

United States  
Department of  
Agriculture

# Big Hole Mountains Subsection

## Summer Travel Management Plan

### Final Environmental Assessment

Forest Service  
Intermountain  
Region

Caribou-Targhee  
National Forest



Big Elk Creek Trailhead – Palisades Ranger District

Prepared by  
Caribou-Targhee  
National Forest

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# Chapter One

## PURPOSE AND NEED

### Introduction

The project area includes all National Forest System lands between Highway 33 in Idaho and Highway 22 in Wyoming on the north and the South Fork of the Snake River to the south known as the Big Hole Mountains Subsection (1997 Revised Forest Plan, page III-58). Several major highways provide access: Idaho Highways 26, 31, and 33, and Highway 22 in Wyoming. Highway 31 is a State Scenic Byway over Pine Creek Pass (**Figure 1.1 - Vicinity Map, page 1-4**).

### Background

The 1999 Open Road and Open Motorized Trail Analysis (Motorized Road and Trail Travel Plan) developed a travel system for the Targhee National Forest which complied with direction from the 1997 Revised Forest Plan (RFP). A major objective of the plan was to resolve conflict by finding integrated, compatible management methods and prescriptions that allow public use of roads and trails to occur in a way that can best meet the needs of the resources and the recreating public. In other words, the plan was developed so that it would be compatible with other resource objectives, such as protecting soils, water quality, riparian habitat, wildlife habitat, or other forest resources while at the same time trying to provide a transportation system that was safe, environmentally sound, affordable to manage and maintain, and responsive to public needs.

### Existing Condition

The Forest completed a travel plan in 1999 using the best information available at that time. Since that time, some site specific condition data is now available which will help develop a more workable travel system while protecting natural resources. Revised Forest Plan direction (page III-27) calls for annual monitoring of 5-10 percent of the trails to determine rehabilitation needs.

The 1999 travel plan designated open motorized routes on the Targhee National Forest. On trails, it made the distinction between vehicles over 50 inches in width and those less than 50 inches in width. The travel plan designated trails that were “Open for Motorized Use less than 50 inches wide but **NOT RECOMMENDED FOR ATVs**”. It also designated trails that were “Open for Motorized Use less than 50 inches wide and suitable for ATVs”. The travel plan also allowed cross-country travel by mountain bikes/mechanized vehicles in most areas of the forest – except for example in wilderness and other special areas such as Research Natural Areas (RNAs).

### Purpose and Need for Action

The **purpose** of this project is to:

- Revisit the existing Travel Plan direction for the Big Hole Mountains Subsection within Bonneville, Madison and Teton Counties Idaho and Teton and Lincoln counties Wyoming in order to clarify ambiguity discovered during implementation of the existing travel

management plan direction and annual monitoring efforts for the existing trail system. Analysis of the road system is not part of this project.

- Develop a clearly defined plan for a mix of trails designed and managed specifically for all-terrain vehicles (ATV), motorcycles, mountain bikes and non-motorized uses.
- Close the remaining areas of the Big Hole Mountain Subsection to off-trail or cross-country use by bicycles (such restrictions are already in place for motorized vehicles).

The **goal** is to create a balanced network of trails that is safe, environmentally sound, affordable to manage and maintain, and be responsive to public needs without exceeding existing OROMTRD standards if at all possible.

The **need** for this analysis was discovered during implementation of the 1999 Travel Plan for the following reasons:

- The current travel plan allows ATV use on motorized single-track trails that are shown as “Open for motorized use less than 50 inches wide but **NOT RECOMMENDED FOR ATVs**” (Targhee National Forest Travel Map - 2001). This is causing a number of resource problems and user conflicts.
- A considerable increase in ATV use has occurred during the last several years. Such an increase of ATV use on single track motorized trails that were not designed for ATV use has and is continuing to pose safety risks for visitors as well as causing damage to vegetation, soils and in some cases, the trails capability to support other uses.
- Continued use of some of these single track motorized trails by ATVs may result in significant environmental effects. At the same time, some trails would be suitable for ATV use with minor modifications in trail design and reconstruction.
- During the same time period, there has been an increase in the recreation use levels of all types of trail use which has increased user conflicts. The combination of increased recreation use, user conflicts and trail use beyond the capability of the intended trail design has led to some damage of the existing trail system and consequently caused a proliferation of new user-created trails.
- Both user-created motorized and non-motorized (mountain bikes) trails have often been constructed in inappropriate locations such as on steep slopes and next to streams which are non-sustainable and difficult to maintain over the long term.
- In addition, user-created motorized routes often exceed established density standards, fragment wildlife habitat, increase erosion, and cause other resource impacts.

In **summary**, the overall **purpose** of this analysis is to:

- refine the existing trail network in the Big Hole Mountains Subsection to provide and manage trail opportunities for all recreation user groups,
- reduce user-conflicts,
- better protect the natural resources,
- and better implement the 1997 Revised Forest Plan and 1999 Open Road and Open Motorized Trail Analysis (OROMTRD) standards and guidelines.

### **Forest Plan Amendment**

This would require amending the current Forest Plan as follows:

Packsaddle Area (Prescription 5.1.4(b) - Timber Management (Big Game Security Emphasis))

- For **Alternative A – Existing Situation (No Action)**, this would necessitate including about 1.1 miles of existing motorized routes. This would increase the OROMTRD from 1.5 miles per square mile to 1.55 miles per square mile.
- For **Alternatives B, C, and D**, motorized route mileages would be reduced and therefore would be under the existing OROMTRD level allowed in the RFP (1.5 miles per square mile). No plan amendment would be necessary.

Moody Creek Area (previously called Farnes Mountain) (Prescription 5.1.4(b) – Timber Management (Big Game Security Emphasis))

- For **Alternative A – Existing Situation (No Action)**, this would necessitate including about 0.79 miles of existing motorized routes. This would increase the OROMTRD from 1.7 miles per square mile to 1.73 miles per square mile.
- For **Alternatives B – Trails Committees'**, this would add about 0.8 more miles to the 0.79 miles which currently exceeds the OROMTRD – for a total of about 1.59 miles. This would necessitate increasing the OROMTRD from 1.7 miles per square mile to 1.76 miles per square mile.
- For **Alternative C – Proposed Action, and Alternative D – Proposed Plus**, this would add approximately 2.0 more miles of motorized routes in order to develop viable loop systems. This would exceed the OROMTRD by 2.79 miles and would necessitate increasing the OROMTRD from 1.7 miles per square mile to 1.8 miles per square mile.

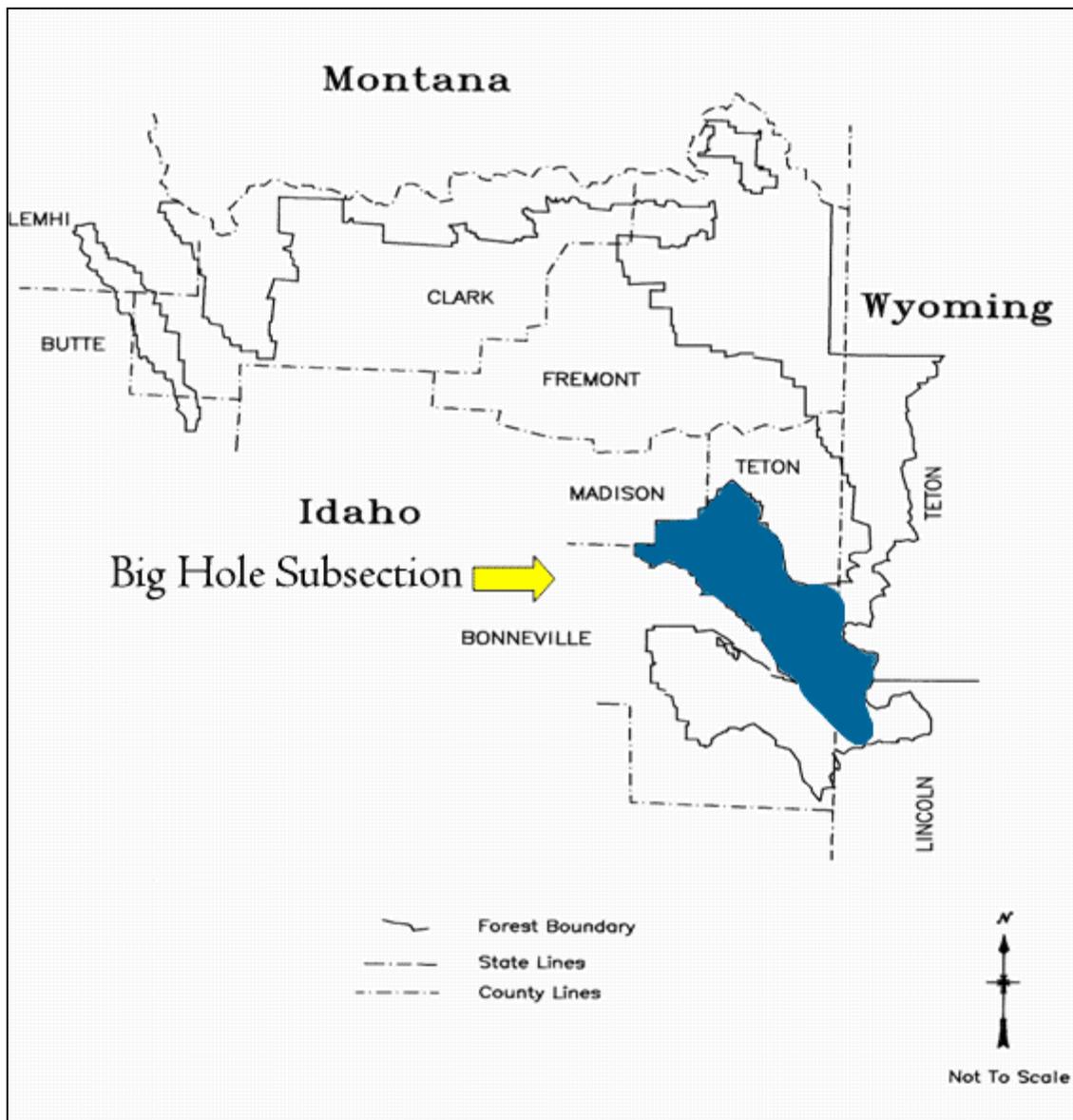
Black Grove-Murphy Creek – Hunts Corral areas (Prescription 3.2(j) – Semi-Primitive Motorized)

- For **Alternative A – Existing Situation (No Action)**, there would be no change and therefore no forest plan amendment needed.
- For **Alternative B – Trail Committees' and Alternative C – Proposed Action**, OROMTRD would not be exceeded – therefore no forest plan amendment would be needed.
- For **Alternative D – Proposed Plus**, this would add about 6.5 miles of motorized trails and therefore exceed the total miles to meet OROMTRD by about 4.45 miles. This would necessitate increasing the OROMTRD from 0.5 miles per square mile to 0.6 miles per square mile.

This project will not re-analyze all aspects of travel management planning in the Big Hole Mountains Subsection. **Winter travel will not be addressed.** All action alternatives will comply with existing 1997 Forest Plan Direction and the 1999 Open Road and Open Motorized Trail Analysis (OROMTRD) except as noted in the “summary” above. All actions will comply with the **“Final Travel Management Rule”** announced on November 2, 2005 by the USDA Forest Service which revises regulations at 36 CFR parts 212,251,261, and 295 to require designation of roads, trails, and areas for motor vehicle use.

This document will clarify the motorized route density standard concerns for prescription areas where current OROMTRD standards appear to be exceeded in the summary above.

**Figure 1.1 - Vicinity Map**



## **Proposed Action**

The actions proposed by the Forest Service to meet the purpose and need are:

1. Develop a clearly defined plan for a mix of trails designed and managed specifically for all-terrain vehicles (ATVs), motorcycles, mountain bikes and non-motorized uses. The goal is to create a balanced network of trails that are safe, environmentally sound, affordable to manage and maintain, and responsive to public needs. **(See Appendix A - Comparison Summary of All Trails by Alternative -- Big Hole Mountains Subsection Summer Transportation Travel Plan).**
2. **Eliminate** the existing designation of “Open for motorized use less than 50 inches wide but **NOT RECOMMENDED FOR ATVs**” and allow ATVs only on trails designed and designated for ATV use.
3. Close the remaining areas (all) of the Big Hole Mountains Subsection to off-trail use (cross-country use) by bicycles.
4. Relocate sections of trails that may be necessary to accommodate the designated use in a safe and sustainable manner and be environmentally sound.

The protocol established in the 1999 Open Road and Open Motorized Trail Analysis, “Road Decommissioning Process Guidelines”, Appendix B, will be followed during trail reclamation and decommissioning as directed by the Revised Forest Plan. A description of the procedures to be followed is found in Appendix C&D of this document. Documentation (Appendix B) at the time of reclamation and or decommissioning will occur to determine effectiveness of the closure type (such as scarification, berms, rocks and vegetation).

## **Decision Framework**

Given the purpose and need, the Forest Supervisor will review the proposed action and the other alternatives in order to make the following decisions:

1. Whether the proposed action will proceed as proposed, as modified by an alternative, or not at all. If it proceeds:
2. What mitigation measures and monitoring requirements will the Forest Service apply to the reconstruction and rehabilitation?
3. Whether the project requires a Forest Plan and or Travel Plan amendment or not? Since this project has highlighted a few apparent discrepancies in OROMTRD in a few Management Prescription areas, a Forest Plan amendment appears necessary regardless of the Alternative selected – even Alternative A – Existing Situation (No Action). See “summary” descriptions in Chapter One, pages 1-2 and 1-3 for details. Also see individual Alternative descriptions in Chapter Two.

## **Public Involvement**

The Council on Environmental Quality (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 issues and to obtain public comment at various stages of the Environmental Analysis process. Although scoping is to begin early, it is really an interactive

process that continues until a decision is made. In addition to the following specific activities, the Big Hole Mountains Subsection Summer Transportation project was listed on the Caribou-Targhee National Forest Schedule of Proposed Actions for the 4th quarter of FY 2005. To date, the public has been invited to participate in the project in the following ways:

1. Bonneville County Idaho created the Bonneville County Trails Committee (BCTC) in March 2003 for the purpose of developing recommendations to the Caribou-Targhee National Forest on recreation related plans and issues. The BCTC consists of Bonneville and Madison County residents who represent the various motorized and non-motorized recreation user groups. The committee members are all volunteers; duly appointed by the Bonneville County Board of Commissioners. The first project the commissioner's directed the BCTC to complete was to review the 2001 Travel Map (Big Hole Mountains Subsection) and provide recommendations for the Caribou-Targhee NF to consider in future travel management planning in the area. The BCTC met monthly from April 2003 to June 2004 to complete the travel map review. The committee reviewed a total of 309 miles of trails.
2. Teton County Idaho also formed a volunteer Trail Advisory Group modeled after the effort initiated by Bonneville County. This committee created some proposals but did not submit a final proposal to the county or the Forest Service. The county shared their draft proposals with the two Districts.

These committees have made recommendations to the agency on modifications they feel are necessary to improve the current travel management system. These committees limited their recommendations to comply with the motorized road and trail densities that are established in the current travel management plan (see individual Management Prescriptions in the Forest Plan). Alternative B is the culmination of both counties' recommendations.

The **goals** of the BCTC were to:

- Provide recreation opportunity for all trail user groups.
- Provide a quality experience for all trail user groups.
- Improve trail conditions.
- Reduce environmental impacts.

Further definitions of these goals include:

- **Recreation opportunity:** Provide (a) trail/road mileage for motorized and non-motorized user groups, and (b) motorized mileage for both ATV users and motorcyclists.
- **Quality experience:** Recognize that (a) loop trails are preferred over out-and-back trails, and (b) motorcyclists prefer single track trails over double track and (c) ATVs should not be permitted on single track motorized trails.
- **Trail conditions:** Recognize that (a) unsafe trail conditions should be corrected, and (b) ATV trails should be designed specifically for the ATV.
- **Environmental impact:** Trails that are causing detrimental environmental impacts should be corrected; key considerations are to minimize soil erosion and stream sedimentation.

In an effort to obtain other public comments and concerns, news releases were sent to area newspapers and media on April 18, 2006 and hard copies of the Scoping document were sent to approximately 240 individuals and groups. Likewise, the Scoping document was posted to the

Caribou-Targhee National Forest web site. We received approximately 46 letters and e-mails providing comments and suggestions for consideration in the environmental analysis. Received comments represent the same issues and concerns expressed in the scoping document plus detailed suggestions on specific trails and how they should be managed. In addition, some discussion was centered on the concern for motorized road and trail density standards as shown in the Revised Forest Plan. See “Issues and Area(s) of Concern” page 1-11 for detailed descriptions of issues and areas of concern.

On August 29, 2007 a Legal Notice and News Release were published notifying the public that a Draft Environmental Assessment had been prepared and available for review. This Notice and Opportunity to Comment explained the time-period and procedures for submitting comments. Comments were received for 30 days after publication of the notice in the Post Register.

Draft EAs were sent to those individuals who responded with comments to the Scoping Document. Approximately 28 individuals and agencies submitted comments to the Draft EA. Comments received were helpful in development of the final environmental assessment. These comments are included in the project analysis folder.

## **Forest Plan Management Direction**

The following Targhee Forest Plan (1997 Revised Forest Plan) direction applies (direction stated as Goals (G), Standards (S), or Guidelines (G)).

### **Desired Future Condition for Forest Use and Occupation**

- Growing and diverse recreational, cultural, visual, historical, and prehistoric management, interpretive and spiritual needs are accommodated based on the capability of the ecosystem to sustain these uses. Recreation use is managed to minimize conflicts between incompatible uses and provide high levels of satisfaction. Year-round human access is managed to provide both motorized and non-motorized recreation opportunities. A system of trails and support facilities exist which are compatible with resource capabilities. Roadless characteristics are preserved in the proposed wilderness areas and in existing wildernesses. (FEIS, Page I-12 and RFP, Page II-2)
- “...In Garns Mountain....a decision was made to manage for motorized use....rather than roadless. (FEIS, Table IV-14, footnote, Page IV-48)
- “Garns Mountain – This area was not recommended for wilderness considerations for the following reason: ...” (See paragraph, FEIS, Appendix B, Update To The Roadless Areas Process Paper For Wilderness Recommendation Rationale. (FEIS, Page B-3)
- “Palisades – A portion of this area was recommended for wilderness considerations for the following reason: ...” (See paragraph, FEIS, Appendix B, Update To The Roadless Areas Process Paper For Wilderness Recommendation Rationale. (FEIS, Page B-3)

### **Forest-wide Goals (G), Standards (S) and Guidelines (G)**

See the specific goal, standard or guideline listed below by element and resource area.

## **Physical Elements**

### **Soils**

- In areas of high mass instability, that have been ground verified, occupancy shall not be allowed. (S) (Page III-7)
- In areas identified as having moderate instability, and that are ground verified, occupancy may be allowed provided it can be shown the project design can prevent unacceptable resource damage. (G) (Page III-7)
- The Region 4 Soil Management Handbook FSH 2509.18 Direction (see Appendix I)
- Region 4 Soil and Water Conservation Practices Handbook FSH 2509.22 Direction:
- Recommended BMP Project Design Features

## **Biological Elements**

### **Fisheries, Water, and Riparian Resources**

- Maintain or improve water quality to meet water quality standards for the States of Idaho and Wyoming. (G) (Page III-9)
- Maintain or restore:
  - Stream channel integrity, processes, and sediment regime.
  - Diversity and productivity of native and nonnative plant communities in riparian zones.
  - Riparian vegetation to: 1) provide large woody debris; 2) provide thermal regulation; and 3) help achieve natural erosion rates and channel migration characteristics.
  - Aquatic habitats necessary to support over-all biodiversity.
  - Habitat to support populations of well-distributed native and desired nonnative plant, vertebrate, and invertebrate populations.
  - Minimize adverse effects to aquatic and riparian dependent species from past, existing, and proposed projects in the Aquatic Influence Zones (AIZ).
  - Wildlife biodiversity is maintained or enhanced. (Page III-15)
  - Region 4 Soil and Water Conservation Practices Handbook FSH 2509.22 Direction (see Appendix D)

### **Wildlife**

- Wildlife biodiversity is maintained or enhanced by managing for a diverse array of habitats and distribution of plant communities. (G) (Page III-15)

### **Plant Species Diversity**

- Preserve unique formations within a landscape (such as cliffs, bogs, seeps, talus slopes, warm or alkaline springs, pot holes, and rock outcroppings) that provide habitat to plant species not common to the overall landscape and contribute to the species diversity within the landscape. (G) (Page III-14)
- Provide necessary protection and management to conserve listed threatened, endangered and sensitive plant species. (G) (Page III-14)
- Native plant species from genetically local sources will be used to the extent practicable for erosion control, fire rehabilitation, riparian restoration, forage enhancement, road right-of-way seeding, and other revegetation projects. (G) (Page III-14)
- Areas planned for nonnative seedings or planting of nonnative woody species need to be evaluated to determine the impacts to the native flora within the analysis area and habitats adjacent to it. (G) (Page III-14)

- Introduced species should be utilized in project seedings where native species would not meet the objectives of erosion control, such as high use or impact areas, and where the effects on local, native flora is minimal; sites that are currently dominated by introduced species and use of nonnative species has not degraded the adjacent native flora; and sites where the management objective is to utilize nonnative species in one area to prevent degradation of other native areas. (G) (Page III-14)
- Information on the presence of listed threatened, endangered or sensitive plant species will be included in all assessments for vegetation and/or ground disturbing management activities. Appropriate protection and mitigation measures will be applied to the management activities. (S) (Page III-14)

## **Forest Use and Occupation**

### **Access**

- The Forest road and trail system is cost effective and integrates human needs with those of other resource values....(G) (Page III-23):

### **Recreation**

- Provide a network of OHV trails while minimizing the effects of OHV use on soils, wildlife and other users. (G) (Page III-26)
- Discourage OHV use on slopes greater than 40 percent, except on designated routes...Roads and trails; however, may cross slopes that exceed 40 percent. (G) (Page III-26)
- Areas with slopes of 25-40 percent may require travel restrictions if soil erosion factors warrant them. (G) (Page III-26)
- Restrict OHV use on identified areas of unstable soils except for snowmobiles. (G) (Page III-26)
- No motorized vehicles over 50 inches wide are allowed on trails unless the trails are specifically designed for such vehicles. (G) (Page III-26)
- Trails for motorized/mechanized use would be sufficient to sustain use over long periods of time and minimize requirements for maintenance or reconstruction. (G) (Page III-27)
- Trails for non-motorized/mechanized use would be sufficient to sustain use over long periods of time with minimal requirements for maintenance or reconstruction. (G) (Page III-27)

### **Heritage Resources**

- Forest consultation procedures and intergovernment agreements with the tribes to guide future cooperative efforts will comply with the protocols set forth in the National Resource Book on American Indian and Alaska Native Relations Working Draft 1995 or its successor. (S) (Page III-28)
- Appendix A - National direction Relevant to Land and Resource Management (Based on FSM Objective Statements) (Pages A-1 – A-7)

The following Forest Plan direction applies to the Big Hole Mountains Subsection project area. (Page III-59)

### **Desired Future Condition (DFC)**

- This subsection will provide a diverse range of recreation opportunities at different locations within the subsection. (Page III-60)
- The Big Hole portion of the subsection will provide a wide variety of resources and recreation opportunities. This area will provide quality motorized recreation opportunity with a signed system of roads and trails for motorized use. Resource protection will be accomplished by restricting motorized use to designated routes and by locating routes along planned and selected routes. (Page III-60)
- The Palisades portion of the subsection will provide more primitive motorized and non-motorized recreation opportunities. Emphasis will be placed on quality backcountry experience for these uses along appropriate designated trails. The Forest recommends the Idaho portion of the Palisades roadless area for wilderness designation. The Wyoming portion is managed as a wilderness study area according to existing legislation. (Page III-60)
- Much of this subsection is made up of inventoried roadless areas. With the exception of the north end of the Big Holes, most of that area is in the Garns Mountain and Palisades Roadless Areas. These areas are typified by steep mountain ranges where little development opportunity is expected. (Page III-60)

### **Goals and Objectives**

- **Recreation**
  - Continue to improve the quality of the summer time OHV use in the Big Hole area and protect resource values by locating and maintaining trails on suitable locations. (G) (Page III-61)
- **Inventoried Roadless Areas**
  - In recommended wilderness, protect roadless area values to ensure wilderness characteristics are maintained. (G) (Page III-61)
  - In all other areas, continue to protect resource values. (G) (Page III-61)
- **Wildlife**
  - Provide for recreational activity while maintaining the integrity of critical wildlife habitats such as winter range. (G) (Page III-60)

### **Management Prescription Areas**

- **Rx 1.2 Wilderness Study Area (Palisades, Wyoming Portion)**
  - Motorized vehicle use less than 50 inches wide is allowed on trails designated open in the Forest Travel Plan Map. (Access Table (S) – 1.2) (Page III-77)
  - Trails and bridges are constructed or maintained to accommodate heavy foot and horse traffic. (G) (Page III-77)
- **Rx 1.3 Recommended Wilderness (Palisades, Idaho Portion)**
  - They will be managed in their present condition (including existing trail use..., as long as existing uses will not degrade the character of the resources) until Congress takes action on that recommendation. (G) (Page III-78)
  - Motorized vehicle use less than 50 inches wide is allowed on trails designated open

in the Forest Travel Plan Map. (Access Table (S) – 1.3) (Page III-79)

- **Rx 2.1.2 Visual Quality Maintenance** (Pine Creek Pass Highway 31 Corridor)
  - Manage these travel corridors to protect their natural visual quality. (G) (Page III-82)
  - Motorized vehicle use greater and less than 50 inches in width is allowed on designated routes shown in the Forest Plan Travel map. (S) (Page III-83)
- **Rx 2.2 Research Natural Area** (Burns Canyon)
  - Motorized vehicle use greater and less than 50 inches in width is allowed on designated routes shown in the Forest Plan Travel map. (S) (Page III-85)
- **Rx 2.3 Eligible Wild River** (Palisades Creek, Big Elk Creek)
  - Road and Trail travel is allowed on routes designated in the Forest Plan Travel Maps where it currently exists and does not degrade the outstandingly remarkable river values. (S) (Page III-89)
- **Rx 2.4 Eligible Scenic River** (South Fork Snake River)
  - Motorized use is allowed unless it needs to be prohibited or restricted to protect the river values.
  - Trails and bridges paralleling or crossing the river are acceptable, provided VQO and ROS objective for the river and corridor are maintained. (G) (Page III-93)
- **Rx 2.7(a) Elk and Deer Winter Range**
  - Motorized vehicles greater and less than 50 inches wide are not allowed cross-country during the snow-free season. Individual roads and trails are designated open or closed in the Forest Plan Travel Map. (S) (Page III-105)
- **Rx 2.8.3 Aquatic Influence Zone**
  - No new roads, trails, or landings will be constructed within these lands until appropriate standards for construction, maintenance, and operations are in place. (G) (Page III-110)
  - Improve; seasonally close; close, relocate and stabilize; or obliterate roads and trails that have been identified as posing a high risk of causing unnaturally high levels of sediment input or are known to be doing so. Action to be taken will be determined based on travel management needs, terrain, the need for the road or trail, the potential environmental impacts, and resource priorities. (G) (Page III-110)
  - Roads and trails or sections of them that have been identified as inhibiting riparian, wetland or aquatic ecosystem processes and/or functions (e.g., plant community development, sediment transport, and stream channel development) will be based on the potential environmental impact, the ecological condition of the riparian, wetland and aquatic resources affected, and the need for the road or trail. (G) (Page III-110)
- **Rx 2.9.1 South Fork Snake River Eligible Scenic River**
  - Motorized vehicle use greater and less than 50 inches in width is allowed on designated routes shown in the Forest Plan Travel map. (S) (Page 113)

- **Rx 2.9.2 South Fork Snake River Eligible Recreation River**
  - Motorized vehicle use greater and less than 50 inches in width is allowed on designated routes shown in the Forest Plan Travel map. (S) (Page 113)
- **Rx 3.2(b,c,d,g,i,j) Semi-Primitive Motorized**
  - Motorized vehicle use greater and less than 50 inches in width is allowed on designated routes shown in the Forest Plan Travel map. (S) (Page III-121)
- **Rx 4.2 Special Use Permit Recreation Sites**
  - Motorized use is allowed only on existing roads and is limited to entering, leaving, and visiting other sites within the facility, except as guided by the special use permit. (S) (Page III-130)
  - Trails may be allowed for the convenience of people using these sites. (G) (Page III-130)
  - Short trails are allowed which provide access to facilities and opportunities for interpretation. (G) (Page III-130)
- **Rx 5.1.3(a-b) Timber Management (No Clear-cutting)**
  - Motorized vehicle use greater and less than 50 inches in width is allowed on designated routes shown in the Forest Plan Travel map. (S) (Page 138)
- **Rx 5.1.4(a-d) Timber Management (Big Game Security Emphasis)**
  - Motorized vehicle use greater and less than 50 inches in width is allowed on designated routes shown in the Forest Plan Travel map. (S) (Pages 140 and 141)
- **Rx 5.2.2 Visual Quality Maintenance**
  - Motorized vehicle use greater and less than 50 inches in width is allowed on designated routes shown in the Forest Plan Travel map. (S) (Page 146)

### **Issues and Area(s) of Concern**

The Forest Service separated the comments into two groups - significant and non-significant issues. Significant issues are defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues were identified as those: 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 factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)..."

The key issues and areas of concern identified through the scoping process from public comments, Trails Committees' recommendations, and interdisciplinary team comments are summarized as such:

1. Fisheries
2. Water Quality and Soil Erosion
3. Wildlife
4. Recreational Use

5. Open Road and Open Motorized Trail Route Density (OROMTRD)
6. Wilderness Study Area, Recommended Wilderness Area and Roadless Areas

Individual descriptions of each issue and area of concern are shown below:

- **Issue 1 - Fisheries:** Designated motorized travel routes have the potential to affect aquatic and riparian-dependent species, particularly where they encroach upon riparian areas and water. 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.

**Indicators:**

1. The density of designated motorized routes within riparian areas of fish bearing streams.
  2. ATV trail densities within the Aquatic Influence Zones (AIZ).
  3. Non-motorized trail densities within the Aquatic Influence Zones (ZIZ).
- **Issue 2 -Water Quality and Soil Erosion:** Designated trail use (non-motorized verses motorized), trail location, trail design and trail maintenance have the potential to affect soil erosion and mass instability negatively or positively which could directly affect water quality and aquatic habitats by increasing or reducing sediment into streams. Soil quality may also be affected negatively or positively.

**Indicators:**

1. Acres of disturbance returned to productivity.
  2. Miles of trails returned to productivity.
  3. Miles of trails constructed on erodible/unstable soils.
  4. Miles of trails and acres within the aquatic influence zone (AIZ).
  5. Number of trail crossings on perennial and intermittent streams.
- **Issue 3 – Wildlife:** The proposed action could affect important plant and wildlife habitat and wildlife species (including threatened and endangered species) by direct removal of habitat to make trails wider for safer ATV use, to relocate segments of trails in order to make viable loop trails and to protect riparian areas. This may not be a significant issue but this topic should be discussed and documented.

**Indicators:**

1. Acres lost to new trail construction.
  2. Change in the Road and Motorized Trail Density by Prescription.
  3. Total miles of trail classified as “Not Recommended for ATVs”.
  4. Change in total miles of ATV trails.
  5. Change in total miles of motorized trails.
- **Issue 4 - Recreational Use:** Public use satisfaction and law enforcement needs may be affected negatively or positively by several factors such as having trails go and end where users want to be, providing loop trail opportunities for the various user groups, performing proper trail design for the intended use, and providing a mix of trails designated for specific user groups or mode of travel.

**Indicators:**

1. Miles of ATV trails.
  2. Miles of Single Track motorized trails.
  3. Miles of non-motorized trails.
  4. Miles of trails to be reconstructed to meet ATV standards.
  5. Miles of new trails to be constructed for ATV use.
  6. Miles of new trails to be constructed for Single Track motorized use.
  7. Miles of new trails to be constructed for non-motorized use.
  8. Miles of trails to be obliterated.
  9. Miles of loop trails for ATV and Single Track motorized vehicles.
  10. Acres closed to cross-country bicycle and other mechanized use.
  11. Total miles of ATV and Single Track motorized trails.
- **Area of Concern – Open Road and Open Motorized Trail Route Density (OROMTRD)**  
Motorized route density standards were established in the 1997 Revised Forest Plan (RFP) – Final Environmental Impact Statement (FEIS) and the October 1999 Final Environmental Impact Statement (FEIS) for the “Open Road and Open Motorized Trail Analysis” (Motorized Road and Trail Travel Plan) for the Targhee National Forest. The 1999 document was intended to clarify and correct errors in the previously established density standards in the 1997 RFP. During analysis of this Environmental Assessment, it was found that some management prescription areas apparently still do not meet the density standards under Alternative A – Existing Situation (No Action). These discrepancies are suspected to be due to better GIS capabilities and data. The areas in question are:

Packsaddle Area (Prescription 5.1.4(b) - Timber Management (Big Game Security Emphasis)

Moody Creek Area (Prescription 5.1.4(b) – Timber Management (Big Game Security Emphasis)

Black Grove-Murphy Creek – Hunts Corral areas (Prescription 3.2(j) – Semi-Primitive Motorized)

See page 1-2 and 1-3 of this chapter for a complete description of each area and the changes which will need to be made in each alternative.

The intent of this project is to remain within established motorized density standards in all of the alternatives in each of the Management Prescriptions except to reconcile apparent existing discrepancies and allow for a very slight increase in a few areas so as to provide viable loop systems in order to reduce user conflicts and improve natural resource conditions. Therefore, this area of concern will not be further analyzed except as discussed in the following sections of the document:

- Individual alternative descriptions will address density standards if they are exceeded in a particular alternative (see Chapter Two, Alternatives, Including the Proposed Action, pages 2-1 through 2-8).
- Issue 3 – Wildlife, Indicator, 2. Change in the Road and Motorized Trail Density by Prescription (see Chapter Four, Table 4.22, pages 4-57 and 4-58).

- Area of Concern – OROMTRD (see Chapter IV, Table 4.22, pages 4-57 and 4-58).

Except as noted in the above discussions, most management prescription density standards would not be exceeded. As noted in Table 2.1 – Effects to Indicators by Alternative and Table 4.15 - Direct and Indirect Impacts to Wildlife Indicators by Alternatives, a number of OROMTRDs (motorized densities) are reduced. Some densities were increased but still remain within the maximum allowable density levels.

- **Area of Concern – Wilderness Study Area, Recommended Wilderness Area and Roadless Areas**

1. **Wilderness Study Area:** The Wyoming Wilderness Act of 1984 identified the portion of the Palisades Roadless area in Wyoming as a Wilderness Study Area. As such, the area is to be administered to “maintain its present existing wilderness character and potential for inclusion in the National Wilderness Preservation System.” The 1985 Forest Plan and the 1997 Revised Forest Plan (RFP) give specific guidelines for continued management of this area in order to accomplish this direction.
  - Prior to the 1984 Wyoming Wilderness Act, motorized trail use was allowed in all or at least portions of this area (it is difficult to find information and maps that cover every year prior to the 1984 Act, but an old 1979 Forest Map indicates motorized trail use was allowed).
  - After the 1984 Wyoming Wilderness Act, the 1985 Forest Travel Map (for the 1985 Forest Plan) indicates that continued motorized use in portions of this area was still allowed (specifically in the Indian Creek Management Unit D (see the 1985 Forest Plan, pages 485, 486 and 489).
  - In the 1997 Revised Forest Plan (RFP) and the 1999 FEIS for the Open Road and Open Motorized Trail Analysis (Motorized Road and Trail Travel Plan), motorcycle use was restricted to a few trails (see the 1997 through 2001 – current Travel Plan maps).
  - On January 12, 2001, the Department of Agriculture promulgated the Roadless Rule at 36 CFR 294 (66 FR 3244), which fundamentally changed the Forest Service’s longstanding approach to management of inventoried roadless areas by establishing nationwide prohibitions that, with some exceptions, generally limited timber harvest, road construction, and road reconstruction within inventoried roadless areas on NFS lands. Since the 2001 Rule does not provide direction for the management of trails within Inventoried Roadless Areas, it does not directly affect this project.
2. **Proposed Wilderness Area:** After the 1984 Wyoming Wilderness Act, the 1985 Land Management Plan prohibited motorized use in the Palisades Creek and Big Elk Management Units (see the 1985 Land Management Plan for the Targhee National Forest, pages 487 and 488). Also, the 1985 Forest Travel Plan shows a prohibition against motorized use in these two units. These two units reflect the same area shown in the 1997 RFP as Management Prescription 1.2 Recommended Wilderness (pages III-78 and III-79) where motorized use is prohibited.
3. **Inventoried Roadless Areas (IRAs):** The management of IRAs on National Forest System Lands is currently directed by the 2001 Roadless Area Conservation Rule.

The proposed action is in compliance with the Roadless Area Conservation Rule because it does not propose any road construction, either through active development or reclassification, in inventoried roadless areas covered by the Rule.

The projects affect on the Roadless Characteristics and Wilderness Attributes on the IRAs in the analysis area (Garns Mountain and Palisades) have been evaluated (Appendix E and F). Additional management direction and background information is discussed in Chapter 3 (pages 3-29 to 3-34) and Chapter 4 (pages 4-58 to 4-61) of this Environmental Assessment.

The 1997 RFP Management Prescription Areas describe the management of these roadless areas. The portions of the roadless areas not included in 1.2 Wilderness Study Area and 1.3 Proposed Wilderness, are being managed according to the various Management Prescription Areas in which they fall (see the 1997 RFP and the subsequent Travel Maps from 1999 to 2001).

As indicated in the issues discussion above, three action alternatives were mapped which best represented a range of alternatives based on comments received from individuals, groups, and forest resource specialists.

The issues concerning motorized travel and access from the Revised Forest Plan analysis were considered in relation to public issues identified from comments concerning development of this environmental analysis. This current analysis of specific trail issues indicates existence of the same polarization concerning access issues as identified during the original public scoping processes for the 1997 RFP and 1999 FEIS for the Open Road and Open Motorized Trail Analysis.

### **Non-significant Issues considered but not brought forward for further analysis for various reasons**

Some of the concerns or topics listed below may or may not have been raised by the public during the scoping process. Others are required to be addressed by other laws or regulations but are not analyzed in detail in this EA. These topics are outside the scope of the analysis for the reasons shown, or are controlled by law or regulations, or are addressed in reports or other NEPA documents. None of these topics drive specific alternatives, and none have been determined to be significant under 40 CFR 1501.7.

- Cultural resources were analyzed and addressed in the 1997 FEIS for the Revised Forest Plan. Law requires that when proposing undertakings that might affect historic properties, the agency will determine the scope of effects, identify historic properties, and evaluate the historic significance of the property. Therefore, normal cultural resource inventories will be conducted for proposed projects. In the event unevaluated cultural resource sites are encountered, they will be treated as significant until comprehensive evaluations are completed. See Chapter Three and Chapter Four for further discussions.
- Mineral resources were analyzed and addressed in the 1997 FEIS for the Revised Forest Plan. No proposed activities will affect this topic.
- Coniferous Forest Old Growth was analyzed and addressed in the 1997 FEIS. Any proposed activity should have little to no affect on this topic.
- Livestock and Range management was also analyzed and addressed in the 1997 FEIS for the

Revised Forest Plan. Any proposed changes in proposed trail use designations or the number of trails constructed, reconstructed, or decommissioned/closed, will have no effect on this topic area.

- Air Quality was analyzed and addressed in the 1997 FEIS. Any proposed activity such as new trail construction or re-routing would not decrease the air quality of the area.

## **Past, Present and Reasonably Foreseeable Actions**

Cumulative effects consist of the direct and indirect effects resulting from the incremental impact of the proposed action or alternatives when added to other past, present, and reasonably foreseeable future actions, regardless of who carries out the action (40 CFR 1508.7). All of the environmental issues carried forward for analysis in the EA have the potential for cumulative effects. Detailed discussion of cumulative effects is found in Chapter Four, Environmental Consequences.

Guidance implementing NEPA requires that federal agencies identify the temporal and geographic boundaries within which they will evaluate potential cumulative effects of alternative, and the specific past, present, and reasonably foreseeable projects that will be analyzed (40 CFR 1508.25). In 1997, the Council on Environmental Quality published additional guidance on cumulative effects assessment, which provides the basis for discussion in this EA (Council on Environmental Quality, 1997).

For the purposes of this EA, the general temporal boundaries of analysis are from 1970 to 2010, for all indicators. This 40-year period encompasses a range within which data are reasonably available and forecasts are reasonably foreseeable. Certain effects may continue beyond 2010 as noted in Chapter Four, but any quantification is speculative and therefore outside the scope of analysis for this document. The geographic boundaries of analysis vary depending on the specific resource and potential effects; therefore they correspond to the “analysis areas” described in Chapters Three and Four for each resource issue.

Specific projects with the potential to affect the same resources potentially affected by the proposed action or alternatives and which were therefore analyzed for cumulative effects are shown below in Table 1.1 and described in Chapter Four, Environmental Consequences.

**Table 1.1 - Past, Present, and Reasonably Foreseeable Actions**

Cumulative Action Items from Land Management Activities	Past	Present	Future	Comments
• firewood collection including post and poles	Most activity occurred	Some on-going activities	Will continue but less volume removed	Generally accessed from existing system roads. Access within 300 feet of some roads would be allowed.
• timber harvest to include wildlife habitat improvements and urban interface fuel reduction for protection from wildfires	Heaviest activity occurred	Limited with most for urban interface and wildlife improvements	Limited but more for urban interface and wildlife habitat improvements	Some of this activity is off forest on private land. Some temporary roads may need to be constructed but large timber sales are not likely.
• mining activities	Some occurred	None	None	Is highly unlikely coal mining would take place again.
• grazing of livestock	Greatest intensity	Still on-going but fewer	Will most likely	Concern is possible impacts in riparian areas (to fisheries and

		numbers	continue but at lower levels	water quality, etc.)
<ul style="list-style-type: none"> <li>fires including prescribed burns and wildfires</li> </ul>	Few	Some prescribed fire for wildlife purposes	Will continue at some level	Concern is for fire location and size of event and intensity of burns.
<ul style="list-style-type: none"> <li>private housing development</li> </ul>	Little development	Considerable increase in developments	Continued considerable increase in all areas	Off forest development could affect fisheries in streams on forest. Increase in human populations could put more pressures on forest resources – natural resources and trails.
<ul style="list-style-type: none"> <li>road and trail use</li> </ul>	Roads used mostly for timber related activities	Limited timber related use but some increase in trail users	Continued demand for trail use as private development continues	Motorized trail use could cause more erosion, thus impacting water quality and fish habitat. Trail maintenance and proper trail design could lessen impacts.
<ul style="list-style-type: none"> <li>cross country access from motorized and non-motorized users</li> </ul>	Subsection closed to cross-country motorized vehicles but open to bicycles	Same as the “Past” column	Subsection would be closed to cross-country motorized and bicycle use in Alt. C only	Development of unwanted user created trails could create additional erosion sources if not promptly closed and taken care of.
<ul style="list-style-type: none"> <li>dispersed activities from all users (including outfitters - on and off forest land) including camping off trails and hunting from motorized vehicles (ATVs and motorcycles)</li> </ul>	Traditional uses but fewer in numbers	Some increase in motorized and non-motorized trail use	Should be an increase in all types of uses due to increases in private development closer to forest	Activities could generate additional ground disturbance if not restricted to designated trails and camp sites not properly selected.
<ul style="list-style-type: none"> <li>user conflicts between different type uses such as between ATV and motorcycles, motorized and non-motorized and motorized vehicles less than 50 inches wide and full-size cars and trucks.</li> </ul>	Less of a problem due to fewer numbers of ATVs and motorcycles	Some conflicts due to increased trail users and vehicle capabilities (ATVs)	Continued increase in number of people – especially ATV users – thus greater potential for conflicts	Providing adequate routes (including loop systems) for all types of user groups could lessen user conflicts and improve overall recreation experiences.

## Chapter Two

# ALTERNATIVES

### Introduction

This chapter describes and compares the alternatives considered for the Big Hole Mountains Subsection Summer Transportation Travel Plan, including the proposed action. It includes a description of each alternative considered. This section also presents the alternatives in comparative form, defines the differences between each alternative and provides a clear basis for making a choice between options by the decision maker and the public.

Based on the most current information available, it appears that the OROMTRD standards in the Moody Creek (previously called Farnes Mountain) and Packsaddle areas (see Revised Forest Plan Prescription Areas 5.1.4(b)) are still slightly exceeded in Alternative A – Existing Situation (No Action) and would also be exceeded in the other proposed Alternatives unless the OROMTRD standards were increased. Likewise, the OROMTRD standard would be exceeded in the Black Grove-Murphy Creek – Hunts Corral areas (Prescription 3.2(j) in Alternative D only.

**No new motorized or non-motorized trails are being proposed in the Wilderness Study Area or Recommended Wilderness Prescription Areas in any of the alternatives.** All existing motorized use in these two prescription areas will be allowed to continue until Congress takes action on the recommendations or until on-going use is determined to be reducing existing wilderness characteristics of the areas (see Revised Forest Plan, pages III-74 thru III-79). Density standards will remain as currently established.

In all alternatives except Alternative A, the current “Open for Motorized Use less than 50 inches wide but **NOT RECOMMENDED FOR ATVs**” designation **would be eliminated**. All ATV trails would be designated as such and ATVs would not be allowed on single track motorized or non-motorized trails.

### Alternatives, Including the Proposed Action

Alternatives were developed from:

- Significant comments received from internal, agency and public scoping on the proposed action (see details under “Public Involvement”, Chapter One).
- Forest Service interdisciplinary team (IDT) significant issues and concerns about the proposal.
- Desired Future Condition statements in the 1997 Revised Forest Plan (RFP) and the 1999 Final Environmental Impact Statement (FEIS) for the Open Road and Open Motorized Trail Analysis (OROMTRD).

## **Alternatives Considered in Detail**

The three action alternatives discussed in this section represent a reasonable range of actions to accomplish the purpose and need for this proposal and respond to the significant issues identified in Chapter One. The No Action Alternative (Alternative A) describes the effects of taking no action and provides a basis for comparing the environmental effects of the three action alternatives.

- **Alternative A - Existing Situation (No Action)**

This alternative is based on the existing situation. This alternative would leave the summer transportation system in place for the Palisades and Teton Basin Ranger Districts within the Big Hole Mountains Subsection. Motorized road and trail density standards would continue to be exceeded in the Moody Creek and Packsaddle Creek areas - Prescription 5.1.4(b) - since no motorized routes would be eliminated or converted to non-motorized use. Even though this alternative makes no changes, it will be necessary to increase the OROMTRD to reflect the current situation shown in the 1997 RFP and 1999 FEIS for the Motorized Road and Trail Travel Plan.

In the Packsaddle Area (Prescription 5.1.4(b) - Timber Management (Big Game Security Emphasis)), it would necessitate including about 0.5 miles (0.6 miles will be closed due to a loss of access across private property) of existing motorized routes. This would increase the OROMTRD from 1.5 miles per square mile to 1.52 miles per square mile.

In the Moody Creek area (Prescription 5.1.4(b) – Timber Management (Big Game Security Emphasis)), it would necessitate including about 0.79 miles of existing motorized routes. This would increase the OROMTRD from 1.7 to 1.73.

The existing single track motorized trails in Prescription Areas 1.2 Wilderness Study Area and 1.3 Recommended Wilderness will remain as they currently exist and no additional motorized or non-motorized trails will be constructed or decommissioned.

This alternative is displayed on the current Travel Map for the two districts – dated 2001. **(See Map A – Existing Situation (Appendix H) and Appendix A - Comparison Summary of All Trails by Alternative - Big Hole Mountains Subsection Summer Transportation Travel Plan).**

**The following currently exists:**

- Approximately 504.8 total miles of trails.
- Approximately 187.5 miles of trails open to motorized use less than 50 inches wide **but not recommended for ATVs.**
- Approximately 30.5 miles of trails open to motorized use less than 50 inches wide that are designed and constructed **(suitable) for ATVs.**
- Approximately 218.0 total miles open to motorized use.
- Approximately 286.8 miles of trails open to non-motorized use.

- 8,804 acres closed to cross-country mountain bike use (see current Travel Map). Bicycles are allowed cross-country throughout most of the subsection. Those areas closed to cross-country bicycle use include Research Natural Areas (RNA) and Eligible Wild Rivers (see Forest Plan Management Prescriptions 2.2 and 2.3 respectively).
- Approximately 0.6 miles of motorized trails will be decommissioned and rehabilitated.
- Approximately 18.56 miles of single track motorized trails are located in Prescription Area 1.2 - Wilderness Study Area (see Chapter Three, pages 3-29 to 3-31 for details). No ATV trails exist (trails designed and constructed for ATVs).
- Approximately 1.0 mile of single track motorized trail is located in Prescription Area 1.3 - Recommended Wilderness Area (see Chapter Three, pages 3-31 and 3-32). No ATV trails exist.

As part of the normal operation and maintenance procedures, trails could continue to be relocated as needed, user-created trails could be decommissioned as funding allowed, some trails could be reconstructed to better accommodate ATVs, reduce user conflicts and protect natural resources. Also, trail or trail segments may be re-designated for a different type of use to protect natural resources and reduce user conflicts. New trails could be constructed after appropriate planning had taken place and as funding became available.

Under this alternative, conflicts between different user types would be greater, resource impacts in some areas would remain and be more severe, and user satisfaction would improve more slowly since loop systems would not be developed as quickly beyond what currently exists. Trail maintenance would continue to be a challenge in areas where ATV use occurs on single track motorized trails that are not adequate for such vehicles (but can legally be there) – thus causing erosion and other resource problems.

- **Alternative B - Trail Committees'**

This alternative is based on recommendations of the Bonneville County Trails Committee and the Teton County Idaho Trail Advisory Group. Not all trails in the subsection were reviewed by the committee and group. Trails that were not addressed are shown with the same type use as shown in Alternative A – Existing Situation (see **Appendix A - Comparison Summary of All Trails by Alternative - Big Hole Mountains Subsection Summer Transportation Travel Plan and Map Alternative B – Trail Committees'**) (Appendix H).

This alternative would eliminate the “NOT RECOMMENDED FOR ATVs” designation and would specify which trails would be open to ATVs and which would not. Existing single track trails – motorized or non-motorized - converted to ATV trails, would be reconstructed to meet ATV standards. New trails constructed for ATV use would be designed and constructed to meet ATV standards. This would mean a finished trail prism of 50 inches wide with turn-outs at appropriate locations and distances to allow vehicles to pass. This alternative would also designate trails for single track motorized vehicles

(motorcycles) and trails that would be closed to all motorized vehicle use. Single track motorized and non-motorized trails would be maintained with a 24 inch finished tread width. ATV trails would be open to single track motorized vehicles. All trails would be open to non-motorized use. **(See Map B (Appendix H) and Appendix A - Comparison Summary of All Trails by Alternative - Big Hole Mountains Subsection Summer Transportation Travel Plan).**

The OROMTRD in the Packsaddle – Prescription 5.1.4(b) Area would not be exceeded since approximately 6.0 miles of motorized trails would be converted to non-motorized trails.

The OROMTRD in the Moody Creek – Prescription 5.1.4(b) Area is currently exceeded by 0.79 miles. Approximately 0.8 additional miles of motorized trail would be added to make viable loop trails. Density standards would then be exceeded by 1.59 miles. The OROMTRD would be increased from 1.7 miles per square mile to 1.76 miles per square mile.

The existing single track motorized trails in Prescription Areas 1.2 Wilderness Study Area and 1.3 Recommended Wilderness will remain as they currently exist and no additional motorized or non-motorized trails will be constructed.

**This alternative would provide the following:**

- Approximately 515.5 total miles of trails. All miles would be open for non-motorized use.
- Approximately 64.9 miles open to ATVs less than 50 inches wide. These trails would also be open to single track motorized vehicles (motorcycles).
- Approximately 153.8 miles open to single track motorized vehicles (motorcycles). ATVs would not be allowed on these trails.
- Approximately 218.7 total miles open for motorized use.
- Approximately 296.8 miles open to non-motorized use.
- Reconstruction of approximately 28.2 miles of trails to meet ATV standards.
- Construction of approximately 1.0 miles of new ATV trails.
- Construction of 3.0 miles of new non-motorized trails.
- Decommission and rehabilitation of 0.6 miles of trails.
- Approximately 8,804 acres (existing situation) closed to cross-country mountain bike use (see current Travel Map). Bicycles are allowed cross-country throughout most of the subsection. Those areas closed to cross-country bicycle use include Research Natural Areas (RNA) and Eligible Wild Rivers (see Revised Forest Plan, Management Prescriptions 2.2 and 2.3 respectively).
- Approximately 18.56 miles of single track motorized trails are located in Prescription Area 1.2 - Wilderness Study Area - (see Chapter Three, page 3-29 – 3-31 for details). No ATV trails exist. No increase or decrease proposed.
- Approximately 1.0 mile of single track motorized trail is located in the Prescription Area 1.3 - Recommended Wilderness Area. (see Chapter Three, pages 3-31 and 3-32 for details). No ATV trails exist (trails designed and constructed for ATVs). No increase or decrease in trails is proposed.

- Approximately 40-45 miles of loop trails for ATVs.
- Essentially an unlimited number of loop trail possibilities for single track motorized vehicles (motorcycles) and non-motorized users.

- **Revised Alternative C**

This alternative is based on recommendations from District and Forest personnel and comments received during the scoping process. It incorporates many recommendations from Alternative B – specifically the designation of ATV trails. ATV use would only occur on trails designed, constructed, and designated for ATV use. **(See Map C (Appendix H) and Appendix A -Comparison Summary of All Trails by Alternative - Big Hole Mountains Subsection Summer Transportation Travel Plan).**

The OROMTRD in the Packsaddle Area – Prescription 5.1.4(b) Area would not be exceeded since approximately **4.6 miles of motorized trails (Trail 060), would be decommissioned.** This trail parallels Forest Road 663. Therefore, this trail segment is not needed.

The OROMTRD in the Moody Creek – Prescription 5.1.4(b) Area is currently exceeded by 0.79 miles of roads or trails. Approximately 2.0 miles of motorized trail would be added to make viable loop trails. Density standards would then be exceeded by 2.79 miles of roads or trails. The OROMTRD would be increased from 1.7 miles per square mile to 1.8 miles per square mile (requiring a non-significant forest plan amendment).

The number of existing single track motorized trails in Prescription Area 1.2 Wilderness Study Area will not be reduced or changed to non-motorized use (see Chapter Three, pages 3-29 to 3-31 for details). The 1.3 Recommended Wilderness area will remain as it currently exists (see Chapter Three, pages 3-31 and 3-32 for details) and no additional motorized or non-motorized trails will be added, eliminated, or changed.

This alternative would **close the remainder of the subsection to cross-country mountain bike travel off system roads and trails.** Improved technology has allowed mountain bikes to be constructed that are more durable, lighter, have gear systems which allow greater climbing ability at slower speeds, and have better breaking systems for down-hill travel. Some mountain bike users feel many existing trails – whether motorized or non-motorized – are not suitable and/or desirable for mountain bike use. Therefore, off-trail use has increased and is creating trails where they are not wanted and also may be causing resource impacts. Likewise, because user created bike trails are appearing, it is inviting single track motorized vehicles to use these trails – and vice versa. Such use creates additional resource impacts. Many of these new user created bike trails may not meet trail standards – such as percent grade, out sloping, width, etc. The lack of proper design accelerates resource damage. **Cross-country motorized travel would remain prohibited.**

### **Adaptive Management**

- In an effort to address the number of **non-system (user-created trails)**, work will continue to be done to close and or decommission such trails as quickly as possible after they are identified. The rate at which these trails can be treated is of course depended for the most part on funding received. When such trails are identified, they may be closed and decommissioned without going through the normal or formal environmental analysis process. A quick response to eliminate these trails may prevent serious resource damages.
- However, when normal re-routing and decommissioning of **system trails** is to be done in order to minimize soil erosion, sediment in streams, etc., - basically to improve overall resource values - the normal environmental analysis process will be followed.
- Whether closing, decommissioning and rehabilitation, re-routing, or new construction, the methods identified and shown in Appendix B, C, & D will be utilized. Continued monitoring and evaluation will be used to assess the effectiveness of the work completed.
- When a new user-created route is identified for decommissioning, forest specialists, including but not limited to representatives from soils, hydrology, wildlife, fisheries, botany, engineering and vegetation management, will be contacted and their input recorded (**see Appendix B, Adaptive Management Specialist Checklist**).
- Decommissioning methods include ground-disturbing surface scarifying and/or trenching/surface debris placement (slash and rocks). The slash and rocks would be packed or dragged from the surrounding forest – within close proximity to the trail being decommissioned and closed. Mechanized equipment such as a small trail cat may need to be used to effectively complete the intended work. To reduce erosion, drainage features such as water bars, rolling dips, out sloping, etc. would be provided where necessary (**see Appendix C - Trail Decommissioning Process Guidelines**).

### **This alternative would provide the following:**

- Approximately 529.3 total miles of trails for motorized and non-motorized uses. All trails would be open for non-motorized use.
- Approximately 80.75 miles open to ATVs less than 50 inches wide. These trails would also be open to single track motorized vehicles (motorcycles).
- Approximately 132.85 miles open to single track motorized vehicles (motorcycles). ATVs would not be allowed on these trails.
- Approximately 213.6 total miles open for motorized use.
- Approximately 315.7 miles open to non-motorized use.
- Reconstruct approximately 27.0 miles of trails to meet ATV standards.
- Construct approximately 1.55miles of new ATV trails.
- Construct approximately 10.8 miles of new non-motorized trails (none within 1.2 Wilderness Study Area or 1.3 Recommended Wilderness).
- Decommission and rehabilitation of approximately 7.7 miles of existing trails.
- Decommission and rehabilitate unwanted user-created trails on an as needed basis as funding allows.

- Re-route approximately 3.25 miles of trails.
  - Approximately 357,779 acres would be closed to cross-country mountain bike use (the entire subsection).
  - The entire subsection will remain closed to all cross-country wheeled (includes ATV/Utility type track conversion vehicles) motorized use (summer use).
  - Approximately 18.56 miles of single track motorized trails will remain open in the 1.2 Wilderness Study Area - (see Chapter Three, pages 3-29 to 3-31 for details). No ATV trails will be designated in this area.
  - Approximately 1.0 mile of single track motorized trail is located in the 1.3 Recommended Wilderness Area (see Chapter 3, pages 3-31 and 3-32 for details). No ATV trails will be designated in this area.
  - Approximately 45-50 miles of loop trails for ATVs.
  - Essentially an unlimited number of loop trail possibilities for single track motorized vehicles.
- **Alternative D - Proposed Plus**

This alternative is based to a large degree on comments received during the Scoping process for an increase in motorized trail miles. It incorporates many of the recommendations pertaining to motorized trails from Alternative B and Alternative C. It would increase the total number of miles of trails open to motorized use while meeting existing OROMTRD standards in all Prescription Areas **except** the Moody Creek – 5.1.4(b) Area – which would be the same as described in Alternative C - and the Black Grove-Murphy Creek-Hunts Corral – 3.2(j) Areas – which would exceed OROMTRD by 4.45 miles. This would necessitate increasing the OROMTRD from 0.5 miles per square mile to 0.6 miles per square mile.

This alternative would convert some non-motorized trails to single track motorized trails. **(See Map D (Appendix H) and Appendix A - Comparison Summary of All Trails by Alternative - Big Hole Mountains Subsection Summer Transportation Travel Plan).** This alternative would not close additional areas of the subsection to cross-country mountain bike or other mechanized travel off system roads and trails beyond what currently exists - the same as Alternatives A and B.

The existing single track motorized trails in Prescription Areas 1.2 Wilderness Study Area and 1.3 Recommended Wilderness will remain as they are since no additional motorized or non-motorized trails will be constructed or closed/decommissioned.

**This alternative would provide the following:**

- Approximately 529.6 total miles of trails for motorized and non-motorized uses. (All miles would be open for non-motorized use).
- Approximately 82.35 miles open to ATVs less than 50 inches wide. These trails would also be open to single track motorized vehicles (motorcycles).
- Approximately 155.25 miles open to single track motorized vehicles (motorcycles). ATVs would not be allowed on these trails.
- Approximately 237.6 total miles open for motorized use.

- Approximately 292.0 miles open to non-motorized use.
- Reconstruct approximately 37.35 miles of trails to meet ATV standards.
- Construct approximately 3.05 miles of new ATV trails.
- Construct approximately 10.8 miles of new non-motorized trails.
- Reroute approximately 3.25 miles of trails.
- Decommission and rehabilitate approximately 6.4 miles of trails
- Approximately 8,804 acres closed to cross-country mountain bike use (see current Travel Map). Bicycles are allowed cross-country throughout most of the subsection. Those areas closed to cross-country bicycle use include Research Natural Areas (RNA) and Eligible Wild Rivers (see Forest Plan Management Prescriptions 2.2 and 2.3 respectively).
- Approximately 18.56 miles of single track motorized trails are located in the 1.2 Wilderness Study Area - (see Chapter Three, pages 3-29 to 3-31 for details). No ATV trails exist or will be designated for ATVs. No increase or decrease in trail mileage is proposed.
- Approximately 1.0 mile of single track motorized trail is located in the 1.3 Recommended Wilderness Area (see Chapter Three, pages 3-31 and 3-32 for details). No ATV trails exist or will be designated for ATVs. No increase or decrease in trail mileage is proposed.
- Approximately 45-50 miles of loop trails for ATVs.
- Essentially an unlimited number of loop trail possibilities for single track motorized vehicles (motorcycles) and non-motorized users.

### **Management Common to All Action Alternatives (B, C, D)**

Trails for ATVs will be designated as such and ATVs will not be allowed on single track motorized trails. Single track motorized use will be allowed on ATV trails. Non-motorized uses will be allowed on all trails.

### **Mitigation Measures and Project Design Features**

- Applicable mitigation measures associated with the Revised Forest Plan and the FEIS for the Open Road and Open Motorized Trail Analysis will apply. More specifically, the Forest wide Standards and Guidelines of the Forest Plan are shown in various sections on Pages III-6, III-9, III-12, III-14, III-15, III-23, and III-25.
- Additional mitigation measures are found in individual Management Prescriptions 1.2 Wilderness Study Area, Page III-77; 1.3 Recommended Wilderness, Page III-78; 2.1.2 Visual Quality Maintenance, Page III-83; 2.2 Research Natural Area, Page III-85; 2.3 Eligible Wild River, Page III-89; 2.4 Eligible Scenic River, Page III-93; 2.7(a) Elk and Deer Winter Range, Page III-105; 2.8.3 Aquatic Influence Zone, Page III-110; 2.9.1 South Fork Snake River Eligible Scenic River, Page III-113; 2.9.2 South Fork Snake River Eligible Recreation River, Page 113; 3.2(b,c,d,g,i,j) Semi-Primitive Motorized, Page III-121; 4.2 Special Use Permit Recreation Sites, Page III-130; 5.1.3(1-b) Timber Management (No Clear-Cutting), Page III- 138; 5.1.4(a-d) Timber Management (Big Game Security Emphasis), Pages III-140 and 141; 5.2.2 Visual Quality Maintenance,

Page III-146.

- Additional mitigation measures applicable to this analysis are found in **Appendix C & D**.
- Recommended Project Design Features:
  1. Design all new ATV trails away from unstable slopes and soils that have high erosion potential.
  2. Design all new trails using FSH 2509.22 Soil and Water Conservation Practices (see **Appendix D**).
  3. Trails that are to be decommission will have effective closures applied and where appropriate, should be ripped, seeded and slash placed on the prism.
  4. Provide for proper drainage in new and existing trails.
  5. Trails that will be relocated and or abandoned need to be ripped and the old trail prisms restored to as near natural conditions as possible.
- Additional Recommendations related to specific trails are found in Chapter Three, pages 3-16 to 3-22.
- In addition to the mitigation measures above, additional measures will be applied as such:
  - Barriers will be placed at appropriate locations at trailheads in the South Indian Creek area to help prohibit ill-legal ATV travel on single track motorized trails in the Wilderness Study Area.
  - ATVs will be allowed on Single Track motorized trails designated for ATV use before the trail has been reconstructed or constructed for such use. However, these trails will be monitored on an annual basis to determine if unacceptable resource damages are occurring. If such damage is being done, then ATV use will be restricted until such trails can be properly reconstructed and or constructed for ATV use.
- Site-specific review for Threatened, Endangered and Sensitive Plants will occur when specific ground disturbing activities are scheduled. Appropriate protection will be applied if TES plants are found to occur.
- When specific ground disturbing activities are scheduled field surveys of those areas will be conducted and identified cultural sites will be evaluated for their significance. If additional sites are discovered during on the ground layout and design of any action alternatives or other on-going survey activities, the Forest Archaeologist will consult with the State Historic Preservation Officer, as required by law to document and determine the significance of the discovery and the effects of the project on them. The Shoshone-Bannock Tribes and Northwest Band of Shoshone will be consulted regarding any potential effects on Native American sites.

Mitigation of effects to other identified cultural resource sites could be accomplished through complete avoidance or scientific removal of the resource. If cultural resources are discovered during future ground disturbing activities, such activities will be stopped until the cultural materials are properly documented and evaluated by the Forest Archaeologist in compliance with 36 CFR 800.11.

### **Alternatives Considered and Eliminated from Detailed Consideration**

During the Scoping process, some comments received from OHV user groups suggested that many trails in the Palisades area, specifically the backcountry, be designated for motorized use.

Since much of the area is designated either a “Wilderness Study Area” or “Recommended Wilderness”, these areas will not be considered for additional motorized trail mileage because the Wyoming Wilderness Act of 1984 and Revised Forest Plan direction does not allow changing existing non-motorized trail use to motorized trail use. Once a determination on wilderness designation for these areas has been made, then and only then will different trail management strategies be considered. Therefore, no further discussion in this document will be give to trails and trail management for Management Prescription Areas 1.2 and 1.3.

**Summary - Comparison of Alternatives**

This section provides a summary of the effects of implementing each alternative. Information in Table 2.1 – Effects to Indicators by Alternative, is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

**Table 2.1 – Effects to Indicators by Alternative**

<b>Issue Indicator</b>	<b>Alternative A – Existing Situation (No Action)</b>	<b>Alternative B - Trail Committees'</b>	<b>Revised Alternative C -</b>	<b>Alternative D - Proposed Plus</b>
<b>Fisheries</b>				
The density (miles) of designated motorized routes within riparian areas of fish bearing streams:				
• Table Rock/Wolverine HUC	4.94	4.94	5.11	5.11
• Burns HUC	3.88	3.88	3.72	3.72
• Pine HUC	0.84	0.81	0.55	0.55
• Rainey HUC	2.69	2.49	1.73	1.73
• Palisades HUC	0	0	0	0
• Little Elk HUC	0	0	0	0
• Big Elk HUC	.09	0.09	0.06	0.06
• Little Pine HUC	2.70	2.77	2.77	2.77
<b>Fisheries</b>				
ATV trail densities (miles) within the Aquatic Influence Zones (AIZ):				
• Table Rock/Wolverine HUC	4.54	4.54	5.11	5.11
• Burns HUC	0.17	0.17	0.20	0.20
• Pine HUC	0.03	0.03	0.48	0.48
• Rainey HUC	0.43	0.43	0.62	0.62
• Palisades HUC	0	0	0	0
• Little Elk HUC	0	0	0	0
• Big Elk HUC	0.06	0.06	0.06	0.06
• Little Pine HUC	0.10	0.10	0.58	0.58

<b>Issue Indicator</b>	<b>Alternative A – Existing Situation (No Action)</b>	<b>Alternative B - Trail Committees'</b>	<b>Revised Alternative C -</b>	<b>Alternative D - Proposed Plus</b>
<b><u>Fisheries</u></b>				
Non-motorized trail densities (miles) within the Aquatic Influence Zones (AIZs):				
• Table Rock/Wolverine HUC	0	0	0.09	0.09
• Burns HUC	0	0	0.19	0.19
• Pine HUC	1.52	1.31	1.78	1.78
• Rainey HUC	0.41	0.61	1.37	1.37
• Palisades HUC	6.41	6.41	6.41	6.41
• Little Elk HUC	3.88	3.88	3.88	3.88
• Big Elk HUC	6.11	6.11	6.11	6.11
• Little Pine HUC	0	0	0	0
<b><u>Water Quality &amp; Soil Erosion</u></b> Acres of disturbance returned to productivity.	0.1	0.1	3.7	2.8
<b><u>Water Quality &amp; Soil Erosion</u></b> Miles of trails returned to productivity.	0.6	0.6	7.7	6.4
<b><u>Water Quality &amp; Soil Erosion</u></b> Current and (additional miles) of trails constructed on erodible/unstable soils.	38.3 currently	38.3 (0 new)	38.3 (0 new)	38.3 (0 new)
<b><u>Water Quality &amp; Soil Erosion</u></b> (Miles) of trails and (acres) within the aquatic influence zone (AIZ).	(233.7 mi.) (60.1 ac.)	(233.0 mi.) (64.0 ac.)	(234.2 mi.) (64.9 ac.)	(237.0 mi.) (65.6 ac.)
<b><u>Water Quality &amp; Soil Erosion</u></b> Number of trail crossings on ( <b>p</b> = perennial) and ( <b>i</b> = intermittent) streams.	(638 <b>p</b> ) (459 <b>i</b> )	(629 <b>p</b> ) (465 <b>i</b> )	(621 <b>p</b> ) (470 <b>i</b> )	(634 <b>p</b> ) (481 <b>i</b> )
<b><u>Wildlife</u></b> Acres lost to new trail construction	0	0.7 (1.0 mi. X 5 ft for M) & 1.1 (3.0 mi. X 3 ft for NM)	0.9 (1.55 mi. X 5 ft for M) & 3.9 (10.8 mi. for NM)	1.8 (3.05 mi. X 5 ft for M) & 3.9 (10.8 mi. for NM)
<b><u>Wildlife</u></b> Change in the Road and Motorized Trail Density by Prescription	No change	5 Rx increased and 3 Rx decreased	3 Rx increased and 6 Rx decreased	6 Rx increased and 1 Rx decreased
<b><u>Wildlife</u></b> Total Miles of Trail Classified as “Not Recommended for ATV”	187.5	0	0	0
<b><u>Wildlife</u></b> Change in Total Miles of ATV Trails*	No Change (Currently there are 30.5)	Increase of 34.4 miles to 64.9	Increase of 50.25 miles to 80.75	Increase of 51.85 miles to 82.35

<b>Issue Indicator</b>	<b>Alternative A – Existing Situation (No Action)</b>	<b>Alternative B - Trail Committees'</b>	<b>Revised Alternative C -</b>	<b>Alternative D - Proposed Plus</b>
<b>Wildlife</b> Change in total miles of motorized trails	No change – currently 219.4	Increase of 6.4 mi. for a total of 225.8	Decrease of 5.6 mi. for a total of 213.6	Increase of 26.3 mi. for a total of 245.7
<b>Recreational Use</b> Miles of ATV trails <u>1/</u>	30.5	64.9	80.75	86.05
<b>Recreational Use</b> Miles of Single Track motorized trails <u>2/</u>	187.5	153.8	132.85	155.25
<b>Recreational Use</b> Miles of non-motorized trails	286.8	296.8	315.7	292.0
<b>Recreational Use</b> Miles of trails to be reconstructed to meet ATV standards	0	28.2	27.0	35.0
<b>Recreational Use</b> Miles of new trails to be constructed for ATVs	0	1.0	1.55	3.05
<b>Recreational Use</b> Miles of new trails to be constructed for Single-Track motorized use	0	0	0	0
<b>Recreational Use</b> Miles of new trails to be constructed for non-motorized use	0	3.0	10.8	10.8
<b>Recreational Use</b> Miles of trails to be obliterated	0.6	0.6	7.7	6.4
<b>Recreational Use</b> Miles of loop trails for ATV and Single Track motorized vehicles	None designated as such for ATV.  There are multiple combinations for Single Track	Approx. 40-45 mi. for ATV.  There are numerous combinations for Single Track Motorized.	Approx. 45-50 mi. for ATV.  There are numerous combinations for Single Track Motorized.	Approx. 45-50 mi. for ATV.  There are numerous combinations for Single Track Motorized.
<b>Wilderness Study Area (WSA)</b> Miles of motorized trails by type	18.56 mi. single track	18.56 mi. single track	18.56 mi. single track	18.56 mi. single track
<b>Recommended Wilderness Area</b> Miles of motorized trails by type	1.0 mi. single track	1.0 mi. single track	1.0 mi. single track	1.0 mi. single track
Acres closed to cross-country bicycle use	8,804	8,804	357,779	8,804
Total miles of ATV and Single Track motorized Trails	218.0	218.7	213.6	237.6
<b>Approximate Total Miles of Trails</b>	504.8 <u>3/</u>	515.5 <u>4/</u>	529.3 <u>4/</u>	529.6 <u>4/</u>

\*Trails designed/constructed and designated for ATVs.

**Note: ATVs are currently allowed on all motorized trails - including single track trails – even though most single track motorized trails will not accommodate ATVs.**

**1/** ATV trails are also open for single track motorized use (motorcycles) and all non-motorized use.

**2/** Single track motorized (motorcycle) trails are closed to ATVs but open to all non-motorized use.

**3/** The total trail miles for Alternative A do not include some trails that may exist on the ground and were missed during the inventory process.

**4/** Includes new proposed trails and trails which are existing on the ground but not shown on the current travel map.

**NOTE:** In Alternative A (Existing Situation), single track motorized trails are open for ATV use BUT NOT RECOMMENDED for ATVs since they are not designed and constructed for these wider vehicles. This type of designation will be eliminated in Alternatives B, C, and D. For Alternative A, trail names and mileages are taken from the Current Forest Travel Plan for the Palisades and Teton Basin Ranger Districts. For the other alternatives, current names are also used except when a new trail is proposed.

# Chapter Three

## Affected Environment

### **Introduction**

The current physical, biological, social, and economic values of the Big Hole Mountains Subsection environment are discussed in general terms in the Revised Forest Plan EIS (Targhee National Forest, 1997) and the Final Environmental Impact Statement for the Open Road and Open Motorized Trail Analysis (Motorized Road and Trail Travel Plan – Targhee National Forest – October 1999). The project area includes all National Forest System lands between Highway 33 in Idaho and Highway 22 in Wyoming on the north and the South Fork of the Snake River to the south known as the Big Hole Mountains Subsection (1997 Revised Forest Plan, page III-58). Several major highways provide access: Idaho Highways 26, 31, and 33, and Highway 22 in Wyoming. Highway 31 is a State Scenic Byway over Pine Creek Pass. This chapter describes the site-specific environmental conditions that would be affected if any of the alternatives, including the “No Action” alternative, were implemented. Environmental components of the affected environment are described below at various scales appropriate to the issue being addressed. Included in this discussion are statements regarding Heritage/Cultural Resources.

This description of the existing conditions provides the basis for assessing the environmental effects of each alternative discussed in Chapter Four Environmental Consequences and assessing how well each of the alternatives responds to the issues identified in Chapter One.

The Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508) require that analysis address only those issues, area and components of the environment with the potential to be affected by the proposed action. Therefore this chapter analyzes the existing conditions as related to the following four issue areas and two areas of concern, identified in Chapter One as significant:

- Issue 1 - Fisheries
- Issue 2 - Water Quality and Soil Erosion
- Issue 3 - Wildlife
- Issue 4 - Recreational Use
- Area of Concern – Open Road and Open Motorized Trail Route Density (OROMTRD)
- Area of Concern – Wilderness Study Area, Recommended Wilderness Area, and Roadless Areas

### **Issue 1- Fisheries**

The Big Hole Mountains of the Caribou-Targhee National Forest support a diversity of both native and non-native fish. The fish species within the streams in the Big Hole Mountains are listed below in Tables 3.1 and 3.2, with their common names, scientific names, and status. This list is followed by narrative descriptions of each native and some selected non-native fish.

**Table 3.1 - Fish Species List: Native Fish**

Common Name	Scientific Name	Status
Yellowstone cutthroat trout	<i>(Oncorhynchus clarki bouvieri)</i>	S, SC-A
Mountain whitefish	<i>(Prosopium williamsoni)</i>	
Utah chub	<i>(Gila atraria)</i>	
Mottled sculpin	<i>(Cottus bairdi)</i>	
Piute sculpin	<i>(Cottus beldingi)</i>	
Longnose dace	<i>(Rhinichthys cataractae)</i>	
Speckled dace	<i>Rhinichthys osculus)</i>	
Redside shiner	<i>(Richardsonius balteatus)</i>	

**Table 3.2 - Fish Species List: Introduced Non-native Fish**

Common Name	Scientific Name
Rainbow trout	<i>(Oncorhynchus mykiss)</i>
Brown trout	<i>(Salmo trutta)</i>
Brook trout	<i>(Salvelinus fontinalis)</i>
Lake trout	<i>(Salvelinus namaycush)</i>

**Status Codes:**

1. S: USDA Forest Service Regional Forester Sensitive (S) species designation (Forest Service Manual 2670.5). Those plant and animal species identified by the Regional Forester for which population viability is a concern as evidenced by:
  - A. Significant current or predicted downward trends in population numbers or density.
  - B. Significant current or predicted downward trends in habitat capability that would reduce a species existing distribution.
2. SC: Idaho Fish & Game Species of Special Concern (SC): native species that are either low in number, limited in distribution, or have suffered significant population reductions due to habitat losses, but is not likely to become threatened in the near future.
  - A. SC-A: Species, which meet one or more of the criteria listed above and for which Idaho presently contains, or formerly constituted, a significant portion of their range (i.e. priority species).

**Native Fish Species**

- **Yellowstone cutthroat trout** (*Oncorhynchus clarki bouvieri*)  
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 US 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-Targhee National Forest is currently addressing the needs of Yellowstone

cutthroat trout by maintaining consistency with its revised Forest Plans and an interagency conservation memorandum of agreement for Yellowstone cutthroat trout prepared and signed in 2000 and through an active restoration program.

Within Idaho, the original cutthroat trout native to the Snake River system 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. Yellowstone cutthroat trout are adapted to cold water. Water temperatures between 4.5 and 15.5 C appear to be optimum for the subspecies. This subspecies migrates for spawning when threshold water temperatures approach 5 C (optimum 10 C) and stream flows subside from spring peaks. Streams selected for spawning are commonly low gradient (up to 3%), perennial streams, with groundwater and snow fed water sources. Use of intermittent streams for spawning is not well documented, but has been noted in some intermittent tributaries to Yellowstone Lake. Spawning potentially occurs wherever optimum size gravel (12-85 mm in diameter) and optimum water temperatures (5.5-15.5 C) are found. Depending on variations in growth, spawning populations are comprised of individuals age 3 and older (primarily ages 4-7). Juveniles congregate in shallow, slow-moving parts of the stream (USDA Forest Service 1996).

Three life history patterns of Yellowstone cutthroat trout that occur in the Big Hole Mountains of the Caribou-Targhee National Forest include resident, fluvial, and adfluvial. Resident trout spend their entire lives in small streams. Fluvial fish spend most of their lives in large streams and rivers, migrating into small streams in the spring to spawn. Their offspring spend the first couple years of their lives in these small streams and eventually migrate to the large streams and rivers downstream. Fluvial and resident populations may interact in the spawning stream. Adfluvial fish spend most of their lives in lentic waters, migrating upstream to small streams to spawn. Their young generally rear in these streams for a couple years and return to the lakes downstream. All adfluvial life history patterns exhibited by Yellowstone cutthroat trout in the Big Hole Mountains were either forced into this pattern by the construction of Palisades Reservoir or are naturally occurring as in the case of Upper and Lower Palisades lakes. For centuries, adfluvial and fluvial populations were instrumental in re-founding extirpated resident populations.

Both large-spotted and fine-spotted varieties of Yellowstone cutthroat trout occur on the Forest. The 2 varieties have been observed inhabiting the same streams and, in fact, the same habitat within the stream. While some biologists prefer to split these forms of Yellowstone cutthroat trout when analyzing effects, there has been no genetic, behavioral, or biologic reason to do so to date. During a symposium held in 2006 exploring the differences between fine-spotted and large-spotted varieties of Yellowstone cutthroat trout, there was general agreement among the convened experts that the 2 varieties should be considered as one sub-species unless additional evidence in the future indicates differently (Van Kirk et al 2006).

Intensive surveys for Yellowstone cutthroat trout distribution have been conducted on the Caribou-Targhee National Forest since 1996. The subspecies appear to be well distributed throughout the parts of the Forest within the Snake River Basin, but populations in various streams or stream segments vary in strength. While some populations are threatened by

competition and interbreeding with nonnative, introduced fish species, others appear to be thriving in some streams or stream reaches. Apparently, some populations have been replaced by nonnative, introduced fish species. Genetic interactions between existing Yellowstone cutthroat trout populations have diminished from historic conditions because of a decrease in connectivity.

The project analysis area encompasses the center of Yellowstone cutthroat trout strongholds on the Forest. Distribution surveys of the 190 6<sup>th</sup> Code HUCs within the Targhee half of the Forest that were historically inhabited by Yellowstone cutthroat trout determined 77 of the 6<sup>th</sup> Code HUCs have strong populations, 54 6<sup>th</sup> Code HUCs have depressed populations, and 59 6<sup>th</sup> Code HUCs have no Yellowstone cutthroat trout present where they have historically occurred. Specifically in the Big Hole Mountains Subsection Analysis Area (comprised of 31 6<sup>th</sup> Code HUCs), there are 18 6<sup>th</sup> Code HUCs with strong populations, 8 6<sup>th</sup> Code HUCs with depressed populations, and 5 6<sup>th</sup> Code HUCs with Yellowstone cutthroat trout populations no longer present. In this analysis, populations were described as Strong when all life histories that historically occurred in the subwatershed are still present, numbers of fish are stable or increasing, the local population is likely to be half or more of its historic density, and greater than 50% of the total salmonid community consists of native trout.

- **Mountain whitefish** (*Prosopium williamsoni*)

Mountain whitefish is widely distributed throughout the western United States and occur in large streams on the Caribou-Targhee National Forest. They are considered abundant. Its preferred habitat is cold mountain rivers where it rests in the deep pools and feeds in the riffle areas. They spawn in the fall in riffles. Whitefish are active feeders throughout the year, feeding on aquatic and terrestrial insects and fish eggs (Idaho Fish and Game 2000).

- **Utah chub** (*Gila atraria*)

In Idaho, the Utah chub is native to the Bear River drainage and the Snake River Drainage upstream of Shoshone Falls. It prefers a lake, pond, or reservoir environment and is very abundant in waters with aquatic vegetation. These fish spawn in late spring and early summer when surface waters reach or exceed 60F. The eggs are scattered indiscriminately over varied types of lake bottom in a water depth of 2 feet or less. Young chubs eat zooplankton until they reach 6-7 inches in length. They then become omnivorous, eating aquatic plants, insects, and crustaceans (Simpson and Wallace 1982).

The Utah chub is very prolific and is a strong competitor with small trout for food and space (Simpson and Wallace 1982). Although they are native to some waters of the Forest, they have been introduced in other waters, including the Henry's Fork upstream of Mesa Falls (Targhee section of the Forest), by some anglers using them as bait.

- **Mottled sculpin** (*Cottus bairdi*)

The mottled sculpin occur in the Snake River upstream of Shoshone Falls and in the Bear River Basin. It is abundant over its entire range and prefers streams with rubble stream bottoms (Simpson and Wallace 1982). They are seldom found in silted areas (AFS 2000). Spawning season is in May and early June. Their eggs are deposited in burrows, on the undersides of rocks (Hendricks 1997). The spawning nest is usually protected by a male until the eggs hatch. Mottled sculpin eat immature aquatic insects, crustaceans, small sculpins, fish eggs, annelids, and plants (Hendricks 1997). Sculpin are an important forage

fish for trout, particularly cutthroat, rainbow, and brown trout (Simpson and Wallace 1982).

- **Piute sculpin** (*Cottus beldingi*)

Piute sculpin occur in the upper Snake River and Bonneville Basins. It is known to occur in both lakes and streams where rubble is present. In streams, it occurs in riffle areas among rubble or large gravel. It prefers clear, cold water with slight to moderate current. It also serves as an important food source for trout (Simpson and Wallace 1982).

Relatively little is known of the life history of this species in Idaho, but in Lake Tahoe, Piute sculpins spawn in the spring. Eggs are laid in clusters on the undersides of rocks and are guarded by the male. Their food consists of a variety of aquatic invertebrates (AFS 2000).

- **Longnose dace** (*Rhinichthys cataractae*)

Longnose dace is widespread from the Pacific to the Atlantic in north, central America. In Idaho it is a common species in every river system. It occurs primarily in the riffle areas of streams, but has been taken from lakes where the shoreline is composed of small rubble. Spawning likely occurs over gravel in riffle areas of streams. It eats immature aquatic insects. Because of its small size and preference for living in riffle areas, it is an important forage fish for trout. It is reported to hybridize with redbase shiners (Simpson and Wallace 1982).

- **Speckled dace** (*Rhinichthys osculus*)

Speckled dace are present in tributaries of the Snake and Bear Rivers in Idaho. They will live in a variety of habitat, but normally prefer the shallow, cool, and quiet waters in contrast to the longnose dace that prefer the fast riffle areas (Simpson and Wallace 1982). They spawn in the spring, usually in May, and broadcast their eggs over the gravelly stream bottom. They are omnivorous, feeding on aquatic insects, plant material, and zooplankton (AFS 2000). Speckled dace are an important forage fish for trout and have been used as a baitfish in parts of its range.

- **Redside shiner** (*Richardsonius balteatus*)

The redbase shiner occurs in the Columbia River System and the Bonneville Basin. In Idaho, it is found in all the major river systems. It prefers the slow moving currents of lakes, ponds, ditches, springs, sloughs, streams, and rivers (AFS 2000). Spawning generally occurs in June or July in water depths of less than 6 inches. Eggs are broadcasted by the female and settle to the stream bottom, attaching to substrate or submerged vegetation. The fry of redbase shiners feed on small planktonic organisms but switch to a diet of insects, mostly terrestrial, by their second year of life. They will prey on eggs, often their own (Simpson and Wallace 1982).

- **Utah sucker** (*Catostomus ardens*)

The Utah sucker is presently found in the Snake River drainage above Shoshone Falls and the Bear River Drainage. It is an adaptable species and lives in lakes, rivers, or streams in warm to very cold water. If living in a stream, it prefers a slow moving current where there is a variety of bottom material (Simpson and Wallace 1982).

The Utah sucker spawns during the spring in small tributaries. Their diet is varied and includes animals and plants found at the bottom of its habitat. Many of the early settlers of

the Bear River area harvested large numbers of suckers during their spawning runs. They were eaten fresh and some were salted and stored in wooden barrels or earthen crocks for winter consumption (Simpson and Wallace 1982).

- **Bluehead sucker** (*Catostomus discobolus*)  
The bluehead sucker occurs on the Forest within the Bonneville basin and the Snake River above Shoshone Falls. It is a river dwelling species, occurring in a variety of habitats, ranging from cold, clear trout streams to warm, very turbid waters. It prefers riffle areas with rocky substrates. It spawns in late spring/early summer and probably scrapes its food off rocks (AFS 2000). Little is known about the life history of this species, but it is assumed to be similar to that of other members of the sucker family. It is often found associated with mountain sucker but can easily be distinguished from it by the smaller scales and by its size when mature (generally larger). It is relatively rare in Idaho waters (Simpson and Wallace 1982).
- **Mountain sucker** (*Catostomus platyrhynchus*)  
Mountain sucker are widespread throughout the Snake and Bear River Systems in Idaho. The preferred habitat of this fish is usually clear, cold streams with clean rubble or sand bottoms. It is seldom found in lakes. This is a small species, when compared with bluehead sucker (AFS 2000). Spawning occurs in late spring or early summer in riffles of clear, swift streams. Its food consists almost entirely of algae that are scraped from the rocks by means of the cartilaginous sheath on the jaws. Because of its preference for cool water, it may serve as an important forage fish to several trout species (Simpson and Wallace 1982).

### **Selected Non-Native Species**

Several non-native fish species have been introduced to or just downstream of some streams, rivers, and lakes in or near the analysis area. Of those species, 3 are particularly important to describe because they are valued by some anglers and are considered a threat to some native fish species on the Forest.

- **Rainbow trout** (*Oncorhynchus mykiss*)  
Rainbow trout are native to the Pacific coast. They have been introduced to the Snake River above Shoshone Falls and the Bear River System. Naturally reproducing populations occur in many streams on the Forest where past introductions have occurred. Idaho Department of Fish & Game still stocks non-native rainbow trout in some streams on the Forest to cater to some recreational anglers. Current and future rainbow trout releases will primarily be sterile fish.

Naturally reproducing populations generally spawn from March through June. They are basically stream spawners and usually search out the small tributaries where gravel riffles are abundant. After hatching, young alevins drift into deeper pools of the streams. Their diet consists mainly of aquatic insects. Large individuals take small fish of any available species as well as aquatic invertebrates (Simpson and Wallace 1982).

Rainbow trout may interbreed with native cutthroat trout, affecting their gene pool. In addition, rainbow trout compete with cutthroat trout for habitat. There are low densities of rainbow trout populations in the larger tributaries of the Snake River in the analysis area,

particularly Pine, Rainey, and Palisades creeks.

- **Brown trout** (*Salmo trutta*)

The brown trout is native to Europe. Successful introductions to Idaho waters began in 1948. The species is now well established in several river systems, including the Snake and Bear Rivers. Its preferred habitat is larger streams, rivers, lakes, and reservoirs at lower elevations. It is more tolerant of the less favorable environment of the lower reaches of streams and rivers than are rainbow and cutthroat trout. The fish spawn in October through December. They usually move upstream some distance to small tributaries to spawn. They spawn by excavating a redd in gravel or small rubble, like other salmonids. Brown trout normally live longer than cutthroat trout. They eat aquatic insects and other fish (Simpson and Wallace 1982). Brown trout occur in the planning area but are generally restricted to lower reaches of large streams or to rivers. They may prey upon native cutthroat trout and other fish species. There are low densities of brown trout populations in lower reaches of some tributaries to Palisades Reservoir and the South Fork of the Snake River.

- **Brook trout** (*Salvelinus fontinalis*)

Brook trout are native to eastern Canada and the United States. It has been extensively planted in lakes, rivers, and streams in the West, including on the Caribou portion of the Caribou-Targhee National Forest. It competes for habitat with native cutthroat trout and has completely displaced some cutthroat populations on the Forest. Brook trout appears to more readily compete with native fish when habitat has been altered (Marcus et al. 1990). Brook trout also prey upon cutthroat trout juveniles and other native fish.

Of the non-native fish that occur in the analysis area, brook trout have had the most significant effect upon the most 6<sup>th</sup> Code HUCs. They have strong populations in Fall, Indian, Moody, Mahogany, Twin, Horseshoe, Packsaddle, Trail, Moose, Game, Fox, Teton, and Leigh creeks. In some of those cases, they have completely displaced the native Yellowstone cutthroat trout that were historically present.

Like other salmonids, brook trout excavate redds while spawning. They spawn in the fall, usually in late September and October in gravels of small streams. The fry emerge from the gravel in April and May and move into pools in the stream. Brook trout generally eat aquatic insects and other small aquatic invertebrates. Large individuals also eat small fish.

### **Trail Network**

Single and double-track (ATV) trails present a moderate threat to fish and their habitat throughout most of the analysis area. Trails have frequently been established parallel to streams and often serve as sources of sediment to water bodies. In addition, these trails may affect riparian vegetation, potentially affecting stream temperature, frequency of large instream wood, and available floodplain (decreasing the ability of the stream to dissipate energy). These impacts have increased 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 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. Trails that accommodate ATV traffic have more surface area exposed to erosion than single track trails.

Fine sediment, when delivered to streams, has the potential to affect aquatic habitat. Fine sediment fills the spaces between and covers spawning gravels, decreasing spawning success. Excessive sedimentation reduces stream channel complexity and diversity. Sedimentation can fill pools that would otherwise be valuable rearing and adult habitat (Kaufman et al. 1983 and Platts 1991). An increase in sediment decreases the survival of trout embryos (Irving and Bjornn 1984).

From an aquatic resource management perspective, one of the most significant threats associated with the Big Hole Mountains trail system is the continued expansion of a user-created, illegal trail system. These user-created trails are not professionally designed or maintained and are likely to be more of an impact upon aquatic resources and riparian areas than agency-created and maintained trails. An example is in Burns Creek, the most important Yellowstone cutthroat trout stronghold stream on the Forest. Users have created illegal trails within the watershed in part to accommodate ATV traffic. Several ford stream crossings were created on Burns Creek and its tributaries. These fords were direct sources of sediment to the stream and were closed by the Palisades Ranger District Trail Crew. Within the Big Hole Mountains, the creation of trails by users has the potential to affect riparian vegetation and deliver sediment to streams.

Recent projects on the Targhee portion of the Forest addressed some impacts from trails and off-trail motorized use upon Yellowstone cutthroat trout habitat. These include projects at Burns, Palisades, Pritchard, and Big Elk creeks. In Burns Creek, user-created illegal trail segments were blocked and trail bridges were constructed in place of fords across tributaries of Burns Creek. In upper Palisades Creek, a trail bridge was replaced to decrease equestrian ford use. ATV traffic was discontinued in Pritchard Creek because the trail system that paralleled the stream did not accommodate ATVs. In Big Elk Creek, bog bridges were installed to keep trail users out of a headwater wetland complex. These types of trail maintenance, construction, and planning efforts happen annually in the project area trail network. These types of projects will continue each year as the funding is available and by priority.

Several Yellowstone cutthroat trout stronghold streams occur in the planning area, including those in Big Elk, Little Elk, Palisades, Rainey, Pine, Burns, Wolverine, and Table Rock creeks. All have trails paralleling them or their tributaries, or trail crossings. In past Forest Fisheries Program surveys, trail-related impacts to riparian or aquatic habitat were documented in Rainey, Pine, Burns, and Wolverine watersheds. These impacts primarily occur in the riparian area of these streams but may also affect stream channels where trails ford streams or are located directly adjacent to stream banks. The impacts result in the addition of sediment to the stream from the eroding trail surface or stream bank. The additional sediment has the potential to affect aquatic biota, including Yellowstone cutthroat trout, by decreasing reproduction success, availability of aquatic insect prey species, and available rearing habitat.

Currently, there are approximately 506.2 total miles of trails in the analysis area. Approximately 219.4 miles are open to motorized use and 286.8 miles are closed to motorized use. Of the miles open to motorized use, 30.5 miles are currently considered suitable for ATV traffic. There are approximately 96 miles of motorized trail in AIZs. Currently, the Forest Travel Plan designates non-motorized and motorized trails. Although it recommends one-track or two-track traffic, it is only advisory, maintaining the potential for aggressive ATV users to attempt to squeeze through one-track trails and increasing the potential for resource damage from vegetation impacts and erosion.

One particularly helpful parameter in assessing the current condition of the Yellowstone cutthroat trout stronghold streams pertaining to trail impacts is trail densities in AIZs. Trail encroachment upon streams and their riparian areas is important to consider because it is a source of sediment and can affect the stability of fallen large woody debris. Trees that have fallen across trails are cut during trail maintenance, decreasing their stability and the potential of them benefiting aquatic habitat through dissipating stream energy, sorting stream gravels, and providing cover, shade, and nutrients. Trail crossings are important to consider because they are sources of sediment and usually impact stream channel width and hydrology. The densities of trails within AIZs (see Table 3.3) will serve as a surrogate for trail crossings because accurate trail crossing data are not currently available. Motorized use is of primary concern due to the higher potential for erosion from their tires. ATV traffic is more of a concern than motorcycles because of the associated larger trail widths, providing more surface area for potential erosion and resulting sedimentation. Of the Yellowstone cutthroat trout stronghold streams in the analysis area, the HUCs including Table Rock/Wolverine creeks and Burns Creek have relatively high motorized trail densities in AIZs. While the motorized AIZ trails in Table Rock/Wolverine are primarily opened to ATVs, the trails in Burns Creek are primarily opened to motorcycles. Pine and Big Elk creeks HUCs have relatively low AIZ motorized trail densities. Palisades and Little Elk creeks have no motorized trails within AIZs.

**Table 3.3 – Trail Densities in AIZs**

Yellowstone Cutthroat Trout Stronghold HUCs	Motorized Trail Densities in AIZs (miles/sq mi)	ATV Trail Densities in AIZs (miles/sq mi)	Exclusively Non-motorized Trail Densities in AIZs (miles/sq mi)
Table Rock/Wolverine	4.94	4.54	0
Burns	3.88	0.17	0
Pine	0.84	0.03	1.52
Rainey	2.69	0.43	0.41
Palisades	0	0	6.41
Little Elk	0	0	3.88
Big Elk	.09	0.06	6.11
Little Pine	2.70	0.10	0

## **Issue 2 - Water Quality and Soil Erosion**

Approximately 100 trails within the Big Hole Mountains Subsection have been evaluated within the Palisades and Teton Basin Ranger Districts. The purpose of this project is to revisit the existing travel plan direction for the Big Hole Mountains Subsection, within Bonneville, Madison and Teton Counties, Idaho and Teton and Lincoln Counties, Wyoming in order to determine if any aspects of the existing trail system need to be modified or changed in order to provide a balanced network of motorized and non-motorized trails that are safe, environmentally sound, affordable to manage and maintain, and responsive to public needs.

The Big Hole Mountains Subsection intersects 19 watersheds (5th HUCs) and are shown in Table 3.4 - and Figure 3.1.

**Table 3.4 - Watersheds (HUC 5) and the percent of total area located within the Big Hole Mountains Subsection.**

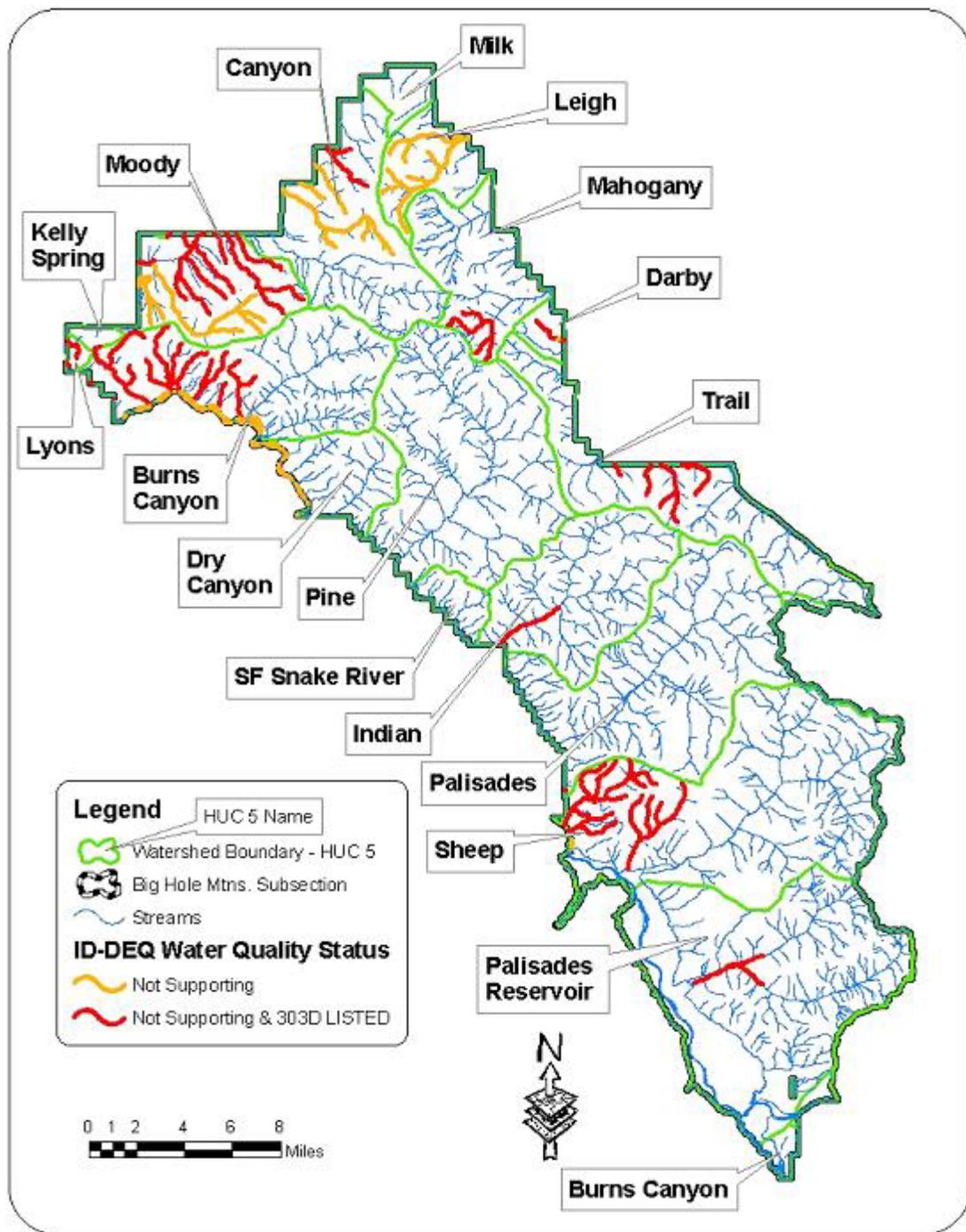
Watershed (HUC5)		
Number	Name	Percent of Total Project Acres
1704010401	Burns Canyon	8.29%
1704010402	Dry Canyon	2.81%
1704010403	Pine	11.65%
1704010404	SF Snake R.	1.01%
1704010406	Indian	6.74%
1704010407	Palisades	11.67%
1704010408	Sheep	15.10%
1704010410	Palisades Res.	14.73%
1704010500	Burns Canyon	0.39%
1704020105	Kelly Spring	0.29%
1704020107	Lyons	0.22%
1704020402	Moody	4.79%
1704020404	Canyon	7.05%
1704020405	Milk	0.96%
1704020408	Leigh	2.49%
1704020409	Mahogany	4.41%
1704020411	Darby	0.64%
1704020412	Trail	6.78%
Grand Total		100.00%

These also intersect Principle Watersheds which include: 005, 006, 007, 022, 023, 024, 031, 033, 035, 036, 039, 040, 041, and 171 as defined in the Targhee RFP. Specific descriptions and direction for the Big Hole Mountains Subsection can be found on pages III-58 thru III-61. Specific direction included on these pages include: Goal \*Fisheries, Water and Riparian Resources\* - *Channel stability would be rated at good to excellent for individual streams*; Objective \*Fisheries, Water and Riparian Resources\* - *Improve stream channel stability ratings to good or excellent by 2007 where natural conditions allow on South Fork, Packsaddle, Horseshoe, Superior, North Fork Mahogany, Main Mahogany, Henderson, Patterson, and Murphy Creeks*. Trails affect nearly all these streams to one degree or another. For example: Trails 055 and 056 parallel Mahogany and North Fork Mahogany Creeks; Trail 071 parallels Henderson Creek; Trail 054 parallels Patterson Creek; Forest Road 235 parallels South Fork Packsaddle Creek and Horseshoe Creek, with several ATV crossing sites; etc.

### **Water Quality Limited Waters, Total Maximum Daily Loads (TMDLs), and BMPs**

Idaho Department of Environmental Quality (IDEQ) has identified surface water use designations (i.e. beneficial uses) and the water quality standards necessary to support those uses (IDEQ 2004). The Idaho 2002/2003 Integrated (303(d)/305(b)) Report (IDEQ, 2003a) provides assessment unit level water quality information concerning support of designated uses. Units determined to not be in support of designated uses are placed on the 303(d) list until a TMDL is approved by the U.S. Environmental Protection Agency (EPA). Figure 3.1 shows streams not supporting beneficial use and Table 3.5 summarizes information from the Idaho Integrated Report (IDEQ 2005), The Teton

River Subbasin Assessment and Total Maximum Daily Load (IDEQ, 2003a), The Supplement to the Teton River Total Maximum Daily Load – Moody, Fox, and Spring Creeks (IDEQ 2003b), and The Palisades Subbasin Assessment and Total Maximum Daily Load Allocations (IDEQ 2001). No Wyoming streams within this project area were identified as not supporting beneficial use and on the 303(d) list (Wyoming DEQ, 2006). Trails influencing those streams not supporting beneficial use are shown by watershed in Table 3.5.



**Figure 3.1 - Stream and Watershed (HUC5) boundaries located within the Big Hole Mountains Subsection. Also, Idaho DEQ water quality status for streams not supporting beneficial use as identified in the 2002/2003 integrated report (IDEQ 2005). No Wyoming streams within this project area were identified as not supporting beneficial use and on the 303(d) list (Wyoming DEQ, 2006).**

**Table 3.5 - Summary of State assessment units not supporting designated uses (IDEQ 2001, 2003a & b, & 2004b) within and directly below project area.**

Assessment Unit	Waterbodies Not Supporting	Use(s) Not Supported	Pollutant(s)	303(d) and/or TMDL Comment(s) <sup>3</sup>
<b>Assessment units within the project area with some extending downstream of the project area:</b>				
ID17040104SK001_02	Hawley Gulch, Table Rock Canyon, Wolverine Creek, Mud Creek, and other tributaries to the Snake River within Black Canyon Creek to river mile 856 reach.	Cold water aquatic life use and Salmonid Spawning	Unknown	Not assessed in the TMDL (IDEQ 2001).  TMDL recommended that Little Elk Creek, Sheep Creek, and North Fork Indian Creek be removed from the 303(d) list, as these segments all meet their beneficial uses and /or show no human impact (IDEQ 2001)
ID17040104SK008_02	SNAKE RIVER - Palisades Reservoir Dam to Fall Cr. tributaries including Sheep Cr.	Cold water aquatic life use	Unknown	
ID17040104SK024_03	South and NF Indian Creek	Cold water aquatic life use	Unknown	
ID17040104SK024_04	Indian Creek - ID/WY border to Palisades Res.	Cold water aquatic life use	Unknown	
ID17040104SK026_02	Little Elk Cr. - source to Palisades Res. including tributaries	Cold water aquatic life use	Unknown	
ID17040104SK028_04	Rainey Creek	Cold water aquatic life use, Salmonid Spawning, and Secondary Contact Recreation	Pathogens	Not listed as impaired on the 1998 303(d) list and not assessed in the TMDL (IDEQ 2001)
ID17040201SK013_02	Kelly Canyon Creek	Cold water aquatic life use, Salmonid Spawning,	Unknown	
ID17040204SK005_04	Moody Creek - confluence of North and South Fork Moody Creek. Small portion on FS Lands	Cold water aquatic life use	Nutrients	TMDL identified nutrient were over target levels for at least part of the year. Total Phosphorus and nitrogen need to be reduced by 59% & 66%, Respectively (IDEQ 2003b)
ID17040204SK007_02	North Moody Creek, Rudy Creek, Sheep Creek, and their tributaries	Secondary Contact Recreation	Pathogens	Not assessed in the TMDL (IDEQ 2003a).
ID17040204SK011_02	Warm Creek and tributaries which drain into Calamity Creek.	Cold water aquatic life use and Secondary Contact Recreation	Pathogens and unknown	Not assessed in the TMDL (IDEQ 2003a).
ID17040204SK025_02	Mahogany Creek - source to pipeline diversion	Cold water aquatic life use	Flow alteration, Siltation, Thermal modification	Sediment TMDL approved 2/26/2003.

<sup>3</sup> See [http://www.deq.state.id.us/water/data\\_reports/surface\\_water/tmdls/sba\\_tmdl\\_master\\_list.cfm](http://www.deq.state.id.us/water/data_reports/surface_water/tmdls/sba_tmdl_master_list.cfm)

Assessment Unit	Waterbodies Not Supporting	Use(s) Not Supported	Pollutant(s)	303(d) and/or TMDL Comment(s) <sup>4</sup>
ID17040204SK026_02	Teton River - Trail Creek to Teton Creek including Dry Fork tributary to Henderson Creek within project area.	Cold water aquatic life use	Flow alteration, Siltation, Thermal modification	Segment and all attributes carried forward from 1998 list
ID17040204SK034_02	Warm Creek and tributaries including Pole and Smith Canyons	Cold water aquatic life use, Salmonid Spawning, and Secondary Contact Recreation	Pathogens and Unknown	Not assessed in the TMDL (IDEQ 300a).
ID17040104SK001_06	Snake River - Black Canyon Creek to river mile 856	Cold water aquatic life use	Flow alteration	Flow alteration is not a "pollutant" under the Clean Water Act. TMDL will not be prepare and is not required.
ID17040104SK003_06	Snake River - Fall Creek to Black Canyon Creek			
ID17040204SK006_02	South Fork Moody, Fish Creek, and their tributaries	Cold water aquatic life use and Salmonid Spawning	Not Listed	Not assessed in the TMDL (IDEQ 300a).
ID17040204SK010_02	Calamity Creek, Carlton Creek, and tributaries	Salmonid Spawning,	Not Listed	
ID17040204SK018_03	Packsaddle Creek on and downstream of FS boundary	Cold water aquatic life use	Flow alteration and Siltation	Flow alteration is not a "pollutant" under the Clean Water Act. TMDL will not be prepare and is not required.
ID17040204SK019_02	Packsaddle Creek, NF Packsaddle Creek, and tributaries	Cold water aquatic life use	Flow alteration and Siltation	TMDL identified 1,924 ton/yr sediment (46%) reduction (IDEQ 300a).
<b>Other assessment units outside of the project area, but directly downstream:</b>				
ID17040204SK021_03	Horseshoe Creek	Cold water aquatic life use and Salmonid Spawning	Flow Alteration	Flow alteration is not a "pollutant" under the Clean Water Act. TMDL will not be prepare and is not required.
ID17040204SK026_04	Teton River	Cold water aquatic life use	Other Habitat Alterations and Siltation	TMDL identified 105,141 ton/yr sediment (41%) reduction and no TMDL for habitat (IDEQ 300a).
ID17040104SK008_06	Snake River - Palisades Reservoir Dam to Fall Creek	Cold water aquatic life use	Flow Alteration	Flow alteration is not a "pollutant" under the Clean Water Act. TMDL will not be prepare and is not required.

<sup>4</sup> See [http://www.deq.state.id.us/water/data\\_reports/surface\\_water/tmdls/sba\\_tmdl\\_master\\_list.cfm](http://www.deq.state.id.us/water/data_reports/surface_water/tmdls/sba_tmdl_master_list.cfm)

**Table 3.6 - Trails located within the Aquatic Influence Zone influencing streams not supporting beneficial use (IDEQ, 2005) displayed within associated watersheds.**

Watershed (HUC 5)		Trail Numbers
Number	Name	
1704010401	Burns Canyon	031, 082, 131, 139,169
1704010402	Dry Canyon	155
1704010406	Indian	086, 115, 116,
1704010408	Sheep	096, 100, 117, 151, 198
1704010410	Palisades Res.	122
1704020402	Moody	060, 083, 139
1704020404	Canyon	059, 060, 061
1704020408	Leigh	212
1704020409	Mahogany	053
1704020411	Darby	070
1704020412	Trail	031, 052, 174

Through a Memorandum of Understanding (MOU) with the State of Idaho, the Forest is responsible for implementing non-point source pollution control measures during all management activities (USDA Forest Service 1994). The State's anti-degradation policy also pronounces that the designated uses and the level of water quality necessary to protect those uses shall be maintained and protected. Forest Service Policy is to maintain or improve water quality (RFP and FSM 2500<sup>5</sup> (2520.3)). The State recognizes Best Management Practices (BMPs) as an effective process for protecting beneficial uses and ambient water quality. Project-specific BMPs are listed in Appendix D.

The soils in the Big Hole Mountains Subsection are derived mainly of colluvium and alluvium from sedimentary parent materials, i.e. limestone, dolomite, sandstone and shale. Soils are generally greater than 60 inches deep to bedrock on the foothills, the low-relief mountains and portions of the high-relief mountains. Soils are usually less than 60 inches deep on ridges and steeper high-relief mountains. Surface soil textures are variable but are mainly medium to coarse textured often with rock fragments included (USDA 1998).

Three Land Type Associations (LTAs) are found within the Big Hole Mountains Subsection. They are LTA 601-Low Snake River Mountains-Conifer Forest; LTA 602-High Snake River Mountains-Conifer Forest; and LTA 603-Big Hole Foothills-Conifer Forest. Ecological Units (EUs) that occur in these LTAs include EU1106, EU1175, EU1216, EU1219, EU1224, EU1280, EU1303, EU1315, EU1316, and EU1646 describe in the Targhee Ecological Unit Inventory (USDA 1999). Many soils in the analysis are susceptible to erosion hazard and compaction when vegetative cover is removed. The hazard increases with slope (See Appendix I, Ecological Units Found on Big Hole Trails Analysis Area).

Due to the large number of trails within the subsection, the Hydrology and Soils analysis concentrated on the trails that have been proposed to be modified or changed. Proposed changes

<sup>5</sup> Section 2520.3: "Apply management practices that meet requirements for protecting, maintaining, restoring, or improving watershed conditions."

include changing the class of vehicle (e.g. motorcycle to ATV), relocating, re-routing or modifying all or portions of the trail to be more compatible with the surrounding terrain, or closing the trail. Additionally, several new trails have been suggested to be included in the trail system. Most of these trails have either been previously “pioneered” by users, or are old roads or trails that were not previously designated as system trails. Following is a synopsis of current conditions by trail. Detailed trail conditions can be found in the project record.

- **Trail 014 – Allen Canyon-Black Grove**

This two-track (ATV) trail has eroded and continues to erode along much of its length. The trail surface consists of rock, cobble and boulders. Some portions of the trail are troughed out and needs drainage and rolling dips. Some short sections are in good condition and need little improvement or reconstruction. The trail has down-cut from erosion on the lower mile of route. When it reaches the ridge, the trail is in good shape. There are no stream crossings on this trail. Some re-routing and relocation may be needed to control erosion on the lower slopes.

- **Trail 030 – Government Pack Trail B**

This trail parallels South Fork Fall Creek, a (303d) listed stream. The trail is an old jeep road that has been converted to a trail. The trail is currently in good overall condition. It has several crossings (fords) that are working adequately. The first crossing at the trail head is bridged and is working well. This bridge eliminated a badly beat-out ford that was producing lots of sediment. The trail crosses one wet area in the upper portion. This wet area needs to be protected.

- **Trail 047 – Wood Canyon Ridge – Black Grove**

The trail parallels Bear Creek – on the Palisades end. On the Teton Basin end, it starts on the BPA access road, which is currently a non-motorized route but appears to have a high amount of illegal ATV use. The soils in the area are very erodible. The first ¼ mile used to be an old road, and is eroded to V-notch bedrock surface. The southern two-thirds is in good overall condition, with several spots that could be re-routed. This new trail would have the same issues as the Allen Canyon Trail. Design would need to consider erosion from erodible soils.

- **Trail 051/216 – Looking Glass - Highway 31**

The Lower portion (216) parallels N Fork. Pine Creek. The lower portion of the 051 trail has recently been reconstructed and maintained from the trail head to the Station Creek crossing. About ½ mile of this section still needs to be re-routed. It is in good over all condition for the next 3.5 miles to Looking Glass Creek. From Looking Glass, north, the 051 trail (sheep driveway) is currently being used heavily by ATVs. Portions are very steep and in moderate to bad condition and not suitable for ATVs. Substantial trail erosion has occurred in some of the upper locations. Trail 216 from Looking Glass up, starts very steep and is eroded and rutted. It is bypassed to the east with an illegal ATV route straight up the hill. Portions of the single track are at the toe of a steep slope that has mass movement potential. The existing tread has eroded to bedrock in several sections. The last 1/8 mile or so is on a very steep side-slope. This steep trail is now an ATV route that has been user-created. Many large rocks are in the trail. This trail is not well suited for an ATV route because it would be difficult to maintain in many places and the route many be difficult to meet design criteria for erosion protection due to the steepness and narrow ridge. The trail

from Piney Pass to Garns Peak is steep and very rocky. It will require some relocation and restoration work to properly accommodate ATVs.

- **Trail 051 - Upper Rainey Creek**

This trail is on a ridge top – very little erosion is occurring. The trail has several steep sections that are relatively stable.

- **Trail 051 - Black Grove**

This trail is being proposed to be included as a designated trail. It is currently an illegal ATV trail with no drainage or maintenance.

- **Trail 060 (Palisades) – Carlton Cutoff**

The trail currently crosses Ruby, Canyon, Kirkham Calamity, Carlton, and Wright Creeks. The trail is very steep where it leaves FR 218. Once the trail makes its initial climb, it is up on a ridge and in overall good condition.

- **Trail 060 (Teton Basin) – Carlton Cutoff**

The trail crosses Ruby, Canyon, Kirkham, Calamity, Carlton, and Wright Creeks. Describing from south to north, the first ½ mile is very steep and needs to be re-routed. Switchbacks were designed for hikers or horses and are too tight for motor vehicles. From South Canyon Creek to Kirkham Hollow is a constructed trail/road built for one-time access for bridges. Pull-outs need to be constructed. ATVs are currently using it. It has steep side-slopes and is gathering sluff from the upper slopes. Two switchbacks are in very poor condition and need to be rebuilt. From Kirkham Hollow for about 2.5 miles the trail is a single track being converted by ATVs. The overall condition is alright, but two small re-routes are needed. Then, the trail dives steeply into Calamity Creek. The lower ¼ mile is in a V-notch that is very eroded and continues to erode. Large amounts of sediment have been delivered to Calamity Creek. There is a very steep climb out of Calamity Creek and this section needs to be re-routed. From FR 803 to FR 219 the trail is steep in a draw bottom. This section also needs to be re-routed. From FR 219 to the FR 951-663 junction, the trail has been logged over and is essentially lost. Users currently ride on the 663 road. From there to the Forest boundary, the trail is an old road in adequate condition, small re-routes are needed. The trail forks 1.5 miles from the Forest Boundary. The “west” fork is the preferred in Alternative - C, but both are being used. A parking lot is proposed next year for a trail-head at the Forest boundary.

- **Trail 061 – Calamity**

The trail parallels Calamity Creek. The trail currently has 16 water crossings. The lower two miles are currently being re-routed as a single track, eliminating 14 crossings and placing the trail on the hillside. From the 059/061 junction for about 1 mile the trail is steep and eroding badly. This section needs re-routing. The last two miles are in the drainage bottom with several crossings. It is currently adequate for motorcycles but needs work for ATVs.

- **Trail 062 – Relay Station**

From the radio towers for about ½ mile the tread is alright, receiving heavy ATV use. From there, to the 064 junction, the trail is very steep and has very loose cobble. From the 064 to 056 junction, the trail is a single track on a side-hill with no ATV encroachment.

- **Trail 031 - Hawley Gulch**  
Has two illegal hill climbing trails that originate at the bottom of the gulch and climb straight up a grass sideslope. These should be closed along with the trail in the bottom that accesses these trails and enforced. The legal trail is in good shape and should be maintained. Little erosion is occurring.
- **Trail 063 - South Fork Canyon Creek**  
This single-track motorcycle trail has several stream crossings. Some erosion is entering the stream from the trail. Crossings should be hardened.
- **Trail 064 – N. Fork Canyon Creek**  
The trail parallels N Fork Canyon Creek. From the 063 junction, the trail is intermittent good to poor. Portions of the trail are encroaching onto and adding sediment to the stream.
- **Trail 065 – Spencer Mountain**  
This is a narrow single track trail. There are no surface water problems. The trail's overall condition is fair to good. There is not much current use by motorized vehicles.
- **Trail 066 – Garns Mountain**  
Portions of trail are in poor to bad condition. The trail is very steep and rutted in several locations. Several sections have large amounts of exposed rock, making the trail extremely rough and hard to ride. There are over 200 yards that are on a very steep slope. Cobble is exposed and moving down-slope, altering the stream channel. This section needs re-routing. If considered for an ATV trail, it needs about 90% re-routing. This trail accesses Elk Flat and many meadows below Garns Mountain. At this point it becomes a single-track motorcycle trail with few problems identified.
- **Trail 072 – Grove Creek**  
The trail parallels Grove Creek. It is currently being used by ATVs. From trail 053 junction going east, the first  $\frac{3}{4}$  mile needs a complete re-route. The trail is severely eroding and nearly past the point of being usable. From that point to Hands Spring, the trail is an old road prism in fair condition but needs drainage. From Hands Spring to junction of trail 030, the tread is too steep, and eroding badly with several user-created trails off the main trail. From there to Walton mine, the trail is a single track trail that is not used very much. It is being overgrown with vegetation. The trail stops in an open meadow.
- **Trail 073 – Little Burns/Black**  
The trail parallels Drake Creek. It is mostly steep and rutted in poor overall condition.
- **Trail 074 – Black Canyon**  
The trail parallels Black Canyon, an intermittent to perennial stream, depending on the year. The trail is in good overall condition on both the upper and lower sections. Some new maintenance has occurred over the past several years. The lower portion is in good condition. There is one bad stream crossings that has steep approaches on both sides. Several crossings have been bridged (need probably three more bridges).

- **Trail 075 – Liars Pass**  
This is a very difficult trail, requiring high skill levels. It is currently located on the upper 1/3 of the slope, bypassing most water (seeps and springs). The last ½ mile needs re-routing due to excessive steepness. ATVs are using the northernmost ½ mile of the trail, until the trail gets too steep.
- **Trail 077 - Thousand Springs**  
The stream parallels Red Creek and is now a constructed ATV trail that is heavily used. The trail is currently in good overall condition with good drainage. The trail crosses several seeps and wet areas but is not a concern.
- **Trail 079 – Fleming Canyon**  
This is currently a single track trail that is steep in some locations. Surface shale and exposed rock makes the trail “slippery” and difficult to ride. There are no specific water or soil problems.
- **Trail 086 – Corral Canyon**  
The trail parallels Corral Canyon. It is an old two-track road converted to a trail. Water in the drainage bottom is in the form of wetlands and seeps. Overall condition is fair. There is currently heavy ATV use on the trail.
- **Trail 087 – Burnt Canyon/Dry Fork**  
The trail parallels Burnt/Dry Fork. It is currently a two-track trail. The drainages are mostly dry. The trail is currently in good overall condition, with little or no rutting.
- **Trail 089 – N. Fork Rainey Creek**  
The trail parallels N. Fork Rainey Creek. The trail is in a narrow V-shaped canyon, making it difficult for motorized vehicle access. There are currently several stream crossings. There is currently little motorized use. The trail is in overall fair to good condition. Current use is mostly by hikers and horses.
- **Trail 108 – Middle Twin**  
A very short trail that has no easement from private land.
- **Trail 131 – Lookout Mountain**  
This is currently an ATV trail in overall good condition. No surface water concerns. The trail is naturally well drained, with little or no rutting.
- **Trail 139 – Morning Glory Mine**  
This is a single track trail being converted by users to an ATV trail. The trail has some steep sections with heavy rutting and troughing. The trail has intercepted the stream in several spots and the trail is now the stream channel. These sections of the trail need to be re-routed. This trail is currently in poor overall condition.
- **Pole Canyon (174) -** This trail appears to begin as an ATV trail at the trailhead near Sherman Springs. It fords the stream in Pole Canyon about three times. The trail switchbacks several times near the top of the drainage and then turns into a single-track motorcycle trail near the top. It appears ATVs are currently pioneering a trail to Fogg Hill –

which should be rehabilitated and closed out.

- **Trail 195 – Nickerson Grove**

This trail crosses N. Twin Creek. It is an old road, currently in good condition. It needs about 1/4 mile re-route to get the trail out of the bottom (just before the N. Twin Creek crossing). An illegal ATV trail stems off the trail. Illegal use is hard to stop in this area because the terrain is open. This is also a segment of the Big Holes Challenge Mountain Bike Race and recently the Big Holes Trail cross-country foot race.

- **Trail 201 – Mike Spencer Loop**

This was a two-track road that is now a trail. The trail is on a proper grade and is in good overall condition.

- **Trail 211 – Henderson Cutoff**

This trail is currently receiving heavy ATV use. It is very steep and needs to be re-routed. The lower portion is an old road that is badly eroded with deep ruts.

- **Trail 212 – Packsaddle Lake**

Portions of the trail are extremely steep, rough and eroded. Users have widened the trail in several locations because of the poor surface conditions. Though the trail accesses Packsaddle Lake, it does not directly influence the lake. From the lake north, it is currently non-motorized, receiving some ATV use.

- **Trail 216 - Lower North Fork Pine Creek**

The trail is in the drainage bottom with several stream crossings. The overall condition is poor. Currently, this trail is a heavily used ATV trail to Garns Peak. It has numerous stream crossings and some areas that should be relocated to protect soils from eroding.

- **NT1 - Pine Creek Pass**

The trail parallels State Highway 31. It is a proposed x-country ski route extending from Tie Canyon to the old highway. It would parallel upper Pine Creek, a perennial stream, but would not directly influence the stream.

- **NT2 - Black Grove Cutoff**

The proposal is to connect trail 051 with trail 052. The proposed location is on fairly flat terrain. The trail would be mostly on a ridge, where there is no surface water.

- **NT3 - Wolverine Creek**

Ranger Trail (NT3) is a single track cow trail that takes off from lower Wolverine Trail and heads east south east toward Mud Springs and Burns Canyon. This trail seems to be located well and very little erosion was noted on the tread. There were several areas that would need to be relocated because they are too steep but should not cause any resource concerns. This trail had several crossings of live water. This is the old Ranger Trail, a single track trail that was used as a pack trail years ago. It is mostly in good condition except two spots that need work - Woods canyon and Mud Creek crossings. Surface erosion is occurring and the trail is widening in those spots.

- **NT4 – Kelly Canyon**  
This is a proposed non-motorized cross-country ski trail that would be within a dry drainage.
- **NT5 - Hinckley Creek**  
Argument Ridge Trail (NT5) is a user created trail that occurs on old roads that take off from trail 213 in Hinckley Creek to access Argument Ridge. This trail has some erosion occurring in the tread and may need some reconstruction in some areas. New trail construction of about one-half mile is needed to make it a loop trail from Argument Ridge connecting with Road 659. There are several illegal user created trails that spur off of this trail that should be closed near Coal Mine Trail. The trail is located on a ridge-top dropping down into an old timber sale area. Most of the trail is an existing jeep type road. There is no surface water. The surface is currently hardened and in stable condition.
- **NT6 - Kelly Canyon Area**  
This is an old logging road in stable condition. There is no surface water along the trail. The trail is currently mostly used by snowmobiles.
- **DP1 - Red Butte**  
This is also known as the Red Butte trail. It is currently a two-track jeep type road converted to an ATV trail. The proposal is to construct the last ¼ mile to connect with another trail. The surface has eroded exposing base rock. The trail needs to be relocated and put on a proper grade in several locations.
- **DP3 - Wolverine/Hawley**  
Is a user created trail currently being used to access the Wolverine Trail. This trail is a series of logging roads that were closed out long ago but are currently being used by ATVs. The trail occurs on fairly level ground and no resource problems were seen except for a head cut on the steep slope that drops into Wolverine Creek. This trail could be brought to standards easily to provide access into Wolverine. Few resource concerns were noted.
- **DP4 - Palisades/Rainey Creek**  
This is a proposed non-motorized trail that follows the Forest boundary. The trail crosses several intermittent drainages, but there is not a lot of surface water to be concerned about. Construction should be relatively easy due to the lack of water and favorable terrain.
- **DP5 - extension of Trail 114**  
This proposal connects Rainey Creek with Pine Cr. Highway. Some of the trail currently exists, but new construction is needed on both ends.
- **DP6 - Windy Ridge connector**  
This is currently an old two-track constructed road. There is no surface water to be concerned with and the surface is currently in good overall condition.
- **NBT1 - Bovine Bliss**  
From the junction of Forest Roads 235 and 140, this trail is a single-track trail through good terrain covered with sagebrush. It was an old cattle trail that has been converted for ATVs by users. It follows a ridge then connects back to the 140 road. This trail is generally in good condition except for one small wet area that will require about ¼ mile of re-route.

- **NBT4 - Sharks Belly**  
This trail leaves Forest Road 140 from where Bovine bliss connects to FR 140. It is a good alignment, has good slope and is in good overall condition except for two wet areas that need to be re-worked to improve the crossings, if it becomes a system trail. A user-built bridge has also been constructed on this trail that is working but does not meet forest service specifications.
- **NBT2 - Channel Lock**  
This trail is a user-created trail that extends north from FR 235. The first half mile is in good condition but needs minor drainage construction. The trail forks, the right fork is the preferred alternative and needs drainage work. The left fork is very steep and eroded and should be closed. However, closure will be difficult because the terrain is open. Much of the trail is down-cut about one-foot.
- **NBT3 - Sod Buster**  
From FR 140, traveling west, this trail needs erosion control features on the first ¼ mile where it is steep. It is a user-created trail that has a good alignment.
- **NBT5 - Bird Bumper**  
From FR 057 traveling west, the first 2/3 of a mile is in good condition and has a good alignment. The last 1/3 of mile before the salt-lick hub is steep and in need of erosion control features. The trail beyond the salt lick is in good condition but needs some erosion control features.
- **NBT6 - South Bound**  
This is a user created trail that is very popular with the mountain biking community because it is one of the first trails in the area to open up in the spring. This trail is a fun single track trail to ride. It has several small steep sections that are out of specifications but the trail is generally built on desirable grade with a durable tread. There are no wet areas to be concerned about and no relocation is needed.
- **031/321 – Bonneville Power Administration (BPA) Line**  
This is a user-created alignment under the BPA power line, within the line right-of-way that is very steep in places and needs re-aligned with erosion control features. It is about 1½ miles in length.

### **Issue 3 - Wildlife**

#### **Wildlife Associated with Aquatic and Riparian Habitats**

Wildlife management indicator species include bald eagles, trumpeter swans, spotted frogs, common loons and harlequin ducks. Table III-10 in the RFP-FEIS (page III-35) illustrates the distribution of these species and their habitats by subsection. The Big Hole Mountains Subsection is shown to support all of these except trumpeter swan nesting habitat.

- **Bald Eagle**  
Southeast Idaho and Forest Overview – As of 2004, total known nesting territories in

southeast Idaho numbered fifty eight. The 2006 Caribou-Targhee National Forest Plan Monitoring and Evaluation Report (TMR 2006) stated that out of the fifty eight territories, thirty two have some portion of the territory on the Targhee and twenty one have their nest site on the Forest (TMR 2006). Thirty three of the fifty eight territories are on, or near, the Big Hole subsection. Of these thirty three, 14 have portions of the 4,000 meter radius home range included in the Bighole Subsection (Wildlife Specialist Report 2007).

Bald Eagle Recovery Plan – The Forest is within the “Greater Yellowstone Bald Eagle Management Zone” as outlined in the Pacific States Bald Eagle Recovery Plan (USFWS 1986). All of the Recovery Plan goals have been exceeded with the current bald eagle populations. In July 1999, the USFWS proposed to remove the bald eagle from the ESA. They proposed the action because the available data indicates this species has recovered. (Federal Register 64(128):36453-36464). On July 9, 2007 the USFWS removed the bald eagle from the list of endangered and threatened wildlife (Federal Register Vol. 72, No. 130: 37346-37372). The bald eagle is now considered a sensitive species on the Caribou/Targhee National Forest.

- **Trumpeter Swan**

From less than 200 birds in 1930, the Rocky Mountain Population increased to about 507 birds in the US breeding segment of the Rocky Mountain Population in 2006 (US Fish and Wildlife Service, Trumpeter Swan Survey of the Rocky Mountain Population, Fall 2006, page 2).

While no nesting swans have been documented in the Big Hole Subsection, the South Fork of the Snake River and the Teton River support wintering swans. This species will not be analyzed further.

- **Spotted Frog**

Surveys conducted in 1992 and 1993 documented spotted frogs in five of the seven subsections. The Big Hole subsection did not have documented presence but suitable habitat probably exists. In 2002 a possible spotted frog was observed in the Moody Creek drainage; observers were unable to catch and positively identify the frog, but they said its length and coloration indicated that it was most likely a spotted frog (Parkin and Stricklan 2002).

- **Common Loon**

While the RFP-FEIS identified the Big Hole subsection as within the distribution range of the loon, it did not identify any potential breeding areas (RFP-FEIS III-39). There are three lakes or reservoirs in the area which are large enough to support loons. Upper and Lower Palisades Lakes may have suitable nesting habitat. These two lakes are large enough for the birds and the lower lake has very little fluctuation of water levels. The other water body, Palisades Reservoir, likely has too much human activity and too much fluctuation in water level to support common loons.

- **Harlequin Ducks**

Harlequin ducks have been observed along Big Elk Creek in this subsection. A successful nest was detected again in the summer of 2007. This creek has been monitored each year and there have been no changes in harlequin duck use. This creek has a non-motorized trail

following along much of its length. This proposal would not change the location or the non-motorized status of the trail. One or two pairs have been documented during a season. Not all streams with suitable habitat have been surveyed. Harlequin ducks are only present on the Forest during nesting and breeding seasons: they migrate to the coasts of Oregon and Washington to winter.

### **Wildlife Associated with Terrestrial Habitats**

Wildlife management indicator species include; elk, gray wolf, northern goshawk, Canada lynx and others. Table III-16 (RFP-FEIS, page III-50) lists these species and illustrates their distribution across this subsection. This table indicates that verifiable sightings, documented suitable habitat or unverifiable, but reliable sightings exist for all management indicator species associated with terrestrial habitats within this subsection. A brief overview of these species and habitats follows. Additional information for these species and other wildlife species is available in the RFP-FEIS (pages III-47-50), the Caribou/Targhee National Forest Plan Monitoring and Evaluation Report 1997-2004 (various pages), and Process Paper D.

- **Elk**

Elk habitat quality is measured in two ways; elk vulnerability (EV) and elk habitat effectiveness (EHE).

We measure elk habitat quality in two ways; elk vulnerability (EV) and elk habitat effectiveness (EHE).

EV is defined as a measure of bull elk susceptibility to being killed during the hunting season. This is given as a percentage where a lower percentage indicates a lowered mortality rate. This is measured using two parameters. They are hunter-day densities and motorized road and trail densities. Hunter-day density is controlled by the State agencies and will not be analyzed in this document. Motorized road and trail densities will be analysed.

EHE is defined as the percentage of available habitat that is usable outside of the hunting season. The closer this figure is to 100%, the better the habitat would be for elk. This is measured using two parameters. They are elk hiding cover and motorized road and trail densities. This project would not affect vegetation except directly next to the trails so this parameter will not be analyzed. Motorized road and trail densities will be analyzed.

- **Gray Wolf**

The Big Hole Mountain subsection is within the Yellowstone Nonessential Experimental Population Area. At the end of 2005, the minimum fall wolf population for this area was 325 (U. S. Fish and Wildlife Service, et al., 2006). The nearest documented wolf pack was adjacent to this subsection in the winter of 2005-06 (Idaho Wolf Recovery Report 2006).

For the three state area, The Rocky Mountain Wolf Recovery 2005 Annual Report stated that the wolves are doing well. The report stated "Of approximately 134 packs (groups of two or more wolves), 71 packs met the definition of "breeding pair," an adult male and female raising two or more pups until December 31. This made 2005 the sixth year in which 30 or more breeding pairs were documented within the three-state area. Recovery

criteria have been met for removing Northern Rockies wolves from the Endangered Species List.” (U. S. Fish and Wildlife Service, et al., 2006).

Wolf activity was documented in Moose Creek and Game Creek in the early months of 2006. This is just a few miles north of the east side of the subsection. In the summer of 2006 we received several reports of unverified wolf activity in the Big Hole subsection. In November, a probable wolf track was seen near Pine Creek Pass by the Teton Basin Ranger District wildlife biologist.

While wolf activity is documented near the subsection and likely within the subsection, no denning activity has been reported.

- **Canada Lynx**

The majority of the subsection is divided into seven Lynx Analysis Units. The portions which are not included in the units are excluded due to low snow depth. There has been two documented occurrence of lynx in the Big Hole Mountains and one occurrence adjacent to the subsection in Wyoming (TMR-2006).

The three most critical factors which affect lynx are snow compaction, denning and security habitat, and habitat fragmentation from motorized roads and trails. This project would not change the vegetation in denning and security habitat. This project would not directly affect snow compaction but improved ATV trails, which often include widening and cutting a bench into the hill side, may facilitate winter access into the LAUs. This project could affect lynx through habitat fragmentation. The potential to facilitate winter access and habitat fragmentation will be analyzed.

- **Grizzly Bear**

This subsection is outside of the Primary Conservation Area. The Primary Conservation Area is found in the Teton Range subsection, about 20 miles north of the east edge of this subsection and about the same distance, and across the Teton Basin, from the north end of the subsection. The TMR-2006 indicates that there has been one grizzly bear observation in the area from 1960 to 1989 and one observation from 1990 to 2004.

This species was officially removed from the list of endangered and threatened wildlife on April 29, 2007 (Federal Register, March 29, 2007. Volume 72, #60, pages 14866 to 14938). The Grizzly bear is considered a recovered population. This species is now considered a sensitive species on the Caribou-Targhee National Forest.

- **Avian Species**

This group includes the northern goshawk, peregrine falcon, three-toed woodpecker and forest owls: great gray, boreal and flammulated owls. These species are all found in this subsection. Further information on these species can be found in the RFP-FEIS, pages III47-71 and in the TMR-2006, various pages.

There are 14 known goshawk territories with nest areas or post fledging family areas in, or near the subsection. The changes in motorized use within these areas will be analyzed.

There are no proposed changes in motorized use in any peregrine falcon territory. This

species will not be analyzed further.

There are no proposed changes in motorized use in any known forest owl territory. These species will not be analyzed further.

- **Furbearer Species and Prey Species**

Most forest furbearers are found in this subsection. The wolverine, fisher and Canada lynx occurrences are rare in this subsection while martin, small weasels and coyote detections are common. Further information on these species can be found in the RFP-FEIS, page III-63 and 67, and TMR-2006, pages 119-148.

- **Primary Cavity Nester Populations and Habitat**

Further information on these species and on this habitat can be found in the RFP-FEIS, pages III-61 and 62, and TMP-2006 pages 87-91. This project would not impact dead trees except where they may be removed in trail construction or rerouting. This subject will not be analyzed further.

- **Big Horn Sheep**

There are no big horn sheep in this subsection. This species will not be analyzed further.

- **Predator Control**

This project would not impact predator control. This subject will not be analyzed further.

### **Neotropical Migratory Bird Populations and Habitat**

Habitat for most forest Neotropical birds is found in this subsection. Habitat changes, including fragmentation, will be analyzed.

## **Issue 4 - Recreational Use**

The Big Hole Mountains Subsection provides a wide variety of recreational opportunities because of the varied terrain and proximity to populated communities. Concerning motorized use, the north end of the subsection contains more roads and trails. Terrain is less steep and provides more opportunities for motorized recreational experiences, while the south half of the subsection contains steep high mountain terrain. Very few roads exist in the south half of the subsection. Trails are often steep and rocky with limited opportunities for motorized use. Current travel management planning reflects this situation. Current management direction restricts much of the south end to non-motorized uses, while allowing motorized use on much of the north end. While some minor exceptions do exist concerning motorized use, generally travel restrictions are reflective of the terrain limitations. The current Travel Management Plan does not distinguish between two wheel motorized use and ATV use. If a trail is open for motorized travel it is open to any vehicle 50 inches or less in width. The Travel Plan does make recommendations for ATV travel on certain trails, but does not restrict ATVs if a trail is open to motorized use.

### **User Opportunities**

Table 3.7 shows current trail opportunities in the Big Hole Mountains Subsection.

**Table 3.7 – Type of Trail Use**

Miles of recommended ATV trails <sup>1/</sup>	30.5
Miles of Single Track Motorized trails <sup>2/</sup>	187.5
Miles of non-motorized trails	286.8
<b>Total Number of Trail Miles</b>	504.8

<sup>1/</sup> *ATV trails are also open for Single Track motorized use (motorcycles) and all non-motorized use.*

<sup>2/</sup> *Single Track motorized (motorcycles) trails are also open to all non-motorized use, but not recommended for ATV use.*

### **User Quality**

When referring to user quality we are referring to how well the trail meets the needs and desires of the user. Condition of the trail would be part of the user quality. How well the trail is maintained and constructed to meet user needs are both considerations in user quality. Another consideration is how the trail links with other trails in the system. In other words, does the trail provide a variety of experiences and loops for the user?

As a general rule the Palisades and Teton Basin Ranger Districts maintain the trail systems on a three year rotation. This means the trail is reviewed and at least cleared by the District Trail crew at least once every three years. Heavier used trails are maintained more frequently, while little used trails may not be maintained on the three year rotation cycle. Trail maintenance varies depending on the funding available, size of trail crew, and time allowed for maintenance. The trail would receive water protection measures such as cross ditching, remarking, and trail tread work. Small trail relocation projects may be done at the time of maintenance to allow water drainage and to better protect the natural resources of the immediate area. Overall, the Palisades Ranger District trails are in satisfactory to good condition while the Teton Basin District trails are in satisfactory to poor conditions. However, there are trail segments on both Districts that need to be relocated to meet user needs and protect natural resources.

Trail location is another part of the user quality. Many of the trails that are now used were created by following game or domestic livestock trails and so were never constructed to any standard. Because the trails were never properly constructed, trail sections may be steep or located improperly causing minor resource damage by motorized and non-motorized uses. As trails are maintained these segments are repaired.

Motorized and non-motorized users prefer trails that can be connected to form loops, thus increasing trail riding and hiking opportunities while providing greater recreational experiences. Many of the Big Hole area trails provide that type of quality experience. Some of the motorized loop trails vary in difficulty and therefore challenge user abilities. Some loops have required easier trails to connect with more technical or difficult trails in order to create the loop – which may have created some difficulties with riders with less experience. However, the existing loop trails are far more desirable than trails where travel is in and out on the same trail. The loop systems have decreased user congestion as well as reduced conflicts between different types of users.

## **User Conflict**

User conflicts appear to have been relatively small or limited in the past. Most of the conflicts that did and do now occur seem to be between motorized and non-motorized users. With increased population growth in surrounding communities there appears to be a corresponding increase in user conflicts between different user groups, i.e. ATV and motorcycle riders. This could be accounted for because of the increase in user visitations and therefore the potential for more inter-action between users. There seems to be less tolerance between the various user types and the activities they prefer. In particular, most of the single track trail users spoken with in the field and at the office, express a desire to keep single track trails narrow since ATVs tend to destroy single track trails not designed and constructed for the wider ATVs.

More and more complaints are being heard from trail users regarding ATV and motorbike use. These range from damage to trails from ATVs and motorcycles to the incompatibility between single track motorized and ATVs on narrow trails. To date, only a few written comments (from the Scoping generated comments) indicate many problems. Non-motorized users in general comment about the loss of solitude and quietness when motorized vehicles are encountered. Some express concern about safety when encountering motorized vehicles. It appears from comments received, that the non-motorized users express more concerns about the damage the motorized vehicles (ATVs in particular) do to the narrow trails. This could be interpreted as “user conflicts” if damage to the trail prism is factored into how much more difficult it is for non-motorized users to negotiate the trails. Some complaints from horse users have been heard regarding motorized vehicles in general (spooking horses when passing each other). Also, user conflicts are sometimes observed by forest employees when working in various forest areas. To date, no records (other than comments received from the scoping process) have been kept on the number of complaints received – either verbal or written.

## **Illegal Uses and Law Enforcement**

Illegal motorized use has been a problem in the past throughout the subsection. The problem seems to be growing as public use increases – particularly in the Big Hole Mountains area (northern part) of the subsection. The types of illegal activities differ between the north and south ends (the areas divided by Pine Creek Highway or State Highway 31) of the Big Hole Mountains Subsection. Since much of the south end (Palisades areas) has a non-motorized designation, the biggest problem is illegal entrance into the closure areas on existing non-motorized trails. In order to ride the south or Palisades end of the subsection, motor bike users must have increased riding skills and be equipped with higher performance type bikes. New user-created trails are generally not a serious problem in this area because terrain limits illegal cross-country travel. Therefore, few new trails are created.

On the other hand, the north end of the subsection (Big Hole Mountains area) has many legal motorized trails so bikers and ATV users have better opportunities to travel much of the area on legal trails. However because users are able to access much of the area and terrain is less steep, problems occur with many new user-created trails being developed. Cross-country motorized travel is not permitted in this area but if one illegal user begins a new trail, other users follow – thus creating unwanted trails that create resource damage. After extended use the new illegal trail appears to be a legal trail. Unless these trails are signed closed and or decommissioned and closed, they otherwise appear open to public use.

Travel plan enforcement funding has been very limited in the past. Enforcement has largely fallen to the regular employees as other duties - to be done only as time from normal duties permits. This has led to limited effectiveness in travel plan enforcement. When enforcement is emphasized and additional personnel made available to check trails, it is effective. This was demonstrated in 2004, when a temporary employee was hired to do travel plan enforcement. After several citations were issued, compliance to the travel plan improved. In 2005 funding did not permit the position to be filled and compliance fell off. During the 2006 field season, funding was available and enforcement efforts were much more effective. Since Forest Service funding varies from year to year, efforts are continually being made to generate new sources of funding in order to help with enforcement efforts. When partnership agreements can be secured and funds made available, additional personnel can be hired to monitor use and enforce motorized and non-motorized activities in the subsection.

### **Area of Concern – Open Road and Open Motorized Trail Route Density (OROMTRD)**

Motorized route density standards were established in the 1997 Revised Forest Plan (RFP) – Final Environmental Impact Statement (FEIS) and the October 1999 Final Environmental Impact Statement (FEIS) for the “Open Road and Open Motorized Trail Analysis” (Motorized Road and Trail Travel Plan) for the Targhee National Forest. The 1999 document was intended to clarify and correct errors in the previously established density standards in the 1997 RFP. During analysis of this Environmental Assessment (Big Hole Mountains Subsection Summer Transportation Travel Plan), it was found that some management prescription areas apparently still do not meet the density standards under Alternative A – Existing Situation (No Action). These discrepancies are suspected to be the result of using newer and more state-of-the-art GIS capabilities (computer programs) that has generated somewhat different but probably more accurate data. The areas in question are as follows:

- In the Packsaddle Area (Prescription 5.1.4(b) - Timber Management (Big Game Security Emphasis)), it appears the density standard is exceeded by about 1.1 miles of existing motorized routes. This currently makes the OROMTRD 1.55 miles per square mile instead of 1.5 miles per square mile identified in the RFP.
- In the Moody Creek area (Prescription 5.1.4(b) – Timber Management (Big Game Security Emphasis)), it appears the density standard is exceeded by about 0.79 miles of existing motorized routes. This currently makes the OROMTRD 1.73 miles per square mile instead of the 1.7 miles per square mile identified in the RFP.

See Chapter Two for further discussions by Alternative.

### **Area of Concern – Wilderness Study Area, Recommended Wilderness and Inventoried Roadless Areas**

The following descriptions summarize management direction for the three areas:

- **Wilderness Study Area – Management Prescription 1.2**  
The Wyoming Wilderness Act of 1984 designated the Palisades Roadless Area situated in Wyoming as a Wilderness Study Area. Specifically, the language states that “Subject to

valid existing rights and reasonable access to exercise such rights, until Congress determines otherwise, the Palisades Wilderness Study Area shall be administered by the Secretary of Agriculture so as to maintain its presently existing wilderness character and potential for inclusion in the National Wilderness Preservation System....”

Accordingly, the 1985 Forest Plan and the 1997 Revised Forest Plan (RFP) directed management of the Palisades WSA to maintain the presently existing wilderness characteristics (see 1985 Forest Plan, page 481 (Description) and 1997 RFP, pages III-75 (Description and Goals) and III-77 (Access Table).

The following is a brief history of changes taken place in the area now designated WSA. Prior to the 1984 Wyoming Wilderness Act, there were some 26 trails in the area now included in the Wilderness Study Area open for motorized use. These trails accounted for approximately 100.6 miles open to motorcycles only (6/1/1979 Targhee National Forest Travel Map on file in the project record).

During the 1985 Land Management Plan process for the Targhee National Forest, 13 of these trails were closed to all motorized use to help protect the wilderness qualities. Some trails were allowed to continue to accommodate single track motorized vehicle use because it was felt the Wilderness resources or characteristics could be maintained (1985 Land Management Plan, pages 485-489 and the 1985 Forest Travel Plan/Map on file in the project record). Specifically, motorcycle use was permitted to remain on the following trails:

- Trail 122 – North Indian Creek (7.0 mi. in WSA) (entire trail is 7.9 mi. long)
- Trail 045 – South Fork Indian Creek (8.55 mi. in WSA) (entire trail is 9.3 mi. long)
- Trail 055 – Long Springs (1.06 mi. in WSA) (entire trail is 1.6 mi. long)
- Trail 056 – Divide (9.0 mi.)
- Trail 058 – Deadhorse Canyon (1.8 mi.)
- Trail 106 – Garden Canyon (2.1 mi.)
- Trail 057 – Burnt Timber (1.7 mi.)
- Trail 127 – Oat Canyon (3.2 mi.)
- Trail 046 – Big Basin (5.2)
- Trail 210 – North Indian Pass (2.5)
- Trail 128 – Indian Peak (0.9)
- Trail 044 – Mail Cabin (3.0)
- Trail 043 – Burbank (5.1)

The 1985 Forest Plan reduced the number of motorized trails from some 26 to 13, thus reducing the open miles of motorized trails from approximately 100.6 to approximately 51.11. It should be noted that the 1979 and 1985 travel maps are at such a small scale that it is somewhat difficult to clearly identify the trails on the maps. Trail mileages for individual trails on these two maps were taken from the 1997 travel map tables.

The 1997 Revised Forest Plan (RFP) and the 1999 FEIS for the Open Road and Open Motorized Trail Route Density (OROMTRD) Motorized Road and Trail Travel Plan, further reduced trails designated for single track motorized use from 13 to four. Specifically, motorized use was allowed to remain on the following trails:

- Trail 122 – North Indian Creek (7.0 mi. in WSA) (entire trail is 7.9 mi. long)
- Trail 045 – South Fork Indian Creek (8.55 mi. in WSA) (entire trail is 9.3 mi. long)

- Trail 055 – Long Springs (1.06 mi. in WSA) (entire trail is 1.6 mi. long)
- Trail 061 – Driveway Canyon (1.95 mi. in WSA) (entire trail is 2.2 mi. long) (new trail name and number since it was split from Trail 055 – Long Springs)

This reduced the number of single track motorized trail miles from approximately 51.11 to **about 18.56** miles. These trails were further restricted (closed) to motorized use from September 15 to November 15 – during the major hunting season. Since the 1997 RFP and 1999 FEIS, no additional motorized trails have been closed or restricted to motorized use.

This environmental assessment, Alternative C – Proposed Action, will not further reduce miles of trails open to single track motorized use, but it will prohibit use by ATVs – since the “but not recommended for ATVs” designation will be eliminated. Only the following four trails - **approximately 18.56 miles within the WSA** - will continue to be open to single track motorized use (motorcycles) until Congress makes a designation on this area or until such time as it is determined this type of trail use is no longer “maintaining the existing wilderness character and potential for inclusion in the Wilderness System.”

- Trail 122 – North Indian Creek (7.0 mi. in WSA) (entire trail is 7.9 mi. long)
- Trail 045 – South Fork Indian Creek (8.55 mi. in WSA) (entire trail is 9.3 mi. long)
- Trail 055 – Long Springs (1.06 mi. in WSA) (entire trail is 1.6 mi. long)
- Trail 061 – Driveway Canyon (1.95 mi. in WSA) (entire trail is 2.2 mi. long - new trail name and number since it was split from Trail 055 – Long Springs)

In summary, since the 1984 Wyoming Wilderness Act designated this a Wilderness Study Area, motorized use on trails has been reduced over the past 22 years as follows:

- from approximately 26 trails to four
- from approximately 100.6 miles to 18.56
- and a seasonal trail restriction of “Closed to Motorized use from September 15 to November 15” has been put into affect.

This reduction in motorized use should continue to maintain the existing wilderness characteristics until such time as Congress makes a determination on the area’s wilderness status. (Also see Appendix F – Wilderness Attributes and Roadless Area Characteristics for the Palisades Roadless Area).

- **Recommended Wilderness – Management Prescription 1.3**

The current 1997 RFP directs that the areas “...will be managed in their present condition (including existing trail use and snowmachine use, as long as existing uses will not degrade the character of the resources) until Congress takes action on that recommendation” (see page III-78) The trail which had existing single track motorized use is as follows:

- Trail 122 – North Indian Creek (approximately 1.0 mile before it enters Wyoming and the Wilderness Study Area)

Total miles now open for single track motorized use is approximately 1.0 mile. Prior to the 1997 RFP, the 1985 Land Management Plan for this area (Palisades and Big Elk Creek Management Units) indicated that no motorized use was allowed. The short 1.0 mile segment of Trail 122 was allowed to continue since it provided access to the open motorized trail network in the adjacent Wilderness Study Area in Wyoming (see September 1985 Forest Travel Plan/Map which indicates motorcycle travel was allowed on all system trails

in the designated area – Area K). Motorcycle use was permitted on the following trails:

- Trail 120 – Spring Run (1.8 mi.)
- Trail 122 – North Indian Creek (1.0 mi.)
- Trail 123 – Blowout (2.2 mi.)

Total miles of trails open for single track motorized use in 1985 for the Recommended Wilderness was approximately 5.0 miles. This is 4.0 miles more than the current situation of 1.0 mile now allowed in the 1997 RFP. This one mile is the beginning of Trail 122 – North Indian Creek just before it enters Wyoming and is needed to access the trail system in Indian Creek located in Wyoming.

The current 1997 RFP directs that the areas “...will be managed in their present condition (including existing trail use and snowmachine use, as long as existing uses will not degrade the character of the resources) until Congress takes action on that recommendation” (see page III-78) The only trail which currently has single track motorized use in this Recommended Wilderness Management Area is:

- Trail 122 – North Indian Creek (approximately 1.0 mile before it enters Wyoming and the Wilderness Study Area)

In summary, motorized use in the now Recommended Wilderness area has gone from “all vehicles allowed” in 1979 to five miles of trails open to motorcycles in 1985 and then to one mile of trail open to motorized use in 1997 to present.

- **Inventoried Roadless Areas**

These areas are discussed in the FEIS for the 1997 Revised Forest Plan (RFP) for the Targhee National Forest (see pages III-77, Roadless Areas – Scale: Forestwide; pages IV-49 and IV-50, Roadless Areas; and pages B-1 thru B-4, Appendix B, Update to the Roadless Areas Process Paper for Wilderness Recommendation Rationale, Garns Mountain and Palisades).

1. **Garns Mountain**

In 1979, nearly all of the area was open to motorized use – including cross-country travel (see the 1979 Targhee National Forest Travel Map on file in the project record). The number of trails and trail mileages for this area has not been calculated but it would include hundreds of miles of trails.

In the 1985 Forest Plan, most of the area continued to be open to motorized use – including cross-country travel (1985 Forest Plan, pages 438 to 479 and the 9/15/85 Forest Travel Plan – all on file in the project record).

The 1997 Revised Forest Plan FEIS, Table IV-14, page IV-48 and IV-49 states that even though Garns Mountain just made the minimum rating (10) to qualify for wilderness recommendation, the determination was made to manage the area for motorized use, rather than roadless. Additional discussion is found in Appendix B - Update to the Roadless Areas Process Paper for Wilderness Recommendation Rationale, page B-1 to B-3 of the 1997 FEIS.

The 1997 RFP divided the area into various Management Prescription Areas as follows:

- 2.2 – Research Natural Areas
- 2.4 – Eligible Scenic River
- 2.5 – Eligible Recreation River
- 2.7(a) – Elk and Deer Winter Range
- 2.9.1 – South Fork Eligible Scenic River
- 5.1.3(b) – Timber Management (No Clearcutting, Urban Interface Fuels Management)

These management prescriptions allow motorized travel on system trails designated for motorized use (see Appendix A and the 1999, 2001 Forest Travel Maps on file in the project record). Cross-country motorized use is prohibited across the entire area.

## 2. Palisades

In 1979, nearly all of the area was open to motorized use – including cross-country travel (see the 1979 Targhee National Forest Travel Map on file in the project record). The number of trails and trail mileages for this area has not been calculated but it would include hundreds of miles of trails.

In the 1985 Forest Plan, the area called the Rainey Creek Management Unit (Unit A) “allowed motorcycle travel on all system trails” (page 487, 1.b). This management unit was to be “managed for moderate levels of visitor use by foot, horse, and motorcycle groups.” The Palisades Creek Management Unit (Unit B) said in part to “allow no motorized vehicles within this management unit” (page 488, g.). The Big Elk Management Unit (Unit C) said in part to “allow no motorized vehicles within this management unit except for snowmobile use in areas open to snowmobiles” (page 488, 3.b). The Indian Creek Management Unit (Unit D) said in part to “allow motorcycle use on all existing trails” (page 489, 4.b – also see the 9/15/1985 Forest Travel Plan map – specifically areas “K” and “H” – on file in the project record).

The 1997 FEIS, Table IV-14, page IV-48 and IV-49 gave Palisades the highest rating (12) to qualify for wilderness recommendation. The determination was made to manage part of the area for motorized use rather than roadless – Recommended Wilderness. Additional discussion is found in Appendix B Update to the Roadless Areas Process Paper for Wilderness Recommendation Rationale, page B-1 – B-3.

The 1997 RFP divided the areas not recommended for “Recommended Wilderness or Wilderness Study Area” (Rainey Creek Management Unit – see 1985 Forest Plan, pages 486-487) into various Management Prescription Areas as follows:

- 2.1.2 – Visual Quality Maintenance
- 2.5 – Eligible Recreation River
- 2.3 – Eligible Wild River
- 2.7(a) – Elk and Deer Winter Range
- 3.2(j) – Semi-Primitive Motorized

These management prescriptions allow motorized travel on system trails designated for motorized use (see Appendix A). Cross-country motorized use is prohibited across the entire area (see the 2001 Travel Map for the Palisades and Teton Basin Ranger Districts - on file in the project record).

In summary, motorized vehicle travel has gone from essentially all trails and areas open to motorized use in 1979 to only the Rainey Creek and Indian Creek areas open to motorized use on designated trails in 1985 and then to motorized use on designated trails (but fewer trails) in the Rainey Creek and Indian Creek areas in 1997 to the present time with cross-country motorized use prohibited throughout the entire area.

## **Plant Species Diversity**

The following descriptions summarize management direction for Threatened, Endangered and Sensitive Plants:

### **Threatened or Endangered Plant Species**

#### **Ute ladies'-tresses (*Spiranthes diluvialis*)**

Ute ladies'-tresses is a Threatened plant listed under the Endangered Species Act (ESA). This species is listed in the Quarterly Species Update, 2008-SL-0071 for the Palisades District of the Caribou-Targhee National Forest. It is not listed for any other district on the Forest.

### **Sensitive Plants**

There are nine plant species listed as Sensitive by the Regional Forester for the Targhee National Forest. Potential habitat exists within the project area for two of the sensitive plants: Sweet-flowered rock jasmine (*Androsace chamaejasme* var. *carinata*) and Payson's milkvetch (*Astragalus paysonii*); One sensitive plant, Payson's bladderpod (*Lesquerella paysonii*) is known to occur within the project area. A determination of "May impact individuals or habitat, but will not likely contribute to a trend toward Federal listing or cause a loss of viability to the population or species" was made for these three sensitive plant species. A Biological Evaluation was prepared for this project and is on file in the project record.

## **Heritage Resources**

Archaeological and ethnographic sources indicate the historic and prehistoric utilization of the Big Hole Mountains Subsection for camping, hunting, fishing, gathering, grazing, mining, harvesting timber and travelling. For the purpose of this analysis, the Caribou-Targhee National Forest's Cultural Resources Project and Site records were used to determine previous analyses, and the nature and distribution of known sites. No fieldwork was conducted specifically for this project since no specific ground disturbing schedule has been set and it is a multi-year project based on the availability of funds.

Cultural resources may be identified as those resources either directly or indirectly related to the material lifeways of a cultural group, or groups as specified by the Code of Federal Regulations (CFR), 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 State Historic Preservation Officer (SHPO).

Of the 357,779 acres within the assessment area approximately 14 percent (or 50,000 acres) of cultural site probability areas has undergone previous cultural resource surveys as part of 86 ground disturbing activities associated with timber sales, prescribed burns, range, recreation, and stream improvements, road building, and mining projects. Completed project files are located at the Caribou-Targhee National Forest Supervisor's Office.

Areas of high cultural site probability within the proposed ground disturbing areas associated with this travel plan will be surveyed and evaluated by an archaeologist, in an effort to locate and record any archaeological and/or historic properties. In the event that significant archaeological and/or historical resource sites are identified and any proposed action that will have an adverse effect on the site, mitigation measures will be implemented in consultation with the Idaho SHPO and the Shoshone-Bannock Tribes. Evidence of historic ranching and mining activities and Native American camping are present throughout the area and will need further evaluation as time and/or site specific projects dictate.

Archaeological investigations of known and as yet undiscovered cultural resources may offer insights into the historic and prehistoric land uses and settlement patterns of the area. The predicted percentage of high and low cultural site probability acres is based on topographical landforms, slope percentages, and other associated natural features. The resulting estimations are subject to change as a predictive archaeological site location model is developed and refined.

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 sites which should be included on the NRHP, or which sites should be designated as significant.

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.

# Chapter Four

## Environmental Consequences

### Introduction

This chapter describes the potential environmental and socioeconomic effects for each of the alternatives presented in Chapter Two. The information presented is based on the best scientific information available. Acknowledgment of incomplete or unavailable information, scientific uncertainty, or risk is stated if such is the case. This chapter forms the scientific and analytical basis for the comparison of alternatives presented in Appendix A – Comparison Summary of All Trails by Alternative – Big Hole Mountains Subsection Summer Transportation Travel Plan. The direct and indirect effects of each alternative are displayed in each issue section. Cumulative effects and irreversible and irretrievable effects are then discussed, each in their own section.

The types of effects analyzed are:

- **Direct Effects:** Direct effects are those that are caused by the action and occur at the same time and place. In this analysis, they are the effects to the specific Fullmer Boat Landing site proposed for redevelopment.
- **Indirect Effects:** Indirect effects are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable. This analysis defines indirect effects as those on adjacent Forest Service or BLM lands adjacent to the analysis area (fenced area known as the Fullmer Boat Landing site).
- **Cumulative Effects:** These are direct and indirect effects resulting from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time. The cumulative actions analyzed in the EA were outlined in Chapter One (Table 1.1) and are described in the cumulative effects section of this Chapter.
- **Irretrievable or Irreversible Effects:** Irretrievable effects apply to losses of production, harvest or commitment of renewable natural resources. For example, some or all of the vegetation production in an area is irretrievably lost during the time the area is used as a recreation site. If the use is changed, vegetation production can be resumed. The production loss is irretrievable but the action is not irreversible. Irreversible applies primarily to the use of nonrenewable resources, such as minerals or heritage resources, or to those factors that are renewable only over long time spans, such as soil productivity. The term irreversible also includes the loss of future management options.
- **Mitigation Measure:** For some specific issue topics, certain information is either not available or the means to obtain it are not known (e.g., trail use where trail counters are not installed). In most cases, these issue areas are not crucial to a choice among alternatives and the missing information does not relate to significant adverse effects on the human environment. In some cases, while it would be helpful to have such information, the data

are speculative, based on multiple and sometimes incompatible scientific models, and/or subject to varying interpretations. For each of these topics, the Forest has adhered to the requirements of 40 CFR 1502.22, which provides a four-step process for dealing with incomplete or unavailable information, as follows:

1. State that the information is incomplete or unavailable.
2. State how it is relevant to evaluating reasonably foreseeable significant adverse effects of the proposed action or alternatives.
3. Summarize existing credible scientific evidence that is relevant to evaluation reasonably foreseeable significant adverse effects of the proposed action or alternatives.
4. Evaluate such impacts based on theoretical approaches or research methods generally accepted in the scientific community.

Each resource identified as potentially affected by the proposed action or alternative is listed below, followed by direct and indirect effects on that resource by alternative. A section on cumulative effects follows, based on analysis of the projects listed in Chapter One (Table 1.1).

## **Issue 1 - Fisheries**

### **Direct and Indirect Effects**

#### **Indicators:**

1. The density of designated motorized routes within riparian areas of fish bearing streams.
2. ATV trail densities within the Aquatic Influence Zones (AIZ).
3. Non-motorized trail densities within the Aquatic Influence Zones (AIZ).

Of all modes of trail transportation within AIZs, motorized use has the most potential to affect aquatic habitat due to potential erosion and resultant sedimentation from mechanized, treaded tires. Of the different modes of motorized use, ATV use has the most potential to affect aquatic and riparian habitat due to relatively more surface area disturbance. To analyze the effects of each alternative upon aquatic and riparian biota (including the species described in Chapter Three) and habitat, an estimate of the total miles of motorized trails located in AIZs for each alternative was used. An estimate of trail density (miles per square mile) was also made within perennial stream AIZs for each Yellowstone cutthroat trout 6<sup>th</sup> Code HUC stronghold. AIZ trail densities were specified in motorized, ATV, and non-motorized categories.

Assumptions were made during the analysis. There was no effort to describe the proximity of the riparian trail to the stream. It was assumed most perennial streams were fish-bearing. No intermittent streams were included in the analysis, though it is recognized they have the capability to transport trail-related sediment to perennial streams.

### **Effects to Yellowstone Cutthroat Trout Stronghold Streams**

Several Yellowstone cutthroat trout stronghold streams occur in the planning area, including those in Big Elk, Little Elk, Palisades, Rainey, Pine, Burns, Wolverine, and Table Rock creeks. No significant changes are proposed for any of these watersheds except Rainey and Pine Creeks. In Rainey Creek watershed, the trail up Corral Canyon (approximately 2.8 miles)(currently designated for motorcycles) would change to a non-motorized trail under Alternative B (least impactful) and

ATV under Alternative C (most impactful). In addition, approximately 3.3 miles of motorcycle trail will be changed to a non-motorized trail along North Fork Rainey Creek under Alternative C, benefiting Yellowstone cutthroat trout. In Pine Creek Watershed, approximately 6.7 miles of trail paralleling and often crossing North Fork Pine Creek will be designated for ATVs under Alternatives B, C, and D. This has the potential to impact Yellowstone cutthroat trout in this stream, where single track use was recommended prior to this project. Along Mike Spencer Canyon, use along 2.5 miles of a loop trail will be changed from recommended motorcycle to ATV in all action alternatives, increasing the potential for impacts to Yellowstone cutthroat trout downstream in Pine Creek through increased sedimentation.

### **Alternative A – Existing Situation (No Action)**

Alternative A is the existing condition as described in the Chapter Three - Existing Conditions. The effects upon adjacent biota and their habitat associated with the trail system described in Chapter Three, would be expected to continue with the selection of this alternative. Specific motorized use would not be designated, potentially allowing ATVs on trails designated for motorcycles, resulting in an increase in trail width and associated sedimentation and impacts to riparian vegetation. The trail densities and designated uses in AIZs in this alternative are generally similar to the other action alternatives. However, Alternative A is less beneficial to aquatic biota in North Fork Rainey Creek than Alternative C because Alternative C changes approximately 3.3 miles of trail along Rainey Creek to non-motorized. Alternative A is more beneficial to Pine Creek, where all the action alternatives propose changing trails in North Fork Pine and Mike Spencer from single track to ATV. Rainey and Pine creeks are Yellowstone cutthroat trout stronghold streams.

### **Alternative B – Trail Committees'**

Under Alternative B, there would be approximately 515.5 total miles of trails in the analysis area. Approximately 218.07 miles are open to motorized use and 296.8 miles are closed to motorized use. Of the miles open to motorized use, approximately 64.9 miles would be open for ATV traffic. There are approximately 94 miles of motorized trail in AIZs. There would be a differentiation between trails designated for single-track and two-track (ATV) use, defining acceptable areas for legal ATV traffic.

One particularly helpful parameter in assessing the current condition of the Yellowstone cutthroat trout stronghold streams pertaining to trail impacts is motorized trail densities in AIZs. Trail encroachment upon streams is important to consider because it is a source of sediment and can affect the stability of fallen large woody debris. Trees that have fallen across trails are cut during trail maintenance, decreasing their stability and their potential to benefit aquatic habitat through dissipating stream energy, sorting stream gravels, and providing cover, shade, and nutrients. Motorized use is of primary concern due to the higher potential for erosion from vehicle tires. ATV traffic is more of a concern than motorcycles because of the associated larger trail widths, providing more surface area for potential erosion and resulting sedimentation. Of the Yellowstone cutthroat trout stronghold streams in the analysis area, the Table Rock/Wolverine Creeks and Burns Creek HUCs (see Table 4.1) have relatively high motorized trail densities in AIZs. While the AIZ trails in the Table Rock/Wolverine HUC are primarily designated for ATVs, the AIZ trails in the Burns HUC are primarily motorcycle. Pine and Big Elk Creeks have relatively low AIZ motorized trail densities. Palisades and Little Elk Creeks have no motorized trails within AIZs.

**Table 4.1 - Trail Densities in Aquatic Influence Zones (AIZs) for Alternative B**

Yellowstone Cutthroat Trout Stronghold HUCs	Motorized Trail Densities in AIZs (miles/square mile)	ATV Trail Densities in AIZs (miles/sq mi)	Exclusively Non-motorized Trail Densities in AIZs (miles/sq mi)
Table Rock/Wolverine	4.94	4.54	0
Burns	3.88	0.17	0
Pine	0.81	0.03	1.31
Rainey	2.49	0.43	0.61
Palisades	0	0	6.41
Little Elk	0	0	3.88
Big Elk	.09	0.06	6.11
Little Pine	2.77	0.10	0

Trail densities and use designations within AIZs are generally the same between all alternatives. However, Alternatives B, C, and D have the potential to most negatively affect Pine Creek, a Yellowstone cutthroat trout stronghold stream. Under these alternatives, trails up North Fork Pine Creek and Mike Spencer Canyon would be converted from single track to ATV, increasing the potential for sedimentation and riparian vegetation impacts.

#### **Revised Alternative C (hereafter called Alternative C)**

Under Alternative C, there would be approximately 529.3 total miles of trails in the analysis area. Approximately 213.6 miles are open to motorized use and 315.7 miles are closed to motorized use. Of the miles open to motorized use, approximately 80.75 miles would be open for ATV traffic. There are approximately 87 miles of motorized trail in AIZs. There would be a differentiation between trails designated for single-track and two-track use (ATV), defining acceptable areas for legal ATV traffic.

One particularly helpful parameter in assessing the current condition of the Yellowstone cutthroat trout stronghold streams pertaining to trail impacts is motorized trail densities in AIZs. Trail encroachment upon streams is important to consider because it is a source of sediment and can affect the stability of fallen large woody debris. Trees that have fallen across trails are cut during trail maintenance, decreasing their stability and their potential of benefiting aquatic habitat through dissipating stream energy, sorting stream gravels, and providing cover, shade, and nutrients. Within these parameters, motorized use is of primary concern due to the higher potential for erosion from their tires. ATV traffic is more of a concern than motorcycles because of the associated larger trail widths, providing more surface area for potential erosion and resulting sedimentation. Of the Yellowstone cutthroat trout stronghold streams in the analysis area, the HUCs including Table Rock/Wolverine Creeks and Burns Creek have relatively high motorized trail densities in AIZs. While the Table Rock/Burns HUC is all designated for ATVs, Burns is primarily designated for motorcycles. Pine and Big Elk Creeks HUCs have relatively low AIZ motorized trail densities in AIZs. Palisades and Little Elk Creeks have no motorized trails within AIZs.

**Table 4.2 – Trail Densities in Aquatic Influence Zones (AIZs) for Alternative C**

Yellowstone Cutthroat Trout Stronghold HUCs	Motorized Trail Densities in AIZs (miles/square mile)	ATV Trail Densities in AIZs (miles/sq mi)	Exclusively Non-motorized Trail Densities in AIZs (miles/sq mi)
Table Rock/Wolverine	5.11	5.11	0.09
Burns	3.72	0.20	0.19
Pine	0.55	0.48	1.78
Rainey	1.73	0.62	1.37
Palisades	0	0	6.41
Little Elk	0	0	3.88
Big Elk	0.06	0.06	6.11
Little Pine	2.77	0.58	0

Trail densities and use designations within AIZs are generally the same between all alternatives. However, Alternatives B, C, and D have the potential to most negatively affect Pine Creek, a Yellowstone cutthroat trout stronghold stream. Under these alternatives, trails up North Fork Pine Creek and Mike Spencer would be converted from single track to ATV, increasing the potential sedimentation and riparian vegetation impacts. Alternative C has the potential to benefit Rainey Creek (a Yellowstone cutthroat trout stream) more than the other alternatives because it would convert a trail segment that parallels North Fork Rainey Creek from motorized to non-motorized, decreasing potential erosion and sedimentation.

Alternatives C and D have the most proposed ATV trail lengths through the analysis area (upland and riparian combined). Heavily used ATV trails have the same type of impacts as roads, just often at a smaller scale. They intercept natural drainage patterns, increase the velocity and energy of drainage, and expose soil to erosion and sedimentation (Furniss et al. 1991), negatively affecting aquatic biota and their habitat.

### **Alternative D – Proposed Plus**

Under Alternative D, there would be approximately 529.6 total miles of trails in the analysis area. Approximately 237.6 miles are open to motorized use and 292.0 miles are closed to motorized use. Of the miles open to motorized use, approximately 82.35 miles would be open for ATV traffic. There are approximately 103 miles of motorized trail in AIZs. There would be a differentiation between trails designated for one-track and two-track use, defining acceptable areas for legal ATV traffic.

One particularly helpful parameter in assessing the current condition of the Yellowstone cutthroat trout stronghold streams pertaining to trail impacts is motorized trail densities in AIZs. Trail encroachment upon streams is important to consider because it is a source of sediment and can affect the stability of fallen large woody debris. Trees that have fallen across trails are cut during trail maintenance, decreasing their stability and the potential they benefit aquatic habitat through dissipating stream energy, sorting stream gravels, and providing cover, shade, and nutrients. Motorized use is of primary concern due to the higher potential for erosion from vehicle tires. ATV traffic is more of a concern than motorcycles because of the associated larger trail widths, providing more surface area for potential erosion and resulting sedimentation. Of the Yellowstone cutthroat trout stronghold streams in the analysis area, the Table Rock/Wolverine creeks and Burns Creek

HUCs have relatively high motorized trail densities. While Table Rock/Wolverine motorized riparian trail densities are primarily designated for ATV, Burns Creek motorized riparian trail densities are primarily designated single-track. Pine and Big Elk creeks have relatively low AIZ motorized trail densities in AIZs. Palisades and Little Elk creeks have no motorized trails within AIZs.

**Table 4.3 – Trail Densities in Aquatic Influence Zones (AIZs) for Alternative D**

Yellowstone Cutthroat Trout Stronghold HUCs	Motorized Trail Densities in AIZs (miles/square mile)	ATV Trail Densities in AIZs (miles/sq mi)	Exclusively Non-motorized Trail Densities in AIZs (miles/sq mi)
Table Rock/Wolverine	5.20	5.11	0
Burns	3.91	0.20	0
Pine	1.49	0.48	0.84
Rainey	2.69	0.43	0.41
Palisades	0	0	6.41
Little Elk	0	0	3.88
Big Elk	.06	0.06	6.11
Little Pine	2.77	0.58	0

Trail densities and use designations within AIZs are generally the same between all alternatives. However, Alternatives B, C, and D have the potential to most negatively affect Pine Creek, a Yellowstone cutthroat trout stronghold stream. Under these alternatives, trails up North Fork Pine Creek and Mike Spencer will be converted from single track to ATV, increasing the potential sedimentation and riparian vegetation impacts.

Alternatives C and D have the most proposed ATV trail lengths through the analysis area (upland and riparian combined). Heavily used ATV trails have the same type of impacts as roads, just often at a smaller scale. They intercept natural drainage patterns, increase the velocity and energy of drainage, and expose soil to erosion and sedimentation (Furniss et al. 1991), negatively affecting aquatic biota and their habitat.

### **Summary of Effects**

It is difficult to summarize the effects of a project this complex. Much of the riparian-related data are similar between alternatives. Some comparisons are possible. Each action alternative improves upon the existing condition because they specifically designate motorized trail lengths as designated for ATV or motorcycles. Alternative A isn't as specific, allowing ATVs to access motorized trails that may not be suitable for their use. Generally, Alternatives C and D have the highest ATV trail mileage and Alternatives B, C, and D impact Pine Creek by converting motorized single-track to ATV trails up North Fork Pine and Mike Spencer Canyon. Alternative C would benefit North Fork Rainey Creek because it would convert a trail segment from motorized to non-motorized. In summary, Alternative D has the most potential to impact riparian and aquatic habitat and species (including those described in Chapter Three), followed by Alternative B. Because of trail use conversion from motorized to non-motorized along North Fork Rainey Creek, Alternative C is the most beneficial action alternative to aquatic species and their habitat.

## **Cumulative Effects**

The cumulative effects analysis for fisheries will concentrate upon effects to Yellowstone cutthroat trout and their habitat because they are Forest Service sensitive species, are as other species in the project area, and are the dominant salmonid in most streams in the analysis area. The analysis area for discussion of fisheries cumulative effects include watersheds located in the analysis area. The cumulative effects analysis area extends downstream from the Forest where migratory life history forms of cutthroat trout spend part of their life in larger water bodies off Forest. These downstream habitat areas may include Teton River, South Fork Snake River, and Palisades Reservoir.

All project alternatives, including the No Action Alternative, are expected to result in some sediment delivery to streams in the project area due to trail use, particularly motorized trail use. The degree of sedimentation is expected to be greater where the trail systems encroach upon or cross streams and is also dependent upon degree of trail use and maintenance.

When you consider past, present, and future land management activities associated with this project area, most either directly or indirectly contribute sediment to aquatic habitat. Some past activities that contributed sediment to streams include firewood collection, road and trail use, grazing, timber sales, irrigation, post and pole cutting, cross country motorized access, aspen cutting, prescribed burns, trail construction, and trail maintenance. Wildfires have also increased sediment delivery to streams. Present land management activities in the analysis area that likely contribute sediment to streams include firewood collection, irrigation, grazing, timber harvest, road and trail use, illegal cross-country motorized travel, housing developments, and trail maintenance. Wildfires continue to contribute sediment to streams. Likely future activities in the project area that directly or indirectly contribute sediment to streams include firewood collection, grazing, timber sales, road and trail use, irrigation, harvest of posts and poles, manipulation of aspen stands, illegal cross-country motorized vehicle use, prescribed fires, trail maintenance, road maintenance, housing developments, and road reconstruction. While most of these actions do not individually contribute overwhelming amounts of sediment to streams, they collectively maintain a baseline of sediment delivery to streams within the project area that is greater than pre-management baselines. The choice of any alternative will add to the current baseline of sedimentation.

The duration of the increase in sediment delivery to streams as a result of trail use is primarily through the life of the plan, although trail-related sedimentation will continue until the eroding trail segments are revegetated. The amount of sediment actually delivered to streams is dependent upon the proximity of the trails to streams, surface material, and the weather conditions during use. 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. Generally, the wider the tracks left by motorized vehicle use on trails near streams, the more sediment delivered to streams from erosion during motorized use. The amount of sediment delivery associated with this analysis is generally low, but widespread across the analysis area, resulting in cumulative effects from any alternative. Generally, Alternatives C and D are expected to have the most direct effects so are expected to have the most cumulative effects.

## **Irretrievable and Irreversible Effects**

There are irretrievable effects upon aquatic resources associated with each alternative of this project

due to the impacts from trails that encroach upon riparian areas and streams, contributing sediment and affecting vegetation. These effects can be addressed through a change in management (obliteration of trails).

Irretrievable commitments would be where the trails exist, such as the trail prism and creek crossings (bridges). While these elements exist, there is an irretrievable commitment of some degree in the AIZs. There would be no irreversible commitments on aquatic and riparian biota and habitat as a consequence of the alternatives. If these elements were removed, riparian biota and habitat could be restored.

### **Related Documents**

See the Yellowstone Cutthroat Trout Biological Evaluation (located in the project file).

## **Issue 2 -Water Quality and Soil Erosion**

### **Direct and Indirect Effects**

#### **Indicators:**

1. Acres of disturbance returned to productivity.
2. Miles of trails returned to productivity.
3. Miles of trails constructed on erodible/unstable soils.
4. Miles of trails within the aquatic influence zone (AIZ).
5. Number of trail crossings on perennial and intermittent streams.

The effect of off-highway vehicles (OHV), also termed off-road vehicles (ORV) and all-terrain vehicles (ATV), on soil and water resources is documented in the literature. A literature search through the Rocky Mountain Library and internet resulted in about one dozen pertinent citations (see "Discussion" on page Chapter Four-28). These were reviewed and used as a basis for determining soil and water impacts from off-road two-wheeled and four-wheeled vehicles.

A wide variety of environmental and social impacts occur from vehicle use off-road. These include impacts related to soil degradation and loss, trail deterioration, vegetation alteration, water and air quality degradation, noise concerns, wildlife and fish displacement and social conflicts among different types of recreation user groups. Key findings in the literature include:

- Regardless of vehicle type, research generally shows very similar impacts, whether it be in Alaska, Nevada, Idaho or Montana. Differences in impact levels are due more to intensity of use or use characteristics, in combination with the soil type, soil moisture, geology, topography and vegetation of the area or site.
- Soil compaction, shear forces and hydraulic pumping caused by motorized vehicle tires can create ruts or troughs. Depending on available moisture, these disturbances can create mud holes on flatter terrain and intensify erosion and gullyng on steeper terrain. These processes in turn can modify hydrologic runoff patterns, intensifying bogging and erosion potentials, which can cause more rutting, bogs and gullyng, on a continuing cycle.
- Impacts on soils caused by off-road and all-terrain vehicles can reduce the surface quality of recreational trails, requiring enhanced management action to develop and maintain safe, usable trail surfaces. ATV use has been found to alter roads and trails, and to increase

erosion and sediment loading into nearby streams, which may affect soil productivity, water quality and threaten aquatic habitat.

- ATV/ORV use often conflicts with non-motorized uses, such as hiking, horseback riding, cross-country skiing and even bicycling. The numbers of motorized recreationists, and the intensity of use, also can reduce the solitude of non-motorized visitors, potentially resulting in displacement of the non-motorized users. ATVs and ORVs can also provide access to areas that were typically less accessible and more remote, potentially expanding impacts to areas previously undisturbed.

### **Analysis Methods:**

The Targhee NF Ecological Unit Inventory was used to determine erodible and unstable soils. The Forest's Geographic Information System (GIS) was used to overlay proposed trails on ecological units with erodible and unstable conditions. GIS layers of AIZ, streams, streams not supporting beneficial uses, and proposed trails were overlaid and analyzed for potential water quality and stream stability impacts using the indicators below. The National Standard for this 1:24,000 data is that 90% of the map-able features should be within 40 feet. Therefore those trails and stream locations that parallel one another may yield a higher number of crossings than what actually occurs on the ground. Therefore the crossing data numbers should be used as a relative comparison to compare alternatives rather than an actual amount. To calculate acres of disturbances associated with the various trail types it is assumed that the disturbed width of two feet for non-motorized trails and single track motorized trails and four feet for ATV trails to determine those acres.

### **Alternative A – Existing Situation (No Action)**

This alternative is based on the existing situation. It leaves the current summer transportation system in place for the Palisades and Teton Basin Ranger Districts within the Big Hole Mountains Subsection, as displayed on the 2001 Travel Map. This alternative currently has about 506.2 total miles of motorized and non-motorized trails. Of these trails, about 188.9 miles of trails are open to motorized use less than 50 inches wide but not recommended for ATVs. About 30.5 miles of trails are open to motorized use less than 50 inches wide and are currently suitable for use by ATVs. About 286.8 miles of trails are open for non-motorized use. No trails would be relocated but approximately 0.6 miles would be closed and rehabilitated due to restricted access from private property. Trail or trail segments would not be re-designated for different types of motorized vehicle use beyond what currently exists. Trail maintenance would continue to be challenging where ATV use occurs on trails that are not adequate or designed for such vehicles. Existing impacts to water and soil resources would continue, and potentially increase over time as trail conditions deteriorate through lack of proper design and/or maintenance. Although no new trails will be constructed, this alternative perpetuates the increased impacts on the soil, water, and aquatic resources because no routes will be obliterated, re-located or redesigned to improve soil and water conditions except through normal annual operation and maintenance activities as funding allows.

Alternative A would maintain the current state of condition for trails...i.e., there would be no change in current management or designation of trails for the various use categories. Currently, motorized trails are designated primarily for two vehicle classes: two-wheeled vehicles (motorcycles) and ATVs. Actual trails are sub-divided into two types: Tread width not able to accommodate vehicles over 50" wide; and tread width not suitable for ATVs and will not accommodate vehicles over 50" wide – ATV use is "not recommended". With this

“suitability/recommendation” designation, even though a trail may be designed and designated for motorcycles, ATVs are not specifically disallowed. If an ATV rider is adventurous enough, he/she can ride a “motorcycle” trail because there is currently no direction specifically banning them from doing so. Because of this, many, if not most, trails designated for motorcycle use are being encroached upon by ATVs. The trails are changing from a single-track to a two-track, and trail widths are doubling in width. The consequence of this is a more than doubling of environmental impacts. Not only are trail widths widening, but soil and water impacts are increasing exponentially as erosion, compaction, rutting, troughing and gullyng increase. The magnitude of effects varies, depending on local characteristics of the landscape including slope, aspect, soil susceptibility to erosion and compaction, and vegetation type (USFS 2003). Riparian areas are particularly vulnerable to OHV damage because of the inherently fragile nature of the areas.

There are several reasons for this exponential increase in soil and water impacts from ATVs vs. motorcycles.

- *First*, is the simple doubling of the affected area. Trail use damages soils when the type and level of use exceeds the soil’s capacity to resist impacts. Trail use damages soils directly by mechanical impact from surface traffic and indirectly by hydraulic modifications, soil transport and deposition. Typically trail degradation follows one of two pathways: surface erosion and surface failure. Either pathway can lead to significant localized impacts that can be difficult to stabilize or reverse (Meyer 2002);
- *Second*, The weight per tire is about the same between motorcycle and ATV vehicle types. However, the ATV leaves two parallel tracks, rather than a single track of a motorcycle, doubling the impacted area. Further, the impacts are very different between the two vehicle types because of the physical geometry of the two vehicles. Power, for example, is supplied only to the rear wheel of a motorcycle in most cases. The front wheel essentially “floats” while going straight and carves during a turn. The rear wheel of the motorcycle may dig somewhat, depending on the power applied, but does not usually displace and relocate large amounts soil within the trail tread. The front wheel usually does not dig or push large amounts of material, even while turning. Conversely, because of the geometry of an ATV, the front tires are continuously contacting the ground and have a tendency to “plow” as the front wheels turn from side-to-side. This “plowing” action tends to displace soil to the outer edge of the trail creating a berm. If the ATV has four-wheel drive, this plowing action can increase, because the front wheels are also churning the soil in addition to pushing it to the side of the trail. Over time, a great deal of material can be displaced from the trail tread over that of a motorcycle with the same number of passes (Lei 2004). This causes the tread to widen and deepen quicker. This wider/deeper tread has a greater potential to trap water, which can increase troughing, erosion and gullyng. Lei (2004) found that bulk density (a measure of soil compaction) increased about 18% per 100 passes by a motorcycle and about 25% from 100 passes by a vehicle;
- *Third*, trail deterioration can cause users to find alternative routes, if the trail tread becomes too difficult to use. Without stabilization, a cycle of degradation can begin that can expand to adjacent surfaces. The cycle usually begins with the widening of trail surfaces as users avoid degraded surfaces and expands to the development of multiple parallel trails (Meyer 2002). Soon a trail can become 10-20 feet wide, or wider, with associated amounts of potential soil displacement, erosion and gullyng and sediment;
- *Fourth*, is the ease of blazing a new trail by an ATV vs. a motorcycle. Because of the riding

geometry of a motorcycle, the skill level required to blaze a new trail greater than that required by an ATV. Normally (and there are exceptions), a motorcycle will “make due” with an existing trail, unless the trail becomes virtually impassable. Conversely, an ATV can relatively easily drive over small trees, bounce over rocks, and climb over downed logs and other small obstructions. When a tread becomes too rough or difficult to easily navigate, even the novice ATV rider can simply “widen” the trail. This situation occurs on many of the trails throughout the assessment area where ATVs regularly access “motorcycle” trails, and even on trails identified for ATV use. The result is an ever increasing watershed area being disturbed with resulting increases in soil disturbance, erosion and sediment in area streams;

- *Fifth*, stream crossings can directly increase the amount of sedimentation within a stream. *Brown* (1994) found that sediment is contributed to the stream by five major processes: 1) the creation of wheel ruts and concentration of surface runoff; 2) the existence of tracks and exposed surfaces; 3) the compaction and subsequent reduction in the infiltration rate of soils leading to increased surface runoff; and 4) backwash from the vehicle and undercutting of banks by bow wave action. ATVs roughly double potential sediment over that of a motorcycle in all 4 processes because of the two tracks vs. a single track.

This alternative would have the following effect on soil and water as shown by the indicators below. A comparison of alternatives can be seen on **Summary Tables 4.10 thru 4.14**.

- Acres of disturbance returned to productivity = 0.1
- Miles of trails returned to productivity = 0.6
- Miles of trails currently constructed on erodible/unstable soils = 20.5 miles
- Miles of trails within the aquatic influence zone (AIZ) = 233.7 (60.1 acres)
- Number of trail crossings on perennial streams = 638
- Number of trail crossings on intermittent streams = 459

Of the 233.7 miles within AIZ, 23.7 miles (7 acres) are adjacent to streams identified as not supporting beneficial use (IDEQ, 2005). There is a total of 1097 stream crossing (perennial and intermittent streams) and of those 11.1 percent are on streams not supporting beneficial use (IDEQ, 2005).

### **Alternative B – Trail Committees?**

This alternative makes some changes to the existing trail network, based on recommendations of the Bonneville County Trails Committee and Teton County, Idaho, Trail Advisory Group. Currently, motorized trails are designated for two-wheeled vehicles (motorcycles) and ATVs. Actual trails are sub-divided into two types: Tread width not able to accommodate vehicles over 50” wide; and tread width not suitable for ATVs and will not accommodate vehicles over 50” wide. Alternatives B, C, and D would specify which trails are open to motorcycles, and which ones are open to motorcycles and ATVs, rather than “suitability” for one vehicle class or the other.

To accommodate ATVs, designated trails would be designed, constructed or re-constructed to meet ATV standards. There would be designated trails for single-track (motorcycles) that would be closed to all other motorized use. Designated ATV trails would be 50 inches wide, whereas motorcycle trails would be about one-half as wide. This alternative would improve the soil resource by reconstructing approximately 28.2 miles of trails for ATV use. Approximately 0.6 miles of trails

would be obliterated and approximately 42.6 miles of trail would still be located on erodible or unstable landforms. To reduce impacts to these streams and help to improve overall water quality, the recommended BMP design features would be followed (see Appendix D).

Alternative B would provide the fewest trails of all the action alternatives or about 515.5 total miles of trails for motorized and non-motorized use. This is about 13.8 fewer total miles than Alternative C and about 14.1 miles fewer than Alternative D. About 64.9 miles would be open to ATVs less than 50 inches wide, corresponding to a 70% potential reduction of the current miles that “don’t disallow” ATV use<sup>1</sup>. About 153.8 miles would be open to motorcycles only (single track motorized vehicles are also allowed on ATV trails). About 296.8 miles would be open to non-motorized use or about 10.0 miles more than the existing situation. About 1.5 miles of new ATV trail would be constructed to meet ATV standards and 3.0 miles of new non-motorized trail will be constructed to standard. About 0.6 miles of trail would be obliterated.

Although a small spike in erosion and sediment is expected the first year after construction, all trails will be constructed or maintained to standards to reduce erosion and sedimentation following the recommended BMP design features (see Appendix D). No new trails would be constructed on highly erodible or highly unstable soil types. Only 0.6 miles would be decommissioned in this alternative. The following are trails that would have some type of change in this alternative.

**Table 4.4 – Trail Actions in Alternative B**

<b>Trail Number</b>	<b>Modification</b>	<b>Changes</b>	<b>Soil and Water Recommendations</b>
047 Wood Canyon Ridge-Black Grove	Reconstruct 3 mi.	Change from non-motorized to ATV use	Lower ½ mile portion needs to be re-routed
051/216 Looking Glass-Highway 31 (Driveway)	Reconstruct 6.7 mi.	Change from Single Track motorized to ATV use	Re-route location needs to be looked at by soils and engineering for slope stability. New location needs to be reviewed
FR253-Black Grove Cutoff (Driveway)	Reconstruct 1.0 mile	Change from non-motorized to ATV use	See 051/216 above
060 (Teton) Carlton Cutoff(District Boundary-Grandview)	Convert 6.0 mi. of the 12.4 mi. of single track motorized to non-motorized	No construction	Provide erosion control
066 Garns Mountain (Teton)	Allow 1.5 mi. of single track motorized to be ATV	Requires 1.5 mi. of reconstructed trail	Design erosion control into reconstruction
074 Black Canyon	Reconstruct 5.2 mi.	Change from Single	Upper portion of trail would

<sup>1</sup> Percent ATV reduction was calculated using 215.5 miles (30.3+185.2) no restricting ATV use in alternative A and the reduction of ATV miles between A & B is 150.8 miles (215.5-64.7) representing a 70% potential ATV mileage use.

		Track motorized to ATV use	have to be widened. Not recommended
076 (Teton) Corral Creek	Convert 2.5 mi. of non-motorized trail to Single Track motorized	No reconstruction needed	Drainage and erosion control as needed
077 Thousand Springs	Reconstruct 1.5 mi.	Change from ATV (3 miles) and Single Track motorized (1.5 miles) to all ATV use (4.5 miles)	No specific S&W concerns. Design erosion control and drainage into trail construction.
086 Corral Canyon	Convert 2.8 mi. of Single Track motorized to non-motorized	No construction.	Provide adequate closure.
087 Burnt Canyon/Dry Fork	Reconstruct 2.5 mi.	Change from Single Track motorized to ATV use	No specific S&W concerns. Design erosion control
139 Morning Glory Mine	Reconstruct 2.0 mi.	Change from Single Track motorized to ATV use	Middle part of trail needs to be relocated and put on proper grade.
201 Mike Spencer Loop	Convert 2.5 mi. of Single Track motorized to ATV	No construction	No specific S&W concerns.
216 Lower N.Fk. Pine Cr.	Reconstruct 2.0 mi.	Change from Single Track motorized to ATV use	See 051/216 above.
216 Elk Flat Fork	Reconstruct 2.8 mi. to allow ATV	Change from Single Track motorized to ATV use	Provide erosion control.
NT1 Pine Creek Pass	Construct 2.0 mi.	Designate as non-motorized.	S&W concerns about proximity of perennial water. Caution needs to be taken not to increase sediment.
NT2 Black Grove Cutoff (Teton)	Existing non-designated trail 1.0 mi.	Designate for ATV use 1.0 mi.	Ensure proper drainage of trail tread
NT3 Wolverine Creek to Big Burns	Existing non-designated trail 5.0 mi.	Designate as Single Track motorized 5.0 mi.	Two spots need to be relocated.
NT4 Kelly Canyon	Construct 1.0 mi.	Designate as non-motorized	No specific S&W concerns
NT5 Hinckley Creek/Argument Ridge to Moody	.5 miles existing YLC and construct 1.0 mi.	Designate as ATV use all 1.5 mi.	No specific S&W concerns

Meadows			
NT6 Kelly Canyon Area	Designate 0.2 mi. as non-motorized	No construction as it currently exists	No specific S&W concerns.

The magnitude of effects varies depending on local characteristics of the landscape including slope, aspect, soil susceptibility to erosion, and vegetation type. Riparian areas are particularly vulnerable to OHV damage. This alternative would have less potential soil and water effects than Alternative A. This is primarily due to the shifting of ATVs onto fewer miles of trails (potentially 70% fewer available ATV miles) that are designed or intended for that vehicle class. About 28.2 miles of trails would be reconstructed to better support these vehicles. Not only are these trails designed to support these vehicles, but they are easier to maintain. This would reduce overall rutting and troughing potentials, substantially reducing erosion and sediment potentials over the current situation in some locations. The designation change for motorcycles from 2-wheel motorized (tread width not suitable for ATVs) to single track motorized will substantially help overall watershed and soil conditions on those trails so designated. Currently, ATVs are encroaching on and expanding single track motorized trails throughout the planning area since they are not specifically prohibited from being on them. The result is a more than doubling of the environmental impacts on those trails. Restricting ATVs to specific trails intended and designed for that use will substantially curtail growing impacts from that source.

Existing trails influencing the State of Idaho's streams not supporting beneficial use are shown by watershed in Table 3.6 and new proposed trails are shown in Table 4.5. To reduce impacts to these streams and to help improve overall water quality, the recommended BMP design features in Appendix D should be followed. The State recognizes BMPs as an effective process for protecting beneficial uses and ambient water quality and is consistent with the State's anti-degradation policy and Forest Service Policy to maintain or improve water quality (RFP and FSM 2500<sup>2</sup> (2520.3)).

**Table 4.5 - New Proposed Trails within the Aquatic Influence Zone that Influence Streams that are not Supporting Beneficial Use (IDEQ, 2005).**

Watershed (HUC 5)		Trail Numbers
Number	Name	
1704010401	Burns Canyon	NT3 Wolverine Creek to Big Burns (Existing trail not on the system which would be put on the system and reconstructed improving existing soil and water conditions.)
1704020105	Kelly Spring	NT4 Kelly Canyon (This is a proposed non-motorized cross-country ski trail that would be constructed within a dry drainage and not have detectable impacts to soil and water.)

All proposed trail re-routes and re-locations would be reviewed by a hydrologist and/or soil scientist prior to construction. An engineer may also be required to ensure proper trail design.

This alternative would have the following effect on soil and water as shown by the indicators below.

<sup>2</sup> Section 2520.3: "Apply management practices that meet requirements for protecting, maintaining, restoring, or improving watershed conditions."

A comparison of alternatives can be seen in **Summary Tables 4.10 thru 4.14.**

- Acres of disturbance returned to productivity = 0.1 acres
- Miles of trails returned to productivity = 0.6 miles
- Additional miles of trails constructed on erodible/unstable soils = 0
- Miles of trails within the aquatic influence zone (AIZ) = 233.0 (64 acres)
- Number of trail crossings on perennial streams = 629
- Number of trail crossings on intermittent streams = 465

Of the 233.0 miles within AIZs, 24.3 miles (7.5 acres) are adjacent to streams identified as not supporting beneficial use (IDEQ, 2005). There is a total of 1094 stream crossings (perennial and intermittent streams), 4 less than alternative A. Of those 11.6 percent are on streams not supporting beneficial use (IDEQ, 2005).

### **Revised Alternative C (hereafter called Alternative C)**

This alternative is based on recommendations of the Caribou-Targhee National Forest, Palisades and Teton Basin Ranger Districts. It incorporates most of the recommendations of Alternative B, except that some trails or segments of trails are proposed for a different vehicle class designation or trail use than proposed in Alternative B and includes new proposed trails on Palisades and Teton Basin Ranger Districts.

Alternative C would provide a total of 529.3 miles of trails for motorized and non-motorized uses, about 24.5 miles more than Alternative A and about 13.8 more than Alternative B. It would provide about 80.75 miles open to ATVs less than 50 inches wide, about 50.25 miles more than Alternative A (trails designed and constructed for ATVs). Trails open to single track motorized vehicles would be about 132.85 miles (single track motorized vehicles are also allowed on ATV trails). About 315.7 miles would be open to non-motorized use, about 28.9 miles more than Alternative A and about 18.9 miles more than Alternative B. Approximately 27.0 miles of trails would be reconstructed to meet ATV standards and about 3.25 miles would be re-routed. New trails would be constructed including about 1.55 miles for ATVs and about 10.8 miles for non-motorized use.

Although a small spike in erosion and sediment is expected the first year after construction, all trails will be constructed or maintained to standards to reduce erosion and sedimentation. About 7.7 miles of existing trails would be decommissioned and rehabilitated. This alternative restores about 4.03 acres of land to productivity from trail rehabilitation. No new trails would be constructed on highly erodible or highly unstable soil types. The following are those trails that would be modified.

**Table 4.6 – Trail Actions in Alternative C**

<b>Trail Number (Old Numbers)</b>	<b>Modification</b>	<b>Comments</b>	<b>Soil and Water Recommendations</b>
030 Government Pack Trail B	Remove/rehab 1.0 mi.	Remove from system	Needed to protect 303(d) stream. Three crossings remain to be bridged. (Palisades). Teton Basin section recommend it be eliminated and

			rehabilitated.
047 Wood Canyon Ridge-Black Grove	Reconstruct 3.0 mi.	Change from non-motorized to ATV	Same as Alt B
051/216 Looking Glass-Highway 31 (Driveway)	Reconstruct 6.7 mi.	Change from Single Track motorized to ATV	Same as Alt B
051 FR253-Black Grove Cutoff (Driveway)	Reconstruct 2.2 mi.	Change from non-motorized to ATV use	Same as Alt B
052 Smith Canyon (Teton)	Remove and rehabilitate 1.0 mi.	Remove from system	Provide drainage and erosion control.
056 South Horseshoe	Add/re-route last 0.75 mi. at head of canyon, remove 0.3 mi. and rehabilitate	Keep as Single Track motorized	Review as suggested by District
057 North Mahogany	Add/reroute 1.0 mi. and remove/rehab. 0.5 mi.	Keep as Single Track motorized	Review as suggested by District
060 Carlton Cutoff (Moody Swamp-District Boundary)	Reconstruct 0.25 mi.	Change from Single Track motorized to ATV	Relocate first ¼ mi. and properly drain.
060 (Teton) Carlton Cutoff(District Boundary-Grandview)	Reconstruct 3.0 mi. of Single Track motorized and remove/rehab 4.6 mi. of Single Track motorized	Change 2.4 mi. from Single Track motorized to ATV and remove/obliterate 4.6 mi. Single Track motorized	From Teton Basin District boundary to FS663, trail needs to be reconstructed and most of it re-routed.
061 Calamity	Reconstruct 1.0 mi.	Change 1 mi. from Single Track motorized to ATV and keep 3.4 mi. as Single Track motorized	ATV section needs minimal trail work and one crossing improved. Single Track portion needs ½ mi. re-route and continue with re-route as planned by District.
062 Relay Station	Reconstruct 1.5 mi.	Change 1.5 mi. from Single Track motorized to ATV and keep 2.4 mi. as Single Track motorized	ATV section needs to be completely rerouted and re-built. Single Track portion needs minor re-routing & drainage.
064 (Teton) North Fork Canyon Creek	Reconstruct 1.0 mi.	Change 1.0 mi. from Single Track motorized to ATV and keep 5.0 mi. as Single Track motorized	ATV portion needs to be rebuilt. Single Track portion needs drain work.

072 Grove Creek	Re-route 1.5 mi.		Re-route as suggested by District. Will require some new construction. (1-2 mi.) Route to be reviewed by S&W.
073 Little Burns-Black Canyon	Change 0.8 mi. of Single Track motorized to non-motorized		Use appropriate closure.
074 Black Canyon	Reconstruct 2.5 mi.	Change 2.5 mi. from Single Track motorized to ATV and keep 2.7 mi. as Single Track motorized	Relocate the trail or provide improve crossing because of extremely steep approach on either side of the crossing.
075 (Teton) Liars Pass	Change 5.0 mi. of Single Track motorized to 5.0 mi. of non-motorized	To non-motorized and leave 1.4 miles STM (include in Trail 079)	No specific soil and water concerns.
077 Thousand Springs	Reconstruct 1.5 mi.	Change 1.5 mi. from Single Track motorized to ATV	No specific S&W concerns
086 Corral Canyon	Change 2.8 mi. of Single Track motorized to ATV		No soil and water concerns. Provide for drainage and erosion control.
089 North Fork Rainey Creek	Change 3.3 mi. of Single Track motorized to non-motorized	Reduction in Single Track motorized by 3.3 miles	No soil and water concerns.
108 Middle Twin	Remove/Rehab 0.3 mi.	Remove from system	Remove from system/proper closure
121 Prospect Peak/Red Butte	Change 1.2 mi. of Single Track motorized to ATV and keep 0.4 mi. Single Track motorized	No Construction	No soil and water concerns. Provide for drainage and erosion control.
139 Morning Glory Mine	Reconstruct 2.0 mi.	Change from Single Track motorized to ATV	Middle section needs to be relocated and drained.
195 Nickerson Grove	Change 3.4 mi. of Single Track motorized to 3.4 mi. of ATV trail	No construction.	Provide for drainage and erosion control.
201 Mike Spencer Loop	Same as Alt. B	Same as Alt. B	Same as Alt. B
211 Henderson Cutoff	Reconstruct 0.8 mi.	Change from Single Track motorized to ATV	OK as proposed by District
212 Packsaddle Lake	Reconstruct 0.8 mi. and construct 0.1 mi.	Change from Single Track motorized to	Develop a parking area away from Packsaddle

		ATV	Lake
216 Lower North Fork Pine Creek	Change 2.0 mi. Single Track motorized to non-motorized	Designate non-motorized	None
216 Elk Flat Fork	Reconstruct 2.8 miles	Change from Single Track motorized to ATV	See 051/216 above
NT1 Pine Creek Pass	Construct 2.0 mi. for non-motorized use	Designate non-motorized	S&W concerns about proximity of perennial water. Caution needs to be taken not to increase sediment.
NT2 (Teton) Black Grove Cutoff	Same as Alt B	Same as Alt. B	Same as Alt. B
NT3 Wolverine Creek to Big Burns	Existing but not shown on map	Show on map as non-motorized	
NT4 Kelly Canyon	Construct 1.0 mi.	Designate non-motorized	No specific S&W concerns
NT5 Hinckley Creek/Argument Ridge to Moody Meadows	1.5 mi. new construction	Designate as ATV use	No specific S&W concerns
NT6 Kelly Canyon Area	Same as Alt. B	Same as Alt B.	Same as Alt. B.
DP1 Red Butte	Existing ATV trail but not shown on map	No construction – but show on map	Provide for drainage and erosion control.
DP2 Black Grove-Blanchard Ridge	Will be dropped from the Alternative	Will not be constructed	NA
DP3 Wolverine-Hawley Gulch	Existing ATV trail but not shown on map	No construction needed but show on map	Provide for drainage and erosion control.
DP4 Palisades-Rainey Creek	Construct 5.0 mi.	Designate non-motorized	Crosses several drainages. Need to involve S&W for location and drainage crossings.
DP5 Extension Rainey Creek #114	Construct 2.8 mi.	Designate non-motorized	Crosses several drainages. Need to involve S&W for location and drainage crossings.
DP6 Windy Ridge Connector	Existing ATV trail but not shown on map	No construction needed but show on	Provide for drainage and erosion control

		map	
NBT1 Bovine Bliss	Existing non-motorized trails but not shown on map	No construction needed but show on map	No soil and water concerns.
NBT2 Channel Lock	Existing non-motorized trails but not shown on map	No construction needed but show on map	No soil and water concerns.
NBT3 Sod Buster	Existing non-motorized trails but not shown on map	No construction needed but show on map	No soil and water concerns.
NBT4 Sharks Belly	Existing non-motorized trails but not shown on map	No construction needed but show on map	No soil and water concerns.
NBT5 Burgh Bumper & Cody's Loop	Existing non-motorized trails but not shown on map	No construction needed but show on map	No soil and water concerns.
NBT6 South Bound	Existing non-motorized trails but not shown on map	No construction needed but show on map	No soil and water concerns.
031/321 (BPA power line)	1.4 mi. existing YLC and construct 0.25 mi.	Designate for ATV use	Ok as proposed by District

This alternative would reduce impacts over those identified in Alternative A, and would be about the same overall as Alternative B. The total mileage of trails would increase over Alternative B, but the mix is different. Trails identified for ATVs are more than Alternative B (15.85 miles), but these trails would be reconstructed or constructed for ATV use. This would concentrate potential impacts on those trails that are designed and maintained for ATV use. It would also substantially reduce the increasing impacts to existing Single Track routes, where ATVs are encroaching throughout the planning area. About 2 miles of trails in a stream bottom would be decommissioned, substantially reducing sediment potentials over Alternatives A and B.

Trails influencing the State of Idaho's streams not supporting beneficial use are shown by watershed in Table 3.6 for existing conditions and Table 4.7 for the proposed trails. To reduce impacts to these streams and help to improve overall water quality the recommended BMP design features (see Appendix D) should be followed for reconstruction and construction actions. The State recognizes BMPs as an effective process for protecting beneficial uses and ambient water quality and is consistent with the State's anti-degradation policy and Forest Service Policy to maintain or improve water quality (RFP and FSM 2500<sup>3</sup> (2520.3)). Also refer to Chapter Three for specific trail conditions related to soil and water impacts.

<sup>3</sup> Section 2520.3: "Apply management practices that meet requirements for protecting, maintaining, restoring, or improving watershed conditions."

**Table 4.7 - New Proposed Trails within the Aquatic Influence Zone that Influence Streams that are not Supporting Beneficial Use (IDEQ, 2005). These trails are to be added in Alternative C.**

Watershed (HUC 5)		Trail Numbers
Number	Name	
1704010401	Burns Canyon	<b>DP3 - Wolverine-Hawley Gulch</b> (Existing trail missed during the inventory process which would have same effect as existing condition)
		<b>NT3 - Wolverine Creek to Big Burns</b> (Existing trail not on the system which would be put on the system and reconstructed improving existing soil and water conditions.)
1704020105	Kelly Spring	<b>NT4 - Kelly Canyon</b> (This is a proposed non-motorized cross-country ski trail that would be constructed within a dry drainage and not have detectable impacts to soil and water.)
1704020408	Leigh	<b>NBT6 - South Bound</b> (Existing trail missed during the inventory process which would have same effect as existing condition)

All proposed trail re-routes and relocations would be reviewed by a hydrologist and or soil scientist prior to construction. An engineer may also be required to ensure proper trail design.

This alternative would have the following effects on soil and water as shown by the indicators below. A comparison of alternatives can be seen on **Summary Tables 4.10 thru 4.14**.

- Acres of disturbance returned to productivity = 3.7 acres
- Miles of trails returned to productivity = 7.7 miles
- Additional miles of trails constructed on erodible/unstable soils = 0
- Miles of trails within the aquatic influence zone (AIZ) = 234.2 (64.9 acres)  
(Removing 1.2 miles in the AIZ)
- Number of trail crossings on perennial streams = 621
- Number of trail crossings on intermittent streams = 470

Of the 234.2 miles within AIZ, 24.4 miles (7.8 acres) are adjacent to stream identified as not supporting beneficial use (IDEQ, 2005). There is a total of 1,091 stream crossings (perennial and intermittent streams), 6 less than Alternative A and 2 less than Alternative B. Of those, 11.7 percent are on streams not supporting beneficial use (IDEQ, 2005).

### **Alternative D – Proposed Plus**

This alternative incorporates recommendations received from the public during the scoping process. It incorporates most of the recommendations pertaining to trail systems from Alternative B and Alternative C. This alternative increases ATV trail miles by approximately 51.85 (trails designed and constructed for ATVs) over the existing condition. It decreases single-track motorized travel by approximately 32.25 miles (but single track motorized vehicles are also allowed on ATV trails).

Non-motorized trails would increase by about 5.2 miles. Approximately 35.9 miles would be reconstructed to meet ATV standards. New construction would add approximately 1.55 miles of ATV trails and 10.8 miles of new non-motorized trails. About 3.25 miles of trails will be re-routed and 6.4 miles of trails will be decommissioned and rehabilitated.

This alternative has the most trail construction and reconstruction of all the alternatives creating approximately an additional 6.8 acres of disturbance over Alternative A. Alternative D would provide a total of 529.6 miles of trails for motorized and non-motorized uses, about 24.8 miles more than Alternative A. It would provide about 82.35 miles open to ATVs less than 50 inches wide. Trails open to single track motorized vehicles would be about 155.25 miles (single track motorized vehicles are also allowed on ATV trails). About 292.0 miles would be open to non-motorized uses.

Although a small spike in erosion and sediment is expected the first year after construction, all trails will be constructed or maintained to standards to reduce erosion and sedimentation. This alternative restores about 2.8 acres of land to productivity by obliterating 6.4 miles of trails. No new trails would be constructed on highly erodible or highly unstable soil types. The following are those trails that would be modified.

**Table 4.8 – Trail Actions in Alternative D.**

<b>Trail Number</b>	<b>Modification</b>	<b>Comments</b>	<b>Soil and Water Recommendations</b>
014 Allen Canyon-Black Canyon	Same as Alt C	Same as Alt C	Same as Alt C
047 Wood Canyon Ridge-Black Grove	Same as Alt B and C	Same as Alt B & C	Same as Alt B & C
051/216 Looking Glass-Highway 31 (Driveway)	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C
051 FR253-Black Grove Cutoff (Driveway)	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C
052 (Teton) Smith Canyon	Same as Alt C	Same as Alt C	Provide erosion control
056 South Horseshoe	Same as Alt C	Same as Alt C	Same as Alt C
057 North Mahogany	Same as Alt C	Same as Alt C	Same as Alt C
060 Carlton Cutoff (Moody Swamp-District Boundary)	Same as Alt C	Same as Alt C	Same as Alt C
060 (Teton) Carlton Cutoff(District Boundary-Grandview)	Same as Alt C	Same as Alt C	From Teton Basin District boundary to FS663, trail needs to be re-constructed and most of it re-routed.
061 Calamity	Same as Alt C	Same as Alt C	Same as Alt C
062 Relay Station	Same as Alt C	Same as Alt C	Same as Alt C
064 (Teton) North	Same as Alt C	Same as Alt C	Same as Alt C

Fork Canyon Creek			
065 Spencer Mountain	Same as Alt A	Same as Alt A	Same as Alt A
066 (Teton) Garns Mountain	Same as Alt B	Same as Alt B	Same as Alt B
069 Trail Canyon	Change 2.2 mi. non-motorized to 2.2 mi. Single Track motorized	Change from non-motorized to single track motorized	Provide erosion control
072 Grove Creek	Same as Alt C	Same as Alt C	Same as Alt C
074 Black Canyon	Same as Alt B	Same as Alt B	Same as Alt B
075 (Teton) Liars Pass	Same as Alt A & B	Same as Alt A & B	Same as Alt A & B
076 (Teton) Corral Creek.	Same as Alt B	Same as Alt B	Same as Alt B
077 Thousand Springs	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C
078 West Pine	Convert 7.2 mi. of non-motorized to 7.2 mi. Single Track motorized		Provide erosion control
086 Corral Canyon	Same as Alt A	Same as Alt A	Same as Alt A
087 Burnt Canyon-Dry Fork	Same as Alt B	Same as Alt B	Same as Alt B
089 North Fork Rainey	Same as Alt A and B	Same as Alt A & B	Same as Alt A & B
108 Middle Twin	Same as Alt A & B	Same as Alt A & B	Same as Alt A & B
121 Prospect Peak-Red Butte	Same as Alt C	Same as Alt C	Same as Alt C
139 Morning Glory Mine	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C
195 Nickerson Grove	Same as Alt C	Same as Alt C	Same as Alt C
201 Mike Spencer Loop	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C
211 Henderson Cutoff	Same as Alt C	Same as Alt C	Same as Alt C
212 Packsaddle Lake	Same as Alt C	Same as Alt C	Same as Alt C
215 Little Pine	Convert 1.2 mi. of non-motorized to 1.2 mi. Single Track motorized		Provide erosion control.
216 Lower North Fork Pine Creek	Same as Alt A	Same as Alt A	Same as Alt A
216 Elk Flat Fork	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C
NT1 Pine Creek Pass	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C
NT2 (Teton) Black	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C

Grove Cutoff			
NT3 Wolverine Creek to Big Burns	Same as Alt B	Same Alt B	Same as Alt B
NT4 Kelly Canyon	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C
NT5 Hinckley Creek-Argument Ridge to Moody Meadows	Same as Alt C	Same as Alt C	Same as Alt C
NT6 Kelly Canyon Area	Same as Alt B & C	Same as Alt B & C	Same as Alt B & C
DP1 Red Butte	Same as Alt C	Same as Alt C	Same as Alt C
DP2 Black Grove-Blanchard Ridge	Same as Alt C	Same as Alt C	Same as Alt C
DP3 Wolverine-Hawley Gulch	Same as Alt C	Same as Alt C	Same as Alt C
DP4 Palisades-Rainey Creek	Same as Alt C	Same as Alt C	Same as Alt C
DP5 Extension Rainey Creek Bench #114	Same as Alt C	Same as Alt C	Same as Alt C
DP6 Windy Ridge Connector	Same as Alt C	Same as Alt C	Same as Alt C
NBT1 Bovine Bliss	Same as Alt C	Same as Alt C	Same as Alt C
NBT2 Channel Lock	Same as Alt C	Same as Alt C	Same as Alt C
NBT3 Sod Buster	Same as Alt C	Same as Alt C	Same as Alt C
NBT4 Sharks Belly	Same as Alt C	Same as Alt C	Same as Alt C
NBT5 Bird Bumper	Same as Alt C	Same as Alt C	Same as Alt C
NBT6 South Bound	Same as Alt C	Same as Alt C	Same as Alt C
031/321 BPA Line	Same as Alt C	Same as Alt C	Same as Alt C

Trails influencing the State of Idaho's streams not supporting beneficial use are shown by watershed in Table 3.6 for existing conditions and Table 4.9 for the proposed trails. To reduce impacts to these streams and help to improve overall water quality, the recommended BMP design features (see Appendix D) should be followed. The State recognizes BMPs as an effective process for protecting beneficial uses and ambient water quality and is consistent with the State's anti-degradation policy and Forest Service Policy to maintain or improve water quality (RFP and FSM 2500<sup>4</sup> (2520.3)). Also refer to Chapter Three for specific trail conditions related to soil and water impacts.

<sup>4</sup> Section 2520.3: "Apply management practices that meet requirements for protecting, maintaining, restoring, or improving watershed conditions."

**Table 4.9 - New Proposed Trails within the Aquatic Influence Zones that Influence Streams that are not Supporting Beneficial Use (IDEQ, 2005). These trails are to be added in Alternative D.**

Watershed (HUC 5)		Trial Numbers
Number	Name	
1704010401	Burns Canyon	<b>DP3 - Wolverine-Hawley Gulch</b> (Existing trail missed during the inventory process which would have same effect as existing condition)
1704010401	Burns Canyon	<b>NT3 - Wolverine Creek to Big Burns</b> (Existing trail not on the system which would be put on the system and reconstructed improving existing soil and water conditions.)
1704020105	Kelly Spring	<b>NT4 - Kelly Canyon</b> (This is a proposed non-motorized cross-country ski trail that would be constructed within a dry drainage and not have detectable impacts to soil and water.)
1704020408	Leigh	<b>NBT6 - South Bound</b> (Existing trail missed during the inventory process which would have same effect as existing condition)

All proposed trail re-routes and relocations would be reviewed by a hydrologist and or soil scientist prior to construction. An engineer may also be required to ensure proper trail design.

This alternative would have the following effect on soil and water as shown by the indicators below. A comparison of alternatives can be seen on **Summary Tables 4.10 thru 4.14**.

- Acres of disturbance returned to productivity = 2.8 acres
- Miles of trails returned to productivity = 6.4 miles
- Additional miles of trails constructed on erodible/unstable soils = 0
- Miles of trails within the aquatic influence zone (AIZ) = 237.0 (65.6 acres)  
(Removing 0.1 miles in the AIZ)
- Number of trail crossings on perennial streams = 634
- Number of trail crossings on intermittent streams = 481

Of the 234.2 miles within AIZ, 24.4 miles (7.8 acres) are adjacent to streams identified as not supporting beneficial use (IDEQ, 2005). There is a total of 1,115 stream crossings (perennial and intermittent streams), 18 more than Alternative A, 21 more than Alternative B, and 24 more than Alternative C. Of those, 11.5 percent are on streams not supporting beneficial use (IDEQ, 2005).

**Summary Table 4.10 - Types of Trails by Alternative and the Associated Disturbed Acres.**

Trail Type	Alternative A	Alternative B	Alternative C	Alternative D
Miles open to motorized use less than 50" but suitable for ATVs	30.5 (14.7 acres)	64.9 (31.4 acres)	77.75 (37.7 acres)	86.05 (41.7 acres)
Miles open to Single Track (motorcycles)	188.9 (44.9-89.8 acres) ATVs are not prohibited. Acres could double to 92.4 acres.	160.9 (39.0 acres)	135.85 (32.9 acres)	159.65 (38.7 acres)
Miles open to non-motorized use	286.8 (47.8 acres)	291.1 (48.5 acres)	320.3 (53.4 acres)	291.0 (48.8 acres)
<b>Total trail miles</b>	<b>506.2</b> <b>(107.4 – 152.3 acres)</b>	<b>516.9</b> <b>(118.4 acres)</b>	<b>533.9</b> <b>(129.2 acres)</b>	<b>536.7</b> <b>(129.9 acres)</b>

**Summary Table 4.11 - Miles and Acres of Trail Construction, Reconstruction, and Decommissioning by Alternative**

Trail Type	Alternative A	Alternative B	Alternative C	Alternative D
Miles reconstructed to meet ATV standards.	0	28.2 (13.7 acres)	27.6 (13.4 acres)	35.0 (17.0 acres)
Miles reconstructed to Single Track motorized standard	0	0	0	0
Miles constructed to meet ATV standards.	0	1.0 (0.5 acres)	1.55 (0.72 acres)	3.05 (1.4 acres)
Miles of Single Track constructed	0	0	0	0
Miles of non-motorized trails constructed	0	3.0 (1.1 acres)	10.8 (3.9 acres)	10.8 (3.9 acres)
Miles of trails decommissioned	0.6	0.6	7.7	6.4

**Summary Table 4.12 - Trail Miles and Acres within AIZs by Alternative<sup>5</sup>**

Trail Type	Alternative A		Alternative B		Alternative C		Alternative D	
	Miles	Acres	Miles	Acres	Miles	Acres	Miles	Acres
ATV	14.4	7.0	30.9	15.0	33.4	16.2	33.6	16.3

<sup>5</sup> Acres associated with type of trail are calculated using a disturbed width of 2 feet for mechanical and single track and 4 ft for atv trails.

Non-Motorized	117.5	28.5	116.0	28.1	129.4	31.4	111.9	27.1
Single Track Motorized	101.9	24.7- 49.4 <sup>6</sup>	86.1	20.9	71.4	17.3	91.4	22.2
Removed					1.2		0.1	
<b>Alternative Totals</b>	<b>233.7</b>	<b>60.1- 84.8</b>	<b>233.0</b>	<b>64.0</b>	<b>234.2</b>	<b>64.9</b>	<b>237.0</b>	<b>65.6</b>

**Summary Table 4.13 - Summary of Trail Miles and Acres within AIZs Associated Adjacent to Streams not Supporting Beneficial Use<sup>7</sup>**

Trail Type	Alternative A		Alternative B		Alternative C		Alternative D	
	Miles	Acres	Miles	Acres	Miles	Acres	Miles	Acres
ATV	5.3	2.6	6.7	3.2	7.8	3.8	8.3	4.0
Non-Motorized	7.7	1.9	7.8	1.9	8.3	2.0	7.8	1.9
Single Track Motorized	10.7	2.6- 5.2 <sup>8</sup>	9.7	2.4	8.3	2.0	8.3	2.0
Remove					0.1		0.1	
<b>Alternative Totals</b>	<b>23.7</b>	<b>7.0-9.6</b>	<b>24.3</b>	<b>7.5</b>	<b>24.4</b>	<b>7.8</b>	<b>24.4</b>	<b>8.0</b>

**Summary Table 4.14 - Number of Stream Crossings by Alternative.** Numbers in parentheses represent percent of crossings associated with Streams Not Supporting Beneficial Use<sup>9</sup>.

Stream Class	Alternative A	Alternative B	Alternative C	Alternative D
Intermittent	459	465	470	481
Perennial	638	629	621	634
<b>Total</b>	<b>1097 (11.1%)</b>	<b>1094 (11.6%)</b>	<b>1091 (11.7%)</b>	<b>1115 (11.5%)</b>

## **Cumulative Effects**

### **Water Quality and Soil Erosion**

Past, present and reasonably foreseeable future actions in the project area include livestock grazing, prescribed fire treatments, dispersed camping, mining activities, and timber harvest. These actions

<sup>6</sup> With this “suitability/recommendation” designation, even though a trail may be designed and designated for motorcycles, ATVs are not specifically disallowed because there is currently no direction specifically banning them from doing so. Therefore the acres impacted could double and a range is shown.

<sup>7</sup> This refers to DEQ determination of streams Non-Supporting Beneficial Use which only a portion of these streams are on the 303(d) list (IDEQ 2006 & IDEQ 2005).

<sup>8</sup> With this “suitability/recommendation” designation, even though a trail may be designed and designated for motorcycles, ATVs are not specifically disallowed because there is currently no direction specifically banning them from doing so. Therefore the acres impacted could double and a range is shown.

<sup>9</sup> This refers to DEQ determination of streams Non-Supporting Beneficial Use which only a portion of these streams are on the 303(d) list (IDEQ 2006 & IDEQ 2005). The National Standard for this 1:24,000 data is that 90% of the map-able features should be within 40 feet. Therefore those trails and stream locations that parallel one another may yield a higher number of crossing than what actually occurs on the ground. Therefore the crossing data numbers should be used as a relative comparison to compare alternatives rather than an actual amount.

generally result in small, scattered areas of increased compaction and potential for soil erosion and water quality impacts. Disturbances that are not planned for but are likely to occur in the project area are use of non-system roads and user-created trails, firewood collection and recreation activities.

The effects of the proposed project on the soil and water resources, combined with the effects of the cumulative actions identified, would be limited to areas taken out of production from new trail construction and potential for erosion for action alternatives. The short sediment production and water quality impact would be greatly offset by the long-term benefits of the projects. Project BMPs would minimize much of the short-term sediment/water quality impacts for proposed action and BMPs used with other cumulative effect activities.

**Alternative A** is the No Action Alternative that includes approximately 107 acres or 431.6 miles dedicated to system trails. Although no cumulative effects should be expected from this alternative because no action will be taken, allowing ATVs to pioneer new trails on single-track trails will cause soil disturbance to double affecting approximately 45 additional acres. This then has the potential to double disturbed acres falling within the AIZ causing a disturbance increase of 24.7 acres. This doubling would exceed all other alternative acres disturbed in AIZ by 23%.

**Alternative B** increases system trails, cumulatively, because this alternative adds about 10.7 miles of system trails more than Alternative A, thus affecting more acres. Approximately 516.9 miles of trails or about 118.3 acres are included in this alternative. This alternative would improve overall trail systems and reduce erosion, while improving conditions to the productive land base when compared to Alternative A – No Action. Trail acres within AIZs adjacent to streams “Non-Supporting Beneficial Use”(Summary Table 4.13) of 7.8 acres has the potential to be less than Alternative A, based on a lack of restrictions for ATVs using single track motorized trails under the existing situation. This alternative would meet RFP soil and water resource requirements.

**Alternative C** increases the miles of system trails to 533.9 miles affecting about 129 acres. This alternative would affect approximately 22 acres more than Alternative A - the No Action alternative. However, this amount of additional trails when added to other disturbances including the current trail system is not at a threshold or limit that would harm long-term soil productivity and hydrologic function in the project area.

When estimated detrimental soil disturbance from existing and future trails, prescribed fire treatments, projected future OHV trail pioneering, dispersed camping, mining activities, timber harvest, roads is added together, the soils, water, riparian resources in the project area would be meeting RFP standards guidelines and goals. Estimated cumulative disturbance is 6.9 percent above existing conditions and meets Regional Soil Quality Monitoring guidance.

**Alternative D** increases the miles of system trails the greatest of all the alternatives. About 536.7 miles of system trails are proposed in this alternative affecting about 130.4 acres. An increase of 23.3 acres more will be used as trails in this alternative than Alternative A - the No Action alternative. However, this amount added to the trail system when added to other disturbances is not at a threshold or limit that would harm long-term soil productivity and hydrologic function in the project area. When estimated detrimental soil disturbance from existing and future trails, prescribed fire treatments, projected future OHV trail pioneering, dispersed camping, mining activities, timber harvest, and roads is added together, the soils in the project area still meet RFP standards guidelines and goals. Estimated cumulative disturbance is 7.5 percent above existing conditions and meets

## Regional Soil Quality Monitoring guidance.

### **Irretrievable and Irreversible Effects**

No irreversible or irretrievable commitments of the soil resource are expected from the trail system within the project area while operating within the standards and guidelines of the Revised Forest Plan.

### **Summary**

The revised Big Hole Mountains Subsection Summer Transportation Travel Plan for all alternatives would maintain existing soil and water conditions which are currently meeting the RFP standards and guidelines. It is recommended that soil condition and qualitative soil monitoring continue on new trails constructed in the future. This project, implemented with the BMPs (see Appendix D), complies with the applicable hydrology-related standards and guidelines from the RFP as well as the pertinent other laws, regulations, and directives discussed above.

### **Discussion**

In 2003, the USFS, Washington Office, issued a position paper on unmanaged motorized recreation. It stated that unmanaged off-highway vehicle (OHV) use is a national spotlight issue representing a threat to public lands. This statement was made because of the unauthorized creation of roads and trails and the associated erosion, water quality degradation and habitat destruction that is caused by unmanaged OHV use. The magnitude of effects varies depending on local characteristics of the landscape including slope, aspect, soil susceptibility to erosion, and vegetation type. Riparian areas and riparian and aquatic species are particularly vulnerable to OHV damage. More recently, OHV use has been implicated in the spread of invasive species. The primary effects of OHV on soils are compaction and erosion, which may result in sedimentation into waterways. Damaged grasses and forbs may open the door to invasive plant species. The effects of OHV use on soils are most evident in desert soils or other easily eroded soil types such as granitic soils, found in portions of Nevada and Idaho. These effects are minimized when OHV travel is limited to roads and trails located and designed for motorized use. The adverse effects of motorized use are most evident where cross-country travel is permitted or motorized use is allowed on trails that are not designed for that purpose.

Following is a synopsis of available literature addressing OHV impacts on soil and water resources:

- **Griggs and Walsh (1981)** studied utilization by Off-road Vehicles (ORVs) in Hungry Valley, California that had been ongoing since 1971. They found a loss of vegetation, severe soil erosion and gulying, alluvial fan formation and increased sediment discharge directly resulting from ORV activity in the valley. Documentation was through sequential aerial photographs, ground surveys and sediment transport measurements. However, they did not measure disturbed vs. non-disturbed differences, the ability of natural vegetation to re-establish itself, or the feasibility of site rehabilitation techniques or methods.
- **Lei (2004)** investigated the effects to soil compaction from human trampling, biking and off-road motor vehicle traffic in Kyle Canyon, Nevada. He found a detectable difference in soil compaction, bulk density and percent pore space at particular frequency of passes in each of 4 disturbance types. On average, a single vehicle pass was equivalent to 10 human footprints. Ten and 100 footprints were equivalent to 1 motorcycle pass and 10 vehicle passes, respectively. He also found that the greatest effects on soils occurred during the first

few passes, with changes per pass decreasing as the number of passes increased. The results of this study suggest that the effects of hiking and biking slowly increase over time relative to the effects of motor vehicle traffic.

- **Dale and Weaver (1974)**<sup>10</sup> studied trails used by hikers and horses in Teton National Park and Yellowstone National Park. They discovered trail widths increase slowly with increasing traffic; and vegetation at trail edges is affected by use from 1-2 meters from the edge of the trail. Some trail edge plant species disappear, some are mostly unaffected and others invade these areas.
- **Helgath (1975)**<sup>11</sup> studied seventy sample sites for hiking trail erosion in the Selway-Bitterroot Wilderness, Idaho. He found vegetative habitat, landform and trail slope are important factors related to trail erosion. He suggested that trail planning; construction and maintenance should be based on biophysical units that combine important landform and vegetative habitat types.
- **Stokowski and LaPointe (2000)** developed an annotated bibliography and research assessment on the environmental and social effects of ATVs and ORVs. A wide variety of environmental and social impacts are documented in the research literature, including those related to soil erosion and trail degradation, vegetation, water and air quality, noise, wildlife and fish and social conflicts among different types of recreation user groups. Key findings include: 1) Regardless of vehicle type, research generally shows very similar impacts; differences in impact level are due more to intensity of use or use characteristics, in combination with the level of fragility of the affected environment; 2) Soil compaction and the shear forces of motorized vehicles create mud holes and gullies that alter hydrologic patterns and intensify erosion; 3) trail erosion and compaction caused by off-road and all-terrain vehicles reduce the quality of recreational trails and require enhanced management action to develop and maintain safe, usable trails. ATV use has been found to widen and rut forest roads and to increase the sediment loading into streams, which may threaten fisheries. ATVs and ORVs offer access to resource areas that are typically less accessible and more remote; 4) ATV, ORV and snowmobile use often conflicts with non-motorized uses, such as hiking and cross-country skiing. The numbers of motorized recreationists and their intensity of use, also results in environmental degradation that reduces the pleasure of non-motorized visitors, potentially resulting in displacement of the non-motorized users.
- **Meyer (2002)** investigated off-highway vehicle trails in wet, unstable and sensitive environments. Unlike hardened material, such as concrete, there is a lack of solid bond between particles of soils, making them susceptible to impacts from trail use and erosion. Impacts include crushing, lateral displacement and erosion. A soil's ability as a structural component for trails is controlled by two factors: its bearing strength (its ability to support a load without being deformed) and its cohesion (the ability to resist displacement). These abilities are primarily controlled by two related factors: the relative size of soil particles (soil texture) and the relative water content of the soil voids (soil moisture level). Soil texture is broken into two major classes: finely textured soils – those with high percentages of organic matter, silt and clay; and coarsely textured soils – those with high percentages of sand and gravel. In general, coarsely textured soils have a good bearing capacity. This is because of their large particle size, good drainage characteristics and low shrink-swell potential. Conversely, finely textured soils generally have poor bearing capacity because of their small

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<sup>10</sup> In Recreation Effects on Forest Soil and Vegetation: Research Synopsis and Selected Bibliography, Technical Paper #16, Clemson University, October 1984.

<sup>11</sup> In Recreation Effects on Forest Soil and Vegetation: Research Synopsis and Selected Bibliography, Technical Paper #16, Clemson University, October 1984.

particle size, poor drainage characteristics and a tendency to shrink or swell under different moisture conditions. Both classes of soils have moderate to poor overall cohesion, depending on other factors such as vegetation cover and roots that help hold individual soil particles in place. The relative amount of moisture within a soil can have dramatic effects on its structural stability. While coarsely textured soils tend to have good bearing strength across a wide range of moisture conditions, finely textured soils have reduced bearing capacity as moisture levels increase. At saturation, finely textured soils typically have little bearing capacity. Further, finely textured soils can store and retain water over long periods, so their bearing capacity can remain low for prolonged periods. Other factors may also play a role in the structural capability and suitability of soils for trails. These include: soil temperature, type of surface cover, root mass, depth to bedrock, slope and landscape position. These characteristics also provide insight on how soil should be managed and on the options that might be employed to increase its suitability for use.

Trail use damages soils when the type and level of use exceeds the soil's capacity to resist impacts. Trail use damages soils directly by mechanical impact from surface traffic and indirectly by hydraulic modifications, soil transport and deposition. Effects of direct mechanical impacts include: abrasion that strips surface vegetation and roots; reduction of soil voids through compaction causes surface subsidence; shearing of soil particles and displacement. Indirect impacts of hydraulic modification can disrupt surface water flows, reduce infiltration and percolation and decrease water holding capacities. An associated impact is the hydraulic pumping that occurs when water is forced through saturated soil. The wheels of a vehicle can cause all these to occur. A common example is rutting. The downward force of a wheel shears – or displaces- the soil beneath it, forcing the soil to bulge upward beside the wheel. The shearing action destroys soil structure by crushing soil peds and collapsing voids. Shearing is most likely to occur on finely textured soils under moist to saturated conditions.

Hydraulic pumping occurs when soils are saturated. It occurs when the downward pressure of a tire forces water through soil voids and passages. When the pressure is released after the wheel passes, water rushes back into the vacuum. The force of this rapid water flow erodes internal soil structure and clogs soil voids with displaced sediment. The combination of shearing and pumping reduces soils into a puddled (structure-less) condition, characterized by the loss of distinguishable soil structure and a reduction in pore space voids and interrupted passages between peds.

Typically trail degradation follows one of two pathways: surface erosion or surface failure. Either pathway can lead to significant localized impacts that can be difficult to stabilize or reverse. Without stabilization, a cycle of degradation can begin that can expand to adjacent surfaces. The cycle usually begins with the widening of trail surfaces as users avoid degraded surfaces and expands to the development of multiple parallel trails.

The first consequences of pioneering a trail across new landscape are the stripping of surface vegetation, the abrasion of roots and the compaction of surface soil layers. These impacts modify soil structure, reduce water infiltration and break bonds between soil particles. This makes the soil particle more vulnerable to displacement and loss from wind or water erosion. Soil compaction also leads to surface subsidence – the lowering of the trail tread relative to the adjacent ground surface. Trails become entrenched. This lower surface intercepts and drains water from adjacent surfaces and channels that flow along the trail.

This increases the risk of water erosion on sloped areas and the pooling of water in low sections. As trail surface degrade from rutting or the formation of mud holes, users tend to seek new routs, widening the trail or making new adjacent trails. This can be repeated until multiple trails occur within a single corridor, expanding environmental impacts and possibly making the trail unusable if there is no room to expand.

Locating trails appropriately or “hardening” with gravel or other materials, help to substantially reduce or even eliminate these problems. A trail pioneered cross-country or expanded from a cow or game trail may be poorly suited for the level of use occurring on them today. New trails need to be located based on soils, terrain, vegetation, anticipated use and type of vehicle.

- **Wilson and Seney (1994)** examined the relative impact of hikers, horses, motorcycles and off-road bicycles in terms of water runoff and sediment yield. They examined 108 plots in or near the Gallatin National Forest, Montana. Treatments of 100 passes were applied to each plot. The results confirmed the complex interactions that occur between topographic, soil and geomorphic variables noted by others. Though no significant statistical conclusions could be made, test results showed that horses and hikers made more sediment available than wheels of motorcycles and bicycles and the effect was most pronounced on wet soils.
- **Brown (1994)** investigated effects of ORVs at stream crossings in eastern Victoria, Canada. They found that sediment is contributed to the stream by five major processes: 1) the creation of wheel ruts and concentration of surface runoff; 2) the existence of tracks and exposed surfaces; 3) the compaction and subsequent reduction in the infiltration rate of soils leading to increased surface runoff; and 4) backwash from the vehicle and undercutting of banks by bow wave action. They found that sediment from crossings contributed a greater amount of material to the stream than did other activities within the study area, such as grazing and prospecting.
- **Webb, Ragland, Godwin and Jenkins (1978)** studied effects of off-road vehicles on the physical and chemical properties of several soil series in central California. They found severe erosion occurred on steep slopes, particularly in coarse-grained soils. Erosion displaced 0.5 and 3.0 metric tons per square meter on 2 trails on gravelly sandy loam and 0.3 metric tons per square meter on a trail on sandy loam. The surface strength and bulk density increased while the soil moisture decreased in gravelly sandy loam, coarse sandy loam, sandy loam and clay. Clay loam had an increased surface strength with variably increased bulk density and no decrease in soil moisture. Diurnal temperature fluctuations increased and organic material and soil nutrients decreased in soil modified by vehicles. These property changes increase the erosion potential of the soil, impede germination of seedlings and slow natural re-vegetation.
- **Johnson and Smith (1981)** measured soil loss on steep slopes near Boise, ID. They found a maximum of 14 cm (5.5”) soil loss depth per year and 300-600 tons/ha/year (120 to 240 tons/ac/year) soil loss from three off-road vehicle trails. Upper slope segments showed about 7 times greater soil loss than lower slope segments.
- **Ahlstrand and Racine (1993)** looked at ATV use in a shrub-tussock community in Alaska. They found that vehicle track depth increased significantly with increasing passes. Heavier ATVs usually produced deeper tracks than lighter vehicles. Deeper tracks resulted when vehicle use was spread over a 10-week period during the summer than when the passes were concentrated into shorter time periods near the beginning and end of the snow-free period. Shrub injury rates were greatest during the first few passes by an ATV.

- **Hamilton (2002)** studied the effects of ORV stream crossings on water quality of two streams located in the Angelina national Forest, Texas. Data suggested that ORV stream crossings do not appear to affect water quality of the streams. Physiochemical results showed that there were no significant differences between each stream's upstream and downstream sites. There were, however, significant differences in two benthic indices up- and downstream of one site.

### **Issue 3 - Wildlife**

Impacts and effects to wildlife were analysed in the 1999 Open Road and Open Motorized Trail Analysis (Motorized Road and Trail Travel Plan). This section of this EA will tier to that analysis and not re-analyze the issues that were included in that document. Rather, this section will analyze the impacts and effects to wildlife from the changes in motorized trail density and the types of uses being proposed in each alternative.

It has been widely accepted that motorized roads and trails impact wildlife directly through removal of habitat by the trail bed, the disturbance associated with implementing trail construction, reroutes and rehabilitation, and loss of stream habitat through sedimentation as well as indirectly through disturbance which fragments habitat, displaces wildlife, alters wildlife movement, and makes potential security habitat useless (Rowland, 69<sup>th</sup> Wildlife and Natural Resource Conference).

More recent research supports these findings. A study which documented the effects of recreation on wildlife by the Montana Chapter of The Wildlife Society (Joslin and Youmans, 1999) found that amphibians were impacted by the noise, collisions, chemicals and sedimentation associated with roads and trails. Small mammals found the trails to be briers to travel. Semi-aquatic animals showed physiologic responses to recreation as well as displacement. Ungulates avoided areas near trails and had lower health in areas of high motorized densities. Black bear sows avoided crossing roads and trails. Similarly, Gregory (2000) found that disturbance was correlated with lower elk calf survival and Michael Wisdom (69<sup>th</sup> Wildlife and Natural Resource Conference) found that roads fragment elk habitat and that ATVs and mountain bikes cause a greater flight response in elk than horses or hikers. See Table 4.15 for a comparison of alternatives.

### **Direct and Indirect Effects**

#### **Indicators:**

1. Acres lost to new trail construction.
2. Change in the Road and Motorized Trail Density by Prescription.
3. Total miles of trail classified as "Not Recommended for ATVs"
4. Change in total miles of ATV trails.
5. Change in Total miles of motorized trails.

**Table 4.15 - Direct and Indirect Impacts to Wildlife Indicators by Alternative.**

Type of Impact	Alternative A	Alternative B	Alternative C	Alternative D
Acres lost to new trail construction	0	0.7 (1.0 miles for ATVs X 5 feet wide)	0.9 (1.55 miles for ATVs X 5 feet wide)	1.8 (3.05 miles for ATVs X 5 feet wide)

		1.1 (3.0 miles for non-motorized X 3 wide)	3.9 (10.8 miles for non-motorized X 3 wide)	3.9 (10.8 miles for non-motorized X 3 wide)
Change in the Road and Motorized Trail Density by Prescription	No Change	5 Rx increased and 3 Rx decreased	3Rx increased and 6 Rx decreased	6 Rx increased and 1 Rx decreased
Total miles of trail classified as "Not Recommended for ATVs"	187.5	0	0	0
Change in total miles of ATV trails <sup>1/</sup>	<b>No Change</b> (Currently there are 30.5 mi.)	Increase of 34.4 miles to 64.9 miles	Increase of 50.25 miles to 80.75	Increase of 51.85 miles to 82.35
Change in Total Miles of Motorized Trails	No Change (Currently 218.0 miles)	Increase of 0.7 miles to 218.7 miles (<1%)	Decrease of 4.4 miles to 213.6 miles (-3%)	Increase of 19.6 miles to 237.6 miles (-9%)

<sup>1/</sup> Trails which have been or will be designed and constructed for ATV use.

The number of acres removed directly by the trail bed is very low when compared to the disturbance corridor associated with the trails. This corridor varies by species and terrain but is considered to extend ¼ mile on each side of the trail for elk and deer (320 acres per mile). Unless the trail is to be constructed in very important habitat the impact to wildlife from removal of habitat is a very small portion of the total impacts.

The disturbance from trail construction, trail rerouting and from trail rehabilitation can be very high. This disturbance, though high, is of short duration. The animals would be impacted in a very localized area for one day and then the trail crew would have moved on. Another factor which limits the impact from up grading, maintenance and many reroutes is that the work is occurring in an established disturbance corridor. The animals which are likely to be displaced by the trail work are already gone. New trails and reroutes which are some distance from the original are exceptions. The disturbance in these areas would be new.

The changes in motorized road and trail densities, by prescription areas, are largely offset in Alternative B and C. Alternative C has an over-all decrease of 4% from current levels. Alternative D has a notable increase in trails, 28.4 miles, which is a 12% increase over-all from current levels. This increase would further fragment habitat, reduce security cover and potentially lower the health of many animals across the subsection.

### **Wildlife Associated with Aquatic and Riparian Habitat**

- **Bald Eagle**

There are two bald eagle territories (800 meter radius around nest sites) which include motorized roads and trails within the Bighole Subsection. There are 14 bald eagle territories with portions of the 4,000 meter home ranges included within the Bighole Mountain Subsection but only two include motorized roads and trails within the 800 meter Primary

## Use Area.

There is one new proposed motorized trail found within the Primary Use Area (Zone II) (Wildlife Specialist Report) of an eagle territory found along the South Fork of the Snake River. This trail, NT3-Wolverine Creek to Big Burns which is a 5 mile motorized single track, is the only proposed increase in motorized use within bald eagle territories. This trail is found in Alternatives B, C, and D.

This trail was identified during the streamlining process with the US Fish and Wildlife Service (FWS) in 2005. Consequently, a field trip to the site was conducted. This trip was attended by FWS and Forest Service personnel. The proposed trail would follow an existing but non-system trail on the hillside above the nest and nest zone. The group determined that the trail was not within sight of the nest and that the disturbance from use of this trail would be very slight when compared to the open main road which runs right past the nest. After this field trip the FWS and the Forest Service agreed that this trail may affect, but not likely adversely affect the bald eagle. Alternative A would have no effect on bald eagles.

- **Spotted Frog**

The spotted frog relies on ponds for breeding and the tadpole stage of its life and it uses streams for much of its adult life. Impacts to this habitat occur directly (riding in the streams, pools and ponds) and indirectly (sediment transfer to the streams and ponds). The biggest contributor to these impacts comes from the use of ATVs on trails which are designated as “Not Recommended for ATVs”. Attempting to drive these powerful machines up two-wheeled motorized trails within the riparian zone has contributed to sedimentation and the degradation of riparian habitat. This is recognized as a problem and all of the action alternatives have eliminated this designation. The trails designated for ATVs would be designed to sustain this type of use and all other motorized trails would be open to motorcycles and non-motorized use only.

Most of the trail reroutes proposed in the three action alternatives are to remove trails from riparian habitat and most reconstruction is intended to make trails designated for ATVs sustainable under this use.

The elimination of the “Not Recommended for ATVs” designation, reroutes, and reconstruction make the three action alternative less impactful than the existing condition. Alternative B with its lower total ATV miles would have the lowest impacts followed closely by Alternative C. Alternative D, with its higher ATV miles and total motorized miles, would have the highest impacts of the action alternatives.

- **Common Loon**

The only lakes within this subsection which may be suitable for common loons are Upper and Lower Palisades Lake. There are no new proposed trails, motorized or non-motorized, associated with any of these alternatives. This project would have no impacts to this species.

- **Harlequin Duck**

The only creek where harlequin ducks have been documented within the subsection is Big Elk Creek. There are no new proposed trails, motorized or non-motorized, associated with

any of these alternatives. This project would have no impacts to this species.

### **Wildlife Associated with Terrestrial Habitats**

- **Elk**

The RFP considers two elk habitat quality measures. They are Elk Vulnerability and Elk Habitat Effectiveness. Elk vulnerability includes two parameters which are considered to be the most important. They are hunter densities and motorized road and trail densities. Elk habitat effectiveness is a measure of the quality of an area for elk during the spring and summer. The two habitat parameters which are considered the most important are elk hiding cover and motorized road and trail densities.

Of the two parameters in elk vulnerability one is beyond the authority of the Forest Service. Hunter densities are controlled entirely by the State of Idaho. This project could change the other parameter which is motorized road and trail densities. Any increase in motorized routes would correspond to an increase in vulnerability.

Similarly, of the two parameters in elk habitat effectiveness, this project could change motorized road and trail densities. Any increase in motorized routes would indicate a decrease in habitat effectiveness. The other parameter is hiding cover. This project does not include habitat alterations other than very limited trail clearing and rerouting.

Both of these measures are calculated at the principal watershed level. Table 4.16 shows the nine principal watersheds in the project area.

**Table 4.16 - Total Motorized Routes By Watershed and the Percent Change**

Watersheds	Base Miles	Alternative A miles & percent change (increase)	Alternative B miles & percent change (increase)	Alternative C miles & percent change (increase)	Alternative D miles & percent change (increase)
002 W&I	40.9	31.8 22%	31.8 22%	31.8 22%	31.8 22%
003 W&I	5.4	6.4 (18.5%)	6.4 (18.5%)	6.4 (18.5%)	6.4 (18.5%)
004 W&I	14.4	10.7 25.7%	10.7 25.7%	10.7 25.7%	10.7 25.7%
005	25.4	24.7 2.8%	21.5 15.4%	22.0 13.4%	27.3 (7.5%)
006	66.4	68.0 (2.4%)	69.3 (4.4%)	57.6 13.3%	79.7 (20.0%)
007 and 033	82.8	84.1 (1.6%)	90.7 (9.5%)	84.3 (1.8%)	91.9 (11.0%)
017 W&I	11.5	4.6 60.0%	4.6 60.0%	4.6 60.0%	4.6 60.0%
022	98.4	99.9 (1.5%)	97.6 0.8%	99.0 (0.6%)	100.9 (2.5%)
023 and 024	133.4	134.4 (0.7%)	131.6 1.3%	131.9 1.1%	132.9 0.4%

Alternative A, the existing condition, indicates that all of the watersheds are different than the information used for the 1993 Process Paper D (pages 37 to 86). The increases in motorized routes between base and this alternative are small across the project area. Watershed 003 indicates an 18.5% increase in motorized routes but this is only an additional one mile across a watershed totaling 72.8 square miles. The large decreases in motorized routes compared to base are also indications of very low densities where small changes in miles can have large changes in densities. Although the increases are small, a total of 6.5 miles of motorized routes across the five watersheds, Alternative A does indicate that five of the nine watersheds have had increases.

Alternative B indicates that three of the nine watersheds have increased. While this is fewer than in Alternative A, the total miles of increase is 11.8 miles over base.

Alternative C has three watersheds with increases but the increase is only 3.1 miles over base.

Alternative D has five watersheds that would increase over base. The total increase across these watersheds would be 27.8 miles of additional motorized routes.

Alternative C would have the largest positive change in EV and EHE across the project area but three of the nine watersheds would still have an increase in motorized routes. And Alternative D would have the largest negative change. Alternatives A and B indicate very little change from the base and would have little impact to elk.

Across the entire project area, Alternatives A and B have similar motorized densities. There is very little difference between these two alternatives. Alternative D has 26.3 additional miles of motorized trail above the existing condition. This is a 12% increase and would have detrimental effects to elk habitat. Alternative C is the only alternative which would reduce motorized densities and improve elk habitat. This alternative would reduce the total miles of motorized trail by 5.8 miles. This would decrease motorized densities by 3%.

Another change from the existing condition is found in the Horseshoe Creek area on Teton Basin Ranger District where a high concentration of unauthorized non-motorized trails have been created within an area identified as elk calving habitat. These trails would be adopted as system trails if Alternative C or D is chosen. These trails would be legal if Alternative A is chosen because cross country mechanized travel is not currently restricted. Alternative B is the only alternative where these trails would be considered illegal and be decommissioned.

- **Gray Wolf**

The Big Hole Mountain subsection is within the Yellowstone Nonessential Experimental Population Area. At the end of 2005, the minimum fall wolf population for this area was 325 (U. S. Fish and Wildlife Service, et al., 2006). The nearest documented wolf pack was adjacent to this subsection in the winter of 2005-06 (Idaho Wolf Recovery Report 2006).

All recovery objectives for the gray wolf have been met (U. S. Fish and Wildlife Service, et al., 2006). This project would have no effects to breeding pairs or packs because none currently exist in the project area. Currently, the only effects will be to individual wolves or small groups of wolves. This project is not likely to jeopardize the continued existence of the gray wolf.

The analysis for this predator would follow closely the analysis for elk. Increased habitat fragmentation and decreased security could displace wolves as well as impact prey numbers. Increases in motorized density could be detrimental. This would indicate that Alternative C would have the lowest impacts while Alternative D would have the highest impacts.

- **Canada Lynx**

The Caribou/Targhee NF has adopted the recent Northern Rockies Lynx Management Direction (USDA 2007) as part of the RFP. This direction has objectives, standards and guidelines which are designed to assure that the Forest lands which include LAUs are suitable for lynx occupation.

The human use objective in this document stress connectivity within and between LAUs, connectivity between LAUs and linkage areas, concentrating recreation activities within currently disturbed areas, and well as discouraging new snow compaction activities (USDA 2007, pages 55,56).

This project would have little affect connectivity. Recreational, administrative and commercial uses of forest roads are known to disturb many species of wildlife (Ruediger 1996). However, preliminary information suggests that lynx do not avoid roads (Ruggiero et al. 2000a), except at high traffic volumes (Apps 2000). It is possible that summer use of roads and trails through denning habitat may have negative effects, if lynx are forced to move kittens because of associated human disturbance (Ruggiero et al. 2000b). At this time, there is no compelling evidence to suggest management of road density is necessary to conserve lynx. However, new road construction continues to occur in many watersheds within lynx habitat, many of which are already highly roaded, and the effects on lynx are largely unknown. Further research directed at elucidating the effects of road density on lynx is needed.

This project contiues to concentrate motorized use in the norther portion of the project area. All of the alternatives in this proposal avoid adding motorized routes in the Wilderness Study Area and the Recommended Wilderness prescriptions.

This project addresses summer travel exclusively but some summer activities can influence winter use. Snowmobiles often follow back county roads, even when they are not groomed. There is a potential for the upgraded ATV trails to attract winter use. These trails would be widened and a bench would be cut into the hill side in some areas. The potential for this is limited. Experience on snowmobiles in the project area indicates that the small bench cut would soon drift in and be obliterated (Ovard 2007). The rational for trail placement in the summer has little correlation to desired snowmobile routes (Ovard 2007). Snowmobiles pick different routes even if the ATV route is accessible. While roads help to facilitate over-the-snow activities, upgrading of ATV trails would have very limited impacts.

The human use standards and guidelines address trails once. Guideline HU G7 states that new trails should avoid forested fingers (USDA 2007 page 59). Most trails in the project area already exist, either as system trails or as user created trails. Their position was determined before this guideline was developed.

The Lynx Conservation Assessment and Strategy lists Forest/Back Country Roads and Trails (Ruediger 2000, page 2-12) as a separate risk factor.

It states that here is little information available on the effects of roads and trails on lynx or its prey (Apps 2000, McKelvey et al. 2000d). Construction of roads may reduce lynx habitat by removing forest cover. On the other hand, in some instances, along less-traveled roads where vegetation provides good snowshoe hare habitat, lynx may use the roadbed for travel and foraging (Koehler and Brittell 1990).

Roads and trails may facilitate snowmobile and other human uses in the winter. As described previously in the recreation section, snow compaction on roads or trails may allow competing carnivores, such as coyotes and mountain lions, access into lynx habitat (Buskirk et al. 2000a). In the absence of roads and trails, snow depths and snow conditions normally limit the mobility of these other predators during mid-winter. Lynx may be more vulnerable to human-caused mortality near open roads (Koehler and Aubry 1994).

The LCAS contains a guideline for road densities as follows: “Determine where high total road densities (>2 miles per square mile) coincide with lynx habitat, and prioritize roads for seasonal restrictions or reclamation in those areas”(Ruediger 2000, page 7-10).

In Chapter 10 of the Ecology and Conservation of Lynx in the United States, results of a lynx study showed that road densities in the study area did not have a significant effect on habitat selection, and lynx crossed roads at frequencies that did not differ from random expectation (USDA Forest Service 1999).

Existing scientific analysis indicates that lynx may not be directly influenced by roads through displacement or avoidance, except at very high traffic volumes. This would also be applicable to summer use on trails. Therefore, at this time, there is no compelling evidence to recommend management of total road and trail density for the conservation of lynx. Further research directed at identifying the effects of high roads density on lynx is needed.

The LCAS has a guideline where high total road densities exist (>2 miles per square mile), that roads could be prioritized for restriction or reclamation. No lynx analysis units in the Big Hole Mountains Subsection have OROMTRD > 2 miles per square mile, and this includes trails.

There will be no increase in groomed snow machine trails or groomed cross-country ski trails with this decision.

Based on the above review, all alternatives being considered in this NEPA document will maintain suitable habitat for Canada lynx within the lynx analysis units.

- **Grizzly Bear**

Even though this is outside the grizzly bear PCA, the grizzly bear forest plan amendment requires that we monitor changes in secure habitat outside of the PCA (USDA Forest Service 2006, Page 6). Table 4.17 shows how the four alternatives are compared to the base security area figure derived from the travel system analyzed in 1999. Secure area is defined as forest Service land which is more than 500 meters from an open road or motorized trail (Wildlife Specialist Report).

**Table 4.17 - Secure Area Analysis for Grizzly Bear Conservation Plan**

Alternative	Secure Acres	Secure Square Miles	Percent change from the Existing (1999) Travel Plan
Existing Condition-Base Line	206,612	323	NA

Alternative A	212,344	332	2.8% <b>increase</b> in secure area.
Alternative B	211,436	330	2.2% <b>increase</b> in secure area.
Alternative C	215,860	337	4.3% <b>increase</b> in secure area.
Alternative D	206,246	322	0.3% <b>decrease</b> in secure area.

Alternatives A, B, and C all show an increase in secure area while Alternative D would decrease this security slightly. Based on this analysis, Alternative D is the only option which would decrease the value of this subsection to future habitation by these bears.

- **Avian Species including Migratory Birds**

The Rocky Mountain Bird Observatory has made the following statement on the effects of roads on birds (Leukering, T., M. Carter, A. Panjabi, D. Faulkner, and R. Levad. 1998. Rocky Mountain Bird Observatory Point Transect Protocol: Revised May 2006. Rocky Mountain Bird Observatory, Brighton, CO, 113 pp.):

“There are no studies demonstrating strong or consistent road effects (see Rotenberry and Knick 1995, Hutto *et al.* 1995, Keller and Fuller 1995) which show that, for most species, there are no differences between results of counts on roads and of counts away from roads.”

If there are no studies demonstrating strong or consistent road effects on birds, then the same holds true for trails.

The impacts that could be affected by this project include riparian degradation, motorized miles of trail and total trail miles including non-motorized.

The impacts to riparian areas were analyzed in the spotted frog section above. Impacts to this habitat occur directly (riding in the streams, pools and ponds) and indirectly (sediment transfer to the streams and ponds). The biggest contributor to these impacts comes from the use of ATVs on trails which are designated as “Not Recommended for ATVs”. Attempting to drive these powerful machines up motorized two-wheeled trails within the riparian zones has contributed to sedimentation and the degradation of riparian habitat. This is recognized as a problem and all of the action alternatives have eliminated this designation. The trails designated for ATVs would be designed to sustain this type of use and all other motorized trails would be open to motorcycles and non-motorized use only.

Most of the trail reroutes proposed in the three action alternatives are to remove trails from riparian habitat and most reconstruction is intended to make trails designated for ATVs sustainable under this use.

The highest motorized densities and the highest total trail miles are found in Alternative D. This alternative would have the highest potential to impact birds. The lowest total miles of trails are found in Alternative A but this is the only alternative which included the “Not Recommended” trail designation. The lowest motorized trail density is found in Alternative C and this alternative does not include the “Not Recommended” trail designation.

- **Goshawk**

Using GIS data, the OROMTD were calculated for 14 goshawk territories with nest areas or post fledging family areas (PFA) on the subsection. The densities from the 1999 data used in the Travel Plan EIS were compared to Alternative A, the existing condition, and Alternative A was compared to the three action alternatives (Wildlife Specialist Report 2007). The data used for Alternative A incorporates many small corrections using data collected over the last 15 or more years.

There are two nest area densities which show more than 0.1 mile per square mile difference between the base line and Alternative A. Both of these nest areas indicate that the existing condition has a lower density than the base line. One nest area was lower by 0.2 miles and the other by 0.3 miles. There are four PFAs which differed by more than 0.1 miles. Two indicate higher densities by 0.2 miles and two indicate lower densities. One of these PFAs by 0.3 miles and one by 0.4 miles.

The existing condition incorporates the 1999 Travel Plan and the small differences between base line and the existing condition can be attributed to differences in mapping information.

When the four alternatives are compared, there is only one territory which indicates any changes from the existing condition. This is a territory on the north edge of the project area. Alternative B indicates no motorized routes and Alternative C indicates 1.0 miles, a drop of 0.6 miles below Alternatives A and D.

The PFA in this territory has an indicated density of 1.4 miles in Alternative A, there are no motorized routes identified in Alternative B, Alternative C indicates 0.8 miles and Alternative D indicates 1.4 miles.

There would be no new motorized routes in any nest or PFA area associated with any alternative (RFP page III-23). The changes in the motorized routes in this subsection would have very little impact on goshawks. The lower total densities across the subsection indicated in Alternative C may reduce the chances of disturbance to these hawks and the higher densities found in Alternative D may increase the chance for disturbance, but none of the alternatives would likely impact the productivity of the nests or the survival of individual goshawks.

- **Fur Bearer and Prey Species**

The publication titled: "The Scientific Basis for Conserving Forest Carnivores, American Marten, Fisher, Lynx, and Wolverine in the Western United States" (Ruggiero et al 1994) documented effects of roads and trails as follows:

**American Marten:**

- In the publication titled: "The Scientific Basis for Conserving Forest Carnivores, American Marten, Fisher, Lynx, and Wolverine in the Western United States" (Ruggiero et al 1994), no scientific documentation or references on the effects of roads or trails on marten are presented, and no management recommendations are provided.
- In the publication titled: "Forest Carnivore Conservation and Management in the Interior Columbia Basin: Issues and Environmental Correlates" (Witmer et al 1998),

the statement is made that paved roads may not be significant barriers to movement, but mortality caused by vehicles on highways is documented. If paved roads are not significant barriers, then unpaved smaller forest roads and trails will not be significant barriers. Mortality on forest roads and trails has not been documented.

### **Fisher:**

- In the publication titled: “The Scientific Basis for Conserving Forest Carnivores, American Marten, Fisher, Lynx, and Wolverine in the Western United States” (Ruggiero et al 1994), the only documentation or references on the effects of roads and trails on fisher pertain to the winter period. Here are the only references to roads and trails from the document: “When snow is deep and fluffy, causing fishers to leave body drags, fishers move less but travel disproportionately often on snowshoe hare trails and on their own trails (R. Powell, pers. obs.)” “Where snow is deep, fishers may forage for hares on packed, snowplow drifts along roads that bisect hare habitat (Johnson and Todd 1985).”
- In the publication titled: “Forest Carnivore Conservation and Management in the Interior Columbia Basin: Issues and Environmental Correlates” (Witmer et al 1998), the statement is made that barriers to movement may include highways. There is no documentation that forest roads or trails are a barrier to movement.

### **Wolverine:**

- In the publication titled: “The Scientific Basis for Conserving Forest Carnivores, American Marten, Fisher, Lynx, and Wolverine in the Western United States” (Ruggiero et al 1994), the documentation or references on the effects of roads and trails on wolverine are:
  - “Wolverine populations that have been or are now on the edge of extirpation have been relegated to the last available habitat that has not been developed, extensively modified, or accessed by humans (such as roads and trails).”
  - “Criteria for recreational developments such as ski areas, hiking trails, and snowmobile and all-terrain vehicle use also need to be developed at the landscape scale.”
  - “Human presence alone is not a deterrent to the presence of wolverines, as evidenced by their feeding in garbage dumps in northern Canadian communities. If large tracts of undeveloped and unroaded habitat are essential, why do wolverine occur in the logged forests of the Sub-Boreal Interior of British Columbia and in the habitats crisscrossed with seismic lines on the Boreal Plains? (See map in Appendix A.) A combination of factors likely under-lie the presence or absence of self-sustaining wolverine populations. A pressing conservation issue is that we lack knowledge of what factors allow wolverines to persist at intermediate densities in western Canadian forests, while resource managers are being asked to provide for the needs of wolverines in the western conterminous United States, where population and habitat conditions are poorly known and likely more tenuous.”
  - **“Research Needs - 1.** Study the habitat needs of wolverine in forests, because there is no sound basis for developing habitat management prescriptions at the stand level. Information that will allow development of recommendations for road densities, sizes of areas on which timber is cut,

minimum cover requirements, natal dens, resting sites, and coarse woody debris is required.”

- In the publication titled: “Forest Carnivore Conservation and Management in the Interior Columbia Basin: Issues and Environmental Correlates” (Witmer et al 1998), trail density and off-road motorized vehicle areas are listed as key environmental correlates. However, there is no recommendation provided for a specific trail density. Off-road motorized vehicle areas are not permitted in the Big Hole Subsection.
- The Forest has been cooperating with the Wildlife Conservation Society for the past 7 years on a wolverine research project that includes several portions of the Forest. Research has shown that wolverine make substantial movements throughout the Forest and across major highways. There is no evidence that Forest road or trails are barriers to wolverine movements (Mark Orme, personal communication).

In summary, there is no scientific recommendation to establish specific road and trail densities for these species. Within the Big Hole Subsection there is a wide variety of OROMTRD densities, ranging from near zero in the Wilderness Study Area and Recommended Wilderness Area to 3.0 in the urban interface areas (Rx 5.1.3) (see Table 4.22 on page 4-57). All alternatives will provide suitable habitat for furbearer populations.

### **Expected Effects From Amending the Moody Creek Area Prescription 5.1.4(b)**

The existing maximum allowed road density for this prescription is 1.7 miles per square mile. Using the latest GIS data this prescription is currently over this level by 0.79 miles, raising the density to 1.73 miles per square mile (Alternative A). This change is the result of mapping changes because there have been no changes in the open roads and motorized trails since the Travel Plan was adopted in 1999.

Alternative B would add an additional 0.8 miles of trail. This would require increasing the OROMTRD to 1.76 miles per square mile. Alternative C and D would add approximately 2.0 miles of trail above Alternative A. This would increase the total motorized roads and trails by 2.79 miles above existing OROMTD, requiring an OROMTRD of 1.8 miles per square mile.

The amendment for Alternative A would not impact wildlife. This amendment would address a recording error. There has been no increase in designated motorized routes in this prescription since the 1999 Travel Plan and this No Action alternative would reflect this.

The other alternatives could affect wildlife. These alternatives include an increase in motorized routes. The change in densities for Alternative B would be an increase of 3.5% (from 1.7 to 1.76) and the change for Alternative C and D would be an increase of 5.9% (from 1.7 to 1.8).

The species which could be impacted by this amendment are spotted frog, elk, gray wolf, Canada Lynx, grizzly bear and goshawk. The other species addressed above are either not found in this prescription or analysis has not shown a strong correlation between motorized route densities and adverse effects.

- **Spotted Frog**

The only probable sighting of this species in the subsection occurred in this prescription.

Motorized travel is associated with impacts to streams from bank erosion at crossings and sedimentation transfer from the road and trail bed.

The action alternatives would increase the potential for sedimentation and other impacts to the riparian areas in this prescription but the impacts would likely be very small. Alternative B would have less potential for impacts than Alternative C and D.

- **Elk**

This prescription is predominantly found in Watershed 023/024. The analysis by watershed indicates that this watershed would have a reduction in motorized routes by adopting any of the three action alternatives. Only the existing condition is above base levels.

At the prescription level, the addition of the motorized routes would increase vulnerability and decrease habitat effectiveness for all alternatives.

- **Gray Wolf**

Impacts to gray wolves would follow the impacts to elk. When motorized access is increased, habitat fragmentation and displacement are likely. The adoption of the action alternatives could decrease access to big game, reduce the number ungulates in the area and increase the vulnerability to unlawful take and traffic accidents.

While the action alternatives would increase fragmentation and reduce security, the small change, 3.5% or 5.9%, would not jeopardize the continued existence of this experimental population.

- **Grizzly Bear**

This prescription is outside of the Primary Conservation Area. The Primary Conservation Area is found in the Teton Range subsection, about 20 miles northeast of this prescription. The TMR-2006 indicates that there has been one grizzly bear observation in the area from 1960 to 1989 and one observation from 1990 to 2004.

Even though this is outside the grizzly bear PCA, the grizzly bear forest plan amendment requires that we monitor changes in secure habitat outside of the PCA (USDA Forest Service 2006, Page 6). The four alternatives are compared to the base security area figure derived from the travel system analyzed in 1999. Secure area is defined as forest Service land which is more than 500 meters from an open road or motorized trail (Wildlife Specialist Report).

The base line calculations indicate that there were 2,933 acres of secure habitat. This base line figure is derived from the 1999 Travel Plan and Alternative A, the current condition or No Action alternative, reflects the same motorized routes. There is a difference of 94 acres between these base line and Alternative A, with Alternative A showing an increase in security. This difference is likely attributable to differences in mapping resulting from 15 years of data updates and better GPS information and not a reduction in motorized routes. The three action alternatives will be compared to this alternative to better determine the change each alternative would cause.

The three action alternatives all indicate a reduction in security from the current condition. Alternative B has a decrease of 17 acres, while C and D indicate a reduction of 45 acres.

The current condition results in the area being unsuitable for grizzly bears due to the high motorized densities. The three action alternatives would reduce security but only by 1.5% or less. Since this area is currently unsuitable, the adoption of any alternative would not impact these bears.

- **Canada Lynx**

As stated above, existing scientific analysis indicates that lynx may not be directly influenced by roads through displacement or avoidance, except at very high traffic volumes. This would also be applicable to summer use on trails. Therefore, at this time, there is no compelling evidence to recommend management of total road and trail density for the conservation of lynx. Further research directed at identifying the effects of high roads density on lynx is needed.

The LCAS has a guideline where high total roads densities exist (>2 miles per square mile), that roads could be prioritized for restriction or reclamation. No lynx analysis units in the Big Hole Mountains Subsection have OROMTRD > 2 miles per square mile, and this includes trails. The adoption of any of these alternatives would not exceed this level.

Based on the above review, all alternatives being considered will maintain suitable habitat for Canada lynx within the lynx analysis units.

- **Goshawk**

There would be no new motorized routes in any nest or PFA area associated with this prescription (RFP page III-23). The changes in the motorized routes in this prescription would have very little impact on goshawks. The lower total densities across the subsection indicated in Alternative C may reduce the chances of disturbance to these hawks and the higher densities found in Alternative D may increase the chance for disturbance, but none of the alternatives would likely impact the productivity of the nests or the survival of individual goshawks.

## **Cumulative Effects**

The cumulative effects analysis for wildlife will concentrate on habitat fragmentation and wildlife security. The analysis area for cumulative effects to wildlife includes the area located within the analysis area and the area below the Forest where migratory wildlife spend part of their lives.

Most past land management activities contributed to habitat fragmentation and to loss of security for wildlife. Some past activities include motorized roads and trails, non-motorized trails, timber harvest, prescribed fire, wildfire, day recreation and dispersed over night camping. Present activities are similar except for timber harvest. Large scale timber harvest is unlikely to occur within the project area. Timber harvest is likely to occur near the boundary and be associated with Wildland/Urban fuels reduction projects. Likely future activities would include continued Wildland/Urban fuels projects and larger prescribed fire projects as well as Wildland Fire Use projects.

Cumulative effects to wildlife from off forest activities will be from loss of habitat as a result of development of wild places for residences and supporting infrastructure. This will result in an increase use of the Forest while there is an increased need for intact wildlife habitat. The existing disturbance corridors will continue to disrupt natural use of the habitat.

### **Alternative A – Existing Situation (No Action)**

The use of the existing trail system would continue with an increase in impacts as the recreational use of the Forest increases. The existing motorized single track trails would continue to be designated as “Not Recommended For ATV Use” and would continue to tempt ATV users to pioneer down more of these trails. There would be no restrictions on cross country bicycle use. As this sport continues to increase, there would be an increase in trails pioneered by these users and motorcycles would likely follow the new, non-system trails.

### **Alternative B – Trail Committees’**

All action alternatives would remove the “Open for motorized use less than 50 inches wide but “NOT RECOMMENDED FOR ATVs” designation. ATVs would be restricted to designated trails designed for ATVs. Cross-country use by bicycles would continue and have the same impacts as described in Alternative A. There would be a decrease in cumulative effects to habitat degradation, habitat fragmentation and to wildlife security. This alternative would increase motorized trails by less than one percent, adding little to the effects to wildlife.

### **Revised Alternative C (hereafter called Alternative C)**

This proposed action would decrease the total motorized trails in the subsection by about three percent but would increase the total miles designed and constructed for ATVs to approximately 80.75 miles. While habitat fragmentation would decrease slightly, security may decline a little as more habitat is accessible by ATVs. However, ATVs would only be allowed on certain trails, instead of on all motorized trails (including single track trails open for motorcycles) as now exists (Alternative A – Existing Situation). This should be a positive action overall in the subsection. Since bicycles would be prohibited to cross-country travel throughout the entire subsection, impacts will decline – thus an overall improvement to the environment would be expected.

### **Alternative D – Proposed Plus**

This alternative would increase motorized trails by about nine percent over the existing condition. This would increase cumulative effects over both alternatives B and C. This alternative would increase ATV trails by 1.6 miles over Alternative C and 17.45 miles over Alternative B. From a positive standpoint, ATVs would be restricted to only those trails designed for such use. Cross-country bicycle use would continue as now exists with affects being the same as described in Alternative A.

## **Issue 4 - Recreational Use**

### **Direct and Indirect Effects**

**Indicators:**

1. Miles of ATV trails.
2. Miles of Single Track Motorized trails.
3. Miles of non-motorized trails.
4. Miles of trails to be reconstructed to meet ATV standards.
5. Miles of new trails to be constructed for ATV use.
6. Miles of new trails to be constructed for Single Track Motorized use.
7. Miles of new trails to be constructed for Non-motorized use.
8. Miles of trails to be obliterated.
9. Miles of loop trails for ATV and Single Track Motorized vehicles.
10. Acres closed to cross-country bicycles/mechanized use.
11. Total miles of ATV and Single Track Motorized trails.

Differences between alternatives are small when considering effects on recreational needs. While all alternative have some differences, most are only minor and are site specific to certain trails or type of use. In all alternatives except Alternative D, total motorized trail miles remain fairly close. The only difference is the allocated miles to ATV verse single track. It is hard to analyze the extent of social affects on users with such a small change. Increasing motorized trail mileage and decreasing non-motorized trail mileage in Alternative D is the greatest potential change.

In all action alternatives (B, C, and D), ATV travel would be restricted to designated trails. This would be a positive management decision for several reasons. Trail encroachment by ATVs into unsuitable terrain would be stopped, thereby protecting natural resources and reducing the need for additional maintenance. Ground disturbance would be minimized and user conflicts would be reduced. Trails designated for ATV use would be a higher priority for improving to ATV standards, thereby improving the quality of experiences for ATV users. Alternative B, C, and D better addresses the problems of increased ATV use occurring on the National Forest and better meets National direction to resolve problems being created by increased ATV use.

Trail maintenance is a big issue when dealing with trail travel designations. The amount of public use, type of use, and location of trails all play an important part of how much maintenance is required to protect the trail, adjacent resources and provide good public access routes. With limited funding for trail maintenance, selecting an alternative which provides the best maintenance scenario is very important. The following is considered when looking at trail maintenance needs:

- Restricting ATV from pioneering further into steep terrain.
- Relocating trails where possible to eliminate steep trail grades and moving trail out of wet area (AIZ).
- Limiting the area of disturbance to the minimum needed. Alternative B and C best address the trail maintenance issue by understanding that a public need exists for motorized use and recommends the best direction to follow to meet that need and protect the resources.

Through out this document reference is made between ATV and single track trails. It should be noted that single track vehicles can travel on ATV track trails, however ATV vehicles are restricted from traveling on single track trails. All non motorized users may use single or ATV trails, but non-motorized means motorized vehicles can not travel on non-motorized trails. Mountain bikes are permitted on all trails outside of wilderness areas unless specifically noted. Table 4.18 shows a summary of trail miles by alternative and Table 4.19 shows the summary of effects by alternative.

**Table 4.18 - Summary of Trail Miles by Alternative**

Trail Type	Alternative A	Alternative B	Alternative C	Alternative D
Total miles of Motorized Trails	218.0	218.7	213.6	237.6
Miles of Single Track Motorized Trails	187.5	153.8	132.85	155.25
Miles of ATV Trails	30.5*	64.9	80.75	82.35
Miles of Non-motorized trails	286.8	296.8	315.7	292.0
Total miles of Trails	504.8	515.5	529.3	529.6

\* Miles are based on the current Travel Plan for trails which have been designed and constructed for or are proposed for ATV use.

**Table 4.19 - Summary of Effects by Alternative**

Elements effecting management of the trail system	Alternative A	Alternative B	Alternative C	Alternative D
Trails Designated for ATVs in Travel Plan*	No	Yes	Yes	Yes
Trail Quality Improved for ATVs	Fair	Good	Better	Best
Loop Trail Opportunity Increased for ATVs	Fair	Good	Better	Better
Trail Maintenance Dollar Needs Decreased or Increased	Increase in dollars needed	Some decrease in dollars needed	Most decrease in dollars needed	Most decrease in dollars needed
Reduction in Potential User Conflicts	Fair	Good	Good	Poor
Over all User Satisfaction	Fair	Good	Good	Poor
Ability to better Control unwanted or illegal Trail development	Poor	Fair	Good	Fair
Improves Safety Issues	Poor	Better	Good	Good

\* Trails designed and constructed for ATVs and which trails ATVs will be restricted to. The current "Open for Motorized Use less than 50 inches wide but NOT RECOMMENDED FOR ATVs" will be eliminated.

#### **Alternative A - No Action (Existing Situation)**

This alternative continues the current management direction established in the 1997 Revised Forest Plan (RFP) and the 1999 Open Road and Open Motorized Trail Analysis (Motorized Road and Trail Travel Plan ) Final Environmental Impact Statement (FEIS). Trails open to motorized travel in the plan will remain open to all vehicles 50 inches or less in width. While some trails are not

recommended for ATV travel in the current Forest Travel Plan, they are permitted on all motorized trails if the user can negotiate the terrain. With the improvement of ATVs and the overall increased popularity, ATV use has become an important activity on the National Forest. With this increased use, management problems have also increased. Trails are more impacted as user numbers increase, thus causing some localized resource problems such as soil erosion. ATV trails are now appearing where only single track trail used to be. ATV users have pioneered further into areas that previously were only used by single track vehicles. Where terrain was the limiting factor for ATV use on many trails in the past, it has become less of a restriction year after year. If ATV trails are not designated under the Forest Travel Plan, this situation can be expected to continue and worsen. Alternative A does not change the current Travel Plan designations, so ATVs will continue to be allowed to use all motorized trails without restrictions.

Trail maintenance, construction and reconstruction will continue at present levels to improve, and recondition trails in order to meet user needs and protect resource values. When trails are planned for improvement work, consideration will be given for the type of use the trail should be developed for in order to best protect all resource values and provide quality recreation experiences. Reconstructing trails to ATV standards will not be done on most trails, and without specific direction in the Forest Travel Plan, will probably be done less frequently than may be needed. Trail maintenance costs will increase as more ATV trails develop in more difficult terrain, thus becoming more difficult and expensive to maintain.

While this alternative does the least to improve or add opportunities for users to make loop travel it still provides reasonably good opportunities under the current travel plan. ATVs can use any of the motorized trails, therefore all current loop opportunities are available. However in practicality only a few opportunities now exist that would meet any type of ATV standards. Most other trails not designed and constructed for ATV use would require a very experienced rider's ability to negotiate. Some new loop opportunities for ATVs may be developed in the next few years, however they would be limited.

Conflicts between different types of uses currently appear low in the Big Hole Subsection. A few reported incidents occur each year but are relatively small in numbers (no actual records exist but some observations and hear-say incidents indicated some conflicts do exist between users). This is somewhat surprising considering all the different types of uses that occur on these trails. Users become somewhat adaptive as use and type changes. However, it appears a growing dissatisfaction is beginning to develop between single track users and ATV users. ATV tracks are some times difficult to ride by a single track vehicle, particularly if the ATV track is rutted. As ATVs pioneer further into new areas, this problem will continue to develop into more of an issue. User conflicts can be expected to increase the most under Alternative A.

Illegal or unwanted trails are those that are created by users who do not use established and designated trails. Illegal trails are created each year and become very difficult to close once created. This is in part because many public users do not know that the trail is not open for use and just simply follow an established track. Signing has been somewhat affective but only lasts until the sign is pulled down and destroyed. One of the key elements in preventing illegal trails is to create a trail system that meets the needs of the different users so they have a place to go. The current travel plan does not provide the system that is needed for ATV users(only about 30 miles). A few trails have been reconstructed to ATV standards, but most trails used by ATVs have never been properly constructed for this type use. So when ATV users come to a section of trail not suitable for ATV travel, they create their own route (thus an illegal and unwanted trail). This situation is quite

common on many trails on the Forest and will continue to get worse under this alternative.

Off highway vehicle use on the National Forest is becoming more of a concern each year. Many of these vehicles can be made street legal by adding lights and other required equipment, but most forest users never take that step. Many of the trails either enter or exit onto a Forest system road. The user is required to ride the road to get to the parking area or to the next trail. A few of the roads are narrow, graveled and are used frequently by full sized vehicles, i.e. the Snake River Road. Travel on a graveled road is more difficult because of the decreased traction on gravel, particularly with light weight vehicles and single track vehicles. This emerging issue is voiced from both the trail and road users and is likely to become more of a problem in the near future. While there are only a few key problem roads relating to this situation, Alternative A does not address the concern at all.

No additional closures to cross-country mountain bike use beyond what currently exists will be established.

### **Alternative B - Trail Committees'**

Under this alternative, trails would be identified where ATVs would be allowed and where ATV travel would be prohibited. All motorized trails would be identified as either ATV or single track motorized in entire subsection. By designating ATV trails, better planning can take place as to which trails would be designated for reconstruct in order to meet ATV standards. Better control of ATV travel would occur, thus reducing potential resource impacts and user conflicts. The public will have a clear understanding of trail use, which will result in better compliance from all users as well as providing more quality experiences.

This alternative approximately doubles the number of ATV miles designed, constructed, and designated for ATV travel over Alternative A. It does go a long way in recognizing that a system of trails is needed for good ATV management. However it does not recommend enough trail use in a key area near Kelly Canyon, based on perceived public demand . This area is heavily used by ATVs and in order to control use by ATVs a properly designed and designated system of such trails is needed in order to better meet demand.

Loop opportunities for single track users will probably remain fairly constant as in Alternative A because the total over all motorized trial miles will remain close to the same in both alternatives. The quality of loop opportunities for ATVs will improve as more developed ATV trails are improved to ATV standards. Overall user satisfaction will be better for all user groups.

Trail maintenance needs will improve significantly since ATVs are restricted from unsuitable terrain on single track motorized trails. As trails are reconstructed in suitable terrain to ATV standards, less maintenance costs can be expected.

This alternative would not close additional acres to cross-country mountain bike use beyond those already closed. Allowing such use could cause additional user-created trails to develop and thus invite single track motorized vehicles to use the tread or tracks they create. Such use could eventually create resource impacts in areas not capable of sustaining additional trail use. Recreation experiences and user satisfaction would be maintained for these users by allowing continued cross-country use.

Specific actions concerning this alternative are:

- Trail NT3 (Wolverine to Big Burns Canyon): This trail would be designated for single track motorized use. It is called the old Ranger Trail. It was built many years ago when the Forest Ranger would ride a horse from the old Hawley Gulch Guard Station to Swan valley. The trail exists today and is used by the cattle permittee as part of his operations. It is a single track trail running parallel to the South Fork River Road approximately ½ to 1 mile up canyon to the north of the road. The trail would be added to the motorized designation in order to provide a trail access from the Wolverine Creek trail to the Big Burns trail. Currently trail users must use the Snake River road to connect the two trails. This trail would remove a growing safety concern for the single track motorized vehicle users. Since it is a single track trail, ATVs would still be required to use the road. However, the Big Burns trail is also proposed to be designated a single track motorized trail under all action alternatives, while the Wolverine Creek trail is proposed to be designated for ATVs. The existing trail would need to be relocated in two areas where the grade is steep and poorly located. The remaining trail is in good condition and its location is satisfactory. Opening the trail to single track motorized vehicles may impact the cattle permittee by introducing new users to the area. Several gates are encountered along the trail which have the potential to be left open with the new use.
- The new proposed Trail NT4 (Kelly Canyon) would make a connection from the junction of FS Road 218 and 217 with Buckskin Morgan summit. The trail does not exist currently and would need to be constructed. The purpose of the trail would be to allow mountain bike use. Currently bikes are required to use Forest Road #218 for the same access. This would resolve a safety issue for this user group. This would be designated a non- motorized trail.
- The proposed Trail NT5 (Hinckley Creek-Argument Ridge to Moody Meadows) would connect Hinckley Creek to the Moody Creek (trailhead) Road. The trail would be designated motorized and built to ATV standards. Currently part of the trail exists from the Coal Mine trail to Argument Ridge and is an old jeep road. From Argument Ridge to Moody Creek Road the trail would need to be constructed. When complete the trail would provide a loop trail opportunity for ATVs from Hinckley Creek to Moody Road. The purpose of the trail is to increase user satisfaction and loop trail opportunities.

### **Revised Alternative C (hereafter called Alternative C)**

As with Alternative B, trails would be identified where ATVs would be allowed and where ATV travel would be restricted. All motorized trails would be identified for either ATVs (single track vehicles would also be allowed) or single track vehicles (ATVs would not be allowed) throughout the Big Hole Mountains Subsection. By designating trails for ATVs, better planning is expected as to which trails would be targeted for reconstruct and or construction to ATV standards. Better control of ATV travel is expected, reducing potential resource impacts and user conflicts. Clearer understanding by the public will result in better user compliance for travel plan management.

This alternative would close the entire subsection to cross-country travel to mountain bikes. Currently, such use by motorized vehicles is already in place and will not be changed. This proposal will improve overall natural resource values and reduce impacts by not creating new single track tread or trail marks which may invite other single track motorized users – thus causing unwanted and illegal trails to be created. This type of closure would decrease to some extent the recreational opportunities and experiences for mountain bike users.

This alternative increases available ATV miles by approximately 15.85 miles over Alternative B. Single track mileage appears to have decreased by approximately 20.95 miles from Alternative B, but in actuality has not decreased that much since single track vehicles can also travel on ATV trails. Overall, total motorized mileage in this alternative would only be approximately 5.1 miles less than Alternative B and 4.4 miles less than Alternative A – the current situation. This alternative best recognizes the need for ATV use in the subsection. Heavily used areas by ATVs such as the Kelly Canyon area, are better considered in this alternative.

Loop opportunities for single track users will remain fairly constant in Alternatives A, B, and C because overall motorized trail miles will remain close to the same. The quality of loop opportunities for ATVs will improve as more developed ATV trails are improved to ATV standards. This alternative and Alternative D offers the best opportunities for ATV use. Overall user satisfaction will improve for all user groups.

This alternative provides the most non-motorized trail opportunities of all the alternatives. There are approximately 18.9 more miles than in Alternative B, approximately 28.9 more miles than Alternative A, and approximately 23.7 more miles than Alternative D. This alternative offers more non-motorized experiences, creates less user conflicts, and has less resource impacts than any of the other alternatives.

Trail maintenance needs will improve significantly since ATVs will be restricted from unsuitable terrain. As trails are reconstructed to ATV standards, less maintenance can be expected on these trails as well. Increases in illegal and unwanted trails may likely be reduced as users are provided new opportunities on trails properly designed and constructed for intended uses.

Specific actions concerning this alternative are:

- **Trail DP1 - Red Butte**

This trail is a short trail (0.2 miles) connecting Prospect Peak Trail to the top of Red Butte. This trail does not show on the Travel Plan but does exist on the ground. Though it is a user created trail, it is proposed to be maintained as a system ATV trail. The purpose of the trail is to allow users access to a vista point, thus increasing visitor satisfaction and experiences.

- **Trail DP3**

Wolverine/Hawley Gulch - This trail would connect the Wolverine Creek Trail with Hawley Gulch Trail. The route is currently a series of logging roads and would require no new trail construction. The trail is purposed to be an ATV trail. Without this purposed trail the ATV user is required to ride Forest Road #218 for approximately 3 miles in order to connect to the two trails. A newly designated trail along these old roads would greatly reduce hazards of riding the road.

- **Trail DP4 - Palisades-Rainey Creek**

This purposed trail would connect Palisades Creek to Rainey Creek. This would be a newly construct trail (24 inch tread width) and would be designated for non-motorized uses. The trail would parallel the Forest boundary. The purpose of this proposed trail is to allow access to the National Forest. Currently access points along this section of National Forest are being closed by adjacent land owners.

- **Trail DP5 - Extension of Rainey Creek Bench Trail**

This trail would extend Trail #114 to connect Rainey Creek and Pine Creek Highway. Currently Trail #114 runs between the two Canyons but never connects to either Canyon. It is proposed to construct trails on each end of the existing trail to connect Rainey Creek and Pine Creek. The trail was proposed because of access needs to the Forest. The trail would be designated for non-motorized uses.

- **Trail DP6 - Windy Ridge Connector**

This trail would connect Road #318 with Road #218. It currently exists as an old jeep type road (with constructed cut and fill slopes). The intent is to provide ATV users a loop between the two roads. Currently this trail does not show on the Travel Plan even though it has been used for many years. It is therefore proposed to be added to the trail system.

### **Alternative D - Proposed Plus**

ATV trails will be designated the same as in Alternatives B and C. Restricting ATV use to certain trails will have the same positive effects as described in Alternatives B and C above.

The greatest difference between this alternative and the other alternatives is the total miles of designated motorized trails. This alternative would provide approximately 24.0 more miles of motorized trails than Alternative C, approximately 18.9 miles more than Alternative B, and approximately 19.6 miles more than Alternative A - the current situation. Approximately 10.5 miles of non-motorized trails would be converted to motorized use (5.5 miles to ATV trails and 5.0 miles to single track trails). Approximately 1.55 miles of new ATV trails would be constructed – the same as in Alternative C. Approximately 10.8 miles of new non-motorized trails would be constructed – the same as Alternative C and 7.8 more miles than Alternative B – thus improving the non-motorized experience for many users.

Changing non-motorized trails to motorized trails will bring motorized and non-motorized users together. This has generally proven to cause some user conflicts. Each alternative has a mix of motorized and non-motorized users, but Alternative D has the greatest potential for creating conflicts between different types of users. User satisfaction will likely decrease the most with the non-motorized users since fewer non-motorized trails will be available.

Increasing motorized trail miles in this alternative would increase loop trail opportunities, more so for single track vehicles, as compared to Alternative B or C. ATV loop opportunities would be similar to Alternative C, but even with the mileage increase it is doubtful that the change would be significant.

Cross-country mountain bike use would be the same as in Alternatives A and B.

### **Cumulative Effects**

The Palisades and Teton Basin Ranger Districts accomplish approximately 140 miles of trail maintenance each year. This work involves clearing trails of brush and downed logs and debris, installing water control structures designed to remove water from the trail tread, improving trail

tread where needed, and signing or marking trails for public information. Trails are typically maintained on a three year rotation schedule depending on need and use of the trail. Idaho Parks and recreation may also assist in maintenance through the Trail Ranger Program, focusing on maintaining motorized trails every other year. Other groups and volunteers may help in this effort each year as well. Trail maintenance has been a part of the District program for many years and will continue as funding permits.

Table 4.20 shows trail construction and reconstruction projects completed since 2002 and those proposed for future years.

**Table 4.20 – Summary of Trail Reconstruction and Construction Projects - past and proposed.**

<b>Trails to ATV Standards</b>	<b>Year</b>	<b>Single Track Trails</b>	<b>Year</b>	<b>Non-motorized Trails</b>	<b>Year</b>
<b>Palisades Ranger District</b>					
Leaning Fir (169)	2002	South Rainey Creek (090)	2002	Chicken Springs Creek (153)	2006
Hawley Gulch (031)	2002	Fleming Canyon (079)	2003	Oat Canyon (127)	2007
Thousand Springs (077)	2003	Corral Canyon (086)	2004	Sheep Creek (096)	2007
Castle Lake (076)	2004	Black Canyon (074)	2005	Water Canyon (092)	2008
Wolverine (082)	2005	Big Burns Creek (068)	2005	Hunts Corral (081)	2008
Fish Creek (083)	2006	Coalmine (064)	2007	Oat Canyon (127)	2007
Carlton Cutoff (Moody Swamp-District Boundary) (060)	*	Upper Burns Creek (068)	2007	Sheep Creek (096)	2007
Burnt Canyon-Dry Fork (087)	*	Coalmine (064)	2007	Water Canyon (092)	2008
Morning Glory Mine (139)	*	Upper Burns Creek (068)	2007	Hunts Corral (081)	2008
Hinkley Creek-Argument Ridge-Moody Meadows (NT5)	*			Kelly Canyon (NT4)	*
Calamity (061)	*			Palisades-Rainey Creek (DP4)	*
Black Canyon (074)	*			Extension Rainey Creek Bench (DP5)	*
Thousand Springs (077)	*				
<b>Trails to ATV Standards</b>	<b>Year</b>	<b>Single Track Trails</b>	<b>Year</b>	<b>Non-motorized Trails</b>	<b>Year</b>
<b>Teton Basin Ranger District</b>					
FR253-Black Grove Cutoff (051)	2010*	S. Horseshoe (056)	2005-2009		

Relay Station (062)	*	N. Mahogany (057)	*		
Henderson Cutoff (211)	*	Calamity (061)	2005-2007		
Packsaddle Lake (212)	*	North Fork Canyon Creek (064)	*		
Elk Flat Fork (216)	2001	Elk Flat Fork (216)	2001		
Black Grove-Blanchard Ridge (DP2)	*				
031/321 BPA Line (031/321)	*				

\* The year in which the work will be done depends on when funding becomes available.

No additional trail miles have been added to the trail system since the 1997/1999 Targhee Travel Plan was implemented. Illegal (ghost or unwanted) trails continue to be a problem as new unauthorized trails appear each year. The problem is more acute in certain areas such as the Kelly Canyon area where public access is easy and only requires a short travel time to the National Forest from major communities. The problem also appears to be fairly constant with no large surge in recent years.

### **Consequences Common to All Alternatives**

- Trail maintenance (motorized and non-motorized) will continue on all trails according to the three-year schedule or cycle as funding levels permit and volunteer and grant resources become available. Increased needs and costs for law enforcement and signing to manage the system of restricted roads and trails will continue to increase. Routine reconstruction of trails and structures will continue as funding levels permit.
- The forest-wide guidelines concerning trail design, condition surveys and restricting OHV use should help meet the RFP goals of sustaining OHV opportunities and sustaining trails in good condition while minimizing effects to other resources.
- Prohibiting cross-country travel by all motorized vehicles throughout the entire subsection will be maintained.
- No change in trails status or no new trails will be proposed in the Wilderness Study Area or the Recommended Wilderness Area.

### **Consequences Which Vary by Alternatives**

Table 4.21 shows a comparison of trails by alternative that will be open to motorized use, restricted, or decommissioned and reclaimed and rerouted. It also shows acres closed to cross-country mountain bike use. Compared to the existing situation, changes are as follows:

- The current designation of “Open for Motorized Use less than 50 inches wide but NOT RECOMMEND FOR ATVs” will be eliminated in Alternatives B, C, and D.
- All trails in Alternatives B, C, and D will be designated for either ATVs, Single Track motorized, or Non-motorized. Single Track motorized vehicles and non-motorized uses will be allowed on ATV trails. Non-motorized uses will be allowed on Single Track motorized trails.

**Table 4.21 – Summary of Trail Miles and Acres closed to cross-country mountain bikes by Indicators by Alternative**

<b>Issue Indicator</b>	<b>Alternative A – Existing Situation (No Action)</b>	<b>Alternative B - Trail Committees'</b>	<b>Alternative C - Selected Alternative - with changes</b>	<b>Alternative D - Proposed Plus</b>
<b>Recreational Use</b> Miles of ATV trails <u>1/</u>	30.5	64.9	80.75	82.35
<b>Recreational Use</b> Miles of Single Track motorized trails <u>2/</u>	187.5	153.8	132.85	155.25
<b>Recreational Use</b> Miles of non-motorized trails	286.8	296.8	315.7	292.0
<b>Recreational Use</b> Miles of trails to be reconstructed to meet ATV standards	0	28.2	27.0	35.0
<b>Recreational Use</b> Miles of new trails to be constructed for ATVs	0	1.0	1.55	3.05
<b>Recreational Use</b> Miles of new trails to be constructed for Single-Track motorized use	0	0	0	0
<b>Recreational Use</b> Miles of new trails to be constructed for non-motorized use	0	3.0	10.8	10.8
<b>Recreational Use</b> Miles of trails to be obliterated	0.6	0.6	7.7	6.4
<b>Recreational Use</b> Miles of loop trails for ATV and Single Track motorized vehicles	None designated as such for ATV.  There are multiple combinations for Single Track	Approx. 40-45 mi. for ATV.  There are numerous combinations for Single Track Motorized.	Approx. 45-50 mi. for ATV.  There are numerous combinations for Single Track Motorized.	Approx. 45-50 mi. for ATV.  There are numerous combinations for Single Track Motorized.
Total miles of ATV and Single Track motorized Trails	218.0	218.7	213.6	237.6
<b>Approximate Total Miles of Trails</b>	504.8 <u>3/</u>	515.5 <u>4/</u>	529.3 <u>4/</u>	529.6 <u>4/</u>
Acres closed to cross-country bicycle use	8,804	8,804	357,779	8,804

1/ ATV trails are also open for single track motorized use (motorcycles) and all non-motorized use.

2/ Single track motorized (motorcycle) trails are closed to ATVs but open to all non-motorized use.

3/ The total trail miles for Alternative A do not include some trails that may exist on the ground and were missed during the inventory process.

4/ Includes new proposed trails and trails which are existing on the ground but not shown on the current travel map.

## Summary

As motorized trails are specifically designated for ATVs and Single Track motorized vehicles, there will be a decrease of ATV use on single track motorized trails in Alternatives B, C, and D. This could have an overall effect of loss of enjoyment for ATV users in some of the areas. At the same time however, this could enhance this type of recreation activity for this same group since more trails would be designed and constructed for ATVs, thus providing safer travel and more loop opportunities.

In addition, Single Track motorized users would enjoy about the same number of miles of trails but they would not be competing with ATV users on trails designated for Single Track motorized use as currently exists in Alternative A. Overall, natural resources would benefit from specifically designating ATV trails that would be designed and constructed for ATV use and trail maintenance would decrease.

Closing all or additional portions of the subsection to cross-country travel by mountain bikes and other mechanized equipment would decrease unwanted or illegal trail development but would increase the need for enforcement efforts for the near future.

Overall, it is questionable whether there will be enough designated trails or routes open to travel to meet the needs of increasing motorized access demand in any of the alternatives, but especially in Alternatives B and C. Much of the cross-country travel occurring to mountain bikes and other mechanized equipment would be lost in Alternative C. Also, all of the motorized trail use occurring by ATV users on Single Track motorized trails would be lost. Therefore, the actual and apparent loss of ATV access and mountain bike and other mechanized equipment opportunities may be of some concern to some of these type of users.

## **Area of Concern – Open Road Open Motorized Trail Route Density**

### **Direct and Indirect Effects**

The Open Road and Open Motorized Trail Route Density (OROMTRD) standards are not analyzed except as discussed in the following sections:

- Chapter One, Issues and Area of Concern.
- Individual alternative descriptions in Chapter Two.
- Chapter Four, Issue 3 – Wildlife, pages 4-32 through 4-44, Indicator, 2. Change in the Road and Motorized Trail Density by Prescription and **Table 4.15 - Direct and Indirect Impacts to Wildlife Indicators by Alternative.**

The goal of this assessment is to stay within the limits of the existing OROMTRD standards established in the 1997 Revised Forest Plan (RFP). This goal has been accomplished in all of the Management Prescription Areas except as described in Chapter Two for each alternative. Table 4.22 summarizes the changes which would occur in each Management Prescription Area by alternative.

**Table 4.22 Summary of OROMTRD by Management Prescription Area**

<b>Management Prescription Area (see Revised Forest Plan)</b>	<b>OROMTRD allowed by RFP (mi./sq. mi.)</b>	<b>Proposed OROMTRD by Alternatives (mi./sq. mi.)</b>	<b>Comments</b>	<b>Is the change an increase or decrease in miles?</b>
1.2 Wilderness Study Area	0.3 <u>1/</u>	0.3	No changes proposed*	NA
1.3 Recommended Wilderness	0.0 <u>1/</u>	0.0	No changes proposed*	NA
2.1.2 Visual Quality Maintenance	Not Applicable	Not Applicable	No changes proposed	NA
2.2 Research Natural Areas	Not Applicable	Not Applicable	No changes proposed	NA
2.3 Eligible Wild River	0.0	0.0	No changes proposed**	NA
2.4 Eligible Scenic River	Not Applicable	Not Applicable	No changes proposed	NA
2.5 Eligible Recreation River	Not Applicable	Not Applicable	No changes proposed	NA
2.7(a) Elk & Deer Winter Range	2.00	2.00	Changes remain within OROMTRD in all alternatives	Increase 1.2 mi. in Alt. B; increase 5.0 mi. in Alt. D
2.8.3 Aquatic Influence Zone	0.0	0.0	No changes proposed	NA
2.9.1 South Fork Snake River Eligible Scenic River	Not Applicable	Not Applicable	No changes proposed	NA
2.9.2 South Fork Snake River Eligible Recreation River	Not Applicable	Not Applicable	No changes proposed	NA
3.2 (d) Semi-primitive Motorized	1.00	1.00	No changes proposed	NA
3.2 (g) Semi-primitive Motorized	1.00	1.00	Changes motorized trail to non-motorized trail	Decrease 3.7 mi. of Single Track motorized in Alt. C.
3.2 (i) Semi-primitive Motorized	1.2	1.2	Changes remain within OROMTRD in all alternatives	Increase 3.3 mi. in Alt. B; decrease 5.1 mi. in Alt. C; increase 13.6 mi. in Alt. D
3.2 (j) Semi-primitive Motorized	0.5	0.5	Changes remain within OROMTRD in all alternatives	Increase 0.3 mi. in Alt. B; increase 1.7 mi. in Alt. C; increase 6.5 mi. in Alt. D
4.1 Developed Recreation Sites	Not Applicable	Not Applicable	No changes proposed	NA
4.2 Special Use Permit Recreation Sites	Not Applicable	Not Applicable	No changes proposed	NA
4.3 Dispersed Camping Management	Not Applicable	Not Applicable	No changes proposed	NA
5.1.3 (b) Timber Management (No Clearcutting, Urban Interface)	3.00	3.00	No changes proposed	NA
5.1.4 (b) Timber Management (Big Game Security Emphasis) – Moody Creek Area	1.7	1.73 in Alt. A; 1.76 in Alt. B; 1.8 in Alts. C and D	Changes exceed OROMTRD in all alternatives	Increase 0.79 mi. in Alt. A; 1.59 mi. in Alt. B; 2.79 mi. in Alt. C and D
5.1.4 (b) Timber Management (Big Game Security Emphasis) – Packsaddle Area	1.5	1.5	Alt. A exceeds OROMTRD. Changes in Alts. B, C, and D remain within OROMTRD	Decrease 0.6 mi. in Alt. A; decrease 6.0 mi. in Alt. B; decrease 4.6 mi. in Alt. C; decrease 4.0

				mi. in Alt. D
5.2.2 Visual Quality Maintenance	Not Applicable	Not Applicable	No changes proposed	NA
8.1 Concentrated Development Areas	Not Applicable	Not Applicable	No changes proposed	NA

1/ Some areas currently exceed the allowed OROMTRD. See individual Management Prescription Area descriptions in the RFP for explanations.

\* Existing uses will continue as is until a determination is made by Congress.

\*\* Use may be allowed where currently existing and it does not degrade the outstanding remarkable river vaules.

### Summary

Even in Alternative A – Existing Situation (No Action), the motorized route densities are exceeded as described in Chapter One, Issues and Area(s) of Concern. This environmental assessment will correct the OROMTRD standards which appear to be over density by amending the density levels in the affected Management Prescription areas - no matter which alternative is selected. As Table 4.22 shows, only the OROMTRD standards in Management Prescription Area 5.1.4(b) – Moody Creek will need to be slightly increased in any alternative selected. All other Management Prescription Areas will retain their current OROMTRD levels.

Therefore, the environmental consequences – including cumulative effects – as described in the 1997 RFP and the 1999 FEIS for the Open Road and Open Motorized Trail Analysis (Motorized Road and Trail Travel Plan) are still applicable. Infact, an overall positive change in all issue areas should be realized by eliminating the “Open for Motorized Uses less than 50 inches wide but NOT RECOMMENDED FOR ATVs” designation in Alternatives B, C, and D.

### **Area of Concern – Wilderness Study Area, Recommended Wilderness and Inventoried Roadless Areas**

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

The effects and consequences to the Wilderness Study Area (WSA), Recommended Wilderness and Roadless Areas were determined in the 1997 FEIS, pages IV-47 to IV-50, for the Revised Forest Plan and the 1999 FEIS for the Open Road and Open Motorized Trail Analysis (Motorized Road and Trail Travel Plan), pages IV-33 and IV-34. Any effects and consequences discussed in the 1997 and 1999 FEISs are still applicable – except as described for Alternative C in the WSA section below. All alternatives have the same consequences as there are no changes in any actions between alternatives – except in Alternative C – Proposed Action as described in WSA below.

#### **Wilderness Study Area (WSA) – Management Prescription Area 1.2**

No increases or decreases in motorized trail designations change in any alternative. The existing seasonal closure for the motorized trails from September 15 to November 15 will remain in effect in all alternatives.

Alternative C – Proposed Action, **proposes to eliminate motorized use on approximately 3.7 miles of an existing trail in an adjacent management prescription area** - which should have a significant effect on reducing the potential for encroachment of motorized uses in the wilderness study area. Likewise, other non-motorized recreational values should be enhanced by eliminating

motorized use adjacent to the WSA. Impacts to wildlife resources should be significantly reduced as well. Overall, the quality and character of the wilderness study area should remain in tact in Alternatives A, B, and D while such qualities would likely be enhanced in the area where the motorized trail would be eliminated – in Alternative C – Proposed Action.

According to the language in the 1984 Wyoming Wilderness Act, Title III – Wilderness Study Areas, Sec.301.(a), the 1985 Targhee Forest Plan and 1997 Revised Forest Plan completed the “review of the lands (Palisades WSA) as to their suitability for preservation as wilderness.” This review is described in the various sections of each document – including FEISs and the 1999 FEIS for the Open Road and Open Motorized Trail Analysis (Motorized Road and Trail Travel Plan) already referenced.

As supplemental information, individual Worksheets for the original Palisades Roadless Area are included in this environmental assessment (see Appendix F – Worksheet 1 – Wilderness Attributes, Evaluating the Effects of Project Activities on Wilderness Attributes and Worksheet 2 – Roadless Area Characteristics, Evaluating the Effects of Project Activities on Roadless Area Characteristics for the **Palisades** Roadless Area).

### **Cumulative Effects**

In summary, since the 1984 Wyoming Wilderness Act designated this a Wilderness Study Area, **motorized use on trails has been reduced over the past 22 years as follows:**

- from approximately 26 trails to four
- from approximately 100.6 miles to 18.56
- and the seasonal trail restriction of “Closed to Motorized use from September 15 to November 15” has been implemented on the four trails now open to motorized use.

In Alternative C – Selected Alternative - with changes, the following actions will be implemented:

- the four trails will remain open to single track motorized use
- the seasonal restriction of “Closed to Motorized use from September 15 to November 15” will be continued on the four trails
- ATV use will be eliminated on all trails in the WSA (applicable only for Alternative C – Proposed Action) and
- mitigation measures will be taken to better insure that ATV travel at the beginning of these four trails will be eliminated. Methods used may vary based on the terrain and vegetation found at each area but may include gates, rock barriers, vegetative plantings, or other accepted measures.

Even though ATVs currently access very little of the four trails open for motorized use due to terrain constraints, the more powerful machines are trying to push further up the trails. Prohibiting ATV use on these trails will have positive benefits to the environment. Trails will remain single track which will reduce trail prism widths and associated soil disturbance. Vegetation will increase along the trails – thus providing a better buffer for screening if near streams. The number of motorized vehicles should be less as ATV owners normally would not switch to single track vehicles just to access the area. There will be fewer conflicts between motorized and non-motorized users on the trails and the overall recreation experience should be enhanced.

Overall, the naturalness of the area has increased over time as motorized use has been restricted. Trails have narrowed, there is more vegetation to screen trail corridors and they are less visible on the terrain. Reductions in motorized trail miles have vastly improved the opportunity for primitive recreation and the absence of motorized sound has improved the sense of solitude experienced by non-motorized users in the area. Furthermore, the absence of motorized vehicles has increased the opportunity to view wildlife up closer in their natural habitat

This reduction in motorized use should continue to maintain the existing wilderness characteristics until such time as Congress makes a determination on the area's wilderness status. (Also see Appendix F – Wilderness Attributes and Roadless Area Characteristics for the Palisades Roadless Area).

The past 1985 Forest Plan and current 1997 Revised Forest Plan have complied with direction in the 1984 Wyoming Wilderness Act.

### **Recommended Wilderness – Management Prescription Area 1.3**

No changes are proposed in any alternative within the Recommended Wilderness area. Since the 1997 RFP management direction, there have been no apparent changes in activities which have changed cumulative impacts or effects beyond what the 1997 RFP already discussed. Therefore, should any adverse interactions or impacts be noted, management responses will be applied to appropriately deal with problems should they arise. All alternatives have the same consequences since no differences in management exist between the alternatives and no changes from the current situation are proposed in any alternative.

### **Inventoried Roadless Areas**

Discussions regarding new changes in the action alternatives which apply to the remainder of the Roadless Areas outside of Recommended Wilderness and Wilderness Study Area (now divided into various Management Prescription Areas shown in the 1997 RFP) will tier to the 1997 and 1999 FEISs. Also see individual Issue Areas for information on effects.

In the Garns Mountain and Palisades Roadless Areas, all management actions will follow applicable direction in the individual management prescription areas into which they fall. Direct, Indirect and Cumulative Effects are discussed in the Issue Areas.

As supplemental information, individual Worksheets for the original Garns Mountain and Palisades Roadless Areas are included in this environmental assessment (see Appendix E – Worksheet 1 – Wilderness Attributes, Evaluating the Effects of Project Activities on Wilderness Attributes and Worksheet 2 – Roadless Area Characteristics, Evaluating the Effects of Project Activities on Roadless Area Characteristics for the **Garns Mountain** Roadless Area and Appendix F – Worksheet 1 – Wilderness Attributes, Evaluating the Effects of Project Activities on Wilderness Attributes and Worksheet 2 – Roadless Area Characteristics, Evaluating the Effects of Project Activities on Roadless Area Characteristics for the **Palisades** Roadless Area).

### **Summary**

From 1985 to present, there has been a reduction in the number of motorized trails in the WSA from 26 to four and a decrease in motorized trail miles from approximately 100.6 to 18.56. Since 1997, there have been no changes to the trail network (additions, change in use type, or decommissioning) in either the Wilderness Study Area or the Recommended Wilderness Area.

In this EA, no changes will be made in any alternative in the WSA or Recommended Wilderness area. However, **in Alternative C – Proposed Action, an additional 3.7 miles of a single track motorized trail in Management Prescription area 3.2(g) adjacent to the WSA, will be changed to a “non-motorized” trail.**

To summarize the Wilderness Attributes and Roadless Area Characteristics, (see Appendix F - Palisades Roadless Area), the naturalness of the area has increased over time as motorized use has been restricted. Trails have narrowed, there is more vegetation to screen trail corridors and they are less visible on the terrain. Reductions in motorized trail miles have vastly improved the opportunity for primitive recreation and the absence of motorized sound has improved the sense of solitude experienced by non-motorized users in the area. Furthermore, the absence of motorized vehicles has increased the opportunity to view wildlife up closer in their natural habitat.

The remaining existing motorized use does not adversely affect the wilderness attributes and roadless area characteristics which existed when Congress passed the WSA legislation. In reality, these attributes, characteristics, and qualities have improved over the past 22 years because of a reduction of motorized trail and cross-country travel. Likewise, the Proposed Action – Alternative C, will have an additional positive effect on the WSA by eliminating the use of ATVs on existing motorized trails. This will eliminate the development of two-track trails which will reduce soil compaction and erosion, improve vegetation adjacent to trails, and reduce user conflicts between motorized and non-motorized users. A reduction in motorized users should help maintain the existing wilderness characteristics and values.

The proposed action is in compliance with the Roadless Area Conservation Rule because it does not propose any road construction, either through active development or reclassification, in inventoried roadless areas covered by the Rule.

No trail use surveys have been conducted over the past few years to determine how much change in use has taken place. Even though District recreation and trail maintenance employees have seen a slight increase in all types of users, they feel the existing wilderness attributes of the WSA and Recommended Wilderness area have not been degraded. The WSA quality and character has been significantly improved over the past 22 years due to the decrease in total motorized trail miles. Therefore, the wilderness character is still in tact in both the WSA and Recommended Wilderness areas.

## **Plant Species Diversity**

The following descriptions summarize management direction for Threatened, Endangered and Sensitive Plants:

### **Threatened or Endangered Plant Species**

#### **Ute ladies'-tresses (*Spiranthes diluvialis*)**

This project was streamlined on March 22, 2005 with the Fish and Wildlife Service. The species list was SP# 1-4-05-SP-118. The preliminary determination in March 2005 for Ute ladies'-tresses was “No Effect”. This determination was based on the condition that this project does not change the recreational use in the Snake River Corridor. Ute ladies'-tresses is found within the Big Hole Subsection, but only associated with the floodplain of the South Fork of the

Snake River. A Biological Assessment was completed for Ute ladies'-tresses for this project and is on file in the project record.

### **Sensitive Plants**

A determination of "May impact individuals or habitat, but will not likely contribute to a trend toward Federal listing or cause a loss of viability to the population or species" was made for these three sensitive plant species. A Biological Evaluation was prepared for this project and is on file in the project record.

### **Cumulative Effects**

The potential impacts to Threatened, Endangered and Sensitive Plants may include the proposed project, cattle grazing, setting of water troughs, mining, recreation, road or trail construction, and other ground disturbing projects. The effect of all impacts will require complete site-specific reviews prior to ground disturbing activities.

### **Heritage Resources**

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 (CRP's). 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 long and progressive history of regulations concerning the protection of significant archaeological resources.

Survey methods will include pedestrian transects and visual assessments of the project's area of potential effects (APE) for all site specific undertakings. The percentage of assessment area to be surveyed will be dependant upon identified site location probability and actual areas affected by the proposed action. Coverage of such previously unsurveyed areas will be performed in compliance with the National Historic Preservation Act Section 106 Process. For any proposed ground disturbing activities one-hundred percent of high cultural site probability areas will be inventoried. Cultural resources property significance, i.e., National Register of Historic Places eligibility shall be determined by Forest Service Cultural Resources Specialist 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 be recommended in order to achieve a "no adverse effect" determination. All inventory reports will be submitted to the SHPO in completion of the NHPA Section 106 process.

### **Cumulative Effects**

The potential impacts to cultural resources may include the proposed project, cattle grazing, setting of water troughs, mining, recreation, and road construction projects. The effect of all impacts will require complete cultural resources review prior to additional undertakings which have the potential to affect cultural resources either independently or commulatively.

## Chapter Five

### SPECIFICALLY REQUIRED DISCLOSURES

This section summarizes the specifically required disclosures, including those from NEPA, other laws, Forest Service regulations and policy.

#### Disclosures Required by Law, Regulation, or Policy

##### Clean Water Act Compliance

Water quality was discussed as an issue in this EA. All alternatives would comply with the Clean Water Act.

##### Water Quantity

No demands for water use is required in any of the alternatives.

##### Executive Orders on Wetlands and Floodplains (E.O. 11990 and 11988)

No ownership changes from public to private would occur. Therefore, this section still applies. All alternatives comply with both executive orders. Discussions are found in this EA.

##### Executive Order on Invasive Species (E.O. 11987)

The Forest uses a comprehensive Noxious Weeds Strategy for the management of noxious weeds. Briefly, this strategy adopts Best Management Practices, promotes education and awareness, established district priorities for control and prevention, and aids in the development of Cooperative Weed Management Areas. The Noxious Weed Strategy insures that all alternatives would be in compliance with this Executive Order.

##### Endangered Species Act

Wildlife and riparian habitat is an issue in this project proposal. Therefore, appropriate discussion regarding T&E species is found in this Environmental Assessment. A Biological Assessment for all listed species was prepared and submitted to the USFWS for their review and concurrence. Copies are available in the project record.

Though Threatened or Endangered Plan Species is not an issue in this assessment, a Biological Assessment and Evaluation for all listed species – including sensitive – were prepared and are available for review in the project record.

##### Cultural Resources

Issues have been reviewed. Any new disturbed areas will be inventoried.

##### Minerals

Minerals are outside the scope and are not addressed.

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**Roadless Areas**

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The 1997 Revised Forest Plan establishes current management direction. Inventoried roadless areas would be directly affected by any of the action alternatives. Effects were disclosed in the Wilderness Study Area, Recommended Wilderness and Roadless Areas section.

On January 12, 2001, the Department of Agriculture promulgated the Roadless Rule at 36 CFR 294 (66 FR 3244), which fundamentally changed the Forest Service's longstanding approach to management of inventoried roadless areas by establishing nationwide prohibitions that, with some exceptions, generally limited timber harvest, road construction, and road reconstruction within inventoried roadless areas on NFS lands. Since the 2001 Rule does not provide direction for the management of motorized or nonmotorized trails within Inventoried Roadless Areas, it does not directly affect this project. A Roadless Area Assessment for the project was completed and is included in Appendixes E and F.

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**Old Growth**

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Old growth is outside the scope and is not discussed.

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**Rangeland Management**

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Rangeland management is outside the scope and not addressed.

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**Native Fisheries**

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Effects to fisheries were disclosed in the Biological Evaluation and fisheries section.

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**Air quality**

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This is outside the scope and not addressed.

## Chapter Six

### PREPARERS

#### List of Preparers and Reviewers

##### Preparers

<p>Dave Ovard Wildlife Biologist BS Wildlife Resources Experience: 7 years</p> <p>Richard Newton Heritage Resources BA Anthropology MA Anthropology with cultural resource management emphasis Experience: 22 years</p> <p>Bart Andreasen Landscape Architect BLA Landscape Architecture And Environmental Planning Experience: 28 years</p> <p>Robin Redman Forest Planner, NEPA, Appeals/Litigation BS Forestry Resource Management BS Paralegal Studies Experience: 18 years</p> <p>Megan Bogle NEPA Coordinator AS, Recreation &amp; Wildlife Mgmt. BS, Environmental Studies Experience: 20 years</p> <p>Mike McFadin Forestry Technician (Trails) Experience: 15</p>	<p>James Capurso Forest Fisheries Biologist AAS Natural Resource Conservation, BS Wildlife Science MS Environmental Science Policy and Law Experience: 21 years</p> <p>John Lott Forest Soil Scientist BS and MS Agronomy with soils emphasis Experience: 29 years</p> <p>Lee Leffert Forest Hydrologist (Retired) BS Watershed Science Experience: 30 years</p> <p>Louis Wasniewski Forest Hydrologist BS Water Resources MS Forest Hydrology Experience: 15 years</p> <p>Brent Porter Forester BS Forest Management with recreation emphasis Experience: 33 years</p> <p>Kurt Kluegel Natural Resource Specialist BS Forest Resources Experience: 20 years</p> <p>Rose Lehman Botanist BA Biology, Plant Science Emphasis Experience: 10years</p>
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## Chapter Seven

# CONSULTATION

### Consultation and Coordination

#### Public Involvement Process

##### **Scoping**

The history of this proposal is detailed in Chapter 1. Formal Scoping began on 18 April 2006 with news releases being sent to area newspapers and media. Also, hard copies of the scoping document were sent to approximately 240 individuals, groups, State and Federal agencies for a 30-day Notice and Comment (36 CFR 215.3). Likewise, the Scoping document was posted to the Caribou-Targhee National Forest web site. However, earlier involvement by the Bonneville County Trails Committee (BCTC) began in March of 2003. Some time after this date, the Teton County Trail Advisory Group also became involved.

Approximately 46 responses were received from Agencies, organizations and individuals. These letters/comments were reviewed for issues and information. Not all of the responses contained substantive comments (36 CFR 215.2).

#### Agencies, Groups and Individuals Reviewing the Scoping Document

##### Federal Agencies

USDI Fish and Wildlife Service

##### State Agencies

Idaho Fish and Game Department  
Wyoming Game and Fish Department  
Idaho Department of Parks and Recreation

##### County Agencies

Bonneville County, Idaho Board of Commissioners  
Teton County, Idaho Board of Commissioners  
Board of Lincoln County Commissioners

##### Organizations

Greater Yellowstone Coalition  
The Wilderness Society – Idaho Region  
Off-Road Business Association, Inc (ORBA)  
Teton Valley Trails and Pathways (TVTAP)  
Idaho Falls Trail Machine Association (IFTMA)  
Trout Unlimited  
WildWest Institute

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**Individuals**


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Numerous individuals

**Draft Environmental Assessment**

On August 24, 2007, the Draft EA was sent out to individuals, groups, and agencies who responded to the 18 April 2006 Scoping Document. Complete copies of the Draft EA were sent to 46 individuals, groups, and agencies. Another 56 individuals who signed one “form” letter were notified by mail that the Draft EA was available for review on the Caribou-Targhee National Forest website.

Some 28 individuals, groups, and agencies responded to the Draft EA.

**Agencies, Groups and Individuals Reviewing the Draft EA**


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**Federal Agencies**


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USDI Fish and Wildlife Service

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**State Agencies**


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Idaho Department of Fish and Game  
 Wyoming Game and Fish Department  
 Idaho Department of Parks and Recreation

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**County Agencies**


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Bonneville County, Idaho Board of Commissioners  
 Teton County, Idaho Board of Commissioners  
 Board of Lincoln County Commissioners

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**Organizations**


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Greater Yellowstone Coalition  
 The Wilderness Society – Idaho Region  
 Off-Road Business Association, Inc (ORBA)  
 Teton Valley Trails and Pathways (TVTAP)  
 Idaho Falls Trail Machine Association (IFTMA)  
 Trout Unlimited  
 WildWest Institute

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**Individuals**


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Numerous individuals

**Final Decision Notice**

Each of the 28 reviewers received a copy of the Final Decision Notice.

## **APPENDIXES**

Appendix A – Comparison Summary of Alternative A & Revised Alternative C Trails - Big Hole Mountains Subsection Summer Transportation Travel Plan – 12 February 2008

Appendix B – Adaptive Management Specialist Checklist

Appendix C – Trail Decommissioning Process Guidelines

Appendix D – Soil and Water Guidelines & Directions

Appendix E – Worksheet 1 & 2 – Garns Mountain Roadless Area – Wilderness Attributes and Roadless Area Characteristics

Appendix F – Worksheet 1 & 2 – Palisades Roadless Area – Wilderness Attributes and Roadless Area Characteristics

Appendix G – References

Appendix H – Alternative Maps

Appendix I – Ecological Units Found in the Big Hole Trails Analysis Area

Appendix A

Comparison Summary of All Trails by Alternative - Big Hole Mountains Subsection Summer Transportation Travel Plan - March 2008

TRAILS			ALTERNATIVE A - Existing Situation				ALTERNATIVE B - Trail Committees'				Revised ALTERNATIVE C				ALTERNATIVE D - Proposed Plus				ALTERNATIVE A - Existing Situation	ALTERNATIVE B - Trail Committees'	Revised ALTERNATIVE C	ALTERNATIVE D - Proposed Plus
			Trail Type				Trail Type				Trail Type				Trail Type							
Existing Trail Name and or New Trail Name	Existing Trail Number	New Trail Number in red	1/ ATV	2/ Two-wheel Motorized Vehicles	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed
Allen Canyon-Black Grove/Allen Canyon-Pole Canyon	014	014	0	2.2	0	2.2	0	2.2	0	2.2	0	7.2	0	7.2	3.7	0	0	3.7	None	None	None-include old 052 & 174 STM sections	Reconstruct 2.2 mi. & construct 1.5 mi.
Government Pack Trail B	030	Deleted	0	1.0	0	1.0	0	1.0	0	1.0	0	0	0	0	0	1.0	0	1.0	None	None	Remove/Rehab. 1.0 mi.	None
BPA Line	031 (Teton)	031	4.8	0	0	4.8	4.8	0	0	4.8	4.8	0	0	4.8	4.8	0	0	4.8	None	None	None	None
Hawley Gulch	031	276	2.5	0	0	2.5	2.5	0	0	2.5	2.5	0	0	2.5	2.5	0	0	2.5	None	None	None	None
Burbank	043	043	0	0	5.1	5.1	0	0	5.1	5.1	0	0	5.1	5.1	0	0	5.1	5.1	None	None	None	None
Mail Cabin	044	044	0	0	3.0	3.0	0	0	3.0	3.0	0	0	3.0	3.0	0	0	3.0	3.0	None	None	None	None
Big Basin	046	046	0	0	5.2	5.2	0	0	5.2	5.2	0	0	5.2	5.2	0	0	5.2	5.2	None	None	None	None
Wood Canyon Ridge-Black Grove	047	047	0	0	3.0	3.0	3.0	0	0	3.0	5.2	0	0	5.2	3.0	0	0	3.0	None	Reconstruct 3.0 mi.	Reconstruct 3.0 mi.	Reconstruct 3.0 mi.
Ruby Creek	051	298	0	3.5	0	3.5	0	3.5	0	3.5	3.5	0	0	3.5	3.5	0	0	3.5	None	None	None	None
Hilton Creek-Coyote Ridge (Driveway)	051/077	077	1.0	0	0	1.0	1.0	0	0	1.0	0	0	0	0	1.0	0	0	1.0	None	None	None - add 1.0 mi. to Trail 077 (Thousand Springs)	None
Coyote Ridge-Blacktail (Driveway)	051	Delete			1.3	1.3	0	0	1.3	1.3	0	0	0	0	0	0	1.3	1.3	None	None	Driveway - not a trail - remove from map	None
Blacktail-Piney Pass (Driveway)	051	299	0	1.9	0	1.9	0	1.9	0	1.9	0	1.9	0	1.9	0	1.9	0	1.9	None	None	None	None
Piney Pass-Chicken Creek (Driveway)	051	Delete	0	0	2.7	2.7	0	0	2.7	2.7	0	0	0	0	0	0	2.7	2.7	None	None	Driveway - not a trail - remove from map	None
Chicken Creek-Highway 31 (Driveway)	051/216	077	0	6.7	0	6.7	6.7	0	0	6.7	0	0	0	0	0	0	0	0	None	Reconstruct 6.7 mi.	Reconstruct 6.7 mi. - add these 6.7 mi. to Trail 077	Reconstruct 6.7 mi.
Highway 31-FR253 (Driveway)	051	300	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	None	None	None	None
FR253-Black Grove Cutoff (Driveway)	051	047	0	0	2.2	2.2	2.2	0	0	2.2	0	0	0	0	2.2	0	0	2.2	None	Reconstruct 1.0 mi.	Reconstruct 1.0 mi. - add these 2.2 mi. to Trail 047	Reconstruct 1.0 mi.
Black Grove Cutoff-Wyoming (Driveway)	051	051	0	0	10.0	10.0	0	0	10.0	10.0	0	0	10.0	10.0	0	0	10.0	10.0	None	None	None	None
North Fork Palisades Creek	052	052	0	0	4.5	4.5	0	0	4.5	4.5	0	0	4.5	4.5	0	0	4.5	4.5	None	None	None	None
Smith Canyon (Teton) Allen Canyon-Pole Canyon	052	014	0	3.7	0	3.7	0	3.7	0	3.7	0	0	0	0.7	2.0	0	2.7	2.7	None	None	Remove/Rehab. 1.0 mi. - add rest of STM to Trail 014	Remove/Rehab. 1.0 mi.
Big Hole Crest	053 (Teton)	217	0	8.9	0	8.9	0	8.9	0	8.9	0	8.9	0	8.9	0	8.9	0	8.9	None	None	None	None
Green Knoll	053 (Wy)	053	0	0	4	3.6	0	0	3.6	3.6	0	0.0	3.6	3.6	0	0	3.6	3.6	None	None	None	None
Patterson	054 (Teton)	218	0	3.5	0	3.5	0	3.5	0	3.5	0	3.5	0	3.5	0	3.5	0	3.5	None	None	None	None
South Fork Big Elk	054 (Wy)	054	0	0	6	6.1	0	0	6	6.1	0	0	6.1	6.1	0	0	6.1	6.1	None	None	None	None
South Horseshoe	056 (Teton)	219	0	4.1	0	4.1	0	4.1	0	4.1	0	4.55	0	4.55	0	4.55	0	4.55	None	None	Remove/Rehab. 3 mi. and add/reroute .75 mi.	Remove/Rehab. 3 mi. and add/reroute .75 mi.
Divide	056 (Wy)	056	0	3.7	15.3	19.0	0	3.7	15.3	19.0	0	0	19.0	19.0	0	3.7	15.3	19.0	None	None	None	None
North Mahogany-Elk Flat	057 (Teton)	220	0	5.8	0	5.8	0	5.8	0	5.8	0	6.3	0	6.3	0	6.3	0	6.3	None	None	Remove/Rehab. 5 mi. and add/reroute 1.0 mi.	Remove/Rehab. 5 mi. and add/reroute 1.0 mi.
Burnt Timber	057 (Wy)	057	0	0	1.7	1.7	0	0	1.7	1.7	0	0	1.7	1.7	0	0	1.7	1.7	None	None	None	None
Wright	058 (Teton)	221	0	0	1.6	1.6	0	0	1.6	1.6	0	0	1.6	1.6	0	0	1.6	1.6	None	None	None	None
Deadhorse Canyon	058 (Wy)	058	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	None	None	None	None
Graham	059 (Teton)	222	0	2.0	0	2.0	0	2.0	0	2.0	0	2.0	0	2.0	0	2.0	0	2.0	None	None	None	None
Carlton Cutoff (Moody Swamp-District Boundary)	060	060	0	1.6	0	1.6	0	1.6	0	1.6	0	1.6	0	1.6	0	1.6	0	1.6	None	None	None	None
Carlton Cutoff (District Boundary-Grandview)	060 (Teton)	060	0	12.4	0	12.4	0	6.4	6.0	12.4	2.4	6.0	0	8.4	2.4	6.0	0	8.4	Remove/rehab. 0.6 mi.	Remove/rehab. 0.6 mi.	Reconstruct 2.4 mi. & Remove/rehab. 4.6 mi.	Reconstruct 2.4 mi. & Remove/Rehab 4.6 mi.
Calamity	061	224	0	4.4	0	4.4	0	4.4	0	4.4	1.0	3.4	0	4.4	1.0	3.4	0	4.4	None	None	Reconstruct 1.0 mi.	Reconstruct 1.0 mi.
Relay Station	062 (Teton)	225	0	3.9	0	3.9	0	3.9	0	3.9	1.5	2.4	0	3.9	1.5	2.4	0	3.9	None	None	Reconstruct 1.5 mi.	Reconstruct 1.5 mi.
Cabin Creek	062 (Wy)	062	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	None	None	None	None

TRAILS			ALTERNATIVE A - Existing Situation				ALTERNATIVE B - Trail Committees'				Revised ALTERNATIVE C				ALTERNATIVE D - Proposed Plus				ALTERNATIVE A - Existing Situation	ALTERNATIVE B - Trail Committees'	Revised ALTERNATIVE C	ALTERNATIVE D - Proposed Plus
Existing Trail Name and or New Trail Name	Existing Trail Number	New Trail Number in red	Trail Type				Trail Type				Trail Type				Trail Type				Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed
			1/ ATV	2/ Two-wheel Motorized Vehicles	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles				
South Fork Canyon Creek	063 (Teton)	226	0	9.3	0	9.3	0	9.3	0	9.3	0	9.3	0	9.3	0	9.3	0	9.3	None	None	None	None
Coalmine Canyon	064	064	0	4.1	0	4.1	0	4.1	0	4.1	0	4.1	0	4.1	0	4.1	0	4.1	None	None	None	None
North Fork Canyon Creek	064 (Teton)	227	0	6.0	0	6.0	0	6.0	0	6.0	1.0	5.0	0	6.0	1.0	5.0	0	6.0	None	None	Reconstruct 1.0 mi.	Reconstruct 1.0 mi.
Spencer Mountain	065	065	0	5.7	0	5.7	0	5.7	0	5.7	0	5.7	0	5.7	0	5.7	0	5.7	None	None	None	None
Blacktail	065 (Teton)	228	0	1.6	0	1.6	0	1.6	0	1.6	0	1.6	0	1.6	0	1.6	0	1.6	None	None	None	None
N/S Rainey Ck	066	066	0	2.1	0	2.1	0	2.1	0	2.1	0	2.1	0	2.1	0	2.1	0	2.1	None	None	None	None
Garns Mountain	066 (Teton)	229	0	2.5	0	2.5	1.5	1.0	0	2.5	0	2.5	0	2.5	1.5	1.0	0	2.5	None	Reconstruct 1.5 mi.	None	Reconstruct 1.5 mi.
Hilton Creek	067 (Teton)	067	0	1.7	0	1.7	0	1.7	0	1.7	0	1.7	0	1.7	0	1.7	0	1.7	None	None	None	None
Big Burns Creek	068	068	0	6.0	0	6.0	0	6.0	0	6.0	0	6.0	0	6.0	0	6.0	0	6.0	None	None	None	None
Trail Canyon	069	069	0	0	2.2	2.2	0	0	2.2	2.2	0	0	2.2	2.2	0	2.2	0	2.2	None	None	None	None
Twin Creek	069 (Teton)	234	0	2.2	0	2.2	0	2.2	0	2.2	0	2.2	0	2.2	0	2.2	0	2.2	None	None	None	None
Hell Hole	070	070	0	2.9	0	2.9	0	2.9	0	2.9	0	2.9	0	2.9	0	2.9	0	2.9	None	None	None	None
Dry Henderson	070 (Teton)	235	0	4.0	0	4.0	0	4.0	0	4.0	0	4.0	0	4.0	0	4.0	0	4.0	None	None	None	None
Little Burns Creek	071	071	0	3.8	0	3.8	0	3.8	0	3.8	0	3.8	0	3.8	0	3.8	0	3.8	None	None	None	None
Wet Henderson	071 (Teton)	236	0	0.8	0	0.8	0	0.8	0	0.8	0	0.8	0	0.8	0	0.8	0	0.8	None	None	None	None
North Grove Creek	072	239	0	3.0	0	3.0	0	3.0	0	3.0	3.0	0	0	3.0	3.0	0	0	3.0	None	None	Reroute 1.5 miles	Reroute 1.5 miles
South Grove Creek	072	237	0	1.0	0	1.0	0	1.0	0	1.0	0	1.0	0	1.0	0	1.0	0	1.0	None	None	None	None
Little Burns-Black Canyon	073	073	0	0.8	0	0.8	0	0.8	0	0.8	0	0.8	0	0.8	0	0.8	0	0.8	None	None	None	None
Drake Creek	073 (Teton)	238	0	1.4	0	1.4	0	1.4	0	1.4	0	1.4	0	1.4	0	1.4	0	1.4	None	None	None	None
Black Canyon	074	074	0	5.2	0	5.2	5.2	0	0	5.2	2.5	2.7	0	5.2	5.2	0	0	5.2	None	Reconstruct 5.2 mi.	Reconstruct 2.5 mi.	Reconstruct 5.2 mi.
Liars Pass	075	075	0	6.4	0	6.4	0	6.4	0	6.4	0	0	5.0	5.0	0	6.4	0	6.4	None	None	Add 1.4 mi. STM to Trail 079	None
Castle Lake	076	076	0.4	0	0	0.4	0.4	0	0	0.4	0.4	0	0	0.4	0.4	0	0	0.4	None	None	None	None
Corral Creek (Teton)	076	240	0	0	6.0	6.0	0	2.5	3.5	6.0	0	0	6.0	6.0	0	2.5	3.5	6.0	None	None	None	None
Thousand Springs	077	077	3.0	1.5	0	4.5	4.5	0	0	4.5	15.0	0	0	15.0	4.5	0	0	4.5	None	Reconstruct 1.5 mi.	Reconstruct 1.5 mi. - add miles from old 051 & 051/216 sections	Reconstruct 1.5 mi.
Red Creek	077 (Teton)	241	0	0	3.3	3.3	0	0	3.3	3.3	0	0	3.3	3.3	0	0	3.3	3.3	None	None	None	None
West Pine	078	078	0	0	7.2	7.2	0	0	7.2	7.2	0	0	7.2	7.2	0	7.2	0	7.2	None	None	None	None
Fleming Canyon	079	079	0	4.5	0	4.5	0	4.5	0	4.5	0	5.9	0	5.9	0	4.5	0	4.5	None	None	None	None
Rocky Peak	079 (Teton)	230	0	2.6	0	2.6	0	2.6	0	2.6	0	2.6	0	2.6	0	2.6	0	2.6	None	None	None	None
Dry Canyon	080	080	3.0	2.3	0	5.3	3.0	2.3	0	5.3	3.0	2.3	0	5.3	3.0	2.3	0	5.3	None	None	None	None
Hunts Corral	081	081	0	0	3.7	3.7	0	0	3.7	3.7	0	0	3.7	3.7	0	0	3.7	3.7	None	None	None	None
Murphy Creek	081 (Teton)	231	0	1.1	0	1.1	0	1.1	0	1.1	0	1.1	0	1.1	0	1.1	0	1.1	None	None	None	None
Wolverine Canyon	082	082	3.3	0	0	3.3	3.3	0	0	3.3	3.3	0	0	3.3	3.3	0	0	3.3	None	None	None	None
Fish Creek	083	083	3.1	0	0	3.1	3.1	0	0	3.1	3.1	0	0	3.1	3.1	0	0	3.1	None	None	None	None
Lower Palisades	084	084	0	0	5.7	5.7	0	0	5.7	5.7	0	0	5.7	5.7	0	0	5.7	5.7	None	None	None	None
Upper Palisades	085	085	0	0	3.1	3.1	0	0	3.1	3.1	0	0	3.1	3.1	0	0	3.1	3.1	None	None	None	None
Corral Canyon	086	086	0	2.8	0	2.8	0	0	2.8	2.8	2.8	0	0	2.8	0	2.8	0	2.8	None	None	None	None
Burnt Canyon- Dry Fork	087	087	0	2.5	0	2.5	2.5	0	0	2.5	0	2.5	0	2.5	2.5	0	0	2.5	None	Reconstruct 2.5 mi.	Reconstruct 2.5 mi.	Reconstruct 2.5 mi.
Poison Creek	088	088	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	None	None	None	None
North Fork Rainey Creek	089	089	0	3.3	0	3.3	0	3.3	0	3.3	0	0	3.3	3.3	0	3.3	0	3.3	None	None	None	None
South Fork Rainey Creek	090	090	0	3.3	0	3.3	0	3.3	0	3.3	0	3.3	0	3.3	0	3.3	0	3.3	None	None	None	None

TRAILS			ALTERNATIVE A - Existing Situation				ALTERNATIVE B - Trail Committees'				Revised ALTERNATIVE C				ALTERNATIVE D - Proposed Plus				ALTERNATIVE A - Existing Situation	ALTERNATIVE B - Trail Committees'	Revised ALTERNATIVE C	ALTERNATIVE D - Proposed Plus	
Existing Trail Name and or New Trail Name	Existing Trail Number	New Trail Number in red	Trail Type				Trail Type				Trail Type				Trail Type				Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed	
			1/ ATV	2/ Two-wheel Motorized Vehicles	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles					
Thompson Creek	091	091	0	0	4.2	4.2	0	0	4.2	4.2	0	0	4.2	4.2	0	0	4.2	4.2	None	None	None	None	
Water Canyon	092	092	0	0	3.0	3.0	0	0	3.0	3.0	0	0	3.0	3.0	0	0	3.0	3.0	None	None	None	None	
Ice Cove	093	093	0	0	3.5	3.5	0	0	3.5	3.5	0	0	3.5	3.5	0	0	3.5	3.5	None	None	None	None	
Dry Elk	094	094	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	None	None	None	None	
Elbow Fork	095	095	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	None	None	None	None	
Sheep Creek	096	096	0	0	3.6	3.6	0	0	3.6	3.6	0	0	3.6	3.6	0	0	3.6	3.6	None	None	None	None	
Big Elk Creek	097	097	0	0	11.5	11.5	0	0	11.5	11.5	0	0	11.5	11.5	0	0	11.5	11.5	None	None	None	None	
Corral Canyon	098	098	0	0	3.7	3.7	0	0	3.7	3.7	0	0	3.7	3.7	0	0	3.7	3.7	None	None	None	None	
Waterfall	099	099	0	0	3.8	3.8	0	0	3.8	3.8	0	0	3.8	3.8	0	0	3.8	3.8	None	None	None	None	
Sheep Creek-Little Elk	100	100	0	0	3.6	3.6	0	0	3.6	3.6	0	0	3.6	3.6	0	0	3.6	3.6	None	None	None	None	
Cabin Creek	101 (Wy)	101	0	0	3.4	3.4	0	0	3.4	3.4	0	0	3.4	3.4	0	0	3.4	3.4	None	None	None	None	
Siddoway Fork Creek	102 (Id)	102	0	0	0.3	0.3	0	0	0.3	0.3	0	0	0.3	0.3	0	0	0.3	0.3	None	None	None	None	
Siddoway Fork Creek	102 (Wy)	102	0	0	4.6	4.6	0	0	4.6	4.6	0	0	4.6	4.6	0	0	4.6	4.6	None	None	None	None	
Palisades Peak Ridge	103	103	0	0	4.7	4.7	0	0	4.7	4.7	0	0	4.7	4.7	0	0	4.7	4.7	None	None	None	None	
Dry Canyon	104	104	0	0	3.8	3.8	0	0	3.8	3.8	0	0	3.8	3.8	0	0	3.8	3.8	None	None	None	None	
Austin Canyon	105	105	0	0	3.9	3.9	0	0	3.9	3.9	0	0	3.9	3.9	0	0	3.9	3.9	None	None	None	None	
Garden Creek	106	106	0	0	2.1	2.1	0	0	2.1	2.1	0	0	2.1	2.1	0	0	2.1	2.1	None	None	None	None	
Corkscrew	107 (Wy)	107	0	0	6.5	6.5	0	0	6.5	6.5	0	0	6.5	6.5	0	0	6.5	6.5	None	None	None	None	
Corkscrew	107 (Id)	107	0	0	0.9	0.9	0	0	0.9	0.9	0	0	0.9	0.9	0	0	0.9	0.9	None	None	None	None	
Middle Twin	108	Delete	0	0.3	0	0.3	0	0.3	0	0.3	0	0	0	0	0.3	0	0.3	0.3	None	None	Remove/Rehab. 0.3 mi.	None	
Waterfall Creek	109	109	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	None	None	None	None	
Big Basin Canyon	110	110	0	0	2.1	2.1	0	0	2.1	2.1	0	0	2.1	2.1	0	0	2.1	2.1	None	None	None	None	
Sheep Camp	111	111	0	0	1.4	1.4	0	0	1.4	1.4	0	0	1.4	1.4	0	0	1.4	1.4	None	None	None	None	
Upper Lake	112	112	0	0	2.0	2.0	0	0	2.0	2.0	0	0	2.0	2.0	0	0	2.0	2.0	None	None	None	None	
Starvation Peak	113 (Wy)	113	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	None	None	None	None	
Rainey Creek Bench	114	114	0	0	4.7	4.7	0	0	4.7	4.7	0	0	4.7	4.7	0	0	4.7	4.7	None	None	None	None	
Rainey Creek	115	115	2.3	0	0	2.3	2.3	0	0	2.3	2.3	0	0	2.3	2.3	0	0	2.3	2.3	None	None	None	None
Spring Canyon	116	116	1.7	0	0	1.7	1.7	0	0	1.7	1.7	0	0	1.7	1.7	0	0	1.7	1.7	None	None	None	None
Little Sheep	117	117	0	0	1.9	1.9	0	0	1.9	1.9	0	0	1.9	1.9	0	0	1.9	1.9	None	None	None	None	
Vacation Canyon	118	118	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	None	None	None	None	
Quaker Flat	119	119	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	None	None	None	None	
Spring Run	120	120	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	None	None	None	None	
Prospect Peak-Red Butte	121	121	0	1.6	0	1.6	0	1.6	0	1.6	1.2	0.4	0	1.6	1.2	0.4	0	1.6	None	None	None	None	
Blowout	123	123	0	0	2.2	2.2	0	0	2.2	2.2	0	0	2.2	2.2	0	0	2.2	2.2	None	None	None	None	
Overall Basin	124 (Wy)	124	0	0	2.6	2.6	0	0	2.6	2.6	0	0	2.6	2.6	0	0	2.6	2.6	None	None	None	None	
Dry Canyon	125 (Id)	125	0	0	1.2	1.2	0	0	1.2	1.2	0	0	1.2	1.2	0	0	1.2	1.2	None	None	None	None	
Dry Canyon	125 (Wy)	125	0	0	3.3	3.3	0	0	3.3	3.3	0	0	3.3	3.3	0	0	3.3	3.3	None	None	None	None	
Box Canyon	126 (Wy)	126	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	None	None	None	None	
Oat Canyon	127 (Wy)	127	0	0	3.2	3.2	0	0	3.2	3.2	0	0	3.2	3.2	0	0	3.2	3.2	None	None	None	None	

TRAILS			ALTERNATIVE A - Existing Situation				ALTERNATIVE B - Trail Committees'				Revised ALTERNATIVE C				ALTERNATIVE D - Proposed Plus				ALTERNATIVE A - Existing Situation	ALTERNATIVE B - Trail Committees'	Revised ALTERNATIVE C	ALTERNATIVE D - Proposed Plus	
Existing Trail Name and or New Trail Name	Existing Trail Number	New Trail Number in red	Trail Type				Trail Type				Trail Type				Trail Type				Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed	
			1/ ATV	2/ Two-wheel Motorized Vehicles	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles					
Cody Mountain	129 (Wy)	129	0	0	0.4	0.4	0	0	0.4	0.4	0	0	0.4	0.4	0	0	0.4	0.4	None	None	None	None - Existing-NOM	
Lookout Mountain	131	131	0.6	0	0	0.6	0.6	0	0	0.6	0.6	0	0	0.6	0.6	0	0	0.6	0.6	None	None	None	None
Morning Glory Mine	139	139	0	2.0	0	2.0	2.0	0	0	2.0	2.0	0	0	2.0	2.0	0	0	2.0	2.0	None	Reconstruct 2.0 mi.	Reconstruct 2.0 mi.	Reconstruct 2.0 mi.
Paradise Basin	143	143	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	None	None	None	None	
Chicken Springs Ridge	149	149	0	0	2.4	2.4	0	0	2.4	2.4	0	0	2.4	2.4	0	0	2.4	2.4	None	None	None	None	
Fogg Hill	150	150	0	0	3.7	3.7	0	0	3.7	3.7	0	0	3.7	3.7	0	0	3.7	3.7	None	None	None	None	
Little Elk Creek	151	151	0	0	4.5	4.5	0	0	4.5	4.5	0	0	4.5	4.5	0	0	4.5	4.5	None	None	None	None	
Neely Cove	152	152	0	0	1.9	1.9	0	0	1.9	1.9	0	0	1.9	1.9	0	0	1.9	1.9	None	None	None	None	
Chicken Springs Creek	153	153	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	None	None	None	None	
Lorine Canyon	154	154	0	0	2.1	2.1	0	0	2.1	2.1	0	0	2.1	2.1	0	0	2.1	2.1	None	None	None	None	
South Fork	155	155	0	5.2	0	5.2	0	5.2	0	5.2	0	5.2	0	5.2	0	5.2	0	5.2	None	None	None	None	
East Fork Palisades Creek	160	160	0	0	2.6	2.6	0	0	2.6	2.6	0	0	2.6	2.6	0	0	2.6	2.6	None	None	None	None	
Upper Lake Bench	163	163	0	0	1.6	1.6	0	0	1.6	1.6	0	0	1.6	1.6	0	0	1.6	1.6	None	None	None	None	
Observation Peak	168	168	0	0	1.3	1.3	0	0	1.3	1.3	0	0	1.3	1.3	0	0	1.3	1.3	None	None	None	None	
Leaning Fir	169	169	1.9	0	0	1.9	1.9	0	0	1.9	1.9	0	0	1.9	1.9	0	0	1.9	1.9	None	None	None - but 0.2 NOM	None
Pole Canyon-Elbow Fork	174	174	0	0	2.6	2.6	0	0	2.6	2.6	0	0	2.6	2.6	0	0	2.6	2.6	None	None	None	None	
Smith Canyon-Pole Canyon/Allen Canyon-Pole Canyon	174 (Teton)	014	0	2.3	0	2.3	0	2.3	0	2.3	0	0	0	0	2.3	0	2.3	None	None	None - add these 2.3 mi.to Trail 014	None		
Green Knoll Hunter	192 (Wy)	192	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	0	0	4.0	4.0	None	None	None	None	
South State	193	193	0.9	0	0	0.9	0.9	0	0	0.9	0.9	0	0	0.9	0.9	0	0	0.9	0.9	None	None	None	None
Austin-Neely	194	194	0	0	2.4	2.4	0	0	2.4	2.4	0	0	2.4	2.4	0	0	2.4	2.4	None	None	None	None	
Nickerson Grove	195	195	0	3.4	0	3.4	0	3.4	0	3.4	3.4	0	0	3.4	3.4	0	0	3.4	3.4	None	None	None	None
Road Canyon	196	196	2.0	0	0	2.0	2.0	0	0	2.0	2.0	0	0	2.0	2.0	0	0	2.0	2.0	None	None	None	None
Whiskey Springs	198	198	0	0	0.8	0.8	0	0	0.8	0.8	0	0	0.8	0.8	0	0	0.8	0.8	None	None	None	None	
Tie Canyon	200	200	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	0	0	2.8	2.8	None	None	None	None	
Mike Spencer Loop	201	201	0	2.5	0	2.5	2.5	0	0	2.5	2.5	0	0	2.5	2.5	0	0	2.5	2.5	None	None	None	None
Fogg Hill-North Palisades	202	202	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	0	0	1.8	1.8	None	None	None	None	
Mikesell Canyon	203 (Wy)	203T & 203P	0	0	8.0	8.0	0	0	8.0	8	0	0	8.0	8.0	0	0	8.0	8.0	None	None	None	None	
Garden Ridge	204 (Wy)	204	0	0	4.1	4.1	0	0	4.1	4.1	0	0	4.1	4.1	0	0	4.1	4.1	None	None	None	None	
Lake Canyon	206	206	0	0	5.6	5.6	0	0	5.6	5.6	0	0	5.6	5.6	0	0	5.6	5.6	None	None	None	None	
Upper Tie Canyon	207	207	0	0	4.1	4.1	0	0	4.1	4.1	0	0	4.1	4.1	0	0	4.1	4.1	None	None	None	None	
Red Slide	209 (Wy)	209	0	0	0.2	0.2	0	0	0.2	0.2	0	0	0.2	0.2	0	0	0.2	0.2	None	None	None	None	
North Indian Pass	210 (Wy)	210	0	0	2.5	2.5	0	0	2.5	2.5	0	0	2.5	2.5	0	0	2.5	2.5	None	None	None	None	
Henderson Cutoff	211	211	0	0.8	0	0.8	0	0.8	0	0.8	0.8	0	0	0.8	0.8	0	0	0.8	0.8	None	None	Reconstruct 0.9 mi.	Reconstruct 0.8 mi.
Packsaddle Lake	212	212	0	0.9	0	0.9	0	0.9	0	0.9	0.9	0	0	0.9	0.9	0	0	0.9	0.9	None	None	Reconstruct 0.8 mi. & construct 0.1 mi.	Reconstruct 0.8 mi. & construct 0.1 mi.
Little Pine	215	215	0	0	1.2	1.2	0	0	1.2	1.2	0	0	1.2	1.2	0	1.2	0	1.2	None	None	None	None	
Lower North Fork Pine Creek	216	216	0	2.0	0	2.0	2.0	0	0	2.0	0	0	2.0	2.0	0	2.0	0	2.0	None	Reconstruct 2.0 mi.	None	None	
Elk Flat Fork	216	077	0	2.8	0	2.8	2.8	0	0	2.8	0	0	0	0	2.8	0	0	2.8	0	None	Reconstruct 2.8 mi.	Reconstruct 2.8 mi.-add miles to Trail 077	Reconstruct 2.8 mi.

TRAILS			ALTERNATIVE A - Existing Situation				ALTERNATIVE B - Trail Committees'				Revised ALTERNATIVE C				ALTERNATIVE D - Proposed Plus				ALTERNATIVE A - Existing Situation	ALTERNATIVE B - Trail Committees'	Revised ALTERNATIVE C	ALTERNATIVE D - Proposed Plus
Existing Trail Name and or New Trail Name	Existing Trail Number	New Trail Number in red	Trail Type				Trail Type				Trail Type				Trail Type				Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed	Type of Trail Action Needed
			1/ ATV	2/ Two-wheel Motorized Vehicles	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles	4/ ATV	5/ Single Track Motorized	3/ Non-motorized Uses	Total Miles				
Pine Creek Pass	NT1*	243	NA	NA	NA	NA	0	0	2.0	2.0	0	0	2.0	2.0	0	0	2.0	2.0	NA	Construct 2.0 mi.	Construct 2.0 mi.	Construct 2.0 mi.
Black Grove Cutoff (Teton)	NT2*	047	NA	NA	NA	NA	1.0	0	0	1.0	0	0	0	1.0	0	0	1.0	1.0	NA	None - Existing-NOM	None - Existing-NOM	None - Existing-NOM
Ranger Trail (Wolverine Creek to Big Burns)	NT3*	287	NA	NA	NA	NA	0	5.0	0	5.0	0	5.0	0	5.0	0	5.0	5.0	5.0	NA	None - Existing-NOM	None - Existing-NOM	None - Existing-NOM
Kelly Canyon	NT4*	288	NA	NA	NA	NA	0	0	1.0	1.0	0	0	1.0	1.0	0	0	1.0	1.0	NA	Construct 1.0 mi.	Construct 1.0 mi.	Construct 1.0 mi.
Hinckley Creek-Argument Ridge to Moody Meadows	NT5*	289	NA	NA	NA	NA	1.5	0	0	1.5	1.2	0	0	1.2	1.2	0	0	1.2	NA	0.5 Existing-YLC and Construct 1.0 mi.	Construct 1.2 mi.	Construct 1.2 mi.
Morgan Ridge	NT6*	169	NA	NA	NA	NA	0	0	0.2	0.2	0	0	0	0	0	0	0.2	0.2	NA	None-Existing-NOM	None - Existing (0.2 mi.) -NOM- part of Trail 169	None - Existing-NOM
Red Butte	DP1**	291	NA	NA	NA	NA	NA	NA	NA	NA	0.2	0	0	0.2	0.2	0	0	0.2	NA	NA	None - Existing-NOM	None - Existing-NOM
Wolverine-Hawley Gulch	DP3**	292	NA	NA	NA	NA	NA	NA	NA	NA	1.2	0	0	1.2	1.2	0	0	1.2	NA	NA	None - Existing-NOM	None - Existing-NOM
Palisades-Rainey Creek	DP4**	293	NA	NA	NA	NA	NA	NA	NA	NA	0	0	5.0	5.0	0	0	5.0	5.0	NA	NA	Construct 5.0 mi.	Construct 5.0 mi.
Extension Rainey Creek Bench #114	DP5**	114	NA	NA	NA	NA	NA	NA	NA	NA	0	0	2.8	2.8	0	0	2.8	2.8	NA	NA	Construct 2.8 mi.	Construct 2.8 mi.
Windy Ridge Connector	DP6**	294	NA	NA	NA	NA	NA	NA	NA	NA	0.3	0	0	0.3	0.3	0	0	0.3	NA	NA	None - Existing-NOM	None - Existing-NOM
Bovine Bliss	NBT1+	246	NA	NA	NA	NA	NA	NA	NA	NA	0	0	1.5	1.5	0	0	1.5	1.5	NA	NA	None - Existing-NOM	None - Existing-NOM
Channel Lock	NBT2+	247	NA	NA	NA	NA	NA	NA	NA	NA	0	0	2.0	2.0	0	0	2.0	2.0	NA	NA	None - Existing-NOM	None - Existing-NOM
Sod Buster	NBT3+	248	NA	NA	NA	NA	NA	NA	NA	NA	0	0	3.0	3.0	0	0	3.0	3.0	NA	NA	None - Existing-NOM	None - Existing-NOM
Sharks Belly	NBT4+	249	NA	NA	NA	NA	NA	NA	NA	NA	0	0	1.5	1.5	0	0	1.5	1.5	NA	NA	None - Existing-NOM	None - Existing-NOM
Burgh Bumper	NBT5+	250	NA	NA	NA	NA	NA	NA	NA	NA	0	0	1.5	1.5	0	0	1.5	1.5	NA	NA	None - Existing-NOM	None - Existing-NOM
South Bound	NBT6+	251	NA	NA	NA	NA	NA	NA	NA	NA	0	0	2.0	2.0	0	0	2.0	2.0	NA	NA	None - Existing-NOM	None - Existing-NOM
Cody's Loop	NBT5+	252	NA	NA	NA	NA	NA	NA	NA	NA	0	0	1.0	1.0	0	0	1.0	1.0	NA	NA	None - Existing-NOM	None - Existing-NOM
031/321 BPA Line	321	031	NA	NA	NA	NA	NA	NA	NA	NA	1.65	0	0	1.65	1.65	0	0	1.65	NA	NA	1.4 Existing-YLC and Construct .25 mile	1.4 Existing-YLC and Construct .25 mile
Totals			30.5	187.5	286.8	504.8	64.9	153.8	296.8	515.5	80.75	132.85	315.7	529.3	82.35	155.25	292.0	529.6				
Total Miles of Trails to be Reconstructed to ATV Standards																		0	28.2	27.0	37.35	
Total Miles of Trails to be Reconstructed to Single Track Motorized Standards																		0	0.0	0.0	0.0	
Total New Miles of ATV Trail Construction																		0	1.0	1.55	3.05	
Total New Miles of Single Track Motorized Trail Construction																		0	0.0	0	0	
Total Miles of Trails to be Re-routed																		0	0.0	3.25	3.25	
Total New Miles of Non-motorized Trail Construction																		0	3.0	10.8	10.8	
Total System Trail Miles to be decommissioned/rehabilitated																		0.6	0.6	7.7	6.4	

1/ Open for Motorized Use less than 50 inches wide and SUITABLE FOR ATVs (current Travel Plan definition).

2/ Open for Motorized Use less than 50 inches wide but NOT RECOMMENDED FOR ATVs (current Travel Plan definition).

3/ Even though zeros show in the Non-motorized columns for some trails, this does not prohibit non-motorized use on these trails. Non-motorized use such as horse, foot, and bicycle traffic is allowed on all trail types - both motorized and non-motorized trails.

4/ Motorized - Open to ATVs (suggest rewording to read "All Terrain Vehicles <50 inches wide").

5/ Single Track Motorized - Closed to ATVs.

NT*	New Trails proposed by the Trails Committee (Trail does not show on the current Travel Map and may or may not exist on the ground).
DP**	New Trails proposed by the Palisades and Teton Basin Ranger Districts (Trail does not show on the current Travel Map and may or may not exist on the ground).
	Trail use and mileage which is the same between Alternatives.
	Trail use and or mileage which is different from the Existing Situation.
	Trails which the Trail Committee or Group did not address or analyze. Therefore, they show in the tables and on the maps the same as Alternative A - Existing Situation.
NA	Trails that were not proposed or addressed in the alternatives. Trails may or may not exist on the ground.
Existing-NOM	(Existing - Not On Map) Trails which exist on the ground but were not identified on the Current Travel Map because they were missed during the inventory process.
	Trails which exist but will need to be reconstructed in order to meet standards for the intended use.
	Trails which do not exist and will need to be constructed.
***	Trails which will need to be reconstructed or constructed to meet standards for intended use.
	System Trails to be decommissioned/rehabilitated.
YLC	Year Long Closure (logging road).
NBT+	New Bike Trail (Mountain Bikes).

# Appendix B

## Adaptive Management Specialist Checklist

### Route/Trail Description

Location: \_\_\_\_\_  
Length: \_\_\_\_\_  
Grade: \_\_\_\_\_  
Vegetation: \_\_\_\_\_  
Hydrology: \_\_\_\_\_  
Recommended Methods of Decommissioning: \_\_\_\_\_  
Other Concerns: \_\_\_\_\_

### Specialist Input

Soils: \_\_\_\_\_  
Hydrology: \_\_\_\_\_  
Fisheries: \_\_\_\_\_  
Wildlife: \_\_\_\_\_  
Botany/Vegetation: \_\_\_\_\_  
Recreation: \_\_\_\_\_  
Engineering: \_\_\_\_\_  
Cultural Resources: \_\_\_\_\_  
Other Resources: \_\_\_\_\_

Deciding Officer: \_\_\_\_\_

Determination of Impacts and Conclusion \_\_\_\_\_

Signature of Deciding Officer \_\_\_\_\_

## Appendix C

### Trail Decommissioning Process Guidelines (also see Appendix D)

The following is a description of the procedures to be followed during trail reclamation and decommissioning (for re-routed and obliteration of existing trails) as directed by the Revised Forest Plan:

**Culverts** – On perennial streams, culverts will be pulled and the edges of the fill slopes for bedding will be pulled back (maximum of 1:1 slope) until the slopes are rounded off, but not all of the bedding fill will be removed from the trench. The material will be pulled away from the stream, and natural bankfull flow capacity and gradient (as determined by channel characteristics up and down-stream of the site) will be maintained. When working in live streams, remove all fill around pipes prior to bypass and pipe removal. On intermittent streams, the majority of the pipes will be pulled and treated as on perennial streams—especially where it is evident the culvert has carried water repeatedly. All drainage structures should be pulled unless authorized to be left by the hydrologist or fisheries biologist. These culverts generally have heavy vegetation growth of trees, grass, and bushes in the stream channel above the pipe. Where culverts are removed, dig to grade of natural stream channel and to a width that the stream will not undercut remaining fill.

**Surface Ripping** – This will be done on a case by case basis where needed to remove visual evidence of a trail or access to it or adjacent areas. These are generally areas with long strait stretches where there is little adjacent vegetation, or other barricade along wide open trail surfaces. Ripping will also be done in areas where it would be important to expose additional soils to allow vegetation to reestablish.

**Trenching/Berming/Surface Debris Placement/Returning to Original Contour** – This will be done as needed, and mostly at the start of decommissioned segments to prevent summer, motorized travel. Berms or trenches will be built following R-4 standard design.

**Fill Slopes** – These will not be reclaimed or pulled back into the trail cut – even when in AIZ or adjacent to a stream, unless significant stream impacts are occurring or are anticipated. These types of areas will be determined on a case by case basis as decommissioning directions are provided to the equipment operators.

**Seeding** – If seeding is determined necessary the seed mix developed by the Forest Botanist and Soil Scientist will be used on all disturbed soils in or near perennial stream channels or water bodies; on disturbed soils that occur within watersheds identified as Water Quality Limited (WQL) streams; and along trail segments that have slopes that are over 15% grade. Disturbed areas will be seeded as soon as possible after disturbance. In areas away from water, and where natural seed sources are available, natural seeding will be allowed to take place.

**Noxious Weeds** – All machinery used in decommissioning is to be washed before entering work areas on the Forest, and again before moving from on County to another. This is to help prevent spread of noxious weeds. As monitoring of trail decommissioning occurs over the years

according to Forest Plan direction, disturbed areas will also be checked for new occurrences of noxious weeds, and appropriate control methods will be applied to any outbreaks.

Miscellaneous – Gates that are to be removed will be removed before decommissioning begins. Signing may be installed before and after to alert users that the trail is to be decommissioned and to help educate them about not using trails after they have been decommissioned.

## **Appendix D**

### **Soil and Water Guidelines & Directions (also see Appendix C)**

**The Region 4 Soil Management Handbook FSH 2509.18 Direction:** This Handbook directs managers that no more than 15 percent of an activity area should have detrimentally disturbed soil after the completion of all management activities. System roads and trails are not counted as detrimental soil disturbance.

**Region 4 Soil and Water Conservation Practices Handbook FSH 2509.22 Direction:** This handbook provides fuel management practices that reference FSM and FSH direction. These practices are listed below:

**PRACTICE:** 15.02 - General Guidelines for the Location and Design of Roads and Trails  
**OBJECTIVE:** To locate and design roads and trails with minimal soil and water resource impact while considering all design criteria.

**PRACTICE:** 15.03 - Road and Trail Erosion Control Plan  
**OBJECTIVE:** To prevent, limit, and mitigate erosion, sedimentation, and resulting water quality degradation prior to the initiation of construction and maintenance activities through effective contract administration during construction and timely implementation of erosion control practices.

**PRACTICE:** 15.04 - Timing of Construction Activities  
**OBJECTIVE:** To minimize erosion by conducting operations during minimal runoff periods.

**PRACTICES:** 15.05 - Slope Stabilization and Prevention of Mass Failures  
**OBJECTIVES:** To reduce sedimentation by minimizing the chances for road-related mass failures, including landslides and embankment slumps.

**PRACTICE:** 15.06 - Mitigation of Surface Erosion and Stabilization of Slopes  
**OBJECTIVE:** To minimize soil erosion from road cutslopes, fillslopes, and travelway.

**PRACTICE:** 15.27 - Trail Maintenance and Rehabilitation  
**OBJECTIVE:** to minimize soil erosion and water quality problems resulting from trail erosion.

**Laws, Regulations, and Directives:** The Forest must comply with the applicable State and Federal laws and regulations. These include, but are not limited to, the Code of Federal Regulations (CFR), the Clean Water Act (CWA), Executive Orders 11988 and 11990 (Floodplain Management and Protection of Wetlands, respectively), the Multiple Use Sustained Yield Act, and the Idaho Water Quality Standards.

## Recommended BMP Project Design Features

Compliance with the Clean Water Act is achieved through the proper site-specific design, implementation, and monitoring of BMPs<sup>1</sup>. BMP effectiveness is dependant on proper implementation and maintenance (Mosley et. al, 1999). BMPs have been found effective at protecting water quality and minimizing erosion on this Forest<sup>2</sup>.

- Based on soil texture and inherent erodibility, trail grade should be no more than 10-15% (FSH 2309.18 Chapter 3 Exhibit 02; USDA Forest Service, 1995).
- The landforms in this ecological subsection have the potential for mass movement. Design all new ATV trails away from unstable slopes, riparian areas and soils that have high erosion potential.
- Design new trails with the fewest possible stream crossings.
- New trail crossing on streams not supporting beneficial uses as identified by the State of Idaho (IDEQ, 2005) should be armored or a bridge installed to reduce water quality impacts.
- Regular trail maintenance, particularly cleaning and repairing drainage structures would reduce the soil erosion potential.
- Once the new trail is built, the old trail segment should be closed and stabilized to reduce further erosion. Stabilization could include where appropriate drainage, should be ripped, seeded and slash placed (branches/whole conifers) on the prism. Also refer to Appendix C for Trail Decommissioning Process Guidelines.
- Trail work should follow practices 15.02-15.06 and 15.27 of the Region 4 Soil and Water Conservation Practices Handbook FSH 2509.22 Direction and as stated above.
- All proposed trail re-routes and re-locations would be reviewed by a hydrologist and/or soil scientist prior to construction.

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<sup>1</sup> 40CFR130.2(m): Methods, measures, or practices selected by an agency to meet its non-point source control needs. BMPs include, but are not limited to, structural & nonstructural controls & operation & maintenance procedures. BMPs can be applied before, during, & after activities to reduce or eliminate the introduction of pollutants into receiving waters

<sup>2</sup> The Forest has monitored implementation and effectiveness of BMPs on several timber sales since 1990 and on several grazing allotments in 2004, 2005 & 2006. The results are located at the Headquarters Office in Idaho Falls, Idaho.

## Appendix E

WORKSHEET 1 – Wilderness Attributes  
 Evaluating the Effects of Project Activities on Wilderness Attributes  
 and  
 WORKSHEET 2 – Roadless Area Characteristics  
 Evaluating the Effects of Project Activities on Roadless Area Characteristics  
 for the  
**Garns Mountain Roadless Area**

WORKSHEET 1 – Wilderness Attributes  
 Evaluating the Effects of Project Activities on Wilderness Attributes

Date:	April 25 2007
Roadless Area:	Garns Mountain

<b>Description of Project Activity or Impact to Roadless Area:</b>
<p>(Note – describe the activity that is affecting the roadless area, i.e. miles of road construction, timber acres harvested, acres treated by fire, etc...)</p> <p>The project will revisit the existing Travel Plan direction for the Big Hole Mountains Subsection in order to clarify ambiguity discovered during implementation of the existing travel management plan direction and annual monitoring efforts for the existing trail system.</p> <p><b>Analysis of the road system is not part of this project.</b> The purpose is to develop a clearly defined plan for a mix of trails designed and managed specifically for all-terrain vehicles (ATVs), motorcycles, mountain bikes and non-motorized uses. This project will also consider closing all or additional portions of the subsection to off-trail or cross-country travel by bicycles and other mechanized uses. Such cross-country <b>summer travel</b> or use by all motorized vehicles is already in effect (see current Revised Forest Plan).</p> <p>The <b>need</b> for this analysis was discovered during implementation of the 1999 Travel Plan for the following reasons:</p> <ul style="list-style-type: none"> <li>• The current travel plan allows ATV use on motorized single-track trails that are shown as “Open for motorized use less than 50 inches wide but <b>NOT RECOMMENDED FOR ATVs</b>” (Targhee National Forest Travel Map - 2001). This is causing a number of resource problems and user conflicts.</li> <li>• A considerable increase in ATV use has occurred during the last several years. Such an increase of ATV use on single track motorized trails that were not designed for ATV use has and is continuing to pose safety risks for visitors as well as causing damage to vegetation, soils and in some cases, the trails capability to support other uses.</li> <li>• Continued use of some of these single track motorized trails by ATVs may result in significant environmental effects. At the same time, some trails would be suitable for ATV use with minor modifications in trail design and reconstruction.</li> </ul>

- During the same time period, there has been an increase in the recreation use levels of all types of trail use which has increased user conflicts. The combination of increased recreation use, user conflicts and trail use beyond the capability of the intended trail design has led to some damage of the existing trail system and consequently caused a proliferation of new user-created trails.
- Both user-created motorized and non-motorized (mountain bikes) trails have often been constructed in inappropriate locations such as on steep slopes and next to streams which are non-sustainable and difficult to maintain over the long term.
- In addition, user-created motorized routes often exceed established density standards, fragment wildlife habitat, increase erosion, and cause other resource impacts.

The **actions proposed** by the Forest Service to meet the purpose and need are:

1. Develop a clearly defined plan for a mix of trails designed and managed specifically for all- terrain vehicles (ATVs), motorcycles, mountain bikes and non-motorized uses. The goal is to create a balanced network of trails that are safe, environmentally sound, affordable to manage and maintain, and responsive to public needs. **(See Appendix A - Comparison Summary of All Trails by Alternative -- Big Hole Mountains Subsection Summer Transportation Travel Plan).**
2. **Eliminate** the existing designation of “Open for motorized use less than 50 inches wide but **NOT RECOMMENDED FOR ATVs**” and allow ATVs only on trails designed and designated for ATV use.
3. Close all or additional portions of the Big Hole Mountains Subsection to off-trail use (cross-country use) by bicycles and other mechanized uses.
4. Analyze the effects of relocating sections of trails that may be necessary to accommodate the designated use in a safe and sustainable manner and be environmentally sound.
5. Develop a process or protocol to use when analyzing the effects of relocating other sections of trails which may be identified in the future without doing another environmental analysis document such as this for every relocation or closure of ill-legal user-created trails. For example, the “Adaptive Management Specialist Checklist” (see Appendix B) procedures would be utilized when potential trail segment relocations may be necessary to meet the intended use and or to protect natural resources. This checklist could also be used when decommissioning or abandoning existing trail segments or for closing ill-legal user created trails. This protocol would compare the environmental effects of relocating and or closing a trail segment or leaving it as it currently exists. This would allow future and currently unknown reroutes to be constructed and or segments to be abandoned and decommissioned without doing an entire new analysis on each new action.
6. Utilize adaptive management methods or “closure methods requiring surface disturbance” on a continuing basis without having to complete additional separate analysis on how to decommission and rehabilitate short re-routed segments and ill-legal user-created trails that are creating unacceptable environmental damage.

The protocol established in the 1999 Open Road and Open Motorized Trail Analysis, “Road Decommissioning Process Guidelines”, Appendix B, will be followed during trail reclamation and decommissioning as direct by the Revised Forest Plan. A description of the procedures to be followed is found in Appendix C of this document. Documentation (Appendix B) at the time of reclamation and or decommissioning will occur to determine effectiveness of the closure type (such as scarification, berms, rocks and vegetation) and possible impacts to resources. The United States Fish and Wildlife Service (USFWS) defines an effective closure as one where the trail no longer

functions as a summer motorized route (USFWS 1997).

Effect to Wilderness Attributes			
Wilderness Attribute  (Note: delete attribute descriptions after data is entered to save space if desired.)	Is there an effect? Yes or No	Which direction is the effect? Improving, Stable or Degrading?	Describe the actual effect. Use descriptive terms that discuss the effect, not the activity. May use GIS layers (ROS, SMS, Roads, etc...) to quantify effects.
<b>Natural Integrity</b> A measure of whether the long-term ecological processes of the area are intact and operating. It describes the extent to which human influences have altered natural processes away from what one would expect without those impacts. Address this attribute by describing the impact your project activities may have on natural processes in the area and by describing any effects these changes may cause within the area. Consider linking to PFC.	Yes	Improving in Alts. B, C, D	With any action alternative chosen, the appearance of the overall landscape will improve because there will be less pioneering of illegal and unwanted new routes from ATVs, motorcycles, and bicycles. Likewise, overall double-track mileage will be reduced as ATVs will be restricted to routes designed and designated for their use – instead of being allowed on single-track routes.
<b>Apparent Naturalness</b> A measure of past and proposed activities on the appearance of naturalness of the area to the casual observer. This is a measure of the degree of environmental modification that will occur because of your project. Address this attribute by describing the extent of modification that will occur in the Roadless area, (i.e. length of roads built, facilities constructed) and how apparent the impact will be to the visitors of the area in both the short-term and the long-term. Effects should be judged from a layman’s point of view. Consider existing scenic integrity and ROS layers.	Yes	Improving in Alts. B, C, D	Same as Integrity
<b>Remoteness</b> A measure of distance from the sights and sounds of civilization. It tries to indicate whether the visitor will experience a setting that is removed from civilization. Address this attribute by describing any sights or sounds of civilization that will occur during the projects duration or resulting after the project is finished. Also address any change in how a visitor might access the area. Consider using ROS maps layers.	No	Stable in all Alts.	No large population centers are close, but there are numerous smaller communities along the entire boundary. Access is very easy to trailheads. There will be little change as existing trails are still being utilized by motorized and non-motorized uses. The only difference across the alternatives is which trails or routes will be motorized and which will not. Very few new trails – either motorized or non-motorized are being proposed in the action alternatives.
<b>Solitude</b> Described as opportunities to experience solitude, or the isolation from the sights, sounds, and presence of others and from the developments and evidence of man. Solitude is measured by looking at the size of the area, the presence of screening, distance from impacts to the rest of the area, and degree of permanent intrusions. Address solitude by discussing how the project	No	Stable in all Alts.	Same as for Remoteness

<p>activities affect the ability of a visitor to escape project impacts on solitude within the area. Consider linking to ROS mapping for size and remoteness criteria for Primitive and SPMN.</p>			
<p><b>Opportunities for Primitive Recreation</b>                  A measure of the experiences available to be isolated from the evidence of man, to feel a part of nature, to have a vastness of scale, and a high degree of challenge and risk while using outdoor skills. Address this attribute by describing how the project activities might affect the size of the area, the number and type of opportunities available, the challenge of the opportunities, and the addition or absence of facilities.</p>	<p>No</p>	<p>Stable in all Alts.</p>	<p>No change from the current situation and the direction in the 1997 Revised Forest Plan. Past and current planned use is semi-primitive motorized. The distance across the area is not far – especially when using ATVs and motorcycles.</p>
<p><b>Special Features (Ecological, Geologic, Scenic or Historical)</b>                  An attribute that recognizes that wilderness may contain other values of ecological, geologic, scenic or historical or cultural significance. Unique fish and wildlife species, unique plants or plant communities, potential or existing research natural areas, outstanding landscape features, and significant cultural resource sites should all be considered as types of values that might exist. Identify any of these values that exist within the project area. Address this attribute by describing the effect proposed activities would have on these values. Consider Scenic Attractiveness link.</p>	<p>No</p>	<p>Stable in all Alts.</p>	<p>There is no change from the current situation and direction in the 1997 Revised Forest Plan. <b>Specifically, there is no significant biodiversity features within this area that warrant special consideration.</b></p>
<p><b>Manageability (as Wilderness)</b>                  A measure of the ability to manage an area to meet the size criteria (5,000 + acres), the resulting configuration of the potential wilderness, and the interaction of the other elements above. Changes in the shape of the Inventoried Roadless Area may have significant consequences to its wilderness potential. Consider also boundary management impacts such as changing wilderness boundaries to different terrain features or for how access would be provided if project activities cause adjustments in the Inventoried Roadless Area. Address this attribute by discussing how the proposed activities may affect the boundary location, the size, the shape, and the access to the area. Consider ROS mapping.</p>	<p>No</p>	<p>Stable in all Alts.</p>	<p>There is no change from the current situation in size or management direction. The decision in the 1997 Revised Forest Plan was not to recommend for wilderness considerations. The area has little development of any type that would impact the natural integrity of the area for wilderness considerations – except motorized trails. The area is a fairly large block of land with the opportunity for challenge with some steep and remote terrain, but also has considerable amounts of much easier terrain. The area is currently used for motorized and non-motorized travel and is considered important by all user groups for recreational access. Opportunity for solitude is high IF motorized use is removed. However, the RFP designated this area for motorized use on trails, and to improve the trails in this area to provide a significant system of high quality that will meet public demand.</p>

**WORKSHEET 2 – Roadless Area Characteristics**  
 Evaluating the Effects of Project Activities on Roadless Area Characteristics

Date:	April 25, 2007
Roadless Area:	Garnes Mountain

<b>Description of Project Activity or Impact to Roadless Area:</b>
(Note – describe the activity that is affecting the roadless area, i.e. miles of road construction, timber acres harvested, acres treated by fire, etc...)
Same as WORKSHEET 1

**Effect to Roadless Characteristics**

<b>Roadless Characteristics</b>	<b>Is there an effect? Yes or No</b>	<b>Which direction is the effect? Improving, Stable or Degrading?</b>	<b>Describe the actual effect.</b> Use descriptive terms that discuss the effect, not the activity.
<p><b>Soil, water and Air resources</b>                      Identify any unique or critical watershed resources. Describe how the project will affect these key resources areas and the habitats that depend on them.</p>	Yes	Improving in Alts. B, C, D	<p>No unique or critical resources identified, but the following applies to identified issue areas.</p> <p><b>Fisheries:</b> Each action alternative improves upon the existing condition because they specifically designate motorized trail lengths as designated for ATVs or motorcycles.</p> <p><b>Water Quality and Soil Erosion:</b> All alternatives would maintain existing soil and water conditions which are currently meeting the RFP standards and guidelines. This project, implemented with the BMPs (see Appendix D), complies with the applicable hydrology-related standards and guidelines from the RFP as well as the pertinent other laws, regulations, and directives discussed above.</p> <p><b>Wildlife:</b> Each action alternative improves upon the existing condition because they specifically designate motorized trail lengths as designated for ATVs or motorcycles.</p> <p><b>Recreational Use:</b> Overall, natural resources would benefit from specifically designating ATV trails that would be designed and</p>

			<p>constructed for ATV use and trail maintenance would decrease. Closing all or additional portions of the subsection to cross-country travel by mountain bikes and other mechanized equipment would decrease unwanted or illegal trail development but would increase the need for enforcement efforts for the near future.</p> <p><b>Open Road Open Motorized Trail Route Density:</b> An overall positive change in all issue areas should be realized by eliminating the “Open for Motorized Uses less the 50 inches wide but NOT RECOMMENDED FOR ATVs” designation in Alternatives B, C, and D.</p>
<p><b>Sources of public drinking water</b> Identify any public drinking water systems or sources within the project area or that would be affected by the project. Describe how the project would affect water quality and quantity of the public drinking water source.</p>	No	Stable in all Alts.	No systems identified.
<p><b>Diversity of plant and animal communities</b> Discuss the diversity of plant and animal communities. Identify any unique plant and animal communities within the area. Describe effects to the diversity of communities and impacts to populations in the areas.</p>	Yes	Stable to improving in Alts. B, C, D	See “Soil, water and air resources” in WORKSHEET 1 above.
<p><b>Habitat for TES and species dependent on large undisturbed areas of land</b> Identify any TES or sensitive species within the Roadless area. Describe how the project would affect the habitats or populations and whether this effect is significant across the normal range and distribution of these habitats and populations.</p>	Yes	Stable to improving in Alts. B, C, D	Wildlife indicator species include bald eagle, trumpeter swans, spotted frogs, common loons and harlequin ducks. The subsection is shown to support all of these except trumpeter swan nesting habitat. Other indicator species include elk, gray wolf, northern goshawk, Canada lynx, grizzly bear, some avian species, and some furbearers. However, there would be very little affect to habitats or populations and therefore the effect is not significant across the normal range and distribution of these species.
<p><b>Primitive and semi-primitive classes of recreation</b> Describe current recreation opportunities within the Roadless area. Identify the effects of your project of the area and these activities. Describe the effect in terms of availability for similar experiences in surrounding areas or within the region of use. Consider link to ROS mapping.</p>	Yes	Stable to improving in Alts. B, C, D	The proposed activities would not change the designation of the current ROS classes. RFP direction is to manage for Semi-primitive uses. This area is designated for motorized uses while most of the Palisades Roadless area is managed for Proposed Wilderness and Wilderness Study Area designations. There is no effect on availability for similar experiences in surrounding areas

			or region.
<p><b>Reference landscapes for research study or interpretation</b>                  Describe the landscape that is present. Describe any unique reference landscapes that exist within the Roadless area. Describe how the project activities might affect the reference landscape values of the Roadless area. Consider how the landscapes within the Inventoried Roadless area fits within the broader landscape and if the project creates any overall change. Consider landscape character descriptions in SMS.</p>	Yes	Stable to improving in Alts. B, C, D	Overall, landscape features are average through the area. There are some larger streams but nothing outstanding. Vegetative variety does exist in some areas with a mix of deciduous and evergreen trees and shrubs. Rock outcrops and canyons are typical throughout but not outstanding when compared to the adjacent Teton Mountain Range. There is less than 1,000 acres where cross-country travel by any type of non-motorized or mechanized vehicle is prohibited in order to protect wildlife or wildlife habitat and other special management area resource values – such as Research Natural Areas. There is no change to this existing direction in these areas.
<p><b>Landscape character and integrity</b>                  Describe the current scenic quality and character of the area. Describe project effects to the scenic integrity of the area and changes to the character of the area. Consider existing scenic integrity.</p>	Yes	Stable to improving in Alts. B, C, D	Current scenic designations are Retention (High) to Modification (Low). Scenic quality is average or typical in most areas – as described in the section above.
<p><b>Traditional cultural properties and sacred sites</b>                  Identify generically any significant cultural resources within the Roadless area and describe the effect of the project on these resources. Typically mitigation will be designed to prevent significant effects to these resources.</p>	Yes	Stable to improving in Alts. B, C, D	??????????????
<p><b>Other locally unique characteristics</b>                  Identify any locally unique characteristics and describe how the project would affect these values.</p>	No	NA	

# Appendix F

WORKSHEET 1 – Wilderness Attributes  
 Evaluating the Effects of Project Activities on Wilderness Attributes  
 and  
 WORKSHEET 2 – Roadless Area Characteristics  
 Evaluating the Effects of Project Activities on Roadless Area Characteristics  
 for the  
**Palisades Roadless Area**

WORKSHEET 1 – Wilderness Attributes  
 Evaluating the Effects of Project Activities on Wilderness Attributes

Date:	April 25, 2007
Roadless Area:	Palisades

Description of Project Activity or Impact to Roadless Area:
<p>                     (Note – describe the activity that is affecting the roadless area, i.e. miles of road construction, timber acres harvested, acres treated by fire, etc...) The project will revisit the existing Travel Plan direction for the Big Hole Mountains Subsection in order to clarify ambiguity discovered during implementation of the existing travel management plan direction and annual monitoring efforts for the existing trail system. <b>Analysis of the road system is not part of this project.</b> The purpose is to develop a clearly defined plan for a mix of trails designed and managed specifically for all-terrain vehicles (ATVs), motorcycles, mountain bikes and non-motorized uses. This project will also consider closing all or additional portions of the subsection to off-trail or cross-country travel by bicycles and other mechanized uses. Such <b>cross-country summer travel</b> or use by all motorized vehicles is already in effect (see current Revised Forest Plan).                 </p> <p>                     The <b>need</b> for this analysis was discovered during implementation of the 1999 Travel Plan for the following reasons:                 </p> <ul style="list-style-type: none"> <li>• The current travel plan allows ATV use on motorized single-track trails that are shown as “Open for motorized use less than 50 inches wide but <b>NOT RECOMMENDED FOR ATVs</b>” (Targhee National Forest Travel Map - 2001). This is causing a number of resource problems and user conflicts.</li> <li>• A considerable increase in ATV use has occurred during the last several years. Such an increase of ATV use on single track motorized trails that were not designed for ATV use has and is continuing to pose safety risks for visitors as well as causing damage to vegetation, soils and in some cases, the trails capability to support other uses.</li> </ul>

- Continued use of some of these single track motorized trails by ATVs may result in significant environmental effects. At the same time, some trails would be suitable for ATV use with minor modifications in trail design and reconstruction.
- During the same time period, there has been an increase in the recreation use levels of all types of trail use which has increased user conflicts. The combination of increased recreation use, user conflicts and trail use beyond the capability of the intended trail design has led to some damage of the existing trail system and consequently caused a proliferation of new user-created trails.
- Both user-created motorized and non-motorized (mountain bikes) trails have often been constructed in inappropriate locations such as on steep slopes and next to streams which are non-sustainable and difficult to maintain over the long term.
- In addition, user-created motorized routes often exceed established density standards, fragment wildlife habitat, increase erosion, and cause other resource impacts.

The **actions proposed** by the Forest Service to meet the purpose and need are:

1. Develop a clearly defined plan for a mix of trails designed and managed specifically for all- terrain vehicles (ATVs), motorcycles, mountain bikes and non-motorized uses. The goal is to create a balanced network of trails that are safe, environmentally sound, affordable to manage and maintain, and responsive to public needs. **(See Appendix A - Comparison Summary of All Trails by Alternative -- Big Hole Mountains Subsection Summer Transportation Travel Plan).**
2. **Eliminate** the existing designation of “Open for motorized use less than 50 inches wide but **NOT RECOMMENDED FOR ATVs**” and allow ATVs only on trails designed and designated for ATV use.
3. Close all or additional portions of the Big Hole Mountains Subsection to off-trail use (cross-country use) by bicycles and other mechanized uses.
4. Analyze the effects of relocating sections of trails that may be necessary to accommodate the designated use in a safe and sustainable manner and be environmentally sound.
5. Develop a process or protocol to use when analyzing the effects of relocating other sections of trails which may be identified in the future without doing another environmental analysis document such as this for every relocation or closure of ill-legal user-created trails. For example, the “Adaptive Management Specialist Checklist” (see Appendix B) procedures would be utilized when potential trail segment relocations may be necessary to meet the intended use and or to protect natural resources. This checklist could also be used when decommissioning or abandoning existing trail segments or for closing ill-legal user created trails. This protocol would compare the environmental effects of relocating and or closing a trail segment or leaving it as it currently exists. This would allow future and currently unknown reroutes to be constructed and or segments to be abandoned and decommissioned without doing an entire new analysis on each new action.
6. Utilize adaptive management methods or “closure methods requiring surface disturbance” on a continuing basis without having to complete additional separate analysis on how to decommission and rehabilitate short re-routed segments and ill-legal user-created trails that are creating unacceptable environmental damage.

The protocol established in the 1999 Open Road and Open Motorized Trail Analysis, “Road Decommissioning Process Guidelines”, Appendix B, will be followed during trail reclamation and decommissioning as direct by the Revised Forest Plan. A description of the

procedures to be followed is found in Appendix C of this document. Documentation (Appendix B) at the time of reclamation and or decommissioning will occur to determine effectiveness of the closure type (such as scarification, berms, rocks and vegetation) and possible impacts to resources. The United States Fish and Wildlife Service (USFWS) defines an effective closure as one where the trail no longer functions as a summer motorized route (USFWS 1997).

Effect to Wilderness Attributes			
Wilderness Attribute  (Note: delete attribute descriptions after data is entered to save space if desired.)	Is there an effect? Yes or No	Which direction is the effect? Improving, Stable or Degrading?	Describe the actual effect. Use descriptive terms that discuss the effect, not the activity. May use GIS layers (ROS, SMS, Roads, etc...) to quantify effects.
<b>Natural Integrity</b> A measure of whether the long-term ecological processes of the area are intact and operating. It describes the extent to which human influences have altered natural processes away from what one would expect without those impacts. Address this attribute by describing the impact your project activities may have on natural processes in the area and by describing any effects these changes may cause within the area. Consider linking to PFC.	Yes – in areas not recommended for Proposed Wilderness. No in Proposed and Wilderness Study Areas	Improving where changes are proposed and Stable where no changes are proposed	In the “Yes areas”, with any action alternative chosen, the appearance of the overall landscape will improve because there will be less pioneering of illegal and unwanted new routes from ATVs, motorcycles, and bicycles. Likewise, overall double-track mileage will be reduced as ATVs will be restricted to routes designed and designated for their use – instead of being allowed on single-track routes. Overall resource protection will be better.
<b>Apparent Naturalness</b> A measure of past and proposed activities on the appearance of naturalness of the area to the casual observer. This is a measure of the degree of environmental modification that will occur because of your project. Address this attribute by describing the extent of modification that will occur in the Roadless area, (i.e. length of roads built, facilities constructed) and how apparent the impact will be to the visitors of the area in both the short-term and the long-term. Effects should be judged from a layman’s point of view. Consider existing scenic integrity and ROS layers.	Yes	Improving in Alts. B, C, D	Same as for Natural Integrity
<b>Remoteness</b> A measure of distance from the sights and sounds of civilization. It tries to indicate whether the visitor will experience a setting that is removed from civilization. Address this attribute by describing any sights or sounds of civilization that will occur during the projects duration or resulting after the project is finished. Also address any change in how a visitor might access the area. Consider using ROS maps layers.	No	Stable in all Alts.	No large population centers are close, but there are numerous smaller communities along the entire boundary. Access is very easy to trailheads. There will be little change as existing trails are still being utilized by motorized and non-motorized uses. The only difference across the alternatives is which trails or routes will be motorized and which will not. Very few new

			trails – either motorized or non-motorized are being proposed in the action alternatives.
<p><b>Solitude</b> Described as opportunities to experience solitude, or the isolation from the sights, sounds, and presence of others and from the developments and evidence of man. Solitude is measured by looking at the size of the area, the presence of screening, distance from impacts to the rest of the area, and degree of permanent intrusions. Address solitude by discussing how the project activities affect the ability of a visitor to escape project impacts on solitude within the area. Consider linking to ROS mapping for size and remoteness criteria for Primitive and SPMN.</p>	No	Stable in all Alts.	No change from the current situation and the direction in the 1997 Revised Forest Plan for the area not recommend for Wilderness. Past and current planned use is semi-primitive motorized. The distance across the area is not far – especially when using ATVs and motorcycles. There are no changes proposed for the Proposed Wilderness and Wilderness Study Areas. If wilderness designation is determined for some of the areas, then the current single track motorized use would be eliminated – thus improving the solitude, remoteness and naturalness of the area. Primitive opportunities would increase as well.
<p><b>Opportunities for Primitive Recreation</b> A measure of the experiences available to be isolated from the evidence of man, to feel a part of nature, to have a vastness of scale, and a high degree of challenge and risk while using outdoor skills. Address this attribute by describing how the project activities might affect the size of the area, the number and type of opportunities available, the challenge of the opportunities, and the addition or absence of facilities.</p>	No	Stable in all Alts.	No change from the current situation and the direction in the 1997 Revised Forest Plan. Past and current planned use is semi-primitive motorized in areas not recommended for Proposed Wilderness. The distance across the area is not far – especially when using ATVs and motorcycles. There is no change in the Proposed Wilderness or Wilderness Study Areas.
<p><b>Special Features (Ecological, Geologic, Scenic or Historical)</b> An attribute that recognizes that wilderness may contain other values of ecological, geologic, scenic or historical or cultural significance. Unique fish and wildlife species, unique plants or plant communities, potential or existing research natural areas, outstanding landscape features, and significant cultural resource sites should all be considered as types of values that might exist. Identify any of these values that exist within the project area. Address this attribute by describing the effect proposed activities would have on these values. Consider Scenic Attractiveness link.</p>	No	Stable in all Alts.	There is no change from the current situation and direction in the 1997 Revised Forest Plan. <b>Specifically, there is no significant biodiversity features within the area not recommended for Proposed Wilderness that warrant special consideration.</b> There is no change in the Proposed Wilderness and Wilderness Study Areas.
<p><b>Manageability (as Wilderness)</b> A measure of the ability to manage an area to meet the size criteria (5,000 + acres), the resulting configuration of the potential wilderness, and the interaction of the other elements above. Changes in the shape of the Inventoried Roadless Area may have significant consequences to its wilderness potential. Consider also boundary management impacts such as changing wilderness boundaries to different terrain features or for how access would be provided if project activities cause adjustments in the Inventoried Roadless Area. Address this attribute by discussing how the proposed activities may affect the boundary</p>	No	Stable in all Alts.	There is no change from the current situation in size or management direction. The decision in the 1997 Revised Forest Plan was not to recommend a portion of the area for wilderness considerations. This portion has little development of any type that would impact the natural integrity of the area for wilderness considerations – except motorized trails. This portion is not a large block of land with the opportunity for challenge as it is not very steep or remote. The area is currently used for motorized

<p>location, the size, the shape, and the access to the area. Consider ROS mapping.</p>			<p>and non-motorized travel and is considered important by all user groups for recreational access. Opportunity for solitude is high IF motorized use is removed. However, the RFP designated this area for motorized use on trails, and to improve the trails in this area to provide a significant system of high quality that will meet public demand.</p>
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**WORKSHEET 2 – Roadless Area Characteristics**  
 Evaluating the Effects of Project Activities on Roadless Area Characteristics

Date:	April 25, 2007
Roadless Area:	Palisades

<b>Description of Project Activity or Impact to Roadless Area:</b>
(Note – describe the activity that is affecting the roadless area, i.e. miles of road construction, timber acres harvested, acres treated by fire, etc...)
Same as WORKSHEET 1

**Effect to Roadless Characteristics**

<b>Roadless Characteristics</b>	<b>Is there an effect? Yes or No</b>	<b>Which direction is the effect? Improving, Stable or Degrading?</b>	<b>Describe the actual effect.</b> Use descriptive terms that discuss the effect, not the activity.
<p><b>Soil, water and Air resources</b>                      Identify any unique or critical watershed resources. Describe how the project will affect these key resources areas and the habitats that depend on them.</p>	Yes	Improving in Alts. B, C, D	<p>No unique or critical resources identified, but the following applies to identified issue areas.</p> <p><b>Fisheries:</b> Each action alternative improves upon the existing condition because they specifically designate motorized trail lengths as designated for ATVs or motorcycles.</p> <p><b>Water Quality and Soil Erosion:</b> All alternatives would maintain existing soil and water conditions which are currently meeting the RFP standards and guidelines. This project, implemented with the BMPs (see Appendix D), complies with the applicable hydrology-related standards and guidelines from the RFP as well as the pertinent other laws, regulations, and directives discussed above.</p> <p><b>Wildlife:</b> Each action alternative improves upon the existing condition because they specifically designate motorized trail lengths as designated for ATVs or motorcycles.</p> <p><b>Recreational Use:</b> Overall, natural resources would benefit from specifically designating ATV trails that would be designed and</p>

			<p>constructed for ATV use and trail maintenance would decrease. Closing all or additional portions of the subsection to cross-country travel by mountain bikes and other mechanized equipment would decrease unwanted or illegal trail development but would increase the need for enforcement efforts for the near future.</p> <p><b>Open Road Open Motorized Trail Route Density:</b> An overall positive change in all issue areas should be realized by eliminating the “Open for Motorized Uses less the 50 inches wide but NOT RECOMMENDED FOR ATVs” designation in Alternatives B, C, and D.</p>
<p><b>Sources of public drinking water</b> Identify any public drinking water systems or sources within the project area or that would be affected by the project. Describe how the project would affect water quality and quantity of the public drinking water source.</p>	No	Stable in all Alts.	No systems identified.
<p><b>Diversity of plant and animal communities</b> Discuss the diversity of plant and animal communities. Identify any unique plant and animal communities within the area. Describe effects to the diversity of communities and impacts to populations in the areas.</p>	Yes	Stable to improving in Alts. B, C, D	See “Soil, water and air resources” in WORKSHEET 1 above.
<p><b>Habitat for TES and species dependent on large undisturbed areas of land</b> Identify any TES or sensitive species within the Roadless area. Describe how the project would affect the habitats or populations and whether this effect is significant across the normal range and distribution of these habitats and populations.</p>	Yes	Stable to improving in Alts. B, C, D	Wildlife indicator species include bald eagle, trumpeter swans, spotted frogs, common loons and harlequin ducks. The subsection is shown to support all of these except trumpeter swan nesting habitat. Other indicator species include elk, gray wolf, northern goshawk, Canada lynx, grizzly bear, some avian species, and some furbearers. However, there would be very little affect to habitats or populations and therefore the effect is not significant across the normal range and distribution of these species.
<p><b>Primitive and semi-primitive classes of recreation</b> Describe current recreation opportunities within the Roadless area. Identify the effects of your project of the area and these activities. Describe the effect in terms of availability for similar experiences in surrounding areas or within the region of use. Consider link to ROS mapping.</p>	Yes	Stable to improving in Alts. B, C, D	The proposed activities would not change the designation of the current ROS classes. RFP direction is to manage a portion for Semi-primitive uses. This area is designated for motorized uses while the remainder of the area is managed for Proposed Wilderness and Wilderness Study Area designations. There is no effect on availability for similar experiences in surrounding areas

			or region.
<p><b>Reference landscapes for research study or interpretation</b>                  Describe the landscape that is present. Describe any unique reference landscapes that exist within the Roadless area. Describe how the project activities might affect the reference landscape values of the Roadless area. Consider how the landscapes within the Inventoried Roadless area fits within the broader landscape and if the project creates any overall change. Consider landscape character descriptions in SMS.</p>	Yes	Stable to improving in Alts. B, C, D	Overall, landscape features are average through the portion not proposed for wilderness values. There are some larger streams but nothing outstanding. Vegetative variety does exist in some areas with a mix of deciduous and evergreen trees and shrubs. Rock outcrops and canyons are typical throughout but not outstanding when compared to the adjacent Teton Mountain Range. In the Proposed Wilderness and Wilderness Study Areas, there are some unique features – namely two mountain lakes, unusual canyon features, waterfalls, and rock features. There is more than 8,000 acres where cross-country travel by any type of non-motorized or mechanized vehicle is prohibited in order to protect wildlife or wildlife habitat and other special management area resource values – such as Research Natural Areas. There is no change to this existing direction in these areas.
<p><b>Landscape character and integrity</b>                  Describe the current scenic quality and character of the area. Describe project effects to the scenic integrity of the area and changes to the character of the area. Consider existing scenic integrity.</p>	Yes	Stable to improving in Alts. B, C, D	Current scenic designations are Retention (High) to Modification (Low). Scenic quality is average or typical in most areas – as described in the section above, but there are some outstanding qualities in landform, water bodies, meandering streams, vegetative patterns, color and texture in the Proposed Wilderness and Wilderness Study Areas.
<p><b>Traditional cultural properties and sacred sites</b>                  Identify generically any significant cultural resources within the Roadless area and describe the effect of the project on these resources. Typically mitigation will be designed to prevent significant effects to these resources.</p>	Yes	Stable to improving in Alts. B, C, D	Archaeological and ethnographic sources indicate the historic and prehistoric utilization of the Big Hole Mountains Subsection for camping, hunting, fishing, gathering, grazing, mining, harvesting timber and traveling. For the purpose of this analysis, the Caribou-Targhee National Forest’s Cultural Resources Project and Site records were used to determine previous analyses, and the nature and distribution of known sites. No fieldwork was conducted specifically for this project since no specific ground disturbing schedule has been set and it is a multi-year project based on the availability of funds.
<p><b>Other locally unique characteristics</b>                  Identify any locally unique characteristics and describe how the project would affect these values.</p>	No	NA	

# Appendix G

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## **Plant Species Diversity**

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## Heritage Resources

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American Antiquities Act of 1906 as amended (16 USC 2101-2106).

Archaeological Resources Protection Act (ARPA) (16 USC 470aa-mm).

Freedom of Information Act of 1982 (FOIA) (5 USC 552).

Historic Sites Act of 1935 as amended (16 USC 461-467).

Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) as amended, (25 USC 3001 et seq.).

National Historic Preservation Act (NHPA) (16 USC 470 et seq) [a National Park Service annotation of the act as amended through December 31, 2000].

# Appendix H

## Alternative Map\*

Revised Alternative C – Selected Alternative .....Appendix H-1

\* Map is too large to insert in this document. Map may be viewed at the Palisades and Teton Basin Ranger Districts or on the Caribou-Targhee National Forest web site listed below.

[www.fs.fed.us/r4/caribou-targhee/projects/big\\_hole\\_mountains\\_subsection/index.shtml](http://www.fs.fed.us/r4/caribou-targhee/projects/big_hole_mountains_subsection/index.shtml)

## Appendix-I

### *Ecological Units Found in the Big Hole Trails Analysis Area*

**Table A1. Ecological Unit Ratings and Interpretations (USFS, 1999)**

Soil Ratings and Interp. by Ecological Unit	Erosion Hazard	Foot and Saddlestock Trails	Off-Road Vehicles	Motorcycle Trails	Mass Instability	Soil Loss Tolerance (T Factor) Tons/Acre
1106	Erodes Easily	Severe-Slope	Severe-Erosion	Severe-Erosion	Stable	3
1130	Erodes Easily	Moderate-Slope	Severe-Erosion	Severe-Erosion	Stable Alpine	5
1170	Moderate	Moderate-Slope	Severe-Erosion	Severe-Erosion	Unstable	5
1172	Moderate	Severe-Slope	Severe-Erosion	Severe-Erosion	Stable	2-3
1175	Erodes Easily	Severe-Slope	Severe-Erosion	Severe-Erosion	Unstable	5
1216	Erodes Easily	Severe-Slope	Severe-Erosion	Severe-Erosion	Unstable	4-5
1219	Erodes Easily	Severe-Slope/Rock	Severe-Erosion	Severe-Erosion	Unstable	5
1294	Erodes Easily	Moderate-Slope	Severe-Erosion	Severe-Erosion	Stable	5
1303	Moderate	Moderate-Slope	Severe-Erosion	Severe-Erosion	Unstable	5
1315	Moderate	Moderate-Slope	Severe-Erosion	Severe-Erosion	Unstable	5-4
1316	Erodes Easily	Severe-Slope	Severe-Erosion	Severe-Erosion	Unstable	4
1646	Moderate	Moderate-Slope	Severe-Erosion	Severe-Erosion	Unstable	5-4
2609	Low	Severe-Wetness	Severe-Wetness	Severe-Wetness	Stable	3

**Ecological Unit Numbers and Names**

- 1106** Abl/Phma5 Gany-Psme/Bere, Syor2 Fritz association, 40 to 70 percent slopes
- 1130** Alpine Graminoid Fritz, 4 to 30 percent slopes
- 1170** Abl/Tall Forb Yodal, 4 to 35 percent slopes
- 1172** Abl/Acgl Gany-Abla/Thoc Katpa-Psme/Bere, Syor2 Fritz complex, 40 to 70 percent slopes
- 1175** Abl/Tall Forb Yodal, 35 to 60 percent slopes
- 1216** Abl/Acgl Koffgo-Abla/Acgl Rhylow-Psme/Artrv Povey complex, 35 to 60 percent slopes
- 1219** Abl/Phma5 Lagall-Psme/Artrv Povey-Psme/Bere, Syor2 Fritz complex, 35 to 70 percent slopes
- 1294** ArtrP4/Syor2/Feid Tetonia-Psme/Osch Rin Complex, 15 to 35 percent slopes
- 1303** Abl/Osch, Pamy Edgway-Abla/Thoc Jumpstart-Psme/Artrv Tophat complex, 15 to 50 percent slopes
- 1315** Abl/Osch, Pamy Edgway-Abla/Vagl, Pamy Koffko-Psme/Artrv Povey association, 15 to 50 % slope
- 1316** Abl/Vagl, Pamy Koffgo-Abla/Thoc Koffgo-Rock Outcrop complex, 40 to 70 percent slopes
- 1646** Abl/Vagl, Pamy Huckridge-Abla/Vagl, Pamy Koffgo-Abla/Osch, Pamy Edgway complex, 15 to 50 percent slopes
- 2609** Pein Cryaquolls, 2 to 8 percent slopes

**Taxonomic Classification of Dominant Soils**

- \***Edgway** - Loamy-skeletal, mixed, superactive Vitrandic Cryoborolls
- \***Fritz** - Loamy-skeletal, carbonatic Calcic Cryoborolls
- \***Gany** - Loamy-skeletal, mixed, superactive Calcic Cryoborolls
- \***Huckridge** - Fine-silty, mixed, superactive Vitrandic Paleboralfs
- \***Jumpstart** - Fine, mixed, active Mollic Cryoboralfs
- \***Kapta** - Loamy-skeletal, carbonatic Calcic Pachic Cryoborolls
- \***Koffgo** - Loamy-skeletal, mixed, superactive Vitrandic Cryochrepts
- \***Legall** - Loamy-skeletal, mixed, superactive Vitrandic Cryoborolls
- \***Povey** - Loamy-skeletal, mixed, superactive Pachic Cryoborolls
- \***Rhylow** - Loamy-skeletal, mixed, superactive Vitrandic Cryumbrepts
- \***Rin** - Coarse-loamy, mixed, superactive Pachic Cryoborolls
- \***Tetonia** - Coarse-silty, mixed, superactive Calcic Pachic Cryoborolls
- \***Tophat** - Fine, mixed, superactive Argic Pachic Cryoborolls
- \***Yodal** - Fine-loamy, mixed, active, Abruptic Paleboralfs
- \***Cryaquolls**- Cryaquolls

**Table A2. Physiographic, Geologic and Climatic Features Associated With Each Ecological Unit.**

Soil Ratings and Interp. by Land Type	Elevation (feet)	Rainfall (inches)	Geology	Physiography	Drainage Class	Depth to Bedrock (feet)	Soil Loss Tolerance tons/ac/yr
1106	5,200-8,00	22	Sedimentary	Stable Mountains	Well Drained	Deep-VeryDeep	3
1130	8,400-11,00	35	Sedimentary	Stable Alpine	Well Drained	Very Deep	5
1170	7,600-9,800	45	Mixed	Unstable Mountains, Summits, Basins	Well Drained	Very Deep	5
1172	6,700-9,700	24	Sedimentary	Mid-slope Mountains	Well Drained	Very Deep	2 3
1175	7,600-9,800	45	Mixed	Unstable Mountains	Well drained	Very Deep	5
1216	5,600-8,500	26	Mixed	Unstable Mountains	Well Drained	Very Deep	4 5
1219	5,600-8,500	24	Mixed	Unstable Foothills	Well Drained	Very Deep	5
1294	5,300-6,500	18	Loess	Dissected Tablelands	Well Drained	Very Deep	5
1303	5,600-8,000	25	Mixed	Unstable Foothills	Moderately Well to Well	Very Deep	5
1315	6,000-7,800	26	Mixed	Unstable Foothills, Mountains	Well Drained	Very Deep	5 4
1316	7,200-9,800	32	Mixed	Unstable Mountains	Well Drained	Very Deep	4 4
1646	6,000-8,000	25	Mixed	Unstable Foothills	Well drianed	Very Deep	5 4
2609	5,600-7,800	25	Allvium	Floodplains	Somewhat Poorly Drained	Very Deep	3