Bannock Tribal staff in April of 2008. A letter detailing the proposed action and maps was sent to the Northwest Band of the Shoshoni in October of 2008. Tribal staff noted that interpretive themes for the area should include the Tribes' uses of the area before the mining era of the 1800s.

## **Public Involvement**

The CEQ defines scoping as "...an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action" (40 CFR 1501.7). Among other things, the scoping process is used to invite public participation, to help identify public concerns and to obtain public comment at various stages of the analysis.

Mailings were sent in August of 2007 to over 156 individuals, groups and agencies. This mailing included a detailed description of the proposed action and a map of the proposed motorized trail route in relation to the Winschell Dugway. A legal notice was printed in the Idaho State Journal in August of 2007. A total of 31 responses were received at the end of the 30-day comment period. A meeting to discuss the proposed action with the Region Five Fish and Game Office in Pocatello was held in October of 2007. Meetings to discuss the proposed action with Bonneville County commissioners and staff were held in August and November 2007 and June of 2008. The Winschell Dugway Trail System was listed in the Caribou-Targhee Forest Schedule of Proposed Actions beginning in spring of 2006 and appearing quarterly since that date.

## Issues

Issues serve to highlight effects or unintended consequences that may occur from the proposed action. Issues that have a “cause and effect” relationship to the proposed action help formulate alternatives to and mitigation for the proposed action. The proposed action and alternatives can be compared and contrasted for the decision maker and public within the frame work of “cause and effect” issues. Issue indicators are the measure or standard used to compare and contrast the differences between alternatives.

Issues brought forth by the public or others but not discussed further in the analysis are issues that are: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or actual evidence. Issues that fall within these categories are discussed later in this chapter.

Some public and internal concerns are not “cause and effect” issues, but do require analysis and disclosure. These resource concerns are analyzed and disclosed in this assessment as required by law, regulation or policy; but effects to these resources are not used to compare and contrast alternatives. Often these resource effects can be eliminated or reduced with mitigation measures.

Based on public and internal comments, the interdisciplinary team and Ranger determined five issues have a “cause and effect” relationship with the proposed action and decision.

### **Issue One: Soil Stability**

Construction, reconstruction, re-routing and use of trails within the project area may contribute to soil loss, instability and sediment into streams due to erosive soils. The indicator used for this issue is miles of new trail located on topography that has a greater risk of slope/soil failure. These would be trail locations that lie below steep slopes and trail segments located along the toe of a slope.

### **Issue Two: Water Quality**

Construction and reconstruction and use of motorized trails within the project area may contribute to sediment into streams due to erosive soils. The indicator used for this issue is the miles of motorized trail within aquatic influence zones (AIZs) and the number of stream crossings for motorized trails.

### **Issue Three: Fisheries**

Construction, reconstruction and use of ATV trails within the project area could affect fish and aquatic habitat within the project area. The issue is analyzed using miles of motorized route within AIZs and motorized crossings.

### Issue Four: Caribou City Roadless Area

Construction, reconstruction and use of ATV trails within the project area could affect the existing wilderness characteristics and roadless area values of the Caribou City Roadless Area. Constructing a motorized trail within a roadless area must comply with existing rules and policy controlling the management of roadless areas on National Forest System lands. This issue is analyzed by each alternative's effects to existing roadless values and existing wilderness characteristics.

### Issue Five: Recreation Use and Setting

Construction, reconstruction and use of ATV trails and non-motorized trails within the project area could affect the recreation settings and experiences within the project area, specifically big game hunting in the fall. The issue is analyzed using effects to semi-primitive motorized and semi-primitive non-motorized settings by alternative and open motorized route densities, OMRDs, by alternative. OMRDs are determined by the miles of motorized road and trail per square mile of the prescription area. The Forest Plan has set ceilings for OMRDs for many prescription areas.

### Other Issues

The status of the Winschell Dugway wagon road under the Revised Statute 2477 (RS 2477) of the 1866 mining law was determined to be beyond the scope of this analysis. The statute pertains to lawful jurisdiction of historic roads. This analysis and any subsequent decision would not affect Bonneville County's prerogative to assert legal jurisdiction over the Winschell Dugway wagon road under RS 2477. **The validity or merit of RS 2477 assertions made by local counties for roads located on National Forest System lands would be determined in federal district court.**

A concern that the ATV trail would cross private patented lands was raised during public scoping. Maps of the proposed action indicated that the proposed ATV trail would cross private in-holdings. The proposed trail location was moved to avoid all private patented lands on Caribou Mountain, specifically private lands in Eagle Creek, Bilk Creek and the patented land just southeast of the Caribou Mountain summit. Survey corners will be established prior to any implementation to ensure that ground-disturbance and trail construction does not occur on private land.

Another concern raised during scoping was the effects of a motorized route on the Caribou Mountain Recommended Wilderness prescription area. The Forest Plan manages this area as non-motorized during the snow-free season. Motorized trail construction/reconstruction associated with this proposal would not occur within the recommended wilderness prescription area. Actions associated with all alternatives would not occur within the recommended wilderness prescription area.

### Resource Concerns

Effects and mitigation for the following resources are disclosed in the analysis; however, the following resource concerns did not drive the formulation of alternatives to the proposed action.

## **Cultural Resources**

Some people commented on the proposed action's potential effects to cultural resources. Cultural resource surveys of the proposed route location and alternatives were completed during the 2007 field season. Before 2007, the Forest Service relied on local memory, old maps and field trips to determine the probably location of the 1870s wagon road. Past assessments have noted that the Winschell Dugway route as mapped was our "best guess" given current information. The 2007 cultural resource surveys did not locate any features or items in the vicinity of the proposed action location and alternative locations that would indicate that this was the historic Winschell Dugway. The survey, and available literature and archives do not support the "assumed" location of the Dugway. They indicate that the Winschell Dugway built in the 1870s was to the west of the "assumed" route location, probably along the McCoy Creek Road and then going south into Caribou City. Existing surveys indicate that the "assumed" route is another travel way of unknown origin. Not to confuse the issue further, this document will refer to the "assumed" route location as the Winschell Dugway; however, current findings and reports do not support this as the actual location of the historic freight route. Site interpretation to the public will reflect these new findings.

Mitigation and monitoring requirements to protect cultural resources are included in Chapter Two of this EA. Cultural resources and potential impacts to cultural resources are discussed in Chapter Three of this EA.

## **Noxious Weeds**

Motorized travel has the potential to spread noxious weeds. The noxious weed specialist report analyzed each alternative for direct, indirect and cumulative effects on the spread of invasive species. Mitigation and monitoring requirements to minimize the spread of noxious weeds are included in Chapter Two of this EA.

## **Wildlife Habitat, TES, MIS and Rare Plants**

Federal agencies are mandated to analyze effects of proposed projects on Threatened and Endangered species according to the Endangered Species Act of 1972. To meet this requirement, biological assessments (BA) for species known to occur or which may occur in the analysis area have been prepared by Forest Service biologists and will be forwarded to the United States Fish and Wildlife Service (USFWS) with the thirty-day review of the EA for consultation. The Forest Service is required to analyze the effects of proposed projects on sensitive plant and wildlife species in Biological Evaluations (BEs). Other wildlife concerns, including management indicator species, migratory birds, and big game habitat are addressed in the Wildlife Specialist Report and summarized in the Wildlife section of the EA. Mitigation and monitoring requirements from the BA, BE and specialist reports are included in Chapter Two of this EA.

## **Resources Considered and Eliminated from Further Analysis**

### **Air Quality and Climate Change**

Potential effects from the proposed action and alternatives to air quality and climate change are at a scale that is not measurable and would not have appreciable effects to air shed of the project area or contribute to trends associated with climate change.

## **Fire and Fuels Management**

While designated motorized routes can improve response time for fire suppression forces, the proposed action would only benefit fire suppression efforts within ¼ mile of additional designated motorized routes. Benefits would be slight and additional motorized use within the area could increase human-caused ignitions.

## **Range Management**

The project area provides forage for livestock. Preliminary analysis concluded that the proposed action and alternatives would not conflict with range management facilities or permitted livestock activities. See project record.

## **Research Natural Areas**

There are no Research Natural Areas within the project area.

## **Scenery Management**

The Forest Plan sets Visual Quality Objectives (VQOs) for forest landscapes. In most cases, building and maintaining ATV trails does not adversely affect natural appearing landscapes in the long-term. The proposed action and alternatives would meet the Plan VQOs of Partial Retention and Modification for the project area. Natural appearance is considered when assessing recreation settings of semi-primitive motorized and semi-primitive non-motorized categories of the Recreation Opportunity Spectrum, or ROS. See the Recreation and Roadless section of the EA.

## **Winter Recreation**

The proposed action and alternatives would not affect existing travel management for winter recreation. System trails considered for construction/reconstruction are for the snow-free season only.

## **Forested Vegetation**

The proposed action and alternatives would not affect forested vegetation within the project area. There are no acres within the project area that are managed under the forested vegetation plan prescription. Action alternatives would remove some trees; however, trail construction and reconstruction will avoid forested stands when possible and meet Forest Plan standards for the management of snags and cavity tree retention for wildlife.

## **Land Use including Prime Farm, Timber and Rangelands**

The proposed action and alternatives would not adversely affect these land uses. Action alternatives would not change or adversely affect existing special use permits. Potential effects to range activities are disclosed in the Noxious Weed and Range section of the EA.

## **Federal and State Permits, Licenses, and Certifications**

To proceed with the proposed project as addressed in this EA, various permits must be maintained from federal and state agencies. The following permits will be obtained as needed by the decision.

## **U.S. Army Corps of Engineers**

If determined to be necessary due to bridge construction, the Forest Service would obtain approval of discharge of dredged or fill material into waters of the United States (Section

404 of the Clean Water Act of 1977, as amended). The Forest Service would obtain approval of construction of structures or work in navigable waters of the United States (Section 10 of the Rivers and Harbors Act of 1899).

### **State of Idaho Department of Environmental Quality**

The Forest Service will obtain certification of compliance with Idaho Water Quality Standards (Section 401 Certification).

### **Applicable Laws and Executive Orders**

Disclosures and findings required by Federal laws and Executive Orders pertaining to project-specific planning and environmental analysis on federal lands are discussed here.

### **Findings and Disclosures**

Several of the laws and executive orders listed in Chapter One require project-specific findings or other disclosures. These are included here, and also in the Record of Decision. They apply to all alternatives considered in detail in this EA. All alternatives would comply with the 2001 Roadless Rule. No road construction or re-construction is proposed in any action alternative.

### **National Forest Management Act**

All alternatives comply with the Caribou Forest Plan (2003) and its goals and objectives. This project incorporates all applicable Forest Plan standards and guidelines and management area prescriptions as they apply to the project area. This includes additional direction contained in all amendments. All required interagency reviews and coordination has been accomplished; new or revised mitigation measures resulting from these reviews have been incorporated. The Forest Plan complies with all resource integration and management requirements of 36 CFR 219 (219.14 through 219.27)

The proposal to construct and reconstruct system trail, motorized and non-motorized, does not meet the general guidelines of minimizing the trail system; however, it does move the Caribou Mountain Special Emphasis area closer to the desired condition identified in the Plan. The proposed action and alternatives would allow visitors to directly experience mining history by providing additional motorized and/or non-motorized access to Caribou City and historic mining landscapes.

### **Endangered Species Act**

The following threatened and endangered species are considered when evaluating projects on the Caribou National Forest: Canada lynx (*Lynx canadensis*), gray wolf (*Canis lupus irremotus*), and bald eagle (*Haliaeetus leucocephalus*). A preliminary determination (USDA 2002a) of “not likely to adversely affect” was assigned to the Canada lynx and bald eagle (2008). A biological assessment (USDA 2008b) evaluated the impacts of this project to wolf and documented a “not likely to adversely affect” determination. A Biological Assessment was sent concurrence of a “not likely to adversely affect wolf”.

### **National Historic Preservation Act**

Cultural resource surveys of the proposed route have been conducted in accordance with the National Historic Preservation Act’s (NHPA) Section 106 and the Secretary of Interior’s Standards and Guidelines. See Cultural Resources section of Chapter Three for

discussion of additional laws pertaining to cultural resources. The Forest has received SHPO concurrence on this project.

### **Clean Water Act**

The design of proposed activities is in accordance with Forest Plan standards and guidelines, the Regional Guide, Best Management Practices, and applicable Forest Service Manual and Handbook direction. Monitoring and evaluation of the implementation and effectiveness of Forest Plan standards and guidelines and Best Management Practices will occur. Project activities are expected to meet all applicable State of Idaho water quality standards. Permits would be needed before the proposed water developments (bridges) are implemented. See Water Quality section of Chapter Three.

### **Clean Water Executive Order 11988**

See Chapter Three, Water Quality.

### **Executive Order on Invasive Species (No. 13112, signed Feb. 3, 1999)**

Implementation of any alternative with mitigation “is not anticipated to cause or promote the introduction or spread of invasive species...” See Noxious Weeds and Range Management section of Chapter Three.

### **Executive Order on Migratory Birds (No. 13186 signed January 11, 2001)**

Management objectives from The Idaho Bird Conservation Plan (Version 1.0, January 2000, prepared by Idaho Partners in Flight) would be met on all alternatives. This is the comprehensive planning effort that will be used in the interim until the Memorandum of Understanding with the US Fish and Wildlife Service is developed to promote the conservation of migratory bird population. See Chapter Three, Wildlife section.

### **Executive Order 12898 (Environmental Justice)**

Federal actions to address Environmental Justice in Minority population and low-income populations, and Departmental Regulations 5600-2 direct Federal agencies to integrate environmental justice considerations into Federal programs and activities. 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. Public involvement activities described in Chapter Two document the efforts made to provide opportunity to comment on this proposed action and assessment. Implementation of any alternative is not anticipated to cause disproportionate adverse human health or environmental effects to minority or low-income populations.

## **CHAPTER TWO**

### **Alternatives**

#### **Introduction**

Chapter Two is intended to present the alternatives in comparative form, sharply define the issues and provide a clear basis for choice by the decision maker and the public (40 CFR 1502.14). This chapter describes and compares the alternatives considered by the Forest Service for the Winschell Dugway trail system. It includes a discussion of how alternatives were developed, alternatives considered but not brought forward, and an overview of mitigation, design features and monitoring for the alternatives. This chapter includes maps for alternatives considered in detail. A comparative summary of alternatives as they pertain to the significant issues can be found at the end of this chapter. Information used to compare alternatives is summarized from Chapter Three, "Affected Environment and Environmental Consequences".

#### **Development of Alternatives**

The interdisciplinary team used information from public scoping, field trips and existing resource information to formulate a reasonable range of alternatives. The alternatives to the proposed action were developed to 1) meet the purpose and need for the action, which includes meeting standards and guidelines and desired conditions of the Forest Plan and 2) consider a reasonable range of solutions for the significant issues. For the purposes of this analysis, new construction is building a trail where no trail or road previously existed. Reconstruction is improving an old or degraded road or trail prism to current trail standards. Re-routing is moving a degraded or poorly located system trail segment to a different location and closing the old route.

#### **Alternatives Not Considered in Detail**

A suggestion for an alternative to the proposed action was to recommend the Caribou Special Emphasis Prescription Area for Wilderness designation. The Caribou Forest's 34 Inventoried Roadless Areas were considered for wilderness recommendation as part of the Forest Plan analysis and decision in 2003. As a result of the forest plan analysis only the eastern portion of the Caribou City Inventoried Roadless Area was recommended for wilderness and is managed under a recommended wilderness prescription. An alternative to manage additional acres under a proposed wilderness prescription will not be considered in the analysis.

A suggestion for an alternative to the proposed action was to accomplish all work that would reduce sedimentation from roads and trails only. Annual road and trail improvements and maintenance are limited by funding. The road and trail work would be made possible by the funding and partnerships opportunities associated with the trail improvements outlined on the action alternatives.

The interdisciplinary team and the transportation engineer considered four alternative segments of the ATV trail analyzed in Alternative Two (Proposed Action): one segment on the upper Bilk Creek drainage, a connection to the Evergreen Mine trail high on Caribou Mountain ridge, a segment east of the existing alignment of the Morgan Meadows portion of the Winschell Dugway, and one segment along an existing historic canal levy, east of Morgan Meadows. The first and third potential trail routes were found to be too steep; the second segment located the trail on a narrow ridgeline. The canal route would take the ATV trail into the Caribou City Recommended Wilderness prescription area, which is managed for a semi-primitive non-motorized setting during the snow-free season.

## Features Common to All Alternatives

All travel routes and areas in the project area are open to hikers, stock, ski and snowshoe travel. There are no snowmobile restrictions within the project area. Mountain bikes, motorcycles, ATVs and full-sized vehicles are restricted to designated routes. Cross-country mountain bike travel has been restricted on the Caribou since the 1980s; this was reaffirmed in the 2005 Travel Plan Revision decision. Motorized travel for permitted activities such as livestock operations, mineral development, outfitter and guide operations and administrative access is independent of public access but requires approval through the operating plan and permit process as described in the Forest Plan (USDA-FS 2003).

A variety of resource protection measures and policies are currently in place to mitigate potential adverse effects of travel and travel routes on the forest. **CFR 261.5 part A and B allow District Rangers to close, re-designate, or impose restrictions on roads and trails at any time if further use poses an immediate risk to public safety or if adverse effects on forest resources are occurring.**

**Road and trail users can be cited for resource damage under CFR 261.15 (h). Activities that may lead to violations of this regulation include hill climbing steep slopes and/or road embankments; operating a motor vehicle off road or when there are wet conditions; operating a motor vehicle in wet areas, such as meadows, ponds, and stream beds. Trail users can be cited for damaging and leaving in a damaged condition any road, trail or segment thereof under CFR 261.12 (c). These violations are Class B misdemeanor violations. Cases involving damage to roads, trails, resources, and/or property can be subject to court-ordered restitution.**

All alternatives include road and trail maintenance, route signing, travel plan education and enforcement and adherence to the 2001 Caribou Forest Noxious Weed Strategy. Trails will be managed for SPM or SPNM setting and will be managed as Class Two trails meaning “low development scale” and moderately difficult. This conforms to Plan standard and FS handbook direction. Trail standards will be minimal clearing and tread width needed for the allowed use.

## Alternative One, No Action

The no-action alternative is required by NEPA. The no-action alternative would continue to manage the Winschell Dugway wagon road as a non-motorized trail with no

maintenance. The existing route of the Dugway is 5.7 miles from Caribou City to Jackknife Basin and terminates at Morgan Meadows. This alternative represents the existing condition against which the other alternatives are compared. Under this alternative there would be no trail re-construction of the Eagle Creek ATV trail.

User-created routes in the project area would be signed and closed as directed by the Travel Plan decision. Earthen berms, debris or gates could be used for effective closure. The alignment shown on the alternative map is the Forest Service's best estimate of the wagon road location. Some segments have been obliterated by landslide, soil creep and downfall.

### **Mitigation, Monitoring and Design Features Common to All Action Alternatives**

- Forest plan standards and guidelines will be applied under all alternatives. Best Management Practices (BMPs) addressing soil, water and noxious weeds will be applied to all construction/reconstruction and maintenance of travel routes and travel route closures.
- Specific BMPs when working in and around waterways include removing equipment and machinery from the vicinity of waterways prior to refueling, repair and maintenance. Work within the high-water mark will be done during base flow conditions. Any culvert removal will be done in a manner to minimize sediment into streams and in a manner to prevent head cuts.
- The alternative includes relocation of approximately three miles of the Eagle Creek ATV Trail (Trail #451) within the Caribou Mountain Special Emphasis Area and the Bridge Creek Winter Range prescription area. The existing designated ATV trail from Eagle Creek to Evergreen Mine will be relocated to eliminate numerous water crossings and improve the condition of the Eagle Creek riparian area.
- Perform heavy maintenance on upper sections of the Barnes Creek Road to improve surface drainage. BMPs will be used in areas that could contribute to surface runoff into streams.
- To mitigate effects to migratory Yellowstone cutthroat trout, stream crossings will be replaced with bottomless drainage structures at Barnes, Iowa, Miners Delight, Camp, Bilk, and McCoy creeks. Bridge abutments at Iowa Creek will be repaired to improve the safety of users. Undersized and perched culverts at Miners Delight, Camp, and McCoy creeks will be replaced with bottomless drainage structures. This will be a cooperative effort with the Forest Service and Bonneville County.
- Placement of natural barriers (rocks, logs or other woody debris, or other natural materials) to deter users from accessing areas adjacent to designated travel routes. This construction practice will reduce the risk of off-route motorized travel in areas where terrain may allow off-route travel.

- Trail standards for stock/mountain bike/pedestrian use will be a single tread 12” to 18” in width with clearing limits of 36” in width and 8’ high. Trail standards for ATV/motorcycle trail will be double track tread 56” in width with clearing limits of 60” in width and 6’ high. These trails will be managed as Class Two trails meaning “low development scale” for a semi-primitive setting. (FSH 2309.18) Based on soil texture and inherent erodibility, sustained trail grade should be no more than 10-12% (Trails Management Handbook FSH 2309.18 Chapter 3 Exhibit 02; USDA Forest Service, 1995).
- Any trail re-location not ground verified in project analysis will be ground verified to determine capability and compatibility with long-term soil resource goals prior to disturbance.
- Trail design and trail maintenance of drainage structures will adhere to recommendations in the Trails Management Handbook FSH 2309.18, Idaho Department of Lands Best Management Practices and Region 4 Soil and Water Conservation Practices Handbook FSH 2509.22.
- Other trail design techniques include using grade reversal to drain trail surface as needed, trail bridge approaches drain away from stream (elevated bridge deck), and ATV trail drainage spacing assumes trail tread is in-sloped from wheel tracks.
- Project area archeological surveys have been completed in compliance with NHPA and other cultural protection laws in consultation with Idaho Historic Preservation Office. The Forest has received SHPO concurrence for this project. The proposed action and alternatives have been surveyed for cultural resources. Following the decision, all areas proposed for ground disturbance not already surveyed, will be surveyed for cultural resources.
- Biological assessments or evaluations have been completed and mitigation will be implemented as required by the Endangered Species Act and agreements with the United States Department of Interior Fish and Wildlife Service.
- Wildlife mitigation includes avoiding snags, and potential cavity nesting trees, detailed mitigation actions are listed under the wildlife section of the assessment.
- Create and implement co-operative enforcement, signing and public information for road and trail travel within the project area. Cooperators include Bonneville County, Idaho Department of Fish and Game and Idaho Department of Parks and Recreation. Road and trail improvements, user-created route closures and on-the-ground interpretive features would be cooperatively funded as part of the action alternatives.
- Trail use and condition will be monitored on a bi-weekly basis during the non-snow season by Bonneville Parks and Recreation staff. Trail uses will be monitored for number of users and travel plan compliance. Trail conditions will

be monitored for template failure and proper drainage. If a segment of trail fails due to wet soil conditions, the trail would be closed to use and re-routed or re-designed to avoid future slumps or slides. Drainage features will also be monitored. If these features do not properly drain the trail surface, they will be redesigned and any trail damage will be repaired to standard.

- Noxious weed mitigation includes patrolling the area on a regular basis. Regular enforcement will also keep motorized traffic on the system trail and reduce the potential of weeds to just that corridor so the weeds will be easier to see and control. Weed free hay is still a Forest policy. Livestock permittees regularly let the Forest Service know about weeds that need to be controlled. A cooperative weed spraying effort will occur between the Forest Service and other entities. After construction, disturbed areas will be watched closely for future weed infestations.

### **Specific Trail/Soil Monitoring**

If a mass failure of any type occurs during trail construction, or is found during routine maintenance, it will be documented and reported to District staff. Identification and action on maintenance needs, such as cleaning and rebuilding drainage structures, will be the responsibility of the District. Segments of the proposed trail near Tincup Creek crossing should be monitored for project effectiveness at controlling existing erosion and preventing further soil loss.

### **Alternative Two, Proposed Action**

This alternative includes construction and reconstruction of approximately 7.8 miles of ATV trail from Caribou City to Morgan Meadows; approximately 2.1 miles of this route will coincide with the southern end of the historic Winschell Dugway wagon road. The proposed route would link the southern half of the Winschell Dugway wagon road to an existing re-contoured 1990s exploration road and then to an abandoned mine road that reaches Caribou City via the Bilk Creek drainage. The route was amended to avoid private lands. This alternative includes stream crossing structures, most likely ATV bridges. Bridges will be necessary for the safety of users and to minimize sediment delivery to streams. The ATV trail would not be open for motorized travel from mid-November to late May due to snow and high water conditions. This alternative also includes reconstructing the northern portion of the historic Winschell Dugway route (3.7 miles of Jackknife Creek to Caribou City) as a non-motorized system trail (Trail #092). Non-motorized trail users would share the lower portion of the Dugway with motorized travelers for two miles. See Alternative Two map on following page.

**Table 2.1 Alt. Two- ATV Trail Description-North to South  
(two-track trail, typical 50" wide tread)**

Route Segment	Miles	Existing Condition	Trail Const. needs	Crossings
Caribou City to lower Bilk Creek (non-system)	0.66 miles	User-created trail	Light re-construction	Construct new ATV Bridge at lower Bilk Creek
Lower Bilk Creek to 7,500' contour (non-system)	0.93 miles	No travel route	New construction through mixed conifer/aspens	No water crossing needed
7,500' contour to boundary of patented land at Caribou Mountain ridgeline (headwaters of Bilk Creek, non-system)	1.82 miles	Old mining road with some brush in road template	Clear brush, light re-construction	No water crossing needed
1995 gold exploration road (non-system)	0.64 miles	Re-contoured road, some brush and small trees in road template on northern portion	New construction, some vegetation clearing	No water crossing needed
Southern end of 1995 exploration road to N.F. Tincup (non-system)	1.65 miles	No travel route	New construction through brush, some conifer	Construct new ATV Bridge at North Fork Tincup Creek
N.F. Tincup to 7,400' contour, (Trail #092, non-system)	1.35 miles	Winschell Dugway wagon road	Light reconstruction	Some wet areas requiring local relocation
7,400' contour to Morgan Meadows Trailhead (Trail #092, non-system)	0.75 miles	Old road bed, could be Winschell Dugway	Light reconstruction, plug existing gullies	No crossings needed

Note: Field information from transportation engineer

**Table 2.2 Alt. Two- Non-motorized Trail Description-North to South  
(single track trail, typical 18" tread)**

Route Segment	Miles	Existing Condition	Trail Const. needs	Crossings
Caribou City to Jackknife Basin, 8,000' contour (Trail # 092, non-system))	1.3 miles	Winschell Dugway route, mostly obliterated	Construction through downed timber, slides	3 pedestrian bridges on Jackknife Creek
Jackknife Basin to N.F. Tincup (Trail # 092, non-system)	2.3 miles	Winschell Dugway route, some segments obliterated	Construction through downed timber, slides	2 pedestrian bridges on S.F. Tincup Creek
N.F. Tincup to Morgan Meadows Trailhead (Trail # 092, non-system)	2.1 miles	Winschell Dugway wagon road	This section will coincide with proposed ATV trail, requiring shared use	(segment described above)

Note: Field information from transportation engineer

### Alternative Three, Dugway Route as an ATV Trail

Many people commented that the entire Dugway wagon road should be reconstructed as an ATV Trail. Some people responded that the original route should be reconstructed as an ATV trail, instead of building “new” trail. Under this alternative the entire known route of the Winschell Dugway from Morgan Meadows to Caribou City would be the route for construction and reconstruction of an ATV trail. This alternative constructs/reconstructs an ATV trail along what was determined to be the probable route of the Dugway, as mapped in 2005 Travel Plan FEIS. The existing route of the Dugway is 5.7 miles from Caribou City via Jacknife Basin to Morgan Meadows. This alternative would include stream crossing structures (ATV bridges) necessary for the safety of users and to minimize erosion. The route would be closed to motorized travel (ATV and motorcycle) from Mid-November to late May due to wet conditions and snow. See Alternative Three map on following page.

**Table 2.3 Alt. Three- ATV Trail Description-North to South  
(two-track trail, typical 50” tread width)**

Route Segment	Miles	Existing Condition	Trail Const. needs	Crossings
Caribou City to Jacknife Basin, 8,000’ contour (Trail # 092, non-system)	1.3 miles	Winschell Dugway route, mostly obliterated	Construction through downed timber, slides	3 ATV bridges on Jacknife Creek
Jacknife Basin to N.F. Tincup (Trail # 092, non-system)	2.3 miles	Winschell Dugway route, some segments obliterated	Construction through downed timber, slides	2 ATV bridges on S.F. Tincup Creek
N.F. Tincup to 7,400’ contour (Trail # 092, non-system))	1.35 miles	Winschell Dugway wagon road	Light reconstruction	ATV bridge at NF Tincup, some wet areas requiring local relocation
7,400’ contour to Morgan Meadows (Trail # 092, non-system)	0.75 miles	Old road bed, could be Winschell Dugway	Light reconstruction, plug existing gullies	No crossings needed

Note: Field information from transportation engineer

### Alternative Four, Winschell Dugway Non-motorized Trail

This alternative addresses public comments in favor of a non-motorized system trail on the historic route. Under this alternative the entire route of the Winschell Dugway would be re-constructed and maintained as a non-motorized trail for hikers, mountain bikes and stock use. The existing route of the Dugway is 5.7 miles from Caribou City, via Jacknife Basin to Morgan Meadows. This alternative constructs/reconstructs a non-motorized trail along what the Forest has determined is the probable route of the Dugway. This alternative would include pedestrian bridges necessary for the safety of users and to minimize erosion. Actual season of use would depend on snow and high water conditions. See Alternative Four map on following page.

**Table 2.4 Alt. Four- Non-motorized Trail Description-North to South  
(single track trail, typical 18” tread)**

Route Segment	Miles	Existing Condition	Trail Const. needs	Crossings
Caribou City to Jackknife Basin, 8,000’ contour (Trail # 092, non-system)	1.3 miles	Winschell Dugway route, mostly obliterated	Construction through downed timber, slides	3 pedestrian bridges on Jackknife Creek
Jackknife Basin to N.F. Tincup (Trail # 092, non-system)	2.3 miles	Winschell Dugway route, some segments obliterated	Construction through downed timber, slides	2 pedestrian bridges on S.F. Tincup Creek
N.F. Tincup to 7,400’ contour (Trail # 092, non-system)	1.35 miles	Winschell Dugway wagon road	Light reconstruction	pedestrian bridge at NF Tincup, some wet areas requiring local relocation
7,400’ contour to Morgan Meadows (Trail # 092, non-system)	0.75 miles	Old road bed, could be Winschell Dugway	Light reconstruction, plug existing gullies	No crossings needed

Note: Field information from transportation engineer

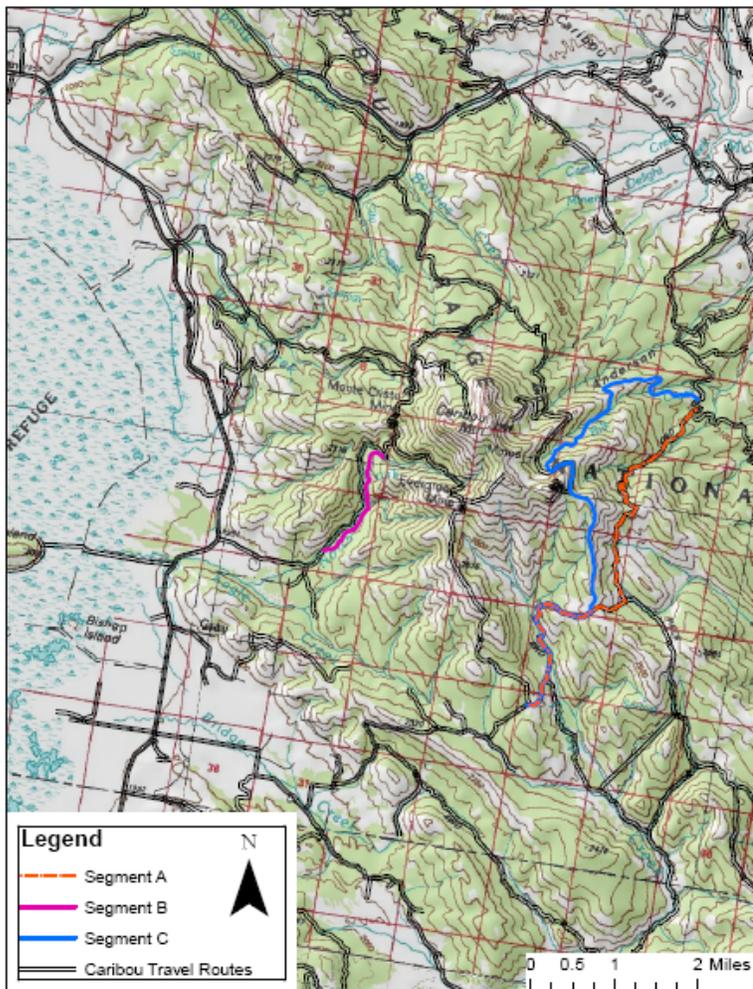


Figure X.X Alternative 2 includes segments A (ATV trail from Morgan Meadows to Jackknife Creek, non-mot. trail from Jackknife Creek to Caribou City), B (NF Eagle Creek ATV Trail) and C (ATV trail), Alternative 3 includes segments A (ATV trail) and B (NF Eagle Creek ATV Trail), and Alternative 4 includes segments A and B (Non-motorized trail).

## Range of Alternatives Considered

The range of alternatives was determined by public comment, the purpose and need, and Forest Plan direction. Alternative development is driven by the issues. Alternative Two meets the purpose and need to improve the trail system within the Caribou Mountain area while minimizing potential trail impacts to soil and water resources. Alternative Three meets the purpose and need to improve trail opportunity and conditions and responds to those who feel the entire historic Winschell Dugway should be managed as an ATV trail. Alternative Four also meets the purpose and need to improve trail opportunity within the Caribou Mountain area and responds to public comment that the Winschell Dugway should be managed as a non-motorized trail. Most feasible and existing travel ways were considered during two seasons of field visits to the mountain.

## Comparison of Alternatives

This section compares the effects and consequences of each alternative by issue using the issue indicators. The full discussion of environmental consequences can be found by resource area heading in Chapter Three.

**Table 2.5 Alternatives by Issue Indicators**

<b>Issue and Indicator</b>	<b>Alternative One: No Action</b>	<b>Alternative Two: ATV Trail to Caribou City/Bilk Creek/Morgan Meadows; Non-motorized trail to Caribou City/Jacknife Basin</b>	<b>Alternative Three: Caribou City/Jacknife Basin/ Morgan Meadows ATV Trail</b>	<b>Alternative Four: Caribou City/Jacknife Basin to Morgan Meadows Non-mot. Trail</b>
<b>Soil Stability</b> trail segments on stable ground	no trail const.	single-track trail on toe slopes and unstable slopes, double track trail on ridges and mid-slopes	some double-track trail segments on toe slopes and unstable slopes in Jacknife Basin	single-track trail on toe slopes and unstable slopes in Jacknife Basin
<b>Water quality</b> miles of additional mot. trail within AIZ & reduction of stream crossings	0 and 0	.9 additional miles of motorized trail in AIZ, 5 less stream crossings	1.4 miles of additional motorized trail in AIZ, 3 less motorized crossings	1 less mile of motorized route in AIZ, 8 less motorized crossings
<b>Fisheries</b> miles of motorized route within AIZs and motorized crossings	0	Same as above	Same as above	Same as above
<b>Roadless Values</b> effects to roadless values of Caribou City Roadless Area	No Change	Some loss of semi-primitive non-motorized setting on perimeter, no change to core area	Some loss of semi-primitive non-motorized setting on perimeter, no change to core area	No Change
<b>Recreation setting</b> semi-primitive non-motorized acres in Caribou Mountain area	58,000	54,700	53,900	58,000
<b>Recreation setting</b> OMRD for Caribou Mountain RX Area-Ceiling 1.5	1.1	1.3	1.3	1.1

## **Conclusions**

All alternatives would provide on-the-ground interpretation of the historic Dugway and the gold mining legacy of Caribou Mountain. Interpretive themes will also include information of human uses of the area before the mining era of the 1800s.

All action alternatives will improve trail conditions on the N.F. of Eagle Creek ATV trail and drainage features on the upper portions of Barnes Creek Road, McCoy Creek and other area drainages. These actions will reduce sediment and improve water quality and fish habitat for these drainages in the long term.

All action alternatives would improve travel plan compliance in the area with cooperative education and enforcement of the motor vehicle use map.

The no action alternative would be the best for fish habitat and water quality; however, no action does not meet the purpose and need to improve trail opportunity and conditions, nor does it fully meet the intent of the Caribou Mountain Special Emphasis Area prescription desired condition. Forest Plan prescription direction focuses on allowing visitors to experience the mining history of the area in a roaded natural, semi-primitive motorized and non-motorized setting. Managing the Winschell Dugway as a system trail moves the area toward the prescribed desired condition of the Forest Plan by improving recreation access to Caribou City and into Jackknife Basin.

Alternative Two would provide new opportunity for ATV and motorcycle travel while providing a non-motorized system trail on the Dugway for hikers, stock users and mountain bikers. This alternative expands both motorized and non-motorized opportunity within the Caribou Mountain area. This alternative provides another motorized access route (ATV) and a non-motorized system trail into Caribou City. This alternative has less risk for trail failure and sediment delivery to streams when compared to Alternative Three. This alternative would still require construction and reconstruction of a single-track trail through Jackknife Basin.

Alternative Three does not provide additional non-motorized trail miles, but does provide new motorized opportunity within the Caribou Mountain area. This alternative provides another motorized access route (ATV) into Caribou City. Alternative Three constructs an ATV trail within the Jackknife Basin. This alternative has the highest risk for trail failure within Jackknife Basin. On-going maintenance needs and possible trail failure could increase sediment delivery to area streams.

Alternative Four does not provide new motorized opportunity but does provide additional non-motorized trail opportunity within Caribou Mountain area. This alternative provides a non-motorized access route into Caribou City. Of the action alternatives, this alternative would require the least amount of disturbance to area soils and water quality, but would still require construction and reconstruction of a single-track trail in Jackknife Basin.

Alternative Two and Three change the amount of acres managed for a non-motorized setting within the Caribou Mountain area. The 58,000 acre semi-primitive non-motorized area would be reduced to 54,700 under Alternative Two and 53,800 under Alternative Three. Alternative Two and Three reduce the existing 58,000 acres managed for a non-motorized setting by 6 and 7 percent respectively. Both alternatives maintain a large semi-primitive non-motorized area for big game and other wildlife.

All action alternatives would meet the purpose and need to improve the trail system within the Caribou Mountain area. All alternatives with mitigation measures would meet Forest Plan standards and guidelines along with federal laws, regulations, and policies for resource protection. The Forest Plan does not prohibit constructing new system trail; however, it states that the forest should minimize the trail system and rehabilitate existing trail as a priority over new construction. The actions alternatives include new trail construction to move the Caribou Mountain Special Emphasis Area towards additional and improved access to the key mining era attractions of Caribou City and Jackknife Basin. All action alternatives do not exceed the ORMD ceilings for prescription areas as directed by the Forest Plan.

Alternative Two manages the Winschell Dugway and surrounding area for two settings, motorized and non-motorized. Although cultural resource surveys do not support this route as actually being the 1870s wagon road built by William Winschell, it is the remnants of some travel route into Caribou City. This alternative adds 7.8 miles of motorized trail and 3.6 miles of non-motorized trail to the Forest trail system. This alternative creates linkages to other existing trails on stable landforms for motorized users and a non-motorized trail through scenic Jackknife Basin leading directly into Caribou City. This alternative provides a greater choice of recreational opportunities in a semi-primitive setting than Alternatives One, Three and Four. This alternative best meets the desired condition described in the Plan for the Caribou Mountain Special Emphasis prescription area.

Alternative Three has similar effects to fish, wildlife and recreation setting as Alternative Two. This alternative provides 6.7 miles of motorized trail into Caribou City. This alternative provides a linkage to other ATV routes but does not enhance non-motorized opportunities along the Dugway. Alternative Three could require more on-going trail maintenance due to constructing a two-track trail within the Jackknife Basin. This alternative has the highest risk of trail failure within Jackknife Basin.

Alternative Four has the least effect to forest resources, adding 6.7 miles of non-motorized trail on the entire length of the Dugway. This alternative does not provide additional motorized opportunity within the Caribou Mountain area. Motorized access into Caribou City would rely on the existing low-standard road from the north.

## **CHAPTER THREE**

### **Affected Environment and Environmental Consequences**

#### **Introduction**

This chapter first summarizes the physical and biological environments of the project area and is the baseline for the comparisons to follow. The analysis area, analysis methods and indicators are discussed by resource area and issue. This chapter then discusses the environmental consequences of the alternatives. Effects and potential effects; direct, indirect and cumulative, are disclosed. Mitigation measures, trail design and monitoring are also described.

Direct environmental effects are those occurring at the same time and place as the initial cause or action. Indirect effects are those that occur later in time or are spatially removed from the activity, but would be significant in the foreseeable future. Cumulative effects result from incremental effects of actions, when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions. Cumulative effects can result from minor, but collectively significant, actions taking place over a period of time. Cumulative effects discussions involve assumptions and uncertainties. Past, present and reasonably foreseeable future actions within the project area were identified by the interdisciplinary team. These are listed below.

The discussions of existing condition of resources and potential effects use the information and findings of the Forest Plan's FEIS (USDA-FS 2003) and the Travel Plan FEIS (USDA-FS 2005). The project record of the Winschell Dugway Trail System EA includes all project-specific information, including specialist reports and field investigation notes. The project record is located at the Soda Springs District Office in Soda Springs, Idaho, and is available for review during regular business hours. Information from the record is available upon written request.

#### **Past Actions**

- Natural fires have occurred over time within the project area. Lower elevations of the project area were burned over by wildfire in the latter part of the 19<sup>th</sup> century. A large wildfire occurred in 1988. Sections of dozer lines from this fire are still evident in the Tincup drainage.
- Vegetation succession, wildfire and wildfire suppression, and weather events have shaped plant communities.
- Insect and disease activity has persisted in forested stands.
- Drought cycles, snow avalanche and soil slumps have occurred periodically within the project area.

- Mining activities, road building, and timber harvest have occurred starting in the late 1860s. Gold and other metals were recovered using hydrological mining techniques. These activities scarred the landscapes with eroded hillsides, extensive canal works and mining debris.
- Noxious weed invasions have occurred on the lower elevations of the project area. Invasive species have spread by wind, human travel, machinery and animals.
- Domestic livestock have grazed most of the area since the 1870s. Sheep grazing has been the most common livestock use in the last 20 years.
- Fossil and archeological investigations and research have occurred in the last 20 years.
- Recreation use, including hunting and fishing, trail use by motorized vehicle and non-motorized means has and continues to occur.

### **Present Activities**

- Insect and disease, drought, wildfire, weather events still influence forested vegetation.
- Livestock grazing continues within the project area.
- Recreation use, including hunting and fishing, gold panning and dredging, trail use by motorized vehicle and non-motorized means will continue to increase as the regional population grows.
- Access to the forest is being restricted to the National Forest by some private land owners.
- Several important fossil and archeological sites have been discovered. These investigations will continue.
- Subdivisions along the western edge of the forest are being established and will continue to encroach on areas of big game winter range.
- A shift in management emphasis and implementation of Best Management Practices has reduced soil impacts from timber harvest, mining, road construction, and livestock grazing. Impacts to soils have increased from recreational activities and noxious weed spread. Localized areas of short- and long-term productivity loss continue to occur.

## **Reasonable Foreseeable Actions**

- Insect and disease, drought, wildfire, weather events still influence forested vegetation.
- Rural communities and subdivisions will continue to grow as the population of Idaho increases.
- Livestock use, mainly sheep grazing, will continue into the foreseeable future.
- Recreation use, including hunting and fishing, will continue. Recreation pursuits may change, but use will continue to increase.
- State of Idaho Department of Environmental Quality will establish Total Maximum Daily Loads (TMDLs) for all 303(d) water quality limited streams within the next 10 years.
- OHV use is likely to continue to increase on existing roads and trails within the project area.
- Noxious weed invasion in the project areas will continue into the future. Noxious weed abatement efforts will also continue.
- Impacts to soils from recreation uses and travel will continue into the future.
- Direction for Roadless Area management could change with the Idaho Roadless Rule FEIS and decision. This could affect roadless values within the 32 Roadless Areas of the Caribou portion of the Caribou-Targhee NF.
- Oil and Gas exploration could affect the Caribou portion of the Caribou-Targhee NF; however, the potential for oil and gas reserves is not high for most of the Caribou.
- Gold exploration and mining could occur in accordance with current mining laws.

## **Available Information for Analysis**

There is less than complete knowledge about some of the relationships and conditions of wildlife, water and forest systems. The ecology, inventory and management of a large forest are a complex and developing science. This analysis uses the best available science and inventory for forest resources, uses and programs.

## **Issues**

### **Issue One: Soil Stability**

#### **Analysis Area, Methods and Indicators**

The soil resources affected by this proposal are the trail corridors encompassing the proposed trail construction and reconstruction and existing designated trails connecting to the proposed trails, as well as connecting road infrastructure. The analysis evaluates the effects of the proposed motorized trails on the soil resource. It is an assessment of the effects on soils that are sensitive to erosion and soils that have potential mass instability. The indicator for comparing the alternatives' effects on soils will be trail location in relationship to topography and soil risk.

#### **Plan and Handbook Direction**

The Forest Plan provides goals and direction for long-term soil productivity. This direction includes limiting detrimental soil disturbances and retaining ground cover. To insure these goals are leading toward the desired future condition described in the RFP (RFP 3-5), standards and guidelines are also provided (RFP 3-6 and 3-7) along with direction from the Forest Service Soil Management Handbook to maintain or improve long-term soil productivity and hydrologic function.

#### **Forest Plan Desired Future Conditions for Soils**

The desired future conditions are that soils have adequate protective cover, adequate levels of soil organic matter (litter), and coarse woody materials for long-term nutrient cycling. Physical, chemical and biological processes in most soils function to sustain the site (RFP p. II-2 and III-6).

#### **Forest Plan Forest-wide Standards and Guidelines for Soils**

The goal of the following standards and guidelines is to keep erosion within soil loss tolerance limits and maintain long-term soil productivity.

- Land types identified as being unstable or marginally unstable in the Caribou National Forest Soil Resource Inventory shall be ground verified prior to soil disturbing activities to determine the capability of the land to sustain resource development activities including road construction. (Standard)
- Suitability for resource management activities shall be disclosed in the site-specific analysis. (Standard).
- For ground-disturbing activities where detrimental soil disturbances occur on areas of 10 acres or greater, plan and implement rehabilitation to meet desired future conditions. (Standard)
- On land types where landslides or landslide prone areas have been identified, a site-specific analysis shall be conducted to ensure project implementation is compatible with desired future conditions. (Standard)

- Resource developments and utilization should be restricted to lands identified in the Soil Resource Inventory as being capable of sustaining such impacts. (Guideline)
- Maintain ground cover, microbiotic crusts, and fine organic matter that would protect the soil from erosion in excess of soil loss tolerance limits and provide nutrient cycling. (Guideline)
- Detrimental soil disturbance such as compaction, erosion, puddling, displacement, and severely burned soils caused by management practices should be limited or mitigated to meet long-term soil productivity goals. (Guideline)
- Reduce soil erosion to less than the soil loss tolerance limits on lands disturbed by management activities within one growing season after disturbance. (Guideline)
- Sustain site productivity by providing minimum amounts of woody residue 3” or greater in diameter dispersed on (forested) sites. (Guideline)

### **Intermountain Region Soil Management Handbook FSH 2509.18 Direction**

This handbook states that no more than 15 percent of an activity area should have detrimentally disturbed soil after the completion of all management activities; however, system roads and trails are not counted as detrimental soil disturbance.

### **Intermountain Region Soil and Water Conservation Practices Handbook FSH 2509.22 Direction**

This handbook provides trail management practices that reference FSM and FSH direction. Practices to minimize adverse affects to soils include:

- General guidelines for the location and design of roads and trails to minimize soil and water impacts while considering all design criteria.
- Road and Trail Erosion Control Plan to prevent, limit, and mitigate erosion, sedimentation, and resulting water quality degradation prior to the initiation of construction and maintenance activities.
- Conduct operations during minimal runoff periods to minimize erosion.
- Practices that will reduce sedimentation by minimizing the chances for road-related mass failures, including landslides and embankment slumps.
- Practices to mitigate surface erosion and stabilization of slopes, road cut slopes, fill slopes, and travel ways.
- Trail maintenance and rehabilitation practices to minimize soil erosion and water quality problems resulting from trail erosion.

## Affected Environment

The project area has soils with the potential for erosion and mass instability. Landscapes and soils were formed from fluvial and glacial processes and gravitational transfer by landslides. Caribou Mountain is part of the Overthrust Mountains, with land types divided into sections and subsections based on surface geology and soil types. The subsection characteristics for the analysis area are described in Table 2 and spatially shown in Figure 2. Soils are mapped and described in the Soil Survey of the Caribou National Forest (USDA-FS 1990). Erosion hazard and mass stability are of particular concern with roads and trails on the landscape.

The soils in the area have a large amount of clay with a layer of sandy clay loam. Typically, trail conditions worsen with traffic. The trail has been managed as non-motorized for approximately 20 years. The trail is still visible from Morgan Meadows on the south; but, as it progresses northward, it becomes less visible (USDA Forest Service, 2005).

In the Caribou Travel Plan FEIS (USDA-FS 2005), a soil risk rating was assigned to each 6 code HUC. The location of the HUC 6 Code watersheds in the Caribou Mountain area is shown in Figure 1. This rating incorporated mass stability and inherent soil erodibility. Table 1 contains the ratings for the watersheds crossed by the Winschell Dugway, proposed relocation, and Eagle Creek re-route, as well as adjacent connecting roads and trails. The soil risk rating used both in the Caribou Travel Plan FEIS and the Caribou Roads Analysis was a coarse filter to help sort out which roads and trails may present a watershed resource risk. This analysis provides more detailed and site-specific soils information and field observations.

**Table 1 Soil Risk rating for the HUC 6 Code watersheds in the Caribou Mountain area (taken from the Caribou Travel Plan EIS (2005) and Road Analysis (2002)).**

<b>Watershed (HUC 6)</b>	<b>Soil Risk</b>
170401041106 (McCoy Cr)	High
170401041104 (Barnes Cr)	Mod
170401041103 (Bilk & Anderson Cr)	Mod
170401051002 (Jackknife Cr)	Mod
170401050905 (Tincup Cr)	Low
170402050701 (Willow Cr/Grays Lake)	Mod
170402050702 (NF Eagle Cr)	Mod

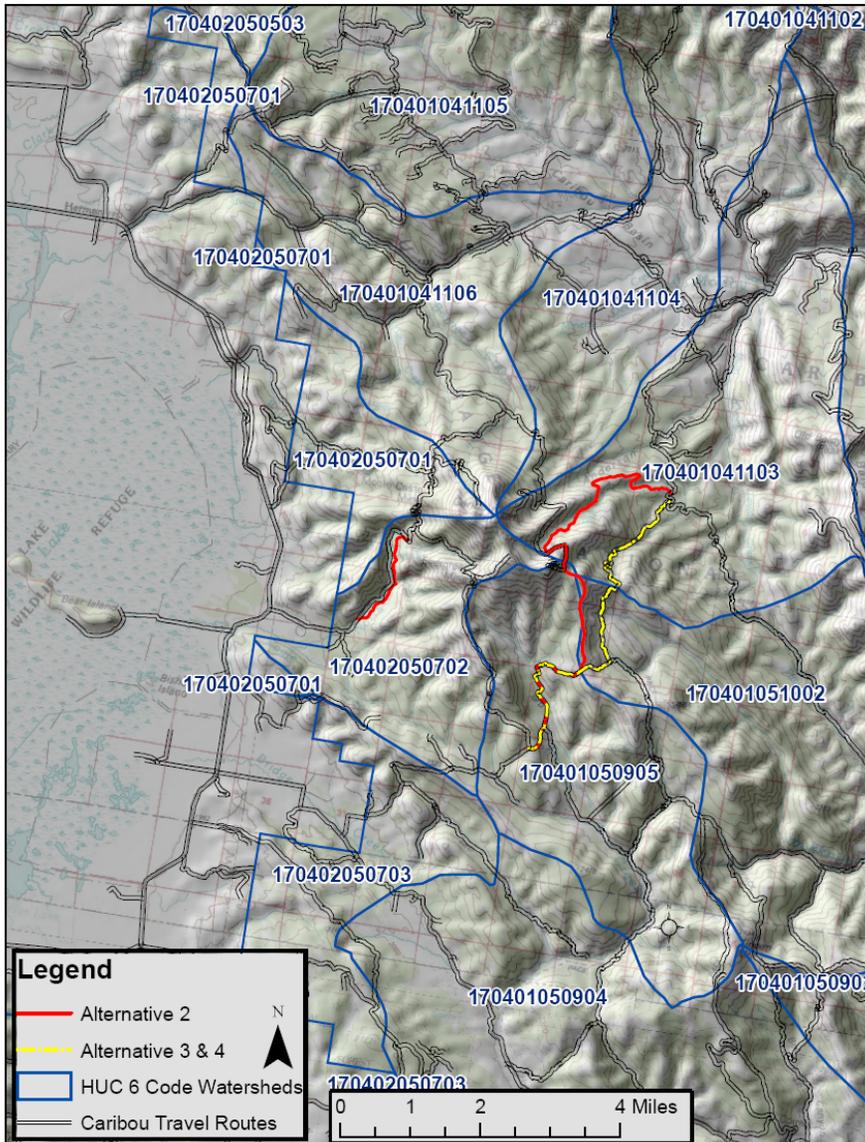


Figure 1 Map of proposed trail construction/ reconstruction in relation to HUC 6 Code watersheds in the Caribou Mountain vicinity. Note: on this map, Alternative 2 shows the motorized trail only.

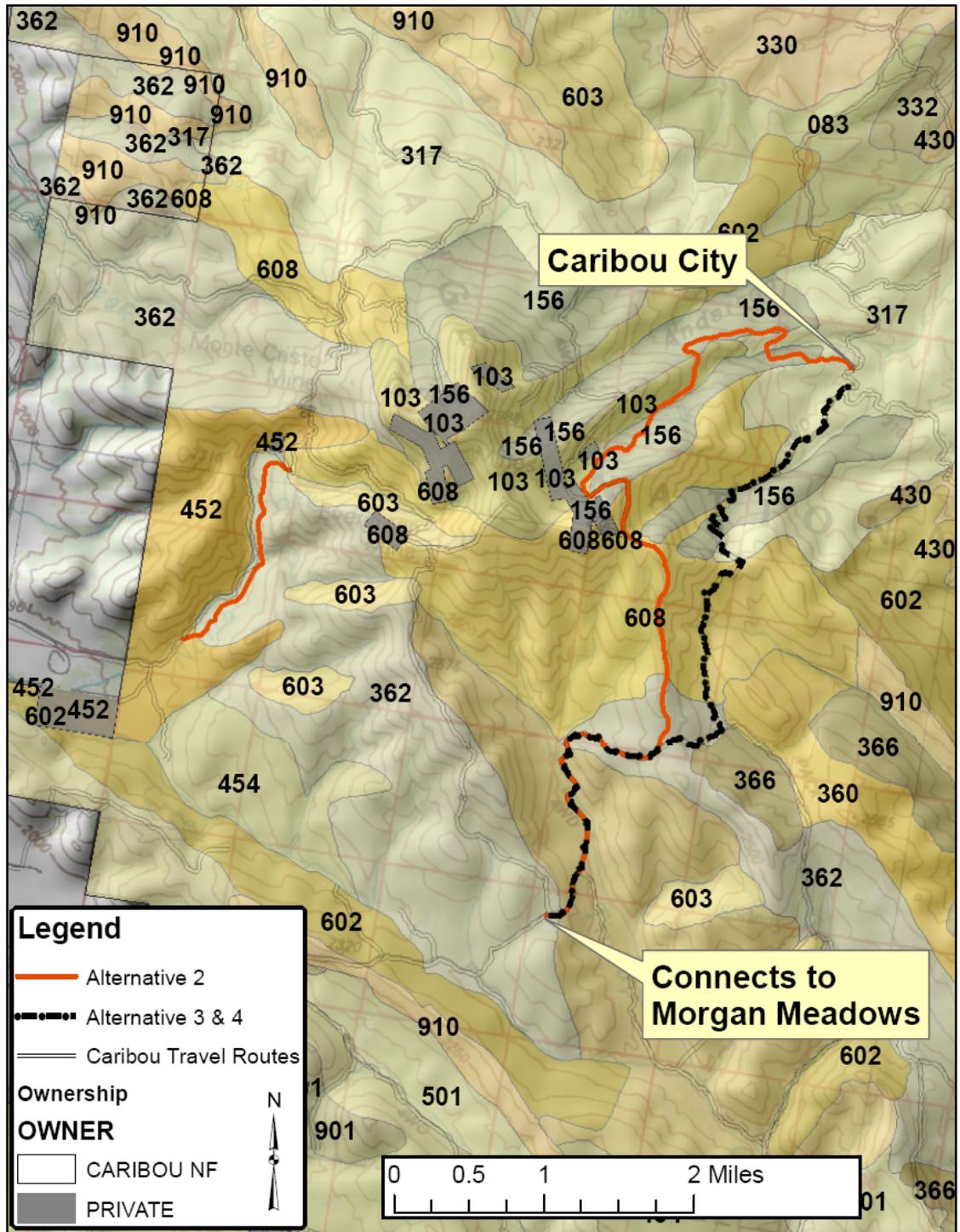


Figure 2 Landtypes mapped in the project vicinity (Caribou Soil Survey, 1990). (Note: Alternative 2 includes non-motorized trail from Jacknife Creek to Caribou City. Alternative 3 is an ATV trail and Alternative 4 is a non-motorized trail)

## **Mass Stability**

The road and trail system of the Forest has contributed to landslides and soil creep on areas prone to mass movement. Road cuts and fills often increase steepness and place added burdens on slopes which may increase the risk of mass instability (Meeuwig et al. 1976). Removing the stabilizing force of roots and vegetation from the road prism may also contribute to mass wasting along travel routes (Swanston and Dyrness, 1973). Mass movements have been documented on main system roads in the Forest. The Herman-McCoy Creek Road was built on unstable landforms and several landslides have occurred on the road prism in the past several years. Small cut-slope failures have also occurred in areas on other forest roads.

## **Erosion Hazard**

Water running off bare, compacted trail treads causes erosion and the potential for subsequent sediment delivery to streams. The amount of erosion from travel routes is dependent on the type of surfacing, maintenance level, and design type, amount of use, and season of use.

## **Riparian Areas and Wetlands**

Springs and wetlands were identified along the existing Winschell Dugway route (Kleinschmidt field notes, Laprevote field notes). The existing Winschell Dugway also crosses Tincup Creek. See the Water Quality section of this analysis.

## **Suitability**

The soils in this area are mapped primarily as unstable or marginally unstable. This does not mean that all areas are unstable. Stable landforms can be found, and this is why site-specific trail design and location are important. The erodibility factors of the soils indicate that keeping the trail grade at 8 to 12%, in addition to recommended drainage structures; will limit excessive erosion (Table 2). Soils are suitable for the proposed trails in areas that have no visible signs of recent mass failure, with slopes less than 45 to 70% (Seyedbagheri 1996) and grade at 8 to 12%. Locations that exceed these limits of suitability will require additional mitigation. Trail design should follow Trails Management Handbook FSH 2309.18 guidance. Starting at Morgan Meadows to the North Fork of Jacknife Creek, the existing trail prism has been water barred on the switchbacks and is in good condition. No failures were identified in this segment of the Winschell Dugway. Several gullies were identified, one several feet deep near Tincup Creek, which appears to be a direct result of poor drainage from a user-created trail segment.

# ENVIRONMENTAL CONSEQUENCES

## Definitions and Assumptions

For the purposes of this analysis, new construction is building a trail where no trail or road previously existed. Reconstruction is improving an old or degraded road or trail prism to current trail standards. Re-routing is moving a degraded or poorly located system trail segment to a different location and closing the old route.

Established roads and trails are essentially eliminated from the productive soil base. Road or trail closures with barriers only and without physical manipulation of the road prism are not considered a soil reclamation measure. Soil impacts such as compaction and decreased infiltration capacity on road or trail prisms can persist for several decades even without continued use. Over the long-term, these areas will recover slowly as they re-vegetate.

## Recommended Mitigation Measures for All Alternatives

- Based on soil texture and inherent erodibility, trail grade should be no more than 10-12% (Trails Management Handbook FSH 2309.18 Chapter 3 Exhibit 02; USDA Forest Service, 1995).
- Segments of the action alternatives not ground verified in project analysis will need to be ground verified to determine capability and compatibility with long-term soil resource goals prior to disturbance.
- Follow trail design and perform maintenance as recommended in the Trails Management Handbook FSH 2309.18, Idaho Department of Lands Best Management Practices and Region 4 Soil and Water Conservation Practices Handbook FSH 2509.22, particularly installing and maintaining drainage structures.

## Recommended Monitoring for All Alternatives

If a mass failure of any type occurs during trail construction, or is found during routine maintenance, it should be documented and reported to District staff. Identification and action on maintenance needs, such as cleaning and rebuilding drainage structures, will be the responsibility of the District. Segments of the proposed trail near Tincup Creek crossing should be monitored for project effectiveness at controlling existing erosion and preventing further soil loss.

## Region 4 Soil Management Handbook FSH 2509.18 Compliance for All Alternatives

Designated transportation facilities such as roads and trails are considered “dedicated use” for lands that comprise the road and trail prism. In this context, impacts to soil productivity resulting directly from the presence of system roads and trails are not evaluated for compliance with Region Four Soil Quality guidelines because the affected

land is managed for transportation and not for site productivity. Effects to soil productivity from the presence of new trail construction, decommissioning of travel routes, and trails re-routed to reduce resource impacts will be evaluated as acres that may be added to or removed from the productive land base. The existing condition of soils within the project area complies with this guidance.

### **Forest Plan Compliance for All Alternatives**

The majority of the trail segments proposed in the action alternatives located in areas identified as unstable or marginally unstable in the Caribou National Forest Resource Inventory were ground verified to determine capability (IDT notes). Portions the Eagle Creek Trail re-route and segments of Alternatives 2, 3 and 4 will need to be ground verified to determine capability prior to disturbance.

The action alternatives proposed in areas identified as unstable or marginally unstable in the Caribou National Forest Resource Inventory were ground verified to determine capability (IDT notes). Portions the Eagle Creek Trail re-route and segments of Alternatives 3 and 4 will need to be ground verified to determine capability prior to disturbance.

System trails are designated for a specific use, and are not expected to meet ground cover guidelines. System trails are designated for a specific use, and are expected to be compacted and have some displacement and erosion. The trails will be designed to standards, and this will minimize the width of the anticipated disturbance.

All alternatives, modified by the mitigation measures meet RFP standards and guidelines and applicable laws.

### **Effects Common to all Alternatives**

Native surface roads and trails are prone to erosion due to the bare, compacted tread and a lack of vegetative cover (Seyedbagheri 1996). Well designed roads and trails, with maintained drainage systems, and appropriate level and season of use, on suitable soils can have low erosion rates. Lack of maintenance and use during periods of low soil strength can increase damage such as accelerated erosion and rutting. Soil impacts tend to be more severe at high elevations, on steep slopes, and on wet, poorly drained soils. Erosion resulting from soil compaction and other adverse off-road vehicle impacts, such as trail widening or multiple trails, are generally greater in wetter soils especially if subjected to heavy use (Meyer 2002).

Off-road vehicles use can result in reduced soil stability, soil fertility, soil moisture retention, and increased wind and water erosion (Belnap, et al, 2001). The Forest Roads Analysis Report contains an assessment of the effects the key travel routes have on erosion and mass stability (USDA-FS, 2002). Standards and guidelines in the Revised Forest Plan provide recovery opportunities for affected soils (RFP 3-37).

### **Effects from User-Created Routes**

When travelers establish new routes, especially to avoid trail obstructions and crossing difficult terrain or wet areas, the subsequent compaction and erosion can reduce soil

productivity. These “pioneered” routes have not been dedicated to transportation uses and are not included in the Forest’s transportation system. Many of the user-created routes that are not on the Forest transportation system are historic routes that were made in the 1950s and 1960s by jeeps, while those made more recently have been by ATVs (USDA FS 2004). User-created roads and trails are more likely to erode than those that have been engineered and maintained. Some disturbance from motorized users was identified in the vicinity of Caribou City, and one user-created trail may originate from Caribou City, but few were identified in other parts of the analysis area (Kleinschmidt field notes, Laprevote field notes). It is estimated that less than 0.5-1 mile of non-system routes exist in the vicinity of Caribou Mountain. The enforcement of road closures is an ongoing issue, but creation of non-system trails is much less of a problem in this area than in other parts of the Forest.

### **Effects of Travel Route Closures**

Closing roads and trails can have a variable effect on the soil resource related to productivity, erosion, sediment, and the level of compaction depending on the method of closure used (Luce 1997, Switalski et al. 2004). Closure methods may include signing, building earthen berms, placing rocks or debris, installing gates, and complete or partial decommissioning by obliteration. An evaluation has been completed for methods of road and trail closures in the analysis area (USDA FS 2004). Reference the Caribou Travel Plan FEIS 2005 for more information.

### **Alternative One: No Action**

#### **Direct and Indirect Effects**

The historic Winschell Dugway route will remain open for non-motorized use. It is only partially visible, and will continue to require cross-country orienteering for those wanting to hike or take stock on this route. Little use is expected and therefore limited soil disturbance. Segments that are currently eroding will continue to erode until reconstructed or re-routed.

#### **Cumulative Effects**

The Caribou Travel plan decision will continue to be enforced, allowing designated use of system trails and timely closure of non-system routes as they are identified. People will continue to use the designated motorized trails in the Caribou Mountain area. Effects of this use, including the potential future creation and closure of additional non-system routes will continue as described above. Non-system routes are anticipated to affect less than two acres, and existing rates of creation and closure are anticipated to keep this affect minor.

## Alternative Two: Proposed Action

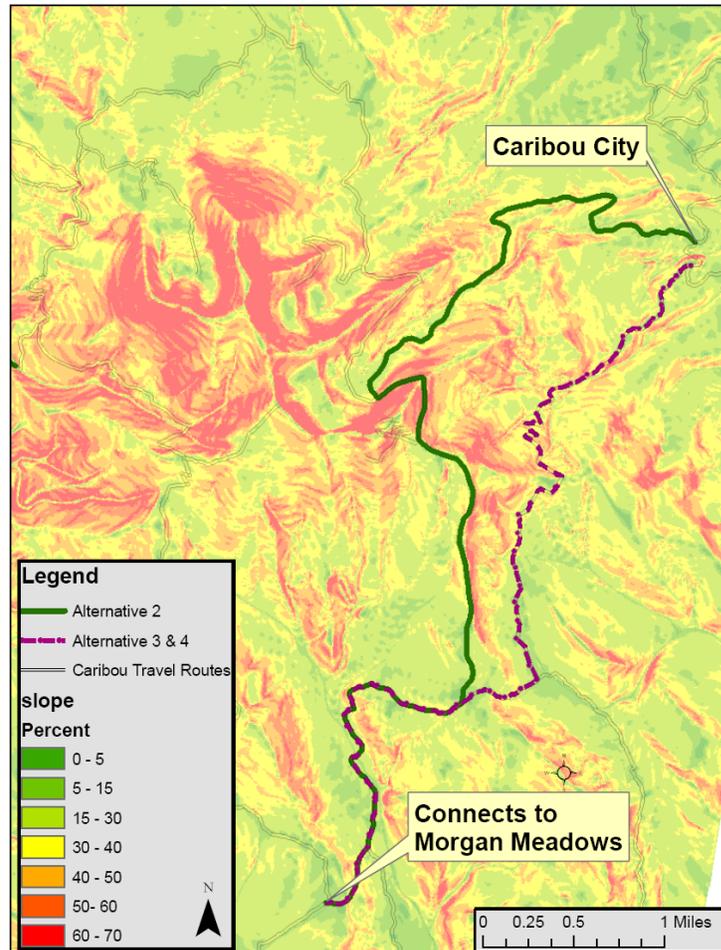
### Direct and Indirect Effects

A new motorized system trail route, utilizing fragments of existing road prisms, is proposed. Trail construction and re-construction will create a non-motorized trail through Jackknife Basin. This will remove about 5 acres of productive land and dedicate it to the travel system. The construction and reconstruction of old road prisms and cutting new trail will require vegetation removal, soil disturbance, and slope re-contouring.

These actions loosen soils and can lead to contributions of sediment to stream systems (Megahan 1977). Following best management practices that establish effective road and trail drainage systems and stabilize cut and fill slopes would effectively reduce erosion within several years (Idaho Department of Lands 1992). Roads built across soils with a high risk for mass movement are especially vulnerable. Meeuwig et al. (1976) found that natural ground slope and fill slope were important factors that contribute to mass failures. Road cuts undermine upper slopes, increasing the probability of soil movement and mass failure. Several studies in the Idaho Batholith show the erosion and mass failure hazards of building a road on steep slopes (exceeding 45-70%) (Seyedbagheri 1996). These concerns are valid for the 0.64 miles of exploration road that is proposed to function as a motorized trail.

This alternative includes

reconstructing the upper portion of the Winschell Dugway for non-motorized travel. Soil compaction and erosion are generally less on trails designed for non-motorized uses compared with motorized trails use (Cole 1999; Weaver et al. 1978). Weaver and Dale (1978) found greater trail widths, depths, and erosion from motorcycles when compared to horses and humans on steep areas. Standard widths for non-motorized trails are also narrower than for motorized trails (about 18" vs. 50" from FSH 2309.18), and narrower trails require less cut and fill on steep slopes. Minimizing the cut and fill reduces the risk of mass failure on unstable slopes and also reduces the erosion risk from these surfaces.



**Figure 3** Relation of the proposed routes to the steep slopes of Caribou Mountain. Note: Alternative 2 includes a non-motorized trail from Jackknife Creek to Caribou City.

The effect is less; however, travel in the form of horseback riding, foot, and mountain bike travel also has impacts on the soil resource and can affect native surfaced road and trail conditions (Sprung 2005). The effects are variable; however, studies have found this type of travel can increase erosion-potential and cause compaction (Vandeman 2004; Sprung 2005). The non-motorized trail portion of Alternative Two will remove about 1.3 acres of productive land and dedicate it to the travel system.

The Alternative Two motorized trail route uses less steep landforms, which have been ground-checked for stability. The route utilizes existing road prisms and remnant of mining activity to traverse the steep east face of Caribou Mountain. From there, the landscape is still mapped as unstable, but the proposed trail placement keeps to the rocky ridgeline, providing both vistas of Jackknife Basin and a stable location for the trail. The proposed trail crosses a degraded sheep bed ground and joins the old prism of the Winschell Dugway at Jackknife Creek. This prism has been water barred on the switchbacks and is in good condition. No failures were identified in the southern portion of the Winschell Dugway. Several gullies were identified lower on the Morgan Meadows/Tincup Creek segment. These gullies coincide with the trail braiding into several user-created trail segments. Under this alternative, the gullies will be stabilized to improve watershed condition.

### **Cumulative Effects**

People will continue to use motorized trails in the Caribou Mountain area, with potentially more use attracted by the new trail and loop opportunities. Several miles of existing trail (trail #608 and #118) were ridden in the fall of 2007 and a cursory assessment of conditions was made (Kleinschmidt field notes). These trails also pass through unstable landforms and are in good condition with few user-created trails, short of a few faint user-created trails exploring the flat ridgelines. Building new motorized trail will result in a loss of about 5 acres of productive soil to a dedicated transportation use. The entire trail mileage was not counted, because old roadbeds are proposed for re-use, which have not been rehabilitated to the point of returned productivity.

The Caribou Travel plan decision will continue to be enforced, allowing designated use of system trails and timely closure of non-system routes as they are identified. People will continue to use the designated motorized trails in the Caribou Mountain area. Effects of this use, including the potential future creation and closure of additional non-system routes will continue as described above in the Effects Common to All Alternatives. Non-system routes are anticipated to affect less than 0.7 acre currently, and existing rates of creation and closure are anticipated to increase slightly due to more areas becoming accessible to motorized users. Minor negative effects are expected due to continued erosion and sedimentation on existing trails and the commitment of an additional 5 acres of productive land.

## **Alternative Three**

### **Direct and Indirect Effects**

Under this alternative the historic Winschell Dugway route would be used to construct a motorized trail route, built to ATV standard. This will remove about 4 acres of productive land and dedicate it to the travel system (Table 2). Effects to soils from construction and reconstruction of remnants of the existing route will be similar as described in Alternative Two. Portions of this route are in good shape, and can be reconstructed, particularly the southern end, which is proposed in both Alternatives 2, 3, and 4. The old route is more difficult to follow after it enters Jackknife basin, and would require more new construction from there north to Caribou City (IDT notes). Unstable land types are mapped throughout this area, affecting trail construction and maintenance similar as in Alternative Two. The existing trail location north of Jackknife basin follows the toeslope of the mountain and crosses some steep slopes. Generally speaking, the toeslope of an unstable landform is not the best location for a trail, especially if the slope is such that it will require cut and fill to build a motorized trail to standard width, making this segment more vulnerable to erosion and mass instability.

### **Cumulative Effects**

People will continue to use motorized trails in the Caribou Mountain area, with potentially more use attracted by the new trail and loop opportunities. Several miles of existing trail (trail #608 and #118) were ridden in the fall of 2007 and a cursory assessment of conditions was made (Kleinschmidt field notes). These trails also pass through unstable landforms and are in good condition with few user created trails short of a few faint user-created trails along a few of the flat ridgelines. Building the new trail will result in a loss of 4 acres of productive soil to a dedicated transportation use. The entire trail mileage was not counted, because old roadbeds are proposed for re-use, which have not been rehabilitated to the point of returned productivity.

The Caribou Travel plan decision will continue to be enforced, allowing designated use of system trails and timely closure of non-system routes as they are identified. People will continue to use the designated motorized trails in the Caribou Mountain area. Effects of this use, including the potential future creation and closure of additional non-system routes will continue as described above in the Effects Common to All Alternatives. Non-system routes are anticipated to affect less than 0.7 acre currently, and existing rates of creation and closure are anticipated to increase slightly due to increased motorized access to previously inaccessible areas. Minor negative effects are expected due to continued erosion and sedimentation on existing trails and the commitment of an additional 4 acres of productive land.

## Alternative Four

### Direct and Indirect Effects

Effects to soils from a non-motorized trail following the historic Winschell Dugway will be similar, but less, than constructing a motorized trail. Soil compaction and erosion are generally less on trails designed for non-motorized uses compared with motorized trails use (Cole 1999; Weaver et al. 1978). Weaver and Dale (1978) found greater trail widths, depths, and erosion from motorcycles when compared to horses and humans on steep areas. Standard widths for non-motorized trails are also narrower than for motorized trails (about 18" vs. 68" from FSH 2309.18), and narrower trails require less cut and fill on steep slopes. Minimizing the cut and fill reduces the risk of mass failure on unstable slopes and also reduces the erosion risk from these surfaces. The effect is less; however, travel in the form of horseback riding, foot, and mountain bike travel also has impacts on the soil resource and can affect native surfaced road and trail conditions (Sprung 2005). The effects are variable; however, studies have found this type of travel can increase erosion-potential and cause compaction (Vandeman 2004; Sprung 2005). This Alternative will remove about 2 acres of productive land and dedicate it to the travel system (Table 2).

### Cumulative Effects

Building the new trail will result in a loss of 2 acres of productive soil to a dedicated transportation use. The entire trail mileage was not counted, because old roadbeds are proposed for re-use, which have not been rehabilitated to the point of returned productivity.

The Caribou Travel plan decision will continue to be enforced, allowing designated use of system trails and timely closure of non-system routes as they are identified. Users will continue to use the designated motorized trails in the Caribou Mountain area. Effects of this use, including the potential future creation and closure of additional non-system routes will continue as described above in the Effects Common to All Alternatives. Non-system routes are anticipated to affect less than 0.7 acre currently and existing rates of creation and closure are anticipated to keep this affect minor.

### Conclusions

All action alternatives designate system trail through a steep, rugged area that is prone to mass failures. No alternative dedicates more than 5 acres of productive land to the transportation system. Maintaining an additional system trail through this area will require varying levels of maintenance to retain trail standards. The more potential for mass failure, the more maintenance will be required to keep to standards. A narrower non-motorized trail is less likely to cause instability than a wider motorized trail. The No Action Alternative protects soil resources the best, followed by Alternative Four. Alternative Two and Alternative Three protect soil resources similarly.

Reducing the productive soil acres on Caribou Mountain by less than 5 acres will not adversely affect the productivity of these watersheds. No action alternatives will result in irretrievable or irreversible commitment of soil resources.

Alternative 2 would provide a motorized trail located on more stable landforms, such as ridgelines and existing road prisms. Alternative 3 utilizes the existing wagon route, the southern end of which is in a suitable location, but is poorly located from Jackknife Basin north, where it follows the toeslope of an unstable landform and crosses a major avalanche chute. Alternative 4 protects soil resources better than Alternative 3, because a non-motorized trail would be narrower and require much less cut and fill. The No Action Alternative protects soil resources the best, followed by Alternative 4. Alternative 2 locates the motorized access on more suitable stable locations, and would therefore protect soil resources better than Alternative 3.

Additional items common to all action alternatives include relocation of approximately three miles of the Eagle Creek ATV Trail, performing heavy maintenance on upper sections of the Barnes Creek Road to improve surface drainage, and improving stream crossings at Barnes, Iowa, Miners Delight, Camp, Bilk, and McCoy creeks, where the road-stream interface contributes sediment to the streams. These items will all have temporary short-term increases in soil erosion, with a long-term benefit to soil resources.

**Irretrievable Commitment:** Building new trails disturbs soils, removes vegetation, and is a dedicated use of the soil resources, which is an irretrievable commitment of resources (Caribou Travel Plan FEIS).

**Irreversible Commitment:** No action alternatives will result in an irreversible commitment of soil resources, because the trails can be reclaimed (Caribou Travel Plan FEIS).

## Issue Two: Water Quality

### Analysis Area, Methods and Indicators

This assessment of hydrologic, wetland and watershed resources is intended to disclose the current conditions, potential benefits and impacts from the proposed action. The affected land area for direct, indirect and cumulative effects consists of the four HUC-5 watersheds surrounding Caribou Mountain. These watersheds include Barnes Creek, Anderson Gulch, Bilk Creek, Jackknife Creek, Tincup Creek and the North Fork of Eagle Creek. This area was chosen because it corresponds to the scale of the water quality analysis for the Travel Plan FEIS. GIS data of hydrology and watershed boundaries were collected by the US Geological Survey, GIS wetlands data by the US Fish and Wildlife Service.

Motorized trails have the potential to affect streams and wetlands. Effects include elevated sediment, changes in flow, flow diversion, altered morphology and lowered wetland water tables. Disturbances could result in the reduced stability, biologic diversity and loss of beneficial uses. Indicators used to discuss and compare alternative effects to water quality are 1) miles of designated motorized trail within Aquatic Influence Zones (AIZs) of streams and 2) number of designated motorized routes that cross perennial streams.

### Forest Plan and Travel Plan Direction

The 2003 Forest Plan states that forest roads and trails are managed to maintain or improve watershed condition (RFP III-36). Prescription 2.8.3 governs AIZs as a special

emphasis area for water. The Desired Future Condition for AIZs relative to roads includes:

- Roads in riparian areas are few and stable.
- Roads exist in riparian areas only where there are no practical alternatives.
- Some road corridors are apparent, but roads in sensitive landscapes are few and stable.

General Riparian Area Management in the Forest Plan has standards and guidelines for limiting new construction of roads. They include proper design and maintenance of culverts and stream crossings (RFP III-15). Goals for prescription 2.8.3 state “Natural timing and variability of the water table elevation in meadows and wetlands is maintained or restored” (RFP IV-47).

### Best Management Practices for Water Quality

Best Management Practices (BMP's) are designed to prevent or minimize short-term increases of non-point sediment delivery to streams. The Forest Service BMP process for forest activities include:

- BMP selection and design using site-specific conditions; feasibility; potential for impacts to water quality, beneficial uses, and stream stability.
- BMP application.
- Monitoring to ensure effectiveness.
- Evaluation of the BMP monitoring results.
- Feedback the results into current/future activities and BMP design.

BMPs can be adapted to local conditions. Forest experience indicates that adaptation is effective at meeting changing needs for motorized trail design. Designs for motorized crossings of wet areas are of particular concern because wet soils are prone to shearing and displacement, resulting in delivery to streams.

### Existing Condition for Water Quality

Existing motorized routes occur in McCoy Creek, Jackknife Creek, Tincup Creek and Willow Creek drainages. The tables below display the existing miles of motorized route and route densities for each watershed and the motorized route miles within AIZs, route densities and stream crossings. There are no 303d, TMDL, or habitat impaired streams in these watersheds on the Forest (IDEQ, 2005). All the affected watersheds were rated as having moderate water quality in the Revised Forest Plan FEIS (USDA-FS, 2005).

**Table 2. Existing Designated Mot. Travel Routes by HUC-5.**

HUC-5, major stream on Forest	HUC area sq mi	Miles of travel route	Road/Trail Density
1704010411 - McCoy Cr	88.12	55.0	0.7
1704010509 - Tincup Cr	75.62	28.8	0.7
1704010510 - Jackknife Cr	43.94	13.4	0.3
1704020507 - Eagle Cr	27.84	33.5	1.0

**Table 3. Existing Designated Mot.Travel Routes in AIZs by HUC-5.**

HUC-5, major streams on Forest	AIZ area sq mi	Mile Mot.r oute	Density mi/mi <sup>2</sup>	Stream crossings
1704010411 - McCoy Cr	17.96	20.6	16.6	35
1704010509 - Tincup Cr	11.35	26.4	14.9	23
1704010510 – Jackknife Cr	9.51	10.8	10.8	14
1704020507 – Eagle Cr	3.20	6.8	7.7	22

### Existing Trail Drainage

Trail drainage is a critical need within the project area. Fine grain soils with low infiltration capacities occur in portions of the Tincup and Jackknife Creek basins. In most cases, ATV traffic on native surfaced trails occurring on finer grained soils tend to form distinct cupped tracks which interfere with drainage design features.

### Existing Water Crossings and Wet Areas

Primitive stream fords are crossings with little engineering design or structure. They tend to “incise” a drainage path through the floodplain and bank and enhance sediment delivery to the stream (Malinga, et. al 2007). Finer grained soils, less cohesive soils and steep slopes increase delivery. In general, streams that are dependent on vegetation for stabilization are often sensitive to disturbance (Rosgen, 1994). Trails in the bottom of drainage swales tend to capture and collect surface drainage. Being collection points, they are more likely to be wet for longer periods. Primitive crossings can also increase petroleum-based pollutants through the direct contact of vehicles and water. Primitive crossings can degrade channel stability and form knick points (changes in channel gradient) which can initiate incision of the channel above and below the crossing point.

There are numerous primitive stream crossings along the route of the Winschell Dugway wagon road, including a primitive ford across the North Fork of Tincup Creek.

The Eagle Creek ATV Trail has eleven existing primitive ford stream and wetland crossings. Most of the 1.85 miles of trail occurs within the AIZ. The trail runs within 20 to 50 feet of Eagle Creek. Existing channel crossings are causing sediment delivery and there are no existing drainage dips or water bars on the passable segments of the Winschell Dugway wagon road and on Eagle Creek ATV trail.

There is an existing roadbed in the Bilk Creek drainage between Caribou City and Barnes Creek. This roadbed is located outside the AIZ on the south side of the drainage. The roadbed leads up to a plateau roughly parallel to Bilk Creek. The existing (abandoned) approach to the west (south) bank of Bilk Creek is stabilized and is in rocky materials that would limit sediment production. The channel at that old crossing is entrenched and braided making it a poor site to for a travel way crossing. An area just west of the crossing has been hydraulically mined leaving a boulder field of about two acres. The far north side of the boulder field is moderately sloped and relatively low in rock content. This area would be suitable for trail construction.

## **Erosion and Sediment Delivery from Trails**

Surface erosion and transport from trails differs greatly depending on soil, trail, and vehicular factors. Soil and trail factors include: erodibility; slope and soil texture. Runoff occurs on steeper, native surfaces of fine grain non-cohesive soils, such soils tend to produce and transport more sediment. Finer grained soils also tend to compact more easily and thereby reduce infiltration, which increases runoff. Trails in drainage bottoms have greater impacts to water quality because they cannot be drained, they are the drainage way. In fine-grained, non-cohesive soils, trails in bottoms are particularly prone to creating gullies. Many trails, including the Eagle Creek Trail, were originally designed for the foot and horse traffic. Motorized use of trails increases the need for more robust drainage design.

Sediment delivery is influenced by the proximity of trails to stream channels. NRCS in Idaho (NRCS, 2002) advocates a 100 ft. protective width to maintain water quality of adjacent streams. Moving trail segments farther from streams is likely to benefit water quality, stability and biologic diversity by reducing sediment delivery to streams and wetlands.

## **ENVIRONMENTAL CONSEQUENCES**

Each alternative is evaluated for the expected benefits, miles of route within AIZs, and number of trail crossings on a comparative basis. Greater reduction in miles of motorized trail in AIZs and in number of stream crossings are judged as giving increased benefit to the watershed.

### **Potential Extraordinary Circumstances**

Hydrologic resources related to extraordinary circumstances (USDA-FS, 2004) include floodplains, wetlands, and municipal watersheds; however, it is the degree of the potential effect of a proposed action to a resource rather than the mere presence that determines whether there are extraordinary circumstances. There are no floodplains within the project area as defined by E.O. 11988. There are no municipal watersheds or culinary water facilities that would be affected by the proposed action or alternatives. Effects of any potential new wetland crossings would be minimal as long as Forest Plan standards and guidelines, plan prescriptions and Corps of Engineers regulatory requirements are met.

### **Mitigation and Design Features for All Action Alternatives**

#### **Wetland and Stream Crossing Design**

All new and reconstructed stream and wetland crossings would be designed to minimize impacts and to meet all applicable guidance, regulations and BMPs. Most or all of existing perennial stream fords involved would be replaced by trail bridges. Where possible, bridge abutments would be positioned above ordinary high water marks. Construction of ramped bridge approaches is desirable to ensure the adjacent trail and ramp does not drain directly into the stream. Wetlands typically would be crossed at the narrowest point. Crossing structures will preserve flow regimes and water tables.

## **Drainage Features**

Earthen water bars built in fine soil materials are not durable over time and are not recommended. Drainage dips of a standard length also tend to wear out fairly rapidly in fine soil materials. Periodic reversals in grade, when designed into new sections of trail are recommended because they are more durable and require only minimal maintenance (Hesselbarth, 2007). Periodic grade reversal lengths of at least 50 feet (slope length contrary to prevailing grade) are recommended to ensure their durability. To minimize delivery of sediment to streams, the length of trail that drains toward stream channels (perennial, intermittent or ephemeral) should be minimized. A short length draining to each channel crossing is necessary; otherwise the trail may capture flow from the drainage and cause erosion and sediment. Design features for minimizing adverse effects to streams include:

- Trails cross drainage lows and do not run up the bottom of them.
- Trails cross AIZs as close to 90° angle as practical while providing proper drainage and without causing rutting.
- No dependence on water bars where soils have >70% silt or >40% clay or >80% sand.
- Use of grade reversal >25' long for at least 33% of cross-drainage needs.
- Bridge approaches are ramped; bridge deck bottom is above floodplain + additional 0.5' higher (or as determined by agency hydrologist) for debris passage clearance.
- Trail drainage spacing calculations will assume trail tread is rutted. Spacing design will use WEPP methodology or other scientifically valid equivalent.
- Trail in AIZs should be moved as far away from water as practical to benefit water quality, stability and biologic diversity.
- Bridge ramps on >70% silt or >40% clay or >80% sand use geotextile.
- Trail drainage spacing calculations will assume trail tread is rutted. Spacing design will use WEPP methodology or other scientifically valid equivalent.
- Trail tread that drains to perennial stream crossings (up to 25') are stabilized with angular material as needed to prevent rutting. Added material is well-graded to maintain compaction. Alternates to be approved with input from hydrologist/soil scientist.
- Where trail tread requires major added angular rock, geotextile is usually used

- Wetland crossings will be constructed to allow full permanent subsurface drainage under trail tread and prevent surface or subsurface shearing of soils.
- Avoid all areas of organic soils with organic surface layer > 4 inches.
- Use puncheon, bridge, well-graded gravel & geotextile or equivalent to cross poorly drained or saturated soils, ponded water, or water table <1' deep.

## **ALTERNATIVE ONE – NO ACTION**

### **Direct and Indirect Effects**

Under this alternative, Winschell Dugway would remain an un-maintained non-motorized trail. No reconstruction, re-routing, installation of bridges, or trail re-routes would occur. Ongoing effects from Eagle Creek trail would continue. These effects include ongoing elevated sediment, reduced channel stability, increased potential for oil/grease contamination of waters, and impact to wetlands.

### **Cumulative Effects**

The cumulative effects area is the same as the direct effects area. Potential effects would be too small to be measured beyond this area, due to small streams near proposed new segments joining with much larger or far more impacted streams downstream.

### **Effects Common to All Action Alternatives**

#### **Sediment Delivery**

Some short-term negative effect from sediment delivery to streams is anticipated from construction of new trail segments and decommissioning of old segments. The construction and re-construction of trails away from drainage bottoms and with adequate drainage design, including grade reversals, cross-drainage dips, and out sloping of the trail surface will help shed water quickly as dispersed sheet flow. Shedding water load quickly helps reduce trail wetness, loosening of trail materials and concentration of flow. Trails that shed water as dispersed flow are unlikely to deliver sediment to streams. Moving trail segments away from streams would help protect water quality and reduce sediment from those trails. Trail construction and re-construction would follow Forest Plan directives and BMPs.

#### **Stream Crossings**

The elimination of primitive stream fords would reduce sediment by reducing bank erosion and tendency of adjacent trail to drain into the stream. Properly constructed trail bridges decrease impacts to streams in three key ways. First, they keep vehicles out of the water, which reduces the potential for oils, grease, weed seeds, etc. from washing into the stream and contaminating the water and/or lands downstream. Second, bridges which have elevated approach ramps at each end, cause waters at the crossing to drain away from the stream (down the ramps) rather than to the stream as with a primitive ford.

Third, bridges minimize risk of impacts to the channel, which include bank erosion, sediment and widening the channel and related potential for creation of a knickpoint.

## **Drainage Features**

Where trails must cross or skirt streams and wetlands, upgrading drainage features of the trails to fit Best Management Practices and Forest standards would greatly reduce the impacts to water and riparian resources. Improving drainage from these trails can be more effectively diffused onto surrounding terrain, which dissipates flow energy, causing sediment and other potential pollutants to be deposited before reaching streams.

## **Eagle Creek ATV Trail Reconstruction**

All ten existing primitive crossings of Eagle Creek will be eliminated. Two trail bridges would be constructed in their place. The net result would be an overall beneficial effect to stream stability, water quality and wetland resources in the area. The watershed benefits for N.F. Eagle Creek would be substantial.

## **Alternative Two**

### **Direct and Indirect Effects**

Under Alternative Two, new trail construction in Bilk Creek would use an existing roadbed that occurs outside the AIZ and on stable topography and soil. This route would require a trail bridge crossing of Bilk Creek about 0.5 miles east of Caribou City. This is the proposed location because the stream channel is a single thread, and channel material is tightly packed boulder-sized rock. Effects for the additional trail and bridges constructed would be minimal due to the favorable soil conditions and somewhat rocky nature of much of this proposed alignment.

Under this alternative, fewer miles would be constructed in sensitive soils and fewer crossings would be used than under Alternative Three, therefore less impact is anticipated from this alternative. New motorized trail construction has potential for more sediment; effects are expected to be more than under Alternative Four. Impacts from new construction are anticipated to be too small to measure at the watershed scale. Effects from new construction are expected to subside in five years or less. Effects from the new construction, including the bridges on Tincup and Bilk Creek under this alternative would be less than the benefit from removing the primitive crossings on N.F. Eagle Creek, meaning that there would be an overall long term benefit to hydrologic resources.

### **Cumulative Effects**

The cumulative effects area is the same as the direct effects area. Potential effects would be too small to be measured beyond this area, due to small streams near proposed new segments joining with much larger or far more impacted streams downstream.

## Alternative Three

### Direct and Indirect Effects

Under Alternative Three some short-term negative effect from sediment delivery to streams is anticipated from construction and reconstruction of new trail segments and decommissioning of old segments to make the old wagon road passable for ATV traffic. Due to the construction in more areas of sensitive soils, substantial additional construction and/or maintenance measures in those areas may be needed to maintain the trail properly to minimize the sediment potential. If additional maintenance frequency becomes necessary, some very small additional sediment could be produced. Impacts from new construction are anticipated to be too small to measure at the watershed scale. Effects from construction and reconstruction are anticipated to recover in five years or less.

### Cumulative Effects

The cumulative effects area is the same as the direct effects area. Potential effects would be too small to be measured beyond this area, due to small streams near proposed new segments joining with much larger or far more impacted streams downstream.

## Alternative Four

### Direct and Indirect Effects

Under Alternative Four some short-term negative effect from sediment delivery to streams is anticipated from construction and reconstruction of new trail segments and decommissioning of old segments to make the old wagon road passable for pedestrian, stock and mountain bike traffic. Trail construction and re-construction of trails will use Forest Plan standards and guidelines and the described BMPs. Impacts from new construction are anticipated to be too small to measure at the watershed scale. Effects from construction and reconstruction are anticipated to recover in five years or less.

### Cumulative Effects

The cumulative effects area is the same as the direct effects area. Potential effects would be too small to be measured beyond this area, due to small streams near proposed new segments joining with much larger or far more impacted streams downstream.

## Comparison of Alternatives

**Table 4: Net Changes in Motorized Route Miles in AIZs**

HUC-5, major streams on Forest	Alt 2	Alt 3	Alt 4
1704010411 McCoy Cr	+0.9	+1.0	0
1704020507 Grays Lake	-1.0	-1.0	-1.0
1704010509 Tincup Cr	+1.0	+1.0	0
1704010510 Jackknife Cr	0	+0.4	0
Net change in motorized AIZ miles =	+0.9	+1.4	-1.0

**Table 5: Net Change in Motorized Stream Crossings**

HUC-5, major streams on Forest	Alt 2	Alt 3	Alt 4
1704010411 - McCoy Cr	+2	+3	0
1704020507 - Grays Lake	-8	-8	-8
1704010509 - Tincup Cr	+1	+1	0
1704010510 - Jackknife Cr	0	+1	0
Net change in crossings =	-5	-3	-8

## CONCLUSIONS

Based on the analysis of the existing conditions and alternatives, all action alternatives are consistent with hydrologic-riparian-wetland guidance and Forest Plan prescription(s). Protection of beneficial uses to state standards is expected for all alternatives.

### Irretrievable and Irreversible Commitment of Resources

With implementation of BMPs, Forest Plan standards and guidelines and design features identified for all action alternatives, there would be no irretrievable and irreversible commitment of hydrological resources that would be measurable at the watershed scale.

## Issue Three: Fish Habitat and Aquatic Species

### Analysis Area, Methods and Indicators

Designated motorized travel routes have the potential to affect aquatic and riparian-dependent species, particularly where they encroach upon riparian areas and water and when they are located on unstable soils. Potential impacts to fish habitat include decreases in riparian vegetation and its benefits to riparian areas and water (shading, large wood delivery, bank stabilization, filtering, and nutrients), increases in erosion, and increases in sediment delivery to water.

Direct and indirect effects discuss the existing condition and impacts to Bilk, Jackknife, Tincup, and North Fork of Eagle creeks. The proposed management activities are within these watersheds. The assessment of potential impacts from each alternative is based on the number of stream crossings from motorized routes. Motorized travel routes and stream crossings contribute sediment delivery to streams, which can impact fish habitat and aquatic species.

The cumulative effects analysis for fisheries will concentrate upon effects to Yellowstone cutthroat trout and their habitat. The analysis area for discussion of fisheries cumulative effects include waters that drain off the Caribou Mountain area. This includes North Fork Eagle Creek to its mouth, Bilk Creek through McCoy Creek to Palisades Reservoir, and Jackknife and Tincup creeks to the Salt River. This extended analysis area accounts for both resident and migratory life history patterns of Yellowstone cutthroat trout in these streams. Analyzing an area that incorporates consideration of migratory fish is important because these fish help to maintain the resiliency of stream populations.

## **Forest Plan Direction for Fisheries**

The goal of the Revised Forest Plan (RFP) is to restore native ecosystems to a healthy, resilient state using a combination of active management activities and natural processes. Management direction is to improve, maintain or restore riparian vegetation, channel stability and function, and other aquatic resources. Standards and guidelines are established for riparian and aquatic areas, which provide for the protection of these resources and dependent species. Restoration of ecological systems is a key component of maintaining the viability of native and desired nonnative species. Management emphasis includes restoring native cutthroat trout populations. Forest Plan standards state that the Forest will design, construct trails in a manner that will maintain progress toward desired AIZ attributes.

## **Forest Service Manual Direction**

Forest Service Manual Direction states:

- Each District Ranger has the authority and responsibility to implement management direction and ensure that standards and objectives for wildlife and fish, including endangered, threatened, and sensitive animal and plant species, are met. (FSM 2620.45)
- It is Forest Service policy to emphasize the protection, enhancement, and maintenance of habitats for production of wildlife and fish. (FSM 1640.3)
- Develop and implement management practices for Sensitive species to ensure that species do not become threatened or endangered because of Forest Service actions. Maintain viable populations of all native and desired nonnative wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands. (FSM 2670.22)
- Avoid or minimize impacts to species whose viability has been identified as a concern. (FSM 2670.32)
- Sensitive Species Management: Sensitive species or native plant and animal species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing. There must be no impacts to sensitive species without an analysis of the significance or adverse effects on the populations, their habitat, and on viability objectives when making decisions that would significantly reduce sensitive species numbers. (FSM 2672.1)

Interagency Yellowstone Cutthroat Trout Memorandum of Agreement

**Conservation goals and objectives have been developed for Yellowstone cutthroat trout in the Memorandum of Agreement for Conservation and Management of**

**Yellowstone Cutthroat Trout among Montana, Idaho, Wyoming, Nevada, Utah, US Forest Service, Yellowstone National Park, and Grand Teton National Park (Anonymous 2000). The agreement's goal is to ensure the persistence of Yellowstone cutthroat trout within its historic range and to manage them to provide adequate numbers and populations.**

## **Existing Conditions for Fish Habitat and Aquatic Species**

Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*) were documented as the dominant salmonids within the project area streams of Bilk, Jackknife, Tincup, and North Fork Eagle Creek. The Forest considers them YCT stronghold streams.

### **Yellowstone cutthroat trout**

U.S. Fish and Wildlife Service was petitioned to list Yellowstone cutthroat trout in August 1998. In February 2001, U.S. Fish and Wildlife Service determined the petition did not provide substantial information to indicate listing may be warranted. In January 2005, a Federal Court asked U.S. Fish and Wildlife Service to re-visit their decision. In March 2006, the Fish and Wildlife revisited their finding and reaffirmed their earlier determination. In May 2006, the litigants announced their intention to sue the U.S. Fish and Wildlife Service over their finding. Yellowstone cutthroat trout currently retains its status as a Sensitive species on the Regional Foresters Sensitive Species List.

The Caribou portion of the Caribou-Targhee National Forest addresses the needs of Yellowstone cutthroat trout by maintaining consistency with its revised Forest Plan and the 2000 interagency conservation memorandum of agreement for Yellowstone cutthroat trout.

The original cutthroat trout native to the Snake River system in Idaho may have been the Yellowstone cutthroat trout. It is believed they were replaced by rainbow trout and other subspecies of cutthroat trout in drainages downstream of Shoshone Falls. Shoshone Falls isolated cutthroat trout from contact with rainbow trout and the Yellowstone subspecies remains the native trout in the upper Snake River basin.

Both large-spotted and fine-spotted varieties of Yellowstone cutthroat trout occur on the Forest. The two varieties have been observed inhabiting same streams and, in fact, the same habitat within the stream. Distribution surveys within the Caribou half of the Forest that were historically inhabited by Yellowstone cutthroat trout determined thirty-nine sub-watersheds have strong populations, twelve sub-watersheds have depressed populations, and four sub-watersheds have no Yellowstone cutthroat trout present where they have historically occurred.

### **Motorized Trails and Streams**

Trails used by motorized vehicles have the potential to affect fish and their habitat throughout most of the project area. Trails have frequently been established parallel to streams and often serve as sources of sediment to water bodies. In addition, trails may affect riparian vegetation, potentially affecting stream temperature, frequency of large instream wood, and available floodplain, which decreases the ability of the stream to

dissipate energy. These impacts can increase stream bank instability and surface fine sediment deposits in the stream channels (Furniss et al. 1991), likely affecting cutthroat trout and other aquatic species. Generally, the closer the trail is to streams and the less maintenance and surfacing of the trail, the more sediment delivery (Furniss et al. 1991). Generally, the wetter the weather during trail use, the more sediment delivered to streams from erosion during motorized use. Fine sediment, when delivered to streams, has the potential to affect aquatic habitat. Fine sediment covers spawning gravels, decreasing spawning success. Sedimentation can fill pools that would otherwise be valuable rearing and adult habitat (Kaufman et al. 1983 and Platts 1991). An increase in sediment has the potential to decrease the survival of trout embryos (Irving and Bjornn 1984).

### **Existing Condition of Streams**

Bilk Creek is a Yellowstone cutthroat trout stronghold tributary to Iowa Creek, within the McCoy Creek drainage. The stream was surveyed in 2003 and only Yellowstone cutthroat trout were collected. Extensive stream channel damage from past mining activities was documented through most of the stream length (Berg 2002). Further downstream, Iowa Creek had much of the same impacts from past mining. Yellowstone cutthroat trout were the only salmonid observed there.

Jackknife Creek was surveyed by in 2001 and determined to be a Yellowstone cutthroat trout stronghold. Habitat conditions were generally good with good habitat complexity. Willows, red osier dogwood, and Englemann spruce dominated the riparian area. In places, large instream wood provided excellent habitat conditions.

Tincup Creek's stream habitat has been more affected by roads, grazing, and streamside campsites. State Highway 34 encroaches upon the stream in several locations and two crossings present barriers to upstream fish migration. Sheep grazing impacts have been documented, particularly at stream crossings. Stream bank impacts were also documented at popular campsites.

The North Fork of Eagle Creek flows into Eagle Creek which flows into Gray's Lake. Eagle Creek was surveyed in 2002 and was dominated by non-native brook trout; however, North Fork Eagle Creek was dominated by native Yellowstone cutthroat trout. Beaver dams near the confluence of the streams have excluded brook trout migrations into the North Fork. Riparian vegetation consisted of willows, lodgepole pine, and aspen. Although an old, closed road parallels the stream, habitat quality was in good condition. Old road crossing structures are no longer fully functioning in the road fill and should be removed.

### **The Wenschell Dugway**

The Wenschell Dugway road had been closed to motorized use since the mid-1980s. Sections of the trail have effectively disappeared due to slides. Foot traffic on the trail is minimal. The lack of maintenance may allow fallen trees to remain over the trail, providing large wood to streams and riparian areas when they fall there.

## **ENVIRONMENTAL CONSEQUENCES FOR FISH HABITAT AND AQUATIC SPECIES**

### **Water Quality/Fish Mitigation Measures for All Action Alternatives**

Each action alternative includes the improvement of stream crossings at Barnes, Iowa, Miners Delight, Camp, Bilk, and McCoy creeks, where the road-stream interface has impacted fish migration and contributes sediment to the streams. These actions are expected to fully mitigate the potential sediment contribution and riparian and aquatic habitat impacts within the McCoy Creek drainage. These actions will improve the resiliency of the Yellowstone cutthroat trout populations in these tributaries by providing access for migratory fish to enter these streams for spawning and rearing.

### **Alternative One – No Action**

#### **Direct and Indirect Effects**

The no-action alternative would have the least potential for sediment into streams adjacent to the Winschell Dugway. The no-action alternative does not include the mitigation measures that would improve stream conditions in the North Fork of Eagle Creek, the improvement of Barnes Creek Road, and the physical closure of user-created routes. In addition, this alternative would not improve stream crossings at Barnes Creek (eroding fords), Iowa Creek (bridge abutment scouring), Miners Delight (undersized and perched culvert), Camp (undersized and perched culvert), Bilk (sediment source ford), and McCoy (perched and undersized culvert near guard station) creeks.

#### **Cumulative Effects**

The No Action Alternative is not expected to increase sediment delivery. The non-use of the Dugway will eventually result in decreases in sedimentation under the No Action Alternative over the long term. Some past and present activities that impact Aquatic Influence Zones include firewood collection, road and trail construction and use, grazing, timber sales, off-trail motorized use, aspen cutting, wildfire suppression, prescribed burns, trail construction, trail maintenance, mining, dredging, residential development, dam building and use, irrigation diversions, and other agricultural practices. Future activities are expected to be similar, with more of an emphasis on residential development impacts on neighboring private land. While most of these actions do not individually contribute overwhelming impacts to riparian and aquatic habitat and biota, they collectively maintain a baseline of impacts within the project area that is greater than pre-management baselines.

#### **Effects Common to All Action Alternatives**

The relocation of the North Fork Eagle Creek Trail away from the stream, the improvement of Barnes Creek Road, and the closure of user-created routes will be implemented in all action Alternatives. These actions will benefit aquatic resources in these areas through improvements in riparian vegetation and decreases in associated sedimentation.

## Alternative Two

### Direct and Indirect Effects

Alternative Two proposes to construct and reconstruct an ATV trail in stable soil locations, minimizing stream crossings. The stream crossings will include bridges to decrease stream channel impacts and sedimentation. Some trail portions may result in slope failures that could deliver trail-related sediment to streams. Depending on the magnitude of these failures, aquatic habitat may be impacted in upper Bilk, Jackknife, and Tincup creeks with increased sedimentation. The riparian areas at the stream crossings will likely be impacted due to construction and general maintenance, potentially decreasing shade and large wood input to the streams. This alternative improves the location of some trail segments and has less impact to aquatic resources than Alternative Three, but more than Alternative Four.

All action alternatives have the potential to result in impacts to riparian and aquatic habitat and biota because of the effects associated with the opening and use of the Winschell Dugway trail. This would add to past, current, and reasonably foreseeable future management actions in the cumulative effects analysis area. However, some of these impacts would likely be offset by the improvements proposed for North Eagle and Barnes creeks and where user-created trails are closed and the McCoy Creek drainage where road crossings will be improved.

### Cumulative Effects

All action alternatives have the potential to result in impacts to riparian and aquatic habitat and biota because of the effects associated with construction and reconstructing trails. This would add to past, current, and reasonably foreseeable future management actions in the cumulative effects analysis area. However, these impacts would likely be offset by the improvements proposed for North Eagle and Barnes creeks and where user-created trails are closed and the McCoy Creek drainage where road crossings will be improved.

Past, present and future activities that impact Aquatic Influence Zones are the same as those described in Alternative One. While most of these actions do not individually contribute overwhelming impacts to riparian and aquatic habitat and biota, they collectively maintain a baseline of impacts within the project area that is greater than pre-management baselines. The construction, reconstruction and use of motorized and non-motorized trails have the potential to add to the current baseline, creating cumulative effects. Some sediment loading will be offset by the improvement of road crossings further downstream in the McCoy Creek watershed, decreasing cumulative effects associated with this alternative. Providing fish passage at impassable culverts in the McCoy Creek drainage will facilitate migratory Yellowstone cutthroat trout access to populations within the project area, increasing the resiliency of resident populations. The degree of sediment delivery associated with this alternative, when considered with past, present, and reasonably foreseeable actions, will likely result in cumulative effects. On a landscape scale, this will be decreased with the implementation of proposed road crossing improvements.

## **Alternative Three**

### **Direct and Indirect Effects**

Alternative Three constructs and reconstructs the existing route of the Dugway for ATV travel. The sedimentation described in Alternative Two would increase under this alternative because more trail miles would be located on unstable soils and there are more stream crossings. This could result in more impacts to the quality of aquatic habitat and fish reproductive success.

### **Cumulative Effects**

Of the action alternatives, Alternative Three has the most potential for sediment delivery in addition to existing sediment loads from a variety of forest uses and processes within the project area because it would use the most unstable route for the trail and would potentially generate the most sediment, adding the most to current sediment loads. Cumulative effects for the project area streams would be similar to those described in Alternative Two.

## **Alternative Four**

### **Direct and Indirect Effects**

This alternative constructs and reconstructs the Dugway for non-motorized travel, including mountain bikes and stock use. This alternative has less potential impacts to aquatic resources than Alternatives Two and Three. Construction and reconstruction of a non-motorized trail has the potential for more impacts to streams adjacent to the Dugway than Alternative One. Potential impacts include loss of riparian vegetation and fallen trees during trail maintenance. Frequent use of the trail may increase sediment delivery beyond current conditions. Cumulative effects for the project area streams would be similar to those described in Alternative Two.

### **Cumulative Effects**

Of the action alternatives, Alternative Four has the least cumulative effects associated with it because trail construction and reconstruction would be for non-motorized travel. Cumulative effects for the project area streams would be similar to those described in Alternative Two and Three.

## **Conclusions**

Alternative One would have the least impact to aquatic and riparian habitat as a result of sedimentation and riparian vegetation impacts from recreational travel. Alternative Four would have less impact to aquatic resources than Alternative Two. Alternative Three has the potential for the greatest impacts because of the higher risks of trail failure and sediment generation to streams.

Each of the action alternatives would benefit aquatic habitat in North Fork Eagle Creek because they would decrease sediment delivery to the stream.

Each action alternative would benefit aquatic habitat in McCoy Creek and some tributaries because they include the improvement of stream crossings at Barnes, Iowa,

Miners Delight, Camp, Bilk, and McCoy creeks. These actions are expected to fully mitigate the potential sediment contribution and riparian and aquatic habitat impacts within the McCoy Creek drainage. These mitigation measures will add to the resiliency of the Yellowstone cutthroat trout populations in these tributaries by providing access for migratory fish to enter these streams for spawning and rearing.

Forest Plan Standards direct the Forest to design, construct, and operate new recreation facilities, including trails and dispersed sites, in a manner that maintains progress toward desired AIZ attributes. Unmitigated impacts associated with the use of the trail will not likely maintain progress toward desired AIZ attributes, including improving waters that do not meet beneficial uses and streams that are considered Yellowstone cutthroat trout stronghold streams. Mitigation measures incorporated into the action alternatives are expected to offset these impacts and, on a landscape scale, maintain progress toward desired AIZ attributes.

### **Irretrievable and Irreversible Commitment of Resources**

Irretrievable effects are those that can result in a decrease in the quality or quantity of fish habitat or populations. Changes in management activities have the potential to reverse this effect. Irretrievable effects can be reached from the intense use of a single forest resource or several forest resources affecting the same area. The No Action Alternative will not result in an irretrievable effect because no management action will occur. The action alternatives have the potential to create irretrievable effects because there is a potential for an increase in sedimentation associated with the development and use of the Wenschell Dugway trail. These impacts would decrease over time if the decision was made to close the trail and restoration efforts were implemented. Irreversible effects are those that can result in a permanent loss of habitat or populations. Irreversible effects eliminate future management options. The four alternatives discussed in this analysis would not result in an irreversible effect because trail closure and prompt restoration have the potential to address effects.

## **Issue Four: Caribou City Roadless Area's Wilderness Characteristics and Roadless Values**

### **Analysis Area, Methods and Indicators**

Construction and reconstruction of trails within the project area have potential to affect the area's existing wilderness characteristics and the existing roadless values of the Caribou City Roadless Area. The analysis area for direct and indirect effects is the Caribou City Roadless Area. The analysis areas for cumulative effects are the Caribou's roadless areas when assessing roadless values and the Designated Wilderness Areas within Idaho when assessing wilderness potential. Information and data for roadless areas and Designated Wilderness are available at these scales and these landscapes have similar recreation use and resource values.

The proposed action and alternatives are designed to benefit recreation trails in the area. The Caribou City Roadless Area will be analyzed from two perspectives. One perspective will consider the proposed action and alternatives' effects to the area's wilderness attributes and the other will discuss the proposed action and alternative's

effects to the area's roadless values. The indicator used to measure effects to the existing wilderness character of the Caribou City Roadless Area will be the potential changes to the six wilderness characteristics by alternative.

Roadless Areas also have values that stem from the area being unroaded and undeveloped. The roadless values associated with water quality, fisheries, rare plants, wildlife and special cultural features (heritage) are discussed under those sections of the EA and summarized here. The indicator used for effects to the roadless values of semi-primitive motorized and non-motorized recreation settings will be acres of change between the ROS settings. The roadless value of "reference landscapes" and "scenic integrity" within Caribou City Roadless Area is also discussed in this section. The roadless value of maintaining a stronghold against invasive species is discussed under the noxious weed section of the assessment.

### **Inventoried Roadless Area Management**

"Roadless Areas" refer to lands over 5,000 acres in size that do not have constructed and maintained roads. The word "roadless" erroneously implies that no roads exist within roadless areas. Roadless area criteria state that a roadless area does not "...contain improved roads maintained for travel by standard passenger-type vehicles." Many of the Caribou's Inventoried Roadless Areas, or IRAs, have unimproved and historic roads.

In preparation to revise the Forest Plan, Caribou National Forest staff completed a roadless area inventory describing changes in the boundaries and character of 34 inventoried roadless areas between 1985 and 1996. The 1996 Roadless Area inventory was used for the 2001 Roadless Area Conservation Rule EIS (36 CFR 294, subpart B [2004]; 66 Fed. Reg. 3244 [Jan. 12, 2001]). The 2001 Roadless Area Conservation Rule prohibits road building and timber harvest within Inventoried Roadless Areas with exceptions for existing rights, leases and other exceptions described in the Rule. The 2001 Roadless Rule was challenged in federal courts. In July of 2004, the Forest Service issued an Interim Directive regarding IRA management which reinstated a previous policy that roadless area management should be decided at the local level if the Forest had a revised Plan which "has considered the protection and management of inventoried roadless areas" (ID 1920-2004-1; Bosworth Letter, June 7, 2001).

The Forest Service conducted a new evaluation of roadless areas as part of the Caribou plan revision, (USDA-FS 2003, Appendix R). The 2003 Forest Plan met the interim directive criteria for Inventoried Roadless Areas, and managed roadless areas under the prescriptions of recommended wilderness, special designated areas, non-motorized recreation and wildlife security, semi-primitive recreation, semi-primitive restoration, forested vegetation management, rangeland vegetation management, and inactive phosphate leases. Sixty percent of roadless area acres rated "high" for roadless area values and/or had special features. These acres were managed under prescriptions that emphasize resource protection. The remaining forty percent of roadless area acres were managed under prescriptions that could allow timber harvest, road building and new phosphate leasing.

On September 20, 2006 a United States Magistrate Judge reinstated the 2001 Roadless Rule. At the time of this analysis, the 34 IRAs that are managed under the 2003 Caribou Forest Plan are also managed under the 2001 Roadless Area Conservation Rule. The roadless areas are managed under Forest Plan prescriptions with the added prohibition on road construction, re-construction and timber harvest, with exceptions as described in the 2001 Rule.

The Forest Service is proposing to promulgate a state-specific rule in response to the Idaho State Petition presented to the Department of Agriculture by Idaho Governor Risch on November 2006. The proposed Idaho Roadless Rule would designate a system of lands called Idaho Roadless Areas. These areas would be managed under five management area themes. This proposal is currently in the final phase of an environmental impact statement. The proposed rule would manage Caribou City Roadless Area under similar direction as the 2003 Caribou Forest Plan.

### **Existing Condition of Caribou City Roadless Area**

The Caribou Forest has approximately 750,000 acres mapped as Inventoried Roadless. This is approximately 68 percent of the Caribou Forest acres. The Caribou's 34 roadless areas vary in their abilities to offer wilderness characteristics and roadless values. The roadless areas offer semi-primitive motorized and non-motorized settings. Current management prescriptions and travel planning decisions manage large tracts of land for a semi-primitive non-motorized setting during the snow-free season within Bear Creek, Bonneville Peak, Caribou City, Elkhorn, Gannett Hills, North Pebble, Stump Creek, Toponce and Worm Creek Roadless Areas.

Caribou City Roadless Area is approximately 93,300 acres. 81,500 acres are managed under the Caribou Forest Plan and 11,800 acres are managed under the Targhee Forest Plan. Caribou City Roadless Area is the second largest roadless area in the Caribou portion of the Caribou-Targhee National Forest. The Caribou City Roadless Area ranges from 6,000 feet above sea level near Palisades Reservoir to 9,803 feet at the top of Caribou Mountain. The topography includes flat benches and basins with rocky mountain ridges at the higher elevations. The area has mixed stands of lodgepole pine, Douglas-fir, sagebrush, mountain brush and aspen.

### **Wilderness Characteristics**

FSH 1909.12, Chapter Seven defines the process used to evaluate Inventoried Roadless Area for their potential as designated wilderness. The existing wilderness potential of each IRA is described using the criteria of *availability*, *capability*, and *need*. *Availability* considers resource uses including forested vegetation, livestock grazing, and gas and mineral potential and legal constraints such as existing leases. *Need* considers the demand for wilderness and settings or ecosystems not already represented within the National Wilderness System. The *capability* assessment describes to what degree a roadless area possesses the characteristics of wilderness:

- natural integrity
- apparent naturalness
- opportunity for solitude

- opportunity for primitive recreation and challenging experiences
- special ecological, geological or cultural features

The *capability* criteria also considers the “manageability” of an area as designated wilderness. This is defined as the ability to manage a given tract of land as designated wilderness. Large areas are more manageable than small areas. Areas with irregular boundaries can be difficult to manage as wilderness.

## The Caribou Forest’s Wilderness Potential

A majority of the Forest’s roadless areas do not offer the opportunity for solitude, primitive recreation, or challenge, due to their small size and the fact that the sights and sounds of human development are often evident from the lower valleys. Most of the roadless areas rate low for manageability, which is based on the size of the area and the configuration of an area’s boundary. Areas inventoried for wilderness potential with high capabilities include Mt. Naomi, Caribou City, Stump Peak and Worm Creek. Based on the conclusions of the EIS for the Forest Plan (USDA-FS 2003), two areas were recommended for wilderness consideration, the eastern slopes of Caribou City IRA and the northwest slopes of Mt. Naomi IRA. All 34 roadless areas were evaluated for wilderness potential. The full assessment is available in the 2003 Forest Plan EIS Appendix C.

## Caribou City Roadless Area’s Wilderness Characteristics

“Availability” considers resource demand and uses; including past, present and future uses. In addition to demand for resources, the “availability” criteria considers constraints to wilderness management, such as private land within the roadless area or legal encumbrances on access or resources. The western slopes of Caribou City Roadless Area contain historic roads and remnants from the early mining era of the 1880s. There are patented and unpatented mining claims along the western slopes. There is some recreational gold panning and dredging that occurs on McCoy Creek and other streams of the area. Caribou City Roadless Area has had no recent timber activity but provides livestock grazing. The roadless area provides motorized trail opportunities along the western slopes and non-motorized trail settings within the eastern portion of the roadless area. The area is very popular for big-game hunting. Special uses include utilities along State Highway 34. There are some private land tracts within the roadless area. Future gold mining development is possible within the area. There are no current phosphate leases within the roadless area. The area has some potential for oil and gas exploration; however, there are no current leases for exploration or drilling. The Forest Service has initiated an environmental impact statement for oil and gas exploration and drilling on the Caribou portion of the Caribou-Targhee National Forest. The western portion of Caribou City IRA contains private inholdings and old roadways, some managed as motorized trails. The eastern portion of the area does not have private lands or mine patents and is managed as non-motorized.

*Capability* criteria for wilderness includes a roadless area’s natural appearance, remoteness, opportunity for a primitive setting and challenging experiences and special features the area may possess. “Capability” also considers the ability to manage the area as designated wilderness. Natural integrity of a roadless area is affected by human

facilities and disturbances. The western portion of Caribou City Roadless Area was a thriving mining area during the late 1800s and into the early 1900s. Mining features such as canal works, tailing piles and scars from hydraulic mining are still evident today. This portion of Caribou City Roadless Area rates “fair” for natural integrity. The landscapes of Caribou City Roadless Area appear natural with some evidence of human activities including historic mining and roads and current recreational mining. Natural appearing landscapes increase as one travels into the western portion of the area. The opportunity for solitude and the feeling of remoteness is “high” due to the area’s size and lack of built facilities, the feeling of remoteness increases as one travels to the interior of the area. The area does not offer the challenging experiences of rocky crags or swift rivers; however, some areas have steep topography. Special features available within the roadless area include wildlife habitat, a large semi-primitive non-motorized area and the remnants of the early mining era. Caribou City Roadless Area is rated “fair” for manageability due to road intrusions along its boundaries. (USDA-FS 2003)

Roadless areas are also assessed by the criteria of *need*, or the degree to which an area could contribute to the local and national distribution of wilderness and ecosystem representation. Southeast Idaho is within a day’s drive of numerous designated wilderness areas including the Frank Church River of No Return Wilderness, which is over two million acres in size. In previous public involvement, many people favored recommending the entire roadless area as wilderness and many people were against recommending any of the Caribou City Roadless Area as wilderness. A portion of the area was recommended for wilderness in the 1992 Northern Rockies Ecosystem Protection Act Proposed Wilderness and the 1992 Idaho Conservation League Wilderness Proposal. To summarize, Caribou City Roadless Area rates high for some wilderness characteristics. The western portion contains private lands and other legal encumbrances that could be incompatible with wilderness designation. The eastern portion of the area was recommended for wilderness designation, as part of the 2003 Forest planning process.

## Assessing Roadless Values

Roadless areas have significant ecological, as well as social values, beyond their wilderness consideration. Roadless areas provide sources of clean drinking water, function as biological strongholds for populations of Threatened and Endangered Species, provide large relatively undisturbed landscapes important for biological diversity and the long-term survival of many species, provide opportunities for primitive, semi-primitive non-motorized and motorized recreation, serve as bulwarks against the spread of non-native invasive plant species; and offer reference areas for study and research. (USDA-FS 2003, 3-194, 195)

The values of roadless areas include high water quality along with habitat for fish, wildlife and rare plants. Existing condition and environmental consequences for water, fish, wildlife and rare plants are described under those headings in this assessment and summarized here. Roadless areas can also function as barriers to the spread of invasive species, including noxious weeds. Noxious weeds are discussed in detail in the noxious weed section of this assessment.

## **Caribou City IRA's Roadless Values**

The Caribou City Roadless Area was evaluated as part of the 2003 Forest Plan Revision. This evaluation uses GIS data and information from the Forest Plan EIS, Appendix R (USDA-FS 2003). Some acre figures may vary due to mapping updates.

### **Semi-primitive Recreation Setting**

Caribou City Roadless Area is managed for both semi-primitive motorized and non-motorized settings for trail travel, hunting, fishing and sight-seeing. Approximately 58,000 acres are managed for a non-motorized setting, or 71% of the Caribou portion of the roadless area. These acres are a minimum of ½ mile from a designated motorized trail. The semi-primitive non-motorized area is one of the two largest semi-primitive non-motorized areas on the Caribou portion, the other is within the Stump Creek Roadless Area. Both roadless areas have high value in providing a non-motorized setting for hunting big game and other species. The remaining portion of the roadless area is managed as “semi-primitive motorized” or “roaded natural”. The motorized trails are popular with local residents and visitors for the access they provide to historic mining features and landscapes. These settings account for 29% of the Caribou portion of the roadless area.

### **Reference Landscapes**

Using roadless areas for reference landscapes has been identified as a potential value of these areas. The 1988 Trail Creek Fire was a large, intense stand-replacing wildfire that occurred primarily in the Trail Creek drainage. The fire occurred within the Caribou City Roadless Area. The restoration of the burned area and the recovery of suppression control features could have value as a reference landscape for long-term fire effects. The roadless area could also have “reference” value as wildlife security area over 50,000 acres. (USDA-FS 2003)

### **Other Roadless Values**

During Forest Plan revision, Caribou Roadless Area was assessed as high and moderate for the roadless values for wildlife including TES species and biological strongholds. The area rated high as a fisheries stronghold. The revision process also identified the area as having a moderate potential for watershed restoration. This is a summary of findings for the roadless area values of Caribou City Roadless Area available in Appendix R of the Forest Plan FEIS. (USDA FS 2003). The resources of soil, water, wildlife, fish and rare plants are analyzed further under those headings of this assessment. The area has special features associated with early human uses and Idaho's mining history beginning in the 1800s. These features are discussed in detail under the heritage section of this assessment. The existing landscape character of Caribou City Roadless Area varies from high scenic integrity to low integrity in areas affected by hydraulic mining techniques.

## **ENVIRONMENTAL CONSEQUENCES FOR ROADLESS AREAS**

### **Direct and Indirect Effects of All Alternatives**

The no action and action alternatives will not change the existing wilderness characteristics of the Caribou City Roadless Area. Existing high natural integrity and apparent naturalness of the eastern portion of the roadless area will be retained. The lower values of the western portion of the roadless area will not be affected by the addition of a motorized trail. The opportunity for solitude will remain high on the eastern portion of the area, and remain moderate on the western portion of the area. The special cultural features of the area will be retained under all alternatives. The “manageability” of the area as “fair” would not change under all alternatives. Action alternatives that add motorized miles within the western portion of the Roadless Area do not affect the existing “availability” rating for wilderness potential, as this portion of the roadless area already contains motorized trails.

### **Alternative One, No Action**

#### **Direct and Indirect Effects**

This alternative will have no direct or indirect effects to the roadless area values of Caribou City Roadless Area.

#### **Cumulative Effects**

The Caribou City Roadless Area will continue to have recreational uses including road and trail use and recreational mining. Existing recreation use of the area is low, with the exception of hunting season. (USDA-FS 2005) Grazing will continue at current levels. Grazing and recreation uses will not change the existing wilderness characteristics or the existing roadless area values of Caribou City Roadless Area. Gold exploration and mining is a foreseeable action and allowed under current mining laws. Gold exploration and mining would be done using technologies and methods that would minimize long-term impacts to the roadless area. Wildfire is foreseeable, given the aspen decline, insect activity and a “high” fire hazard rating on 30% of the roadless area acres (USDA-FS 2003, Appendix R). Wildfire and suppression actions could change the existing appearance of the roadless area. If the Roadless Rule is rescinded in the future, existing forest plan prescriptions will protect existing wilderness characteristics and roadless values of Caribou City Roadless Area. Management themes suggested under the Idaho Roadless Rule are similar to existing forest plan prescriptions and are anticipated to retain wilderness characteristics and roadless values of Caribou City Roadless Area. National direction for roadless area management may continue to change. The existing wilderness characteristics and roadless values of the Forest’s 34 Roadless Areas will be retained under Forest Plan prescriptions. If the 2001 Roadless Rule is rescinded or the Idaho Roadless Rule is implemented, portions of roadless areas that do not rate high for roadless values due to past human disturbances, small size and irregular boundaries and road intrusions could be managed for a variety of uses including phosphate mining and timber harvest. (USDA-FS 2007)

## **Direct and Indirect Effects of All Action Alternatives**

The actions of reconstructing the North Fork of Eagle Creek Trail and improving drainage features of the Barnes Creek Road could increase travel on these routes; however, it is unlikely that increased recreation use would change the existing recreation settings of these areas.

Alternatives Two, Three and Four would not affect the area being used as a reference landscape for wildlife security areas over 50,000 acres or for the long-term fire effects of the 1988 Tincup Fire. All action alternatives would not adversely affect the roadless values of TES habitat, biological stronghold, fisheries stronghold, water quality, rare plants and the special heritage features found within the Caribou Roadless Area. Effects to these resources are discussed further under resource area headings. The existing landscape character of the area will not change under all alternatives. The addition of a motorized trail could change the natural setting of the landscape within ¼ mile of the route; however, trails generally do not lower an area's scenic integrity if they are designed to follow existing terrain and do not create a straight corridor through continuous vegetative cover.

### **Alternative Two**

#### **Direct and Indirect Effects**

This alternative constructs the southern portion of the Dugway as a motorized trail and then diverts the ATV trail to the upper slopes of Caribou Mountain, reaching Caribou City via the Bilk Creek drainage. The northern portion of the Dugway will be reconstructed as a non-motorized trail. Under this alternative, an additional 3,300 acres of the roadless area will be managed as semi-primitive motorized. This will reduce semi-primitive non-motorized acres to 54,700; a reduction of 5.7 percent of acres managed for a non-motorized experience. Having an additional 7.8 miles of motorized trail will not change the core experience of over 50,000 acres of non-motorized setting; however, it will change the recreation setting and experience within ½ mile of the trail. The Caribou City Roadless Area will continue to have recreational uses including road and trail use and recreational mining. Building motorized and non-motorized trails is likely to increase recreation use of the area during spring and summer. It could also increase recreation use during hunting season which may or may not create user conflicts.

#### **Cumulative Effects**

Additional recreation trail use and miles of trail will not change the existing wilderness potential or the roadless area values of Caribou City Roadless Area. Cumulative effects will be similar to the effects described for Alternative One. Considering the 34 roadless areas of the Caribou National Forest, this alternative would not change the quality or quantity of roadless values offered by these lands. Considering Idaho's Designated Wilderness System, this alternative would not affect the quality or quantity of wilderness opportunity available now or into the future.

## **Alternative Three**

### **Direct and Indirect Effects**

This alternative would construct and reconstruct the entire Dugway for use as a motorized trail. Under this alternative, 4,100 additional acres of the roadless area will be managed as semi-primitive motorized. This will reduce semi-primitive non-motorized acres to 53,900; a reduction of 7 percent of existing acres managed for a non-motorized experience. Having an additional 5.7 miles of motorized trail will not change the core experience of over 50,000 acres of non-motorized setting; however, it will change the recreation setting and experience within ½ mile of the trail. Building motorized and non-motorized trails is likely to increase recreation use of the area during spring and summer. It could also increase recreation use during hunting season which may or may not create user conflicts.

### **Cumulative Effects**

Additional recreation trail use and miles of trail will not change the existing wilderness characteristics or the roadless area values of Caribou City Roadless Area. Cumulative effects will be similar to the effects described for Alternative Two.

## **Alternative Four**

### **Direct and Indirect Effects**

This alternative would construct and reconstruct the Dugway as a non-motorized trail. Under this alternative, there will be no change in motorized and non-motorized settings. Having an additional 5.7 miles of non-motorized trail will introduce human activities into the area, which could have minor affects on the recreation setting within ¼ mile of the trail.

### **Cumulative Effects**

Building motorized and non-motorized trails is likely to increase recreation use of the area during spring and summer. It could also increase recreation use during hunting season which may or may not create user conflicts. Recreation trail use will not change the existing wilderness potential or the roadless area values of Caribou City Roadless Area. Cumulative effects will be similar to the effects described for Alternative Two and Three.

## **Conclusions**

All action alternatives would increase recreation use within the roadless area. Alternatives Two and Three would increase motorized trail use on all motorized trails in the area and increase motorized trail miles by 7.8 mile and 5.7 respectively. Alternatives Two and Three reduce semi-primitive non-motorized acres within the area by 5.7 and 7% respectively. These actions would change the recreation setting within ½ mile of the new motorized trail, but would not have much effect on the 50,000 core acres managed for a non-motorized setting. Alternatives One and Four have the least potential to change the roadless values of semi-primitive non-motorized experiences. Alternatives Two and Three change the amount of acres managed for semi-primitive non-motorized setting

from 71% to 67% respectively. All action alternatives would retain the existing wilderness characteristics and the existing roadless values of Caribou City Roadless Area. All action alternatives have no affect on the 34 Caribou Roadless Areas as a whole and have no affect on Idaho's Designated Wilderness System as a whole.

## **Irreversible and Irretrievable Commitment of Resources**

Constructed recreation trails do not have the same dimensions and do not involve the same degree of disturbance as constructed roads. Trails can be reclaimed. All alternatives do not represent an irreversible and irretrievable commitment of resources concerning wilderness potential and roadless area values, including the values of semi-primitive recreation, reference landscapes and scenic integrity.

## **Issue Four: Recreation Uses and Settings**

### **Analysis Area, Methods and Indicators**

Construction, reconstruction and decommissioning of trails within the project area have potential to affect the area's recreation uses and settings. The analysis area for direct and indirect effects is the three Forest Plan prescription areas, Caribou Mountain special emphasis prescription area, Tincup Creek rangeland prescription area and Bridge Creek big game winter range prescription area. The analysis area for cumulative effects for recreation is the Caribou portion of the Caribou-Targhee National Forest. Information and data for the Caribou Forest is available at this scale and these lands have similar recreation use and resource values.

The proposed action and alternatives are designed to benefit recreation trails in the area. Recreation use and settings will be discussed in terms of changes between Recreation Opportunity Spectrum categories of semi-primitive motorized and semi-primitive non-motorized. The Forest Plan also uses Open Motorized Route Densities (OMRDs) to manage recreation settings. OMRDs are miles of designated motorized route per square mile of prescription area. Changes in OMRDs will also be used as a method to compare and contrast the alternatives. Forest Plan direction for recreation, roads and trails is discussed in Chapter Two of the assessment.

### **Existing Condition for Recreation Use**

Recreation uses within the project area include hiking, driving for pleasure, fishing, big game and upland bird hunting along with occasional gold-panning and people viewing the remains of the 1860s gold rush. ATV trail use also occurs within the project area. Dispersed camping sites are common along McCoy Creek with the majority of campers coming from the surrounding counties to enjoy weekend stays on the Forest. During the start of big game hunting season the level of use changes and all dispersed camp areas are full from August to November. At the junction of the Brockman and McCoy Creek roads are the Caribou Guard Station and Caribou warming shelter. The Guard Station is a Forest Service facility that can be rented for overnight use, while the warming hut is free for day use only and is maintained by a local snowmobile club.

### Motorized Travel

There are low standard roads within the area. Access roads to the Winschell Dugway area include the Barnes Creek Road that leads to the upper reaches of Caribou Mountain, the McCoy Creek-Anderson Creek Road that leads directly into Caribou City and the Morgan Meadows Road that leads to the southern terminus of the Dugway. These roads are native surface and generally require four-wheel drive capability. ATV travel is allowed on these roads if vehicle and driver are licensed and registered with the State of Idaho. ATV trails in the vicinity of the Dugway include the Morgan Meadows/Evergreen Mine and the North Fork of Eagle Creek trail system at approximately 10 miles of trail. Caribou Mountain provides challenging off trail snowmobiling for experienced riders who enjoy high marking and un-groomed terrain.

The existing OMRDs for the three prescription areas and the prescribed ceilings for the densities are listed below.

**Table 3.x Prescription Areas and OMRDs**

Forest Plan Prescription Area	Existing OMRD	Prescribed Ceiling for OMRD
Caribou Mountain Special Rx. Area	1.1 miles of designated motorized route per square mile	1.5 miles of designated motorized route per square mile
Bridge Creek Winter Range Rx. Area	0.4 miles of designated motorized route per square mile	0.5 miles of designated motorized route per square mile
Tincup Range Management Rx Area	0.5 miles of designated motorized route per square mile	0.5 miles of designated motorized route per square mile

### Non-Motorized Travel

The majority of the project area is managed for a semi-primitive non-motorized setting providing about thirty miles of non-motorized trails. Horseback riding during the summer months and hunting on horseback during the fall months dominate the non-motorized travel in the area. Mountain biking and hiking occur in incidental amounts with the exception of big game hunting on foot during the fall season.

## ENVIRONMENTAL CONSEQUENCES FOR RECREATION USE AND SETTING

### Alternative One – No Action

#### Direct and Indirect Effects

Under this alternative recreation settings remain the same. Recreation uses and patterns will not change. People can still reach Caribou City via the McCoy Creek Road/Anderson Creek Road in full-sized passenger vehicles and on ATVs. There would be no on-site interpretation of the Winschell Dugway. Hikers and stock users could still negotiate some portions of the wagon road, but could not easily travel from Caribou City

to Jackknife Basin on the old wagon road template. Road and trail travel on Barnes Creek Road and Eagle Creek ATV trail would be difficult for travelers during wet conditions.

## **Cumulative Effects**

Under the no-action alternative Caribou Mountain will continue to receive recreation use, including motorized and non-motorized trail use. The majority of trail use will be associated with big game hunting in the fall. Recreation use will continue to increase as regional populations increase. Participation in hunting is high for State of Idaho residents compared to other parts of the country; however, hunting participation numbers within the State have been static since the 1990s (USFW 2006). The county's average median age is rising and outdoor recreation trends may change with this shift in demographics (US Census 2000). Fuel costs will influence outdoor recreation trends. Higher gas prices may increase forest visits, as residents choose to recreate closer to home. Higher gas prices may limit forest visits, as everyone chooses to recreate in their local park or backyard. Private lands along the western edge of the forest will continue to be developed. Economic trends may slow the growth of building new residences in the near future. This trend of development in the lower valley will increase local recreation use in the area. All of these variables may affect recreation use and activity choice, but dramatic shifts in recreation patterns within the analysis area are not anticipated in the next 10 years. Forest Plan direction manages most of the Caribou Mountain area for recreation and historic interpretation. This management emphasis will retain the existing recreation settings and opportunities of the project area. Natural processes of fire, wind, disease and drought could affect the natural appearance of area.

## **Direct and Indirect effects of All Action Alternatives**

All action alternatives would provide on-site interpretation to forest visitors about Caribou Mountain's history, including its mining legacy and uses by the Shoshoni and Bannock people and their ancestors. All action alternatives would provide improved road and trail conditions for the Barnes Creek Road and the Eagle Creek ATV trail. These improvements and facilities will attract more people to the Caribou Mountain area to camp, fish and pan for gold during the snow-free season. All action alternatives include providing improved access, motorized and non-motorized. The improved access will benefit hunters' ability to scout and travel within Hunting Unit 66A, but may also increase disturbance from other hunters using the same travel routes. This would be the case for motorized and non-motorized routes.

## **Alternative Two**

### **Direct and Indirect Effects**

This alternative constructs the southern portion of the Dugway as a motorized trail and then diverts the trail to the upper slopes of Caribou Mountain, reaching Caribou City via the Bilk Creek drainage. The northern portion of the Dugway will be reconstructed as a non-motorized trail.

Under this alternative recreation settings would change. 3,300 acres that were managed as part of the larger 58,000 acre semi-primitive non-motorized area would be converted to a semi-primitive motorized setting. People would be able to ride an ATV trail into

Caribou City via the southern portion of the Winschell Dugway and then along the upper slopes of Caribou Mountain and into Bilk Creek. Full- sized passenger vehicles could still reach Caribou City via the McCoy Creek Road. Hikers and stock users would use the entire historic wagon road route, but would “share” the trail with ATVs and motorcycles for two miles on the southern-end of the trail. The 3,300 acres that would be converted to a motorized setting do not contain non-motorized system trails.

Unimproved game trails may exist in the area. Under this alternative the core non-motorized area and non-motorized system trails used by hunters would not be affected. This alternative would increase the Open Motorized Route Density for the prescription area from 1.1 miles of motorized route per square mile to 1.3 miles of motorized route per square mile.

### **Cumulative Effects**

Cumulative effects for this alternative would be similar to the no-action alternative. Caribou Mountain will continue to receive recreation use, including motorized and non-motorized trail use. Due to improved trails and interpretive facilities, recreation use could increase more than under the no-action alternative. Management emphasis will retain the recreation settings and opportunities of the project area. Natural processes of fire, wind, disease and drought could affect the natural appearance of area.

### **Alternative Three**

#### **Direct and Indirect Effects**

This alternative would construct and reconstruct the entire Dugway for use as a motorized trail. Under this alternative recreation settings would change. 4,100 acres that were managed as part of the larger 58,000 acre semi-primitive non-motorized area would be converted to a semi-primitive motorized setting. People would be able to ride an ATV trail into Caribou City via the entire portion of the Winschell Dugway. Full- sized passenger vehicles could still reach Caribou City via the McCoy Creek Road. Some hikers and stock users would use the motorized route to experience the Winschell Dugway. Some hikers and stock users would avoid this trail, in favor of other non-motorized trails in the area. The 4,100 acres that would be converted to a motorized setting do not contain non-motorized system trails. Unimproved game trails may exist in the area. Under this alternative the core non-motorized area and non-motorized system trails used by hunters would not be affected.

### **Cumulative Effects**

Cumulative effects for this alternative would be similar to the no-action alternative. Caribou Mountain will continue to receive recreation use, including motorized and non-motorized trail use. Due to improved trails and interpretive facilities, recreation use could increase more than under the no-action alternative. Management emphasis will retain the recreation settings and opportunities of the project area. Natural processes of fire, wind, disease and drought could affect the natural appearance of area.

## **Alternative Four**

### **Direct and Indirect Effects**

This alternative would construct and reconstruct the Dugway as a non-motorized trail. Under this alternative existing recreation settings of motorized and non-motorized would not change. Full- sized passenger vehicles could still reach Caribou City via the McCoy Creek Road. Under this alternative the core non-motorized area and non-motorized system trails used by hunters would not be affected.

### **Cumulative Effects**

Cumulative effects for this alternative would be similar to the no-action alternative. Caribou Mountain will continue to receive recreation use, including motorized and non-motorized trail use. Due to improved trails and interpretive facilities, recreation use could increase more than under the no-action alternative. Management emphasis will retain the recreation settings and opportunities of the project area. Natural processes of fire, wind, disease and drought could affect the natural appearance of area.

### **Conclusions**

All action alternatives would increase recreation use within the project area. Alternatives Two and Three would increase motorized trail use and motorized trail miles. The change from a non-motorized setting to a motorized setting will be noticeable within ½ mile of the additional motorized trails. Changes in acres of semi-primitive non-motorized settings and miles of additional motorized route are not of a large percentage for the project area as a whole. Forest Plan prescription OMRD ceilings will not be exceeded under any action alternative.

Alternatives One and Four have the least potential to change semi-primitive non-motorized experiences. Alternatives Two and Three have the greatest potential to enhance semi-primitive motorized experiences.

### **Irreversible and Irretrievable Commitment of Resources**

Constructed recreation trails do not have the same dimensions and do not involve the same degree of disturbance as constructed roads. Trails can be reclaimed. All alternatives do not represent an irreversible and irretrievable commitment of resources concerning recreation uses and settings.

### **Cultural Resources**

#### **Analysis Area, Methods and Indicators**

The analysis area for direct, indirect and cumulative effects coincides with the three Forest Plan prescription areas, Caribou Mountain Special Emphasis Area, Tincup Creek Rangeland prescription area and Bridge Creek Big Game Winter Range area.

Construction, re-construction and decommissioning trails can have the potential to affect cultural resources. The Winschell Dugway is an historic wagon road and management of

the route needs to consider the route's historic attributes. However, the historic route of the wagon road is well outside of this project's area of potential effects (APE).

Areas of proposed ground disturbance would be surveyed and evaluated by a qualified archaeologist, in an effort to locate and record any archaeological and/or historic properties. Adverse effects on any significant properties would be mitigated. Implementation and mitigation would occur in consultation with the Idaho SHPO and local Tribal governments. The percentage of assessment area to be surveyed would depend on identified site location probability and actual areas affected by the proposed action. Coverage of such previously un-surveyed areas would be performed in compliance with the National Historic Preservation Act Section 106 Process. Cultural resources property significance, i.e., National Register of Historic Places eligibility shall be determined by the Forest Archaeologist in consultation with the State Historic Preservation Officer (SHPO). If significant cultural resource properties fall within the area of potential effects or impact area of site specific undertakings, mitigation measures would be recommended in order to achieve a "no adverse effect" determination. All inventory reports would be submitted to the SHPO in completion of the NHPA Section 106 Process. This analysis would assess each alternative's potential for risk to existing cultural resources. Potential for risk would be used to compare and contrast the effects of alternatives on cultural resources.

## **Background**

Archaeological and ethnographic sources indicate historic and prehistoric use of the analysis area. Archaeological investigations of known and undiscovered cultural resources may offer insights into the historic and prehistoric land uses and settlement patterns of the area. One of the goals of land managers is to protect and preserve cultural resources within their jurisdiction. In order to fulfill this responsibility, an inventory of these resources is essential. Once site locations are identified, this information can then be provided to planners so that management decisions can be made to avoid or mitigate the effects of proposed activities.

## **Laws and Regulations**

Cultural resources may be identified as those resources related to the material lifeways of a cultural group, or groups as specified by the Code of Federal Regulations, 36 CFR 296.3. Cultural resources may refer to sites, areas, buildings, structures, districts, and objects which possess scientific, historic, and social values. The significance or the National Register of Historic Places (NRHP) eligibility of cultural resources is determined by the Forest Archaeologist in consultation with the Idaho State Historic Preservation Officer (SHPO).

Cultural resource site locations are not disclosed in this document. In order to protect and preserve cultural resources, detailed description and locations are exempt from disclosure under the Freedom of Information Act as stated in the Forest Service Policy (FSH 6209.13, section 11.12) in accordance with the Archaeological Resources Protection Act (ARPA) of 1979 (16 USC 170hh) and the National Historic Preservation Act (NHPA) of

1966 (16 USC 470w-3). Such information is disclosed in full to the SHPO in order to facilitate decisions on which sites should be included on the NRHP.

Notification and involvement of the Shoshone-Bannock Tribes and Eastern Shoshone of Wind River Reservation concerning Native American cultural resource matters will be carried out as specified by the Code of Federal Regulations 36 CFR 296.7, 36 CFR 800 section 101(d)(6)(B) and in accordance with Presidential Memorandum concerning Government-to-Government consultation signed April 29, 1994.

Cultural resources are non-renewable resources. As such, Federal regulations have been passed which prohibit destruction of significant cultural sites and obligate Federal agencies including the Forest Service to protect and manage cultural resource properties. The Antiquities Act of 1906, the Historic Sites Act of 1935, the National Historic Preservation Act of 1966 with its 1992 Amendments, the Archaeological and Historic Preservation Act of 1974, the Archaeological Resources Protection Act (ARPA) of 1979, and the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 exemplify the progressive history of regulations concerning the protection of significant archaeological resources.

### **Forest Plan Consistency**

The project is consistent with the Forest Plan and management area direction for cultural resources.

### **Existing Conditions**

Evidence of prehistoric occupation and use, spanning the last 12,000 years, are present on the Forest. Significant historical sites include homesteads, mining sites, wagon trails and other developments within the project area.

The area around Soda Springs, Idaho was very important to various bands of the Shoshone and Bannock Tribes. On October 4, 1863 the Soda Springs Treaty was negotiated by James D. Doty, Superintendent of Indian Affairs in Utah Territory, and accepted by 150 men and their families. Due to a technicality, this treaty was never ratified by Congress. A second treaty with the Shoshone and Bannock Tribes, signed in 1868 at Fort Bridger, Utah was ratified by Congress. The treaty signed at Fort Bridger contains language which reserved rights for various bands of Shoshone and Bannock Tribes in the Caribou Mountain area.

### **Paleo-Indian, Archaic and Late Periods**

Cultural groups in the Northern Great Basin of the Paleo-Indian period are characterized as big-game hunters who utilized spears with large projectile points to hunt large mammals. During this time, low human population density resulted in widely dispersed groups of few individuals. Consequently, cultural material remains from this time period are rare.

The Archaic Period in the Northern Great Basin, from about 7,000 years ago to about 1300 years ago, is characterized by hunting-and-gathering peoples who lived in essentially a similar physical environment as today. Climate changes (warmer and drier) were

reflected in changes in the types of tools that they made and used. New tool technologies appeared.

The Late period is thought to range from about A.D. 700 to 1700 or to the arrival of European trade goods. The Late Period includes the Shoshonean groups occupying the Upper Snake and Salmon River Country. Characteristics of this period include the use of bow and arrow and the Shoshonean Intermountain Ware pottery tradition. By the end of this period most Great Basin people had experienced contact with Europeans and had acquired trade goods of metal and glass.

No sites representing the Paleo-Indian period have been discovered or recorded within the project area. This does not mean that there is no potential to discover sites of this period. Site could be discovered with additional analysis and technological advances in archaeological research. Sites within the Archaic and Late periods have been recorded within the analysis area.

### **Historic Period**

The main characteristic of the Historic Period is the introduction of the horse and contact with Euro-Americans. The initial Euro-American explorers were followed by trappers, missionaries, settlers, miners and soldiers. Because of the influx of people during the most intense periods of mining and the various methods employed to conduct mining in this area, sites of this time period are widely present within this analysis area. The use of hydraulic mining and large scale dredging in many locations of the analysis area destroyed many of the prehistoric sites that may have been present. This is not to say that all archaeological evidence from these periods is lost, but in the areas where hydraulic mining and large scale dredging were present there is no potential for locating intact archaeological resources.

### **Historic Mining Activities**

Caribou Mountain was the scene of a brief but intense gold rush in the 1870s and 1880s. Placer gold was discovered on Caribou Mountain by Jesse “Carriboo Jack” Fairchild, Frank McCoy, and F. Babcock in the summer of 1870 at what is now known as McCoy Creek, located at the base of Caribou Mountain (Johnson and Carney, 1990). Many of the historic references to Caribou Mountain use the Carriboo spelling, however, this analysis uses the contemporary spelling of Caribou. By the end of the year 1870 Iowa City on Iowa Creek and Keenan City on Barnes Creek were the centers of mining activity in the area. Iowa City was soon abandoned and was replaced by Caribou City, most of which burned in 1885. Caribou City had a population of about 1,500, and Keenan City had a population of more than 500. There was also a “china town” with approximately 400 people associated with the mines.

By the 1920s and 30s hardrock mines had also been established at the top of Caribou Mountain. Abundant evidence of past mining activity can be observed throughout the Caribou Mountain area. Dredge tailings piles, ditches/canals, mine adits, a stamp mill, and other structures are located in the hardrock mining area near the top of Caribou Mountain. Evidence of early mining can still be observed in the form of placer tailings along Barnes, Bilk, Anderson, Iowa, McCoy, and Tincup Creeks (Rains and Federspiel, 1993). The area continued to support placer mining at a smaller scale through the mid-

1900s. Current mining operations are limited to a few recreational placer mining operations adjacent to streams.

The mining activities within the project area and the sites of Caribou City and Keenan City are well known throughout Southeast Idaho. It can be assumed that many artifacts from the historic period were removed from Caribou Mountain many years ago.

Approximately 2,500 acres within the general vicinity of the project area has undergone cultural resource survey in advance of several previous management projects. During previous cultural resource surveys and supplementary research, 2 prehistoric and 22 historic cultural resource sites have been located and recorded for a total of 24 sites in the analysis area. Using the National Register of Historic Places criteria for determining eligibility (36CFR63) 3 sites have been determined to be eligible for inclusion on the National Register, 10 sites have been determined as not eligible, and 11 sites have not been formally evaluated. These sites and any additional sites will be preserved, protected and monitored for adverse effects. Based on antiquity, historic use, and local or regional historic importance, the Winschell Dugway wagon road may be eligible for inclusion to the National Register of Historic Places (36 CFR 800.4[c] [2]).

The archaeological survey for the proposed action and alternatives was completed during the 2007 field season. No National Register eligible sites were discovered within the project's proposed areas of impact. No previously documented cultural resources are located within the project's APE. Literature and archival sources indicate that the Winschell Dugway Wagon Road is not located within the project's proposed areas of impact.

## **Environmental Consequences**

### **Mitigation for All Action Alternatives for Cultural Resources:**

An intensive survey was conducted of the management activity areas under all four proposed alternatives, and no National Register eligible cultural resources were discovered. The Forest Archaeologist determined that the project would have "No Effect" on known historic properties in the project area. The Idaho State Historic Preservation Officer (SHPO) has concurred with the agency's "No Effect" determination. Therefore, no mitigation measures are recommended. If any cultural resources are encountered during the course of the project, the Forest Archaeologist will be notified immediately and all ground disturbing activities will cease in that area until the Forest Archaeologist takes appropriate action in consultation with the Idaho SHPO.

### **Effects Common to All Alternatives**

All alternatives provide some access to cultural resource sites associated with the mining era of the 1880s and later. Cultural resources are located throughout the analysis area and are available for interpretation, but also vulnerable to vandalism and theft. Areas adjacent to roads and trails, motorized and non-motorized, could be more vulnerable to vandalism and theft.

## **Effects Common All Action Alternatives**

All action alternatives include ground disturbing activities along the entire mapped route of the Dugway. Levels of disturbance vary by alternative. Under all action alternatives, Caribou mining history and the Dugway would be interpreted through signing, brochures and trailhead kiosks.

## **Alternative One- No Action**

### **Direct and Indirect Effects**

This alternative would not construct/reconstruct trails or improve roads. The existing trail system attracts people to the mountain, and there is potential for damage to cultural resources. Under this alternative there is little interpretation of Caribou Mountain's unique mining history. History information is not readily available to Forest visitors.

The Forest Archaeologist has determined that the management activities under this alternative would have "No Effect" on known historic properties in the project area.

### **Cumulative Effects**

This alternative represents the existing condition. The analysis area for cumulative effects is the Caribou portion of the Forest managed by the Soda Springs District. This area represents similar topography and cultural uses of the land. On-going activities that affect cultural resources include vegetation management, road and trail maintenance, prescribed and wildfire, grazing and recreation activities.

The project will have "No Effect" on historic properties in the project area, therefore, proposed management activities will not have a cumulative effect.

## **Alternative Two**

### **Direct and Indirect Effects**

Alternative Two proposes to reconstruct the southern portion of the Winschell Dugway as an ATV trail. The northern portion of the Winschell Dugway would be constructed and reconstructed as a non-motorized trail. Since the historic route of the Winschell Dugway is well outside of the project's area of potential effects no disturbances to the site are expected from this alternative.

The Forest Archaeologist has determined that the management activities under this alternative would have "No Effect" on known historic properties in the project area.

### **Cumulative Effects**

Cumulative effects for Alternative Two would be similar to those under Alternative One.

The project will have "No Effect" on historic properties in the project area, therefore, proposed management activities will not have a cumulative effect.

## **Alternative Three**

### **Direct and Indirect Effects**

Alternative Three proposes to construct and re-construct the entire route of the Winschell Dugway as an ATV trail. This alternative would have more ground-disturbance along the Winschell Dugway route when compared to Alternatives One, Two and Four.

The Forest Archaeologist has determined that the management activities under this alternative would have “No Effect” on known historic properties in the project area.

### **Cumulative Effects**

Cumulative effects for Alternative Three would be similar to those under Alternative One.

The project will have “No Effect” on historic properties in the project area, therefore, proposed management activities will not have a cumulative effect.

## **Alternative Four**

### **Direct and Indirect Effects**

Alternative Four proposes to construct and reconstruct the entire route of the Winschell Dugway as a non-motorized trail. This alternative would have less ground-disturbance along the Winschell Dugway route when compared to Alternatives Two and Three.

The Forest Archaeologist has determined that the management activities under this alternative would have “No Effect” on known historic properties in the project area.

### **Cumulative Effects**

Cumulative effects for Alternative Four would be similar to those under Alternative One.

The project will have “No Effect” on historic properties in the project area, therefore, proposed management activities will not have a cumulative effect.

## **Conclusions**

To compare alternatives, Alternative One would have the least potential for loss of cultural resources, but also has the least potential for acquiring new information. This alternative does not provide direct interpretation of the mining history for visitors. Of the action alternatives, Alternatives Two to Four have no potential to cause any disturbances to the historic Winschell Dugway wagon road since it is not located within the project’s APE.

All action alternatives include providing on-site interpretation of Caribou mining history and the Winschell Dugway. All alternatives would meet the intent of the Forest Plan, NHPA, ARPA and other laws and regulations pertaining to cultural resources protection.

## Threatened, Endangered, and Sensitive Plants

### Introduction and Existing Condition

Currently, there are no Threatened and Endangered species listed for the Caribou portion of the Caribou-Targhee National Forest. There are three plant species on the Caribou that are listed as sensitive for the Intermountain Region. This assessment takes into account the habitat and known population areas of the three sensitive plants species: Starveling milkvetch, Cache Beardtongue and Payson's Bladderpod. Only Payson's Bladderpod is known or suspected to occur within the project area.

### Payson's Bladderpod (*Lesquerella paysonii*)

Payson's Bladderpod is endemic to the carbonate mountain ranges of west central Wyoming and adjacent Idaho. There is little evidence of threats to viability. Payson's Bladderpod is found on sparsely vegetated ridgelines and at a lesser degree on slopes in openings in sagebrush and forested stands. Elevation ranges are from 6,000 to 9,950 feet with most populations above 8,000 feet (Moseley 1996). One population that occurs separate from its main range in Idaho can be found on the upper slopes of Caribou Mountain.

### Mitigation and Effects Common to all Action Alternatives

Under all action alternatives, the Forest botanist will conduct site-specific rare plant surveys in areas to be disturbed. If populations are found, they will be avoided or impacts will be minimized. There will be no direct or indirect or cumulative impacts to T&E and rare plants under all action alternatives.

## Wildlife

### Introduction

Motorized and non-motorized trails have the potential to affect wildlife and their habitat depending on the season of use and the mode of travel. The Forest Plan sets Open Motorized Route Density ceilings to enhance wildlife habitat and reduce motorized disturbance to wildlife. The direct, indirect, and cumulative impacts of these travel route ceilings were analyzed in the EIS for Forest Plan (USDA-FS 2003) and the EIS for the Travel Plan Revision (USDA-FS 2005). The existing roads and trails of the project area and their relationship with wildlife disturbance are disclosed in the section. The affected environment for Threatened, Endangered, Sensitive, and Management Indicator Species (MIS), Migratory Birds, and Big Game is also described.

### Analysis Area and Methods

The analysis area for direct, indirect, is the three prescription areas, Caribou Mountain Special Emphasis Area, Tincup Creek range prescription area and the Bridge Creek Elk and Mule Deer Winter Range prescription area. Wildlife Reports (CNF WWP 2008), survey data, known locations, aerial photos, known habitat types, and field visits have been used to determine the existing condition. The wildlife species of concern for this project are divided into six groups and documented in their respective reports:

- Threatened and Endangered (T&E) Species identified by the U.S. Fish and Wildlife Service (USFWS) [Biological Assessment (BA)]
- Sensitive Species identified by the Regional Forester [Biological Evaluation (BE)]
- Management Indicator Species identified in the 2003 Forest Plan [see BE]
- Amphibians in the CNF RFP
- Migratory Landbirds as required by Executive Order [Wildlife Report]
- Big Game (mule deer and elk) [Wildlife Report].

The Forest Plan sets Open Motorized Route Density ceilings, OMRDs, to enhance wildlife habitat and reduce motorized disturbance to wildlife. OMRDs are defined as miles of open motorized routes, roads and trails, per square mile of a prescription area. The direct, indirect, and cumulative impacts of these OMRD ceilings were analyzed in the EIS for the Forest Plan (USDA-FS 2003) and the EIS for the Travel Plan Revision (USDA-FS 2005). Security areas, defined as areas over 1,000 acres managed for a semi-primitive non-motorized setting, influence state population objectives for big game herds. Acres managed for a semi-primitive non-motorized setting during the snow-free season and OMRDs will be used to discuss risk of disturbance to mule deer and elk by alternative.

## Forest Plan Direction

The RFP set OMRD ceilings for many prescription areas to benefit the recreation setting and for wildlife security concerns. OMRD standards range from 0 mi/mi<sup>2</sup> to 3.0 mi/mi<sup>2</sup>. OMRD ceilings were based the existing density of designated travel routes but also included reductions in specific areas due to wildlife or other concerns. OMRDs for the project area are 1.5 mi/mi<sup>2</sup> for Caribou Special Emphasis Area, and 0.5 mi/mi<sup>2</sup> for Tincup Creek prescription area and 0.5 mi/mi<sup>2</sup> for Bridge Creek prescription area.

## Existing Condition

The Forest provides a wide variety of diverse habitats for approximately 334 species of terrestrial vertebrate wildlife known or suspected to occur on the forest. Habitats can be broadly classified as a forested, rangeland, and riparian cover types. Within these types, reside several wildlife species of management concern.

Motorized and non-motorized trails have the potential to affect wildlife and their habitat depending on the season of use and the mode of travel. The Forest Plan EIS Appendix D identifies effects of roads on wildlife based on available literature and research. Some road associated impacts also apply to motorized trails but may be less due to the size of the vehicle, the dimensions of the trail and level of traffic. Impacts from motorized routes and travel are addressed by OMRDs, acres managed for a semi-primitive non-motorized setting and acres of potential habitat loss. Potential impacts from motorized trails include:

- Snag and downed log reduction (woody debris in streams is discussed in the fish section of this assessment)
- Habitat loss and fragmentation

- Harassment or human disturbances
- Collisions from motorized vehicles
- Travel or movement barriers

## Threatened and Endangered Species (ESA)

This project is not expected to impact Canada lynx (*Lynx canadensis*) moving through the area or jeopardize the continued existence of the gray wolf (*Canis lupus*). The preliminary determination of “no effect” to the Canada lynx was acknowledged by the U. S. Fish and Wildlife Service (USFWS). Because the determination of “not likely to jeopardize the continued existence” is considered the same as a “no effect” and the streamlining discussion meets the conference requirement for an experimental/non-essential population, concurrence was not requested from the USFWS. More information is found in the Biological Assessment located in the project record. These species will not be discussed further.

## Sensitive Species and MIS

The Regional Forester identifies Sensitive Species when population viability is a concern. An expected downward trend in population numbers and/or habitat could indicate the need to identify a species as “sensitive.” Sensitive Species have been identified for the Caribou and are discussed here. In addition, the Goshawk, Columbian sharp-tailed grouse, and sage-grouse are Management Indicator Species (MIS) for the 2003 Forest Plan. The **Spotted bat** (*Euderma maculatum*), **Pygmy rabbit** (*Brachylagus idahoensis*), **Trumpeter Swan** (*Cygnus buccinator*), **Harlequin Duck** (*Histrionicus histrionicus*), **Peregrine falcon** (*Falco peregrinus anatum*), **Bald eagle** (*Haliaeetus leucocephalus*), **Northern Goshawk** (*Accipiter gentiles*) [MIS], **Columbian Sharp-tailed Grouse** (*Tympanuchus phasianellus columbianus*) [MIS], **Greater sage-grouse** (*Centrocercus urophasianus*) [MIS], **Columbia spotted frog** (*Rana luteiventris*) do not occur within the project area and will not be discussed further.

- **Townsend’s (Western) big-eared bat** (*Corynorhinus townsendii*) -The Western bat occupies caves and underground mines on the Forest. The Western big-eared bat relies on snags for roosting. Bats forage on insects that use riparian and upland vegetation.
- **North American Wolverine** (*Gulo gulo*) – Wolverines are found on the Forest and the project area provides suitable habitat. Forest Plan guidelines restrict intrusive human disturbance within on mile around known active den sites from March 1 to May 15 (RFP III-33).
- **Great Gray Owl** (*Strix nebulosa*) – Mature lodgepole pine or subalpine fir forests bordering small openings or meadows occurs in or near the project area.
- **Flammulated Owl** (*Otus flammeolus*) – Large snags in mature Douglas-fir or aspen forests with open canopies occur in the project area.
- **Boreal Owl** (*Aegolius funereus*) – Suitable nesting habitat (tree cavities in mature fir or spruce forests with a high density of large trees) occurs in the project area.
- **Three-toed Woodpecker** (*Picoides tridactylus*) – Suitable habitat of recently killed trees occurs in or near the project area.

## Amphibians, Migratory Landbirds and Big Game

- **Western (boreal) toad** (*Bufo boreas boreas*) – There are known locations of boreal toads in Tincup Creek, McCoy Creek, and Lanes Creek. Vehicle collisions can decrease amphibians and reptile population and restrict migration (Wisdom et al 2000, 122). Roads are a risk factor and some researchers recommend vehicle use should be restricted to designated roads, trails, and areas (Maxell 2000, 88). The Caribou Forest restricts motorized travel to designated routes.
- **Northern leopard frog** (*Rana pipiens*) – Suitable habitat (ponds) does not occur in the project area. This species will not be discussed further.
- **Migratory Landbirds** – Riparian areas are “Priority A” and conifer forested habitats are “Priority B and C habitats” important for nesting birds. See mitigation measures for nesting birds.

## Mule Deer and Elk

The project area contains spring, summer and fall foraging habitat for mule deer and elk. Security areas, defined as areas over 1,000 acres managed for a semi-primitive non-motorized setting, influence state population objectives for big game herds. The state objective is to maintain or increase elk and deer population. Areas away from human disturbance in the spring (during the fawning and calving season) and away from hunter mortality in the fall can increase elk and deer survival. Motorized trails bring disturbance into these security areas. Big game hunting vulnerability is expected to decrease in large areas, over 1,000 acres and ½ mile from a designated motorized route. The project area has a semi-primitive non-motorized block of 58,000 acres on the eastern slopes of Caribou Mountain. Within this block are 8.65 miles of non-motorized trail identified in the Caribou Travel Plan Revision that needed further analysis; this proposed action. The ORMD is currently 1.1 miles of motorized route per square mile. This security area does have system non-motorized trails, which can increase human access and hunting into an area. The project area has not been identified as providing winter habitat for elk or deer.

## ENVIRONMENTAL CONSEQUENCES

### Alternative One, Direct and Indirect Effects

No actions are proposed under this alternative and the existing condition for wildlife and habitat would continue. There would be no change from this project to riparian, brush or forested habitat, including snags. There would be no change or fragmentation to the large security area for big game or collisions to amphibians. However, the existing non-motorized trail currently being used would not be maintained. There would be no change to existing OMRDs within the three prescription areas of the project area. Changes to big game survival and populations are not expected under this alternative.

## Cumulative Effects

There would be no additional cumulative impacts from the no-action alternative. Existing activities that will continue to affect wildlife in the project area and on the Caribou Forest include road and trail use, hunting, grazing, and mining. Recreation use on the forest will increase with a rise in human populations. Development of private lands outside the Forest is expected to increase, which will make forest habitats and food sources more important to many species of wildlife. Drought, insect and disease and wildfires could affect existing vegetation composition and pattern which could affect habitat in the short and long-term.

## Alternative Two, Direct and Indirect Effects

Under this alternative, there would be 7.8 miles of motorized trails and 3.6 miles of non-motorized trail requiring the clearing of brush and forest vegetation from the trail corridors totaling less than eight acres. On-going trail maintenance would clear away any new brush or tree growth. Most of the trail clearing would occur on previously disturbed sites. Construction of an estimated 2.6 miles of motorized trail within conifer stands would remove less than two acres of mature forest habitat, including existing and future snags, including hazard trees. Estimates are based aerial photography of existing conifer stands. The two acres would be configured as a long narrow corridor. Adequate quantities of forested habitat, including snags and brush would be available adjacent to the trails to provide for the needs of wildlife in the area. Any impacts to wildlife, specifically birds, are expected to be very low or un-measurable due to the mitigation measures and creating a long, very narrow corridor through a small amount of “high elevation mixed conifer”, considered a less desirable habitat for birds. There would be a small improvement to riparian habitat from increasing riparian vegetation and reducing sediment delivery from the existing North Fork of Eagle Creek Trail, Barnes Creek road improvement, and continued trail maintenance in all alternatives. Reconstruction of the NF Eagle Creek Trail would cause a short term loss of vegetation (<1.3 acres, estimated) on the new trail corridor that would be off-set by the reestablishment of vegetation on the closed sections of trail. The impacts would be the same (very low or un-measurable) to wildlife for the new construction on the Winschell Dugway route.

**Western big-eared bat** – there would be a small improvement of riparian habitat that would provide insects and adequate quantities of snags, which are used as day roosts.

**North American Wolverine** – Human disturbances on the trails are not expected to impact the wolverine during the denning period. Like the lynx, movement through the area is not expected to be impacted. Human disturbances from all activities would be localized and short duration and could be avoided by wildlife species. Small species could easily escape harm from disturbance activities.

**Northern Goshawk** – Trail clearing in a narrow corridor would not change the mature forest stand structure. Foraging habitat would remain. Some trees and snags would be lost; however, known nests would be avoided.

**Great Gray Owl, Flammulated owl, Boreal Owl, and Three-toed Woodpecker** – A mature forest stand condition would remain, but trees and snags (along with hazard trees)

would be removed along the trail corridor. There would be adequate snags within the project area and trees with known active nests would be avoided.

**Western (boreal) toad** – constructing or improving the ATV trails has the potential for traffic to impact toad populations from collisions. These impacts would be low due to the narrow width and low traffic volume. The risk of vehicle collisions for amphibians could increase over existing levels as the ATV trail intersects waterways and wet areas. The risk of vehicle collision would decrease as several creek fords would be replaced with bridges.

**Migratory birds** – there would be a small increase in riparian habitat, which is important for birds. Mitigation measures would reduce the risk of harm to nesting birds.

**Big Game** – ORMDs would increase to 1.3 miles of motorized route per square mile within the Caribou Mountain Special Emphasis prescription area. Although this alternative would fragment habitat, it is under the 1.5 prescription OMRD ceiling. The majority of the prescription area would remain under 0.6 miles of motorized route per square mile. The large security block, managed as a semi-primitive non-motorized setting, would be reduced by 5.7 percent. The large block or non-motorized area would be reduced by 3,300 acres, a 5.7 percent reduction of wildlife security, specifically for big game species. Constructing and managing a motorized trail would increase human disturbance and hunting vulnerability on the perimeter of the security area. A large (54,700 acre) block of non-motorized security area would remain for big game habitat and escape. There would be opportunities to increase aspen forest habitat. The impacts to big game population levels are not known.

## Cumulative Effects

There would be a very small additional cumulative impact due to the loss of forest and brush habitat and acre reduction of the large security area managed as semi-primitive non-motorized. Under this alternative there would be a small additional risk of ATV-caused mortality to amphibians due to an increase in motorized trail miles. This alternative may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

## Alternative Three, Direct and Indirect Effects

This alternative has similar effects to wildlife as Alternative Two. 5.7 miles of motorized trail would be reconstructed, requiring the clearing of brush and forest vegetation (including hazard trees) from the trail corridor totaling 4.1 acres. There would be no new non-motorized trail constructed. The risk of vehicle collisions for amphibians could increase on 5.7 miles. The large security block would be reduced by 7 percent, leaving 53,900 acres for wildlife security. ORMDs will increase to 1.3 miles of motorized route per square mile.

## Cumulative Effects

The small increase in cumulative impacts would be the same as Alternative Two.

## **Alternative Four, Direct and Indirect Effects**

This alternative has similar effects to wildlife when compared to Alternative Two and Three. 5.7 miles of non-motorized trail would be constructed or reconstructed. This would require the clearing of brush and forest vegetation (and hazard trees) from the previously disturbed trail corridor totaling 2.8 acres. There would be no new motorized trail constructed or loss of large trees or snags. Under this alternative, there would be no increase in risk of vehicle collisions for amphibians. There would be no change to the large security block or ORMDs.

## **Cumulative Effects**

Cumulative impacts from this Alternative would be less than Alternative Two and Three, but more than Alternative One.

## **Conclusion**

Alternative One would have the least impact to wildlife, followed by Alternatives Four, Two and Three. All alternatives would meet Forest Plan standards and guidelines. All action alternatives would maintain adequate quantities of forested habitat, adjacent to the trails to provide for the needs of wildlife in the area. Any impacts to wildlife, specifically birds, are expected to be very low or un-measurable due to the mitigation measures. There would be a small improvement to riparian habitat from increasing riparian vegetation along the roads and trails receiving reconstruction, improved drainage and maintenance. Construction and reconstruction of trails would cause a short term loss of vegetation on new trail corridor. ORMDs ceilings would not be exceeded under any alternative. A large block of non-motorized security area would remain for big game habitat and escape.

## **Irretrievable and Irreversible Commitment of Resources**

Direct, indirect and cumulative impacts to wildlife from trail construction, motorized and non-motorized, would not be an irretrievable or irreversible commitment of resources. Trails can be closed and reclaimed if they are causing resource damage.

## **Noxious Weeds**

### **Existing Condition**

Noxious weed infestations within the project area are not currently causing the extent of concern that they are on other parts of the Soda Springs Ranger District.

Spotted knapweed has been found at Morgan Meadows and at the Monte Cristo Mine; both of these infestations are believed to have been eradicated. The closest known infestation of spotted knapweed is found along lower McCoy Creek. Musk and Canada thistle are widespread and probably do occur within these areas, but no large infestations have been located.

## **Mitigation for All Action Alternatives**

Noxious weed mitigation will include patrolling the area on a regular basis. Regular enforcement will also help keep motorized traffic on the system trail and reduce the potential of weeds to just that corridor. This will make it easier to see the weeds and to control them as well if they appear. The Forest's Weed free hay policy will still be enforced. Livestock permittees regularly let the Forest Service know about weeds that need to be controlled. The Forest Service can keep in contact with the permittees to help us monitor weed infestations. A cooperative weed spraying effort will occur between the Forest Service and other entities such as the county. After construction, the disturbed areas will be watched closely for future weed infestations. Information about the spread of noxious weeds and the need to control them can be posted at the Morgan Meadows trail head to help educate the public.

## **Environmental Consequences for Alternative One, No Action**

Under the No Action Alternative current levels of noxious weed infestations will likely remain the same.

## **Environmental Consequences for All Action Alternatives**

Ground disturbing activities associated with the construction and reconstruction of trails and the associated traffic on the new trail is nearly certain to introduce noxious weeds to the area. The soil disturbance will create an ideal seed bed; and the increased ATV traffic and human activity is likely to introduce weed seeds into the area.

## **Cumulative Effects for All Alternatives**

On-going activities such as motorized and non-motorized travel and livestock grazing, could affect the existing rate of spread. Loss of cover due to wildfire could increase the risk of weed infestations within the project area. All action alternatives would increase trail uses, increasing the risk of new infestations. Mitigation measures should reduce these risks along trail corridors and trailheads.