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# Environmental Assessment

## Travel Management – Eastern Snowy Range

Laramie Ranger District

Albany and Carbon Counties, Wyoming

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## SUMMARY

The Travel Management – Eastern Snowy Range Environmental Assessment (EA) describes the environmental effects of a proposal to make changes to the Forest Transportation System (FTS) on the eastern portion of the Snowy Range<sup>1</sup>. Proposed changes include designating inventoried, unauthorized roads and trails as part of the Medicine Bow National Forest's transportation system, closing unauthorized routes that are not designated as part of the system, and establishing a summer-use motorized trail system. The EA also describes the level of maintenance and improvements that would be needed before unauthorized routes are designated and open to public use. Finally, it describes methods for closing unauthorized routes that are not designated as part of the system. Map 1 (EA page 4) shows the area within which these changes could occur.

In addition to a Proposed Action, the EA also describes and compares the environmental consequences of implementing a No Action alternative and one additional action alternative (Alternative 2: Expanded Motorized Trail System). Alternative descriptions are provided on pages 23 - 30 of this EA. The alternatives were designed to address issues raised during the Scoping process (40 CFR 1501.7) for this analysis. They were also designed to help achieve the goals and objectives of the Revised Medicine Bow National Forest Land and Resource Management Plan (Forest Plan 2003). Mitigation measures to protect other resource uses and values were prescribed as part of the Proposed Action and Alternative 2, and monitoring requirements were prescribed to ensure that the mitigation measures are effective.

The Proposed Action is consistent with management direction set forth in the Forest Plan. The Forest Plan is being implemented as required by the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA, P.L. 93-378) and the National Forest Management Act of 1976 (NFMA, P.L. 94-588). The Forest Plan provides the framework for the actions proposed in this document, and the actions are being undertaken as one step in implementing the Forest Plan.

Alternative 2: Expanded Motorized Trail System is not consistent with the Forest Plan due to the location of three motorcycle and three ATV trail segments within two non-motorized management area prescriptions (MA 1.31 – Backcountry Recreation, Year-round Nonmotorized and MA 1.33 – Backcountry Recreation, Summer Nonmotorized with Winter Snowmobiling). Consequently, two Forest Plan amendments would be required if this alternative is selected for implementation. Pages 38 - 44 of this EA contain information concerning Forest Plan amendment requirements. It also contains analysis information which determines the significance of the proposed amendments. All other trail locations included in Alternative 2 would be consistent with the overall management direction set forth in the Forest Plan.

This EA is tiered to the Forest Plan and to the Final Environmental Impact Statement (FEIS) for the Forest Plan. Tiering means that Forest Plan and Forest Plan FEIS information is incorporated by reference in this document rather than repeated. Tiering is used to reduce paper work as stated in 40 CFR 1500.4 and 40 CFR 1502.20. The Forest Plan and the FEIS are on file at the Medicine Bow-Routt National Forests, 2468 Jackson Street, Laramie, Wyoming, 82070.

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<sup>1</sup> This area essentially encompasses the east side of the Snowy Range. Travel management on the Brush Creek/Hayden District's portion of the Snowy Range (west side) will be addressed during resource analyses for site-specific project proposals occurring on that District.

An EA is not a decision document. It is a document disclosing the environmental effects of implementing a Proposed Action and alternatives to that action. The EA will be available for a 30-day public review and comment period beginning the day after a legal notice announcing the availability of the EA is published in the Laramie Boomerang. Following public review, a decision will be documented in a separate Decision Notice (DN) signed by Acting Laramie District Ranger, Frank E. Romero. The DN will specify which alternative was selected for implementation and the rationale for the decision.

## INTRODUCTION

### Document Structure ---

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

- *Introduction:* This section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving the purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Comparison of Alternatives, including the Proposed Action:* This section provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose and need. It also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Finally, this section provides a summary table of the environmental consequences associated with the alternatives.
- *Affected Environment and Environmental Consequences:* This section describes the environmental effects of implementing the Proposed Action and the other alternatives and is organized by resource area (e.g., botany, fisheries, heritage resources, etc.). The affected environment for each resource area is described first followed by the effects of the proposed alternatives.
- *Agencies and Persons Consulted:* This section provides a list of preparers and agencies consulted during the development of the environmental assessment.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Laramie Ranger District Office, 2468 Jackson Street, Laramie, Wyoming 82070.

### Definition of Commonly Used Terms in the EA ---

**All-terrain Vehicle (ATV) Trail** – A motorized trail designed to accommodate vehicles 50 inches or less in width.

**Decommission** – Activities that result in the stabilization and restoration of unneeded roads or trails to a more natural state. The road or trail is permanently removed from the transportation system. Activities range from blocking the entrance, scattering boughs on the roadbed, revegetating and water barring, to removing fills and culverts, reestablishing drainage-ways, pulling back shoulders, and recontouring the slopes.

**Designated ORV Route** – A National Forest System Road or Trail that is designated for motor vehicle use pursuant to 36 CFR 212.51 in a use map.

**Motorcycle Trail** – A single-track motorized trail whose tread is generally between 12 to 18 inches in width.

**National Forest System Road (NFSR)** – Any road that is wholly or partly within, or adjacent to, and serving the National Forest System. NFSRs are necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

**Off-road Vehicle (ORV)** - Any motor vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain. Examples of ORVs include motorcycles, ATVs, and 4-wheel drive vehicles.

**Unauthorized Route** – Any route on NFS lands that is not managed as part of the forest transportation system, such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail.

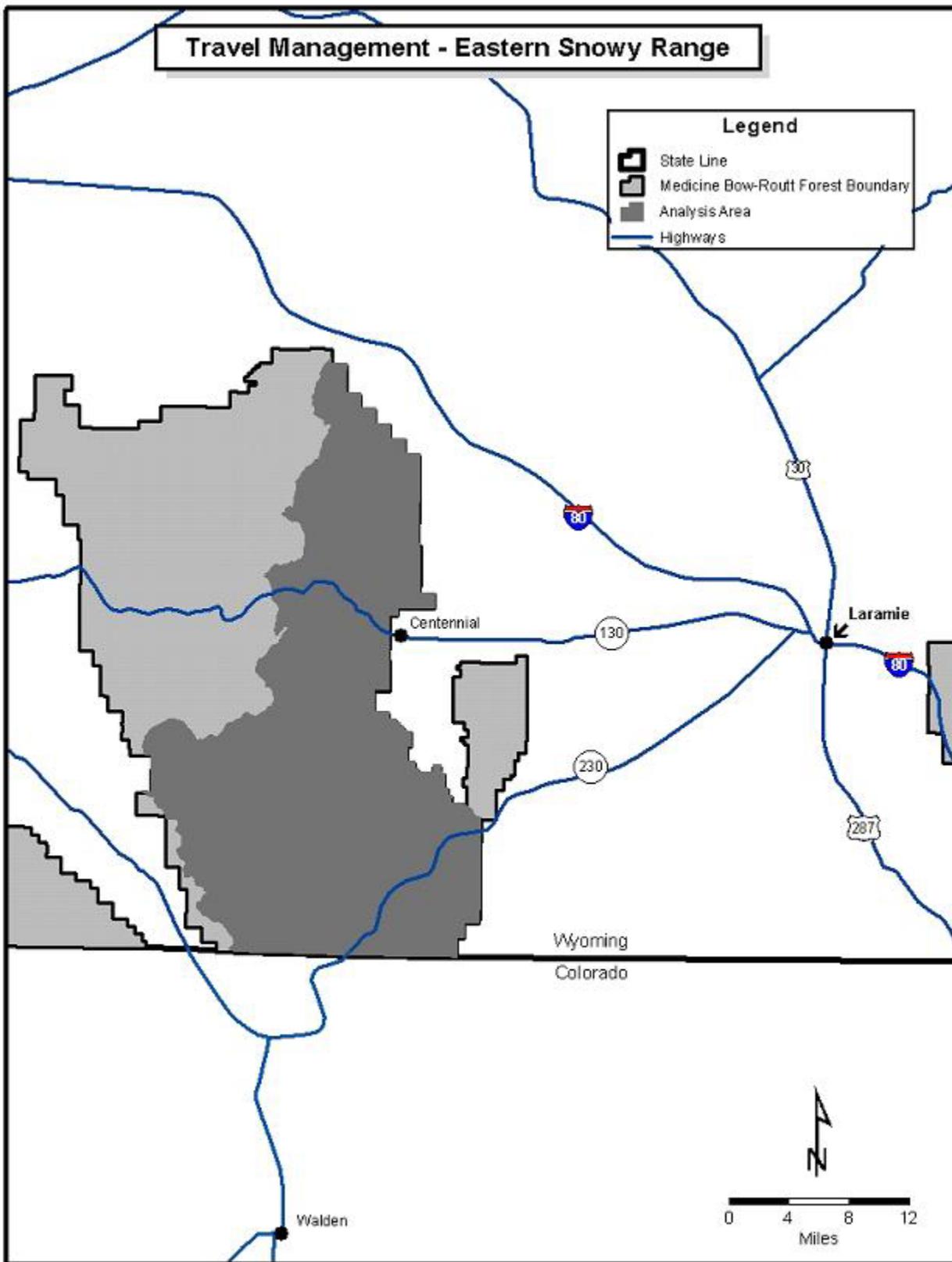
## Background Information ---

Currently the Laramie Ranger District manages approximately 630 miles of National Forest System Roads (NFSRs) open to motorized travel, 150 miles of closed, gated roads, and 0 miles of summer motorized trails on the eastern portion of the Snowy Range (see Map 1). In addition to the managed system, the District contains roughly 262 miles of unauthorized roads and 96 miles of unauthorized motorized trails. Many of the unauthorized routes were created over the last few decades as a result of a dramatic increase in off-road vehicle (ORV) use on the Forest. The Forest's own policy of allowing unrestricted cross-country motorized vehicle use prior to 2000 further contributed to the creation of unauthorized roads and trails.

While most people do not intend to create a "route" when enjoying the freedom of exploring their National Forest, by the time several vehicles cross the same path, a "user-created" route generally results, as do the lasting environmental impacts. These impacts frequently present themselves as increases in soil, water, and vegetation damage, forest fragmentation, wildlife disturbance, and increased opportunities for vandalism and trash dumping. Motorized use on these route networks also has the potential to impact people looking for quiet, peaceful recreation experiences, thus increasing conflicts between forest users.

Recognizing the impacts that unmanaged motorized vehicle use can have on forest resources and users, the Medicine Bow National Forest (MBNF) initiated a Forest-wide travel management analysis in 1998. The primary purpose of the analysis was to change travel regulations to restrict motorized travel, with the exception of snowmobiles, to designated roads and trails on all areas of the Forest. The decision affecting travel regulations on the Medicine Bow National Forest went into effect on October 16, 2000. The decision restricted motorized vehicles to designated routes and approved temporary use of unauthorized roads and motorized trails until site-specific travel management analyses were completed to determine their status. The decision emphasized that unauthorized routes would not be designated as part of the FTS until the site-specific analyses were completed.

Map 1. Vicinity Map – East Side of the Snowy Range



Environmental and social impacts associated with unmanaged motorized vehicle use are not unique to the MBNF – they are a nation-wide problem. Consequently, in January of 2004, the Chief of the Forest Service recognized unmanaged recreation – especially impacts from ORVs – as one of the four major threats to the nation’s forests and grasslands. At that time, he expressed concern about the number of unplanned roads and trails, soil erosion, watershed and habitat impacts from ORV use. He also proposed amending regulations regarding travel management on National Forest System lands to clarify policy related to ORVs.

On November 9, 2005, “36 CFR Parts 212, 251, 261, and 295 Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule” went into effect. The Final Rule requires designation of roads, trails, and areas that are open to motorized vehicle use. It also prohibits the use of motorized vehicles off of the designated system, as well as the use of motorized vehicles on routes and in areas that are not consistent with the designations. While not establishing a date by which such designations are to be completed, the Final Rule emphasized the importance of completing route and area designations as quickly as possible (Final Rule 2005).

The Snowy Range Travel Management EA represents a site-specific analysis for the Laramie Ranger District’s portion of the Snowy Range, as required by the MBNF’s October 16, 2000 travel management decision. It also implements the requirements of the November 9, 2005 Final Rule. Any decision associated with this analysis will result in a designated system of roads and motorized trails open to motorized vehicle use on the District’s portion of the Snowy Range. Such a decision will also prohibit the use of motorized vehicles off of the designated system.

***NOTE:** The “Travel Management – Eastern Snowy Range Environmental Assessment” focuses primarily on the future status of unauthorized routes; there are, however, roughly 5.0 miles of National Forest System Roads (NFSRs) proposed for closure in the Proposed Action and 4.2 miles of NFSRs proposed for closure in Alternative 2. Under both alternatives, approximately 2.7 miles of this mileage is located within Management Area 1.31-Backcountry Recreation, Year-round Nonmotorized. The remaining NFSR mileage proposed for closure provides duplicate access; the adjacent unauthorized route, which is in better condition, is proposed for addition to the forest transportation system in place of the NFSR. The future status of the remaining NFSRs in the analysis area will be covered under separate site-specific project analyses (e.g. timber sales, Allotment Management Plan Revisions, etc.).*

## Existing Condition

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As mentioned above, there are approximately 262 miles of unauthorized roads and 96 miles of unauthorized motorcycle/ATV trails on the Laramie Ranger District’s portion of the Snowy Range. While it is difficult to determine the origin of some of the unauthorized roads, we believe that many of them were developed from forest users accessing hunting, fishing, camping, and wood gathering sites or as skid trails during past timber sale operations. Many tend to tie into roads built for past timber sales or mining claims, while others go for a short distance and then dead end with no apparent destination in mind. Other routes tend to provide multiple access opportunities to the same location.

The unauthorized trails, on the other hand, seem to have been created by recreational riding groups or individuals. Like the unauthorized roads, the unauthorized trails do not appear to be particularly destination oriented and few “loops” were observed. The location and terrain of the trails themselves seem to be the recreational experience valued by the trail users. There are, however, some outstanding views and interesting cultural sites adjacent to these trails.

Field inventories indicate that the condition of the unauthorized motorcycle trails is quite good in terms of trail tread stability, stream crossings, wet meadows and riparian zones, erosion and rutting, and lack of trail “braiding” or route proliferation. This condition is most likely due to many factors, including: 1) use numbers are relatively low and seasonal due to the status of the trail designation process. Since no formal designation is yet in place, no trail signing is present. Consequently, most potential users are unaware of their existence; 2) much of the trail mileage observed has the duff and litter layer of the forest soil intact with no mineral soil showing; 3) virtually all of the unauthorized motorcycle trails are for the more experienced rider due to the presence of fallen trees across the trails, tight clearing widths, and rocky surfaces; and 4) few high speed straight segments or hill climbs exist that allow hard acceleration and resulting soil movement.

The unauthorized ATV trails that were inventoried varied greatly in condition. For example, some of the trails are on old roads and are in fairly good shape with respect to tread stability, avoidance of riparian zones, etc. On the other hand, other trails have clearly been pioneered through areas with little or no thought given to location or sustainability of the trail. It appears as though the unauthorized ATV trails are experiencing more use than the motorcycle trails due to the increased number of riders, low level of rider experience needed, and ease in locating unmarked trails from intersecting roads.

Little existing data is available regarding use numbers, user demographics, or visitor preferences on the unauthorized routes. However, observations are that most visitors seeking beginner or entry level trail riding experiences are using ATV trails and National Forest System Roads (NFSRs). This includes both ATV and motorcycle riders. Motorcycle riders seeking more challenging routes appear to be using the single-track trails. There do not appear to be any medium or long distance ATV trails that are challenging for an experienced ATV rider.

## **Desired Condition**

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The Laramie Range District’s portion of the Snowy Range will provide a transportation system that offers a variety of experiences for both motorized and non-motorized Forest users. The system will be designed to protect physical, biological, and social values of the Forest while meeting the Standards and Guidelines and Management Objectives of the Forest Plan. A wide range of Forest users will be encouraged to actively participate in system planning, design, and implementation in an attempt to address and reduce potential conflicts.

The transportation system will be clearly marked so that allowed uses are easy to identify. Roads and trails will be designed to require minimal maintenance. They will also be able to withstand repeated use so that they provide a quality forest experience and remain visually pleasing for years to come. Policies and procedures will be in place to protect natural resources, promote the safety of all users, and to minimize conflicts among the various uses of the Forest.

## **Proposed Action**

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The Laramie Ranger District of the Medicine Bow National Forest is proposing to implement changes to the Forest Transportation System (FTS) on the District’s portion of the Snowy Range. Specific changes include designating approximately 12.2 miles of unauthorized roads, 68.3 miles of single-track motorcycle trails, and 38.1 miles of ATV trails as part of the FTS. Designation of the motorized trail system would require the construction of roughly 15.5 miles of single-track motorcycle trail segments and 6.2 miles of ATV trail segments. The Proposed Action also includes

closing roughly 235.5 miles of unauthorized routes and 5.0 miles of National Forest System Roads (NFSRs) to motor vehicle use.

To accommodate use of the designated motorized trail systems, two trailheads would be established; one in the Albany area and one in the Mountain Home area of the Forest. Appropriate signing and traffic control measures would be installed at both sites.

If approved, the Laramie Ranger District would like to begin implementing the Proposed Action during the summer of 2007. A more detailed description of the Proposed Action can be found on pages 24 - 27 of this EA.

## Purpose and Need for Action ---

The purpose of the Proposed Action is to:

- Determine the future status of unauthorized routes on the Laramie Ranger District's portion of the Snowy Range;
- Expand the opportunity for trail-based motorized recreation. This opportunity is measured most simply in miles of routes open for motorized travel, but is also assessed in terms of loops offered to riders, the scenic quality and diversity of settings through which routes pass, and the challenge offered in terms of rider skills;
- Minimize travel and recreation impacts to the environment (e.g., water quality, wildlife, riparian and wetland areas, etc.);
- Provide safe access to and through the National Forest;
- Help achieve the goals, objectives, strategies, and desired condition for travel management, as identified on Forest Plan (2003) pages 1-2 through 1-24;
- Minimize user conflicts.

This action is needed to:

- **Comply with the October 16, 2000 Forest-wide travel management decision:** That decision stated, "...for the next 5 to 7 years, site-specific travel management analyses will be completed to determine whether or not unauthorized roads and trails should be added to the FTS. The analyses will also determine whether or not additional motorized opportunities should be developed or if existing FTS routes should be opened or closed. Decisions pertaining to unauthorized routes, FTS routes, and the creation of additional motorized opportunities will occur only after further public discussion and disclosure through the National Environmental Policy Act (NEPA) process."
- **Comply with Revised Medicine Bow Land and Resource Management Plan (Forest Plan, 2003):** The Revised Forest Plan includes Non-motorized Management Area Prescriptions that were not in place when the 2000 Forest-wide travel management decision was made. Some of the unauthorized roads and trails are located within these areas. Consequently, the Forest Service must decide whether or not to close these routes to motorized use or to amend the Forest Plan to accommodate continued motorized use of the routes.
- **Comply with the "36 CFR Parts 212, 251, 261, and 295 Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule":** This rule, which went into effect on November 9, 2005, requires designation of those roads, trails, and areas that are

open to motor vehicle use. It also states that the use of motor vehicles will be prohibited off of the designated system, with exceptions (36 CFR 212.51(a)).

- **Reduce adverse resource impacts caused by unauthorized routes:** Maintenance and restoration of healthy ecosystems and watersheds is a national goal articulated by the Chief of the Forest Service. This analysis strives to achieve this goal by identifying those unauthorized routes that are causing resource impacts and either closing or hardening them. Resource impacts include, but are not limited to, increased sedimentation, lack of wildlife security areas, lack of solitude in backcountry areas, and impacts to riparian and wetland areas.
- **Develop a transportation system designed to meet an increasing demand for motorized recreational opportunities:** Over the last 30 years the Snowy Range Mountains have seen a dramatic increase in ORV use, coupled with impressive advances in motor vehicle technology, yet the District does not manage a single summer motorized ORV route. Moreover, transportation systems on the Snowy Range were not developed with motorized recreational travel in mind; instead, they were developed for commodity uses, such as livestock grazing, timber harvest, and mining. Consequently, these systems generally do not provide the types of opportunities desired by the public. For example, they do not provide loop opportunities and they do not offer varying challenge levels. Hence, motorized users have sought these desired experiences by traveling off of the designated transportation system. However, cross-country travel, by its very nature, can result in the creation of unauthorized routes and can negatively impact natural and cultural resources.

The Forest Service recognizes that motorized recreation is a legitimate use of the National Forest and has its place. However, we also recognize that some areas are more suitable for this type of use than are other areas. Thus, there is a need to manage motorized recreation in a way that meets the needs of forest users while reducing soil erosion and impacts to wetlands, cultural resources, wildlife habitat, and other forest users.

- **Specify which routes (roads and trails) may be used by ORVs:** In January of 2004, the Chief of the Forest Service recognized unmanaged recreation, especially impacts from ORVs, as one of the four major threats affecting the nation's forests and grasslands. Consequently, he suggested that each forest designate and manage a system of routes offering the best opportunities for ORV use. ORV use should be compatible with traffic and route design conditions, as well as with adjacent land management (36 CFR 295, direction in Forest Service Manuals (FSMs) 7730 and 2355).
- **Coordinate with various users in developing and maintaining recreational transportation systems that provide a variety of settings and experiences:** Some of the unauthorized routes that have been created on the Snowy Range have become used and marketed by different users. Not all of these efforts have evolved in cooperation with the Forest Service. Limited budgets have not allowed the Forest Service to devote time to planning and developing recreational transportation systems that meet the needs of some of these users. The Forest Service and ORV users need to work together to develop and maintain safe recreational transportation systems that provide the desired experiences while meeting resource management objectives.

The Laramie Ranger District is currently working with motorized interest groups and state agencies concerning ORV issues and opportunities. We have partnered with the State of Wyoming and the State Trails Program to analyze the potential for a motorized trail system. The State of Wyoming, through the ORV trail program, is funding part of the analysis of the existing unauthorized motorized trail system and is also funding some of the environmental studies needed to analyze possible impacts from motorized trails.

The Proposed Action responds to goals and objectives outlined in the Forest Plan (December 2003) and helps move the analysis area towards desired conditions described in that Plan. Specifically, the Proposed Action responds to:

## **GOAL 2 – Multiple Benefits to People**

**Provide a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems.**

**Subgoal 2.a:** Improve the capability of the Nation’s forests and rangelands to provide diverse, high-quality outdoor recreation opportunities. (USDA Forest Service Strategic Plan 2000 Revision Objective 2.a) (p. 1-7).

**Objective 4:** Over the life of the plan, rehabilitate 20% of existing and/or construct new trailheads and associated facilities to meet agency standards and user demand as permitted by plan direction (p. 1-7).

**Strategy a:** Provide winter and summer nonmotorized and motorized opportunities for a wide variety of uses and experiences consistent with other resource objectives (p. 1-7).

**Strategy d:** Where off-road and off-trail damage is taking place, restore and protect these areas (p. 1-7).

**Strategy f:** Integrate trail systems with those of other government entities and partners (p. 1-7).

## **GOAL 4 – Effective Public Service**

**Ensure the acquisition and use of an appropriate corporate infrastructure to enable the efficient delivery of a variety of uses.**

**Subgoal 4.a:** Improve the safety and economy of Forest Service roads, trails, facilities, and operations, and provide greater security for the public and employees. (USDA Forest Service Strategic Plan 2000 Revision Objective 4.b) (p. 1-12).

**Objective 3:** Within 10 years, implement Phase II of the October 16, 2000 Forest Supervisor Forestwide Travel Management Decision which is to complete site-specific travel management analyses to decide the future status of the Forest Transportation System (p. 1-12).

**Strategy a:** During site level travel management analysis, identify the minimum road and trail system by considering aquatic and riparian areas and aquatic wildlife, terrestrial wildlife and the need for security areas, ecosystem processes and functions including soil protection, economics such as expected maintenance budgets, commodity production, minerals management, range management, water production, special products, special use permits, general public transportation, administrative uses, fuels management, air quality, recreation, passive use values, and social issues (p. 1-13).

**Strategy b:** Monitor for and obliterate user-created motorized roads and motorized trails (p. 1-13).

## **Forest Plan Direction**

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Travel management on the Medicine Bow National Forest must be within the sideboards of management requirements established at three different geographic scales. The broadest scale, which outlines the most general and basic direction, is applicable to the entire forest (Forest-wide Standards and Guidelines). From there, the direction becomes more focused and applies to Geographic Areas and Management Areas, respectively. Any proposal to implement the Forest Plan, including the Travel Management – Eastern Snowy Range proposal, must consider the direction provided at each scale. The following information identifies how the Proposed Action responds to direction provided at the three geographic scales.

### **Forest-wide Standards and Guidelines**

- Limit roads and other disturbed sites to the minimum feasible number, width, and total length consistent with purpose of specific operation, local topography, and climate (**Soil Standard 1, p. 1-28**).
- Construct roads and other disturbed sites to minimize sediment discharge into streams, lakes, and wetlands (**Soil Standard 2, p. 1-28**).
- Stabilize and maintain roads and other disturbed sites during and after construction to control erosion (**Soil Standard 3, p. 1-28**).
- Reclaim roads and other disturbed sites when use ends, as needed, to prevent resource damage (**Soil Standard 4, p. 1-28**).
- Manage land treatments to limit the sum of severely burned and detrimentally compacted, eroded, and displaced land to no more than 15% of any activity area (**Soil Standard 5, p. 1-29**).
- Maintain or improve long-term levels of organic matter and nutrients on all lands (**Soil Standard 6, p. 1-29**).
- Prohibit soil-disturbing (e.g., road construction, wellpad construction) on slopes greater than 60% and on soils susceptible to high erosion and geologic hazard (**Soil Guideline 1, p. 1-29**).
- Perform an on-site slope stability examination on slopes over 40% prior to designing roads or activities that remove most or all of the timber canopy. Limit intensive ground-disturbing activities on unstable slopes identified during the examinations (**Soil Guideline 2, p. 1-29**).
- In the water influence zone next to perennial and intermittent streams, lakes, and wetlands, allow only those actions that maintain or improve long-term stream health and riparian condition (**Water and Aquatic Standard 4, p. 1-28**).
- Design and construct all stream crossings and other instream structures to allow passage of water and sediment, to withstand expected flood flows, and allow free movement of resident aquatic life (**Water and Aquatic Standard 5, p. 1-29**).
- Conduct actions so that stream patterns, geometry, and habitats are maintained, or improved toward robust stream health (**Water and Aquatic Standard 6, p. 1-29**).
- Apply runoff controls to disconnect new pollutant sources from surface and groundwater (**Water and Aquatic Standard 11, p. 1-29**).
- Design activities to protect and management the riparian ecosystem. Maintain the integrity of the ecosystem including quantity and quality of water (**Water and Aquatic Standard 14, p. 1-29**).
- In watersheds containing aquatic, wetland or riparian dependent TES species, allow activities and uses within 300 feet or the top of the inner gorge, (whichever is greater), of perennial and

intermittent streams, wetlands and lakes (over ¼ acre) only if onsite analysis shows that long-term hydrologic and riparian function, channel stability, riparian and stream habitat will be maintained or improved (**Water and Aquatic Standard 15, p. 1-29**).

- Manage old forest to retain or achieve at least the minimum percentages of old growth by cover type<sup>2</sup> by mountain range. If stands meeting the old growth definition do not exist at these percentages, manage additional stands that are closest to meeting old growth criteria as recruitment old growth to meet these desired percentages. (**Biological Diversity Standard 1, p. 1-31**)
- Limit management of stands to actions necessary to maintain or restore old growth composition and structure. (**Biological Diversity Standard 2, p. 1-31**)
- Operations (such as timber harvest and other vegetative treatments) and road and motorized trail construction and management should be conducted to create patch sizes of sufficient area or appropriate spatial pattern to serve the habitat needs of species or communities at risk. (**Biological Diversity Guideline 4, p. 1-32**)
- When managing vegetation, maintain existing, or move towards desired patch size, distribution, abundance, and/or edge-to-interior ratios, which are characteristic of natural disturbances (fire, insects, diseases) representative of the cover types, measured at the Geographic Area scale (**Biological Diversity Guideline 5, p. 1-32**).
- In wet meadows, fens, peatlands, and bogs, limit recreation facility development that may result in concentrated recreation use of these important habitats (**Biological Diversity Guideline 7, p. 1-32**).
- During project design, maintain or increase security areas composed of blocks of hiding cover >250 acres over ½ mile from any roads or motorized trails that are open to motorized use (**Wildlife Guideline 1, p. 1-40**).
- During project analysis and design, evaluate current and desired open road density at the geographic area scale and design projects, include road management, to provide adequate security areas for wildlife and limit disturbances during parturition, nesting, and fledging periods (**Wildlife Guideline 2, p. 1-41**).
- Apply seasonal restrictions as needed on motorized use of travelways to reduce disturbance in sensitive big game areas, such as birthing areas and winter range (**Wildlife Guideline 5, p. 1-41**).
- Integrate trail systems with those of other government entities and partners (**Recreation – Dispersed Guideline 4, p. 1-54**).
- Consider the following in new trail construction: a. Proximity to population centers; b. Feasibility of loops; d. Types of trail users to be served; e. Partnership opportunities; f. Protection of habitats and wilderness; h. Protection of aquatic and riparian resources (**Recreation – Dispersed Guideline 5, pgs. 1-54 and 1-55**).
- Allow summer motorized use on new or designated travelways unless a documented decision states otherwise (**Infrastructure – Travelways Standard 2, p. 1-59**).
- Provide a wide range of recreation opportunities and difficulty levels, both motorized and nonmotorized, with the trail system (**Infrastructure – Travelways Guideline 3, p. 1-60**).
- Decommission unneeded travelways to achieve resource objectives or where resource damage cannot be mitigated (**Infrastructure – Travelways Guideline 4, p. 1-61**).

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<sup>2</sup> Spruce/fir - 25%; Lodgepole - 15%; Ponderosa pine - 25%; Aspen – 20%

### Geographic Area Direction

Analyses at the geographic area level provide a framework for short and long-term projects, for monitoring the effectiveness of Forest-wide goals and management area standards and guidelines, and for achieving Forest-wide goals and objectives. A geographic area (GA) is a watershed or aggregation of watersheds, 125,000 acres or smaller, in which management is directed toward achieving a specified desired condition. Geographic areas link the Forest Plan to management at a landscape or watershed scale. Application of management area prescriptions and associated standards and guidelines will move specific portions of each geographic area towards the desired condition (Forest Plan p. 3-1). The analysis area includes portions of nine (9) Geographic Areas in the eastern Snowy Range (see Table 1 and Map 2):

**Table 1: Geographic Areas and Acreages**

Geographic Area	Total GA Acres	Analysis Area (AA) Acres	Percent of GA	Percent of AA
Lower Douglas Creek	101,910	101,910	100	35.2
Upper Douglas Creek	36,307	32,057	100	11.1
Bow River	52,276	94	<1	<1
Platte River	59,955	45,490	76	15.7
Barrett	12,194	12	<1	<1
Middle Fork	35,352	35,352	100	12.2
French Creek	34,873	991	<1	<1
North Fork	25,234	25,234	100	8.7
Snowy Range, Eastern Front	62,633	48,660	78	16.8
<b>TOTAL</b>	<b>420,734</b>	<b>289,800</b>	<b>--</b>	<b>100</b>

#### Lower Douglas Creek GA

**Desired Condition:** Dispersed motorized recreation opportunities will dominate this area. The central portion west of Somber Hill will include backcountry motorized recreation opportunities (p. 3-71).

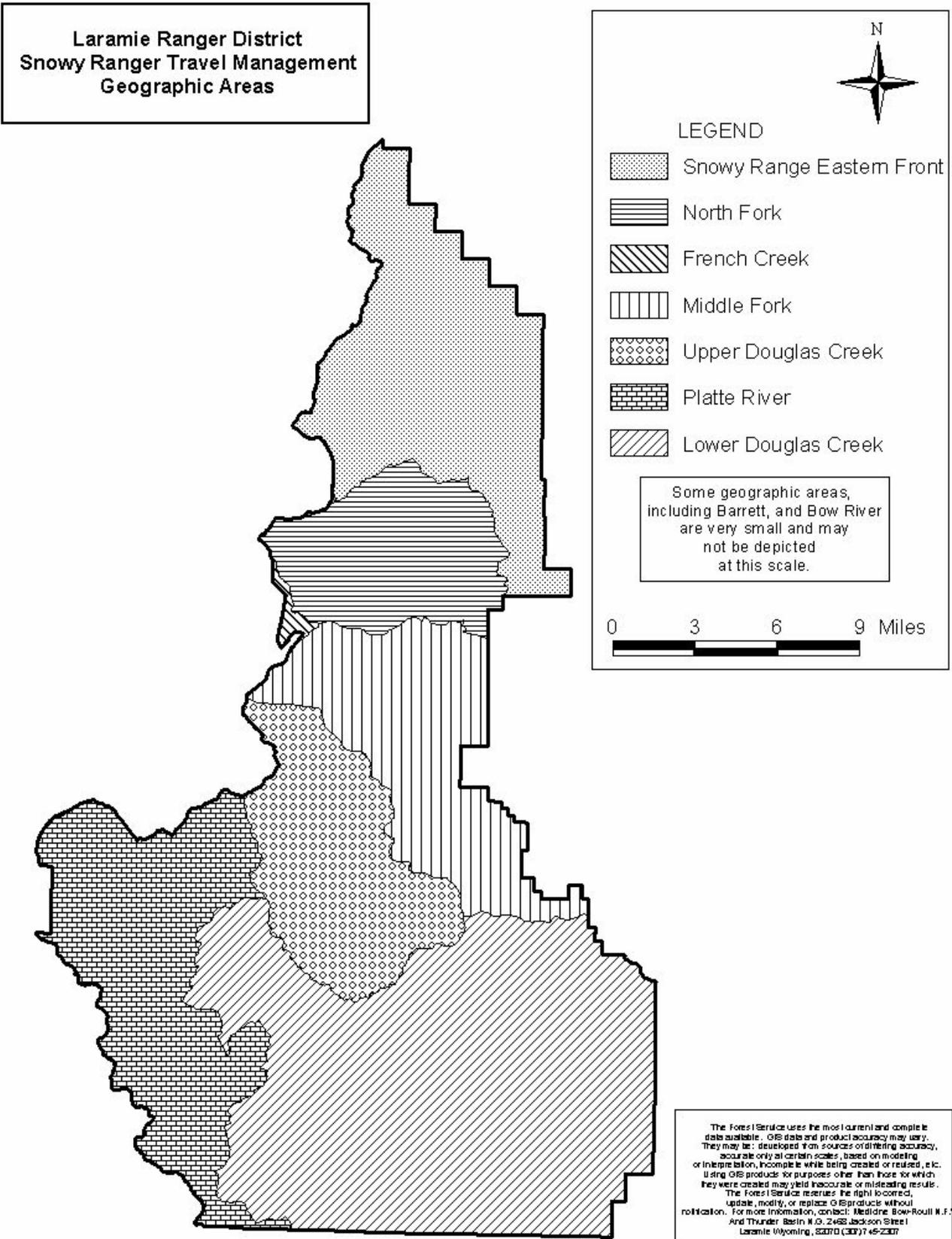
**GA Strategy:** Develop a motorized trail system (p. 3-72).

#### Upper Douglas Creek GA

**Desired Condition:** Dispersed motorized recreation opportunities will dominate this area. Rob Roy Reservoir will continue to provide popular fishing and dispersed recreation opportunities (p. 3-95).

**GA Strategy:** Develop a motorized trail system (p. 3-95).

Map 2: Geographic Areas within the Analysis Area



**Bow River (Bow River is not depicted on the Geographic Area Map due to its small size)**

**Desired Condition:** Dispersed motorized recreation opportunities will dominate the central and northern portions of the area. The southern portion will include backcountry motorized year round (15%) and nonmotorized with winter motorized (17%) (p. 3-59).

**Platte River GA**

**Desired Condition:** Backcountry nonmotorized year-round recreation opportunities will dominate the area (62%) in the existing wilderness areas and crucial big game winter range. Limited amounts of winter and summer motorized opportunities are available (p. 3-87).

**Barrett GA (Barrett is not depicted on the Geographic Area Map due to its small size)**

**Desired Condition:** Dispersed motorized recreation opportunities will dominate this area. Primitive motorized experience will be maintained; however, unneeded roads will be closed in order to improve the hunting experience and increase the effectiveness of the habitat (p. 3-55).

**Middle Fork GA**

**Desired Condition:** Dispersed motorized recreation opportunities will occur primarily along the western edge of the area. Backcountry nonmotorized with winter motorized opportunities (26%) will prevail in the central and western portions of the area (p. 3-75).

**French Creek GA**

**Desired Condition:** The eastern portion will include backcountry summer nonmotorized, winter motorized (p. 3-67).

**GA Strategy:** Develop motorized trails and trailhead infrastructure (trailheads, etc.) in the Headquarters Park area (p. 3-67). **(Brush Creek-Hayden Ranger District)**

**North Fork GA**

**Desired Condition:** This area will continue to be one of the most popular winter recreation areas on the Forest. Dispersed motorized recreation opportunities will continue in the eastern portion of the area. The areas north of the Green Rock picnic area will provide backcountry summer nonmotorized with winter snowmobiling opportunities (20%). The south western portion at higher elevations will provide backcountry year-round nonmotorized opportunities (12%) (p. 3-79).

**Snowy Range, Eastern Front GA**

**Desired Condition:** Dispersed motorized recreation opportunities will be provided in the southern portion of the area. Backcountry nonmotorized year-round opportunities occur in the northern portion. The high elevations of the southwestern portion provide backcountry nonmotorized opportunities with winter motorized (8%) (p. 3-92)

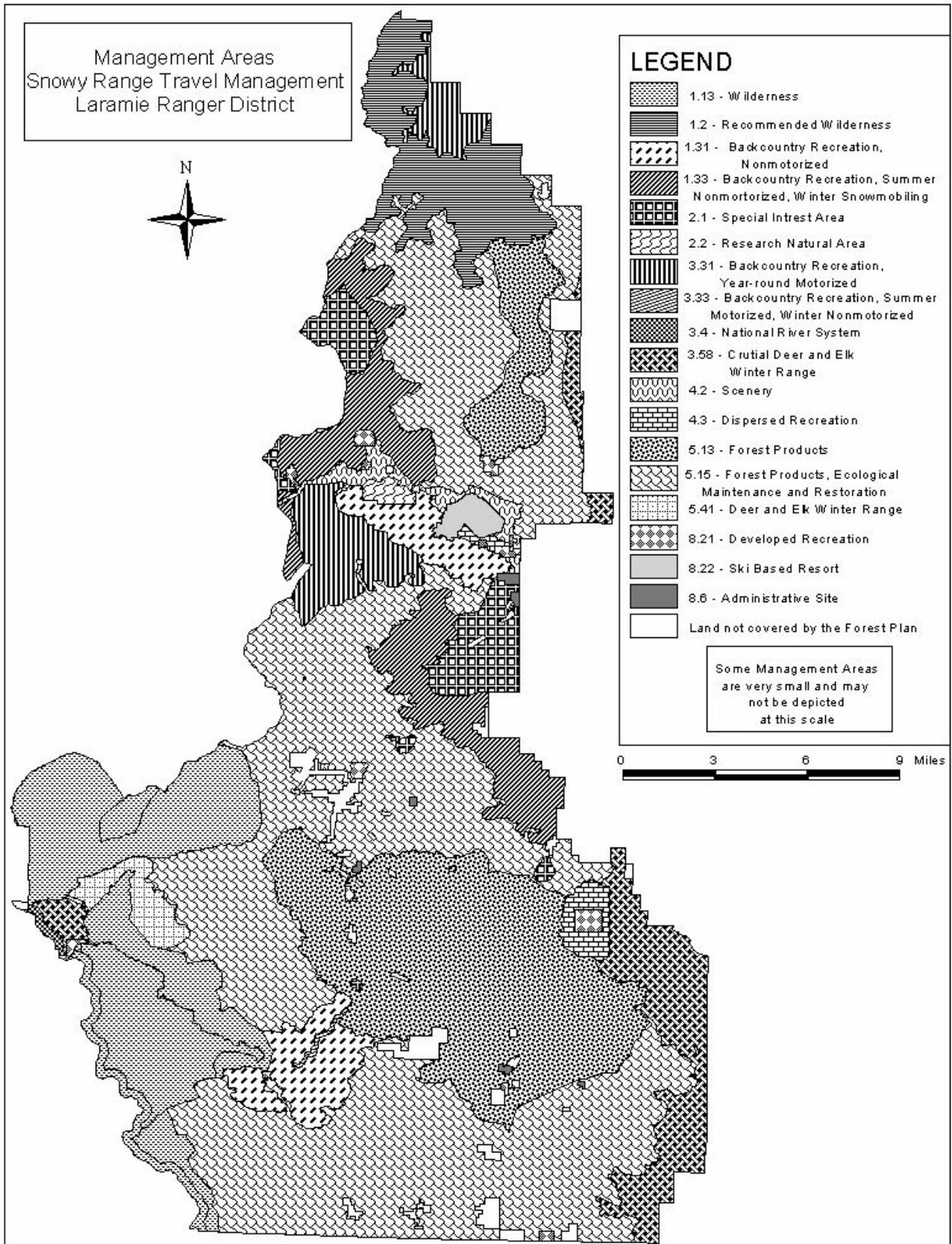
**Management Area Direction**

Management emphasis within the analysis area and larger geographic areas is distributed among several Forest Plan management area prescriptions (see Table 2 and Map 3). Application of management area prescriptions and associated standards and guidelines will move specific portions of each geographic area towards the desired condition (Forest Plan p. 3-1). The descriptions of each management area prescription include: theme, setting, desired condition, and standards and guidelines. This information can be found in the Forest Plan, Chapter 2, pages 2-1 through 2-80.

**Table 2: Management Area (MA) Prescriptions and Acreages**

<b>MA #</b>	<b>Management Area Prescription</b>	<b>Acres in Analysis Area (AA)</b>
1.13	Wilderness, Semi-primitive	34,066
1.2	Recommended for Wilderness	13,431
1.31	Backcountry Recreation, Year-round Nonmotorized	10,566
1.33	Backcountry, Recreation, Summer Nonmotorized with Winter Snowmobiling	18,456.2
2.1	Special Interest Areas	7,978
2.2	Research Natural Areas	759
3.31	Backcountry Recreation, Year-round Motorized	9,532
3.33	Backcountry Recreation, Summer Motorized with Winter Nonmotorized	241
3.4	National River System, Scenic Rivers Designated and Eligible	328
3.58	Crucial Deer and Elk Winter Range	15,056
4.2	Scenery	2,518
4.3	Dispersed Recreation	2,072
5.13	Forest Products	47,610
5.15	Forest Products, Ecological Maintenance and Restoration Considering the Historic Range of Variability	115,528
5.41	Deer and Elk Winter Range	2,905
8.21	Developed Recreation	1,842
8.22	Ski-based Resorts, Existing and Potential	1,364
8.6	Administrative Sites	414
Private		5,115
<b>TOTAL</b>		<b>289,782</b>

Map 3: Management Areas within the Analysis Area



## Other Management Requirements

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Additional direction for travel management and the development of Forest transportation systems is found in the National Forest Roads and Trails Act of October 13, 1964 as amended (16 U.S.C. 532-538, P.L. 88-657), the Highway Safety Act of 1966 (23 U.S.C. 402, P.L. 89-564), the National Trails System Act of October 2, 1968 (16 U.S.C. 1241-1249, P.L. 90-543), and the Surface Transportation Assistance Act of 1978 as amended (23 U.S.C. 101a, 201-205, P.L. 95-5999 and 97-424). The Surface Transportation Assistance Act corresponds to policy and direction in Forest Service Manuals 2300 and 7700.

Forest Service regulations at “36 CFR Parts 212, 251, 261, and 295 Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule” (November 9, 2005) further clarified policy related to motor vehicle use, including the use of ORVs. The final rule requires designation of those roads, trails, and areas that are open to motor vehicle use. According to the rule, designations will be made by class of vehicle and, if appropriate, by time of year. The rule also prohibits the use of motor vehicles off the designated system, as well as use of motor vehicles on routes and in areas that are not consistent with the designations. These regulations implement Executive Order 11644 (February 9, 1972), “Use of Off-Road Vehicles on the Public Lands,” as amended by Executive Order 11989 (May 24, 1977). These Executive orders direct Federal agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands. Direction for off-road travel management is found in Forest Service Manual 2350 and in Forest Plan Direction (pages 1-59 to 1-61).

## Decision Framework

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Given the purpose and need for action, the Responsible Official will review the proposed alternatives before making the following decisions:

- Which routes will make up the forest transportation system for the eastern portion of the Snowy Range?
- Which uses will be allowed on specific roads and trails?
- What special seasonal or timing restrictions, if any, will be applied to specific routes?
- What mitigation and/or monitoring measures should be implemented as part of the selected alternative?

## Public Involvement

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The proposal was first listed in the Schedule of Proposed Actions (SOPA) for the Medicine Bow-Routt National Forests in July of 2004 and has been listed in every report since. In addition to the SOPA listing, the Laramie Ranger District also hosted two Open House meetings in July of 2004; one in Cheyenne, Wyoming on July 26, 2004 and one in Laramie, Wyoming on July 27, 2004. The public was notified of the meetings via postcards that were mailed to roughly 415 individuals, clubs, associations, and public agencies, and notices that were published in area newspapers. The purpose of the meetings was threefold: 1) to provide information about the analysis process; 2) to display maps depicting the inventoried transportation system; and 3) to determine if the inventory contained

errors or omissions. Collectively, 61 entities attended the meetings. Information gathered at the meetings (24 comment letters) was used to help develop the Proposed Action analyzed in this EA.

On March 4, 2005, a formal scoping letter describing the Proposed Action, purpose and need for the action, nature of decisions to be made, and comment opportunities was mailed to roughly 715 interested and potentially affected individuals, groups, organizations, tribes, and agencies. In addition to describing the proposal and requesting comments on it, the scoping letter informed the public of another Open House meeting that was hosted on March 24, 2005. A news release was also published in area newspapers to notify the general public of the proposal and of the Open House meeting. From this scoping effort, roughly 70 entities attended the Open House meeting and 94 public comment letters regarding the Proposed Action were received. The Forest Service used the comments received from the public, other Federal and State agencies, and local groups to develop a list of key issues to be addressed during the analysis process. The issues are outlined below.

On November 1, 2006 the Travel Management – Eastern Snowy Range EA was released for public review and comment. Although released that day, the 30-day public comment period did not begin until November 15, 2006, the day after a legal notice announcing the availability of the EA was published in the *Laramie Boomerang* (newspaper of record). The Forest Service used a variety of methods to inform the public about the availability of the EA and the 30-day public comment period. These methods included publishing a legal notice in the *Laramie Boomerang*, publishing press releases in local newspapers, mailing the EA to individuals, organizations, and agencies who had expressed interest in the project, and personally contacting those entities who could be affected by the proposal. Additionally, the Forest Service hosted two public Open House meetings at the beginning of the comment period; one in Cheyenne on November 14 and one in Laramie on November 15, 2006. Collectively, 93 entities attended the meetings.

By the close of the comment period (December 14, 2006), the Forest Service had received 212 public comment letters. The Response to Comments appendix is posted on the Forest Service's web site and is also attached to the Decision Notice and Finding of No Significant Impact (DN/FONSI) issued for the proposal.

## Scoping Issues ---

The Forest Service generally separates environmental issues into two groups:

### 1) Key Issues:

- a) Environmental issues used to develop alternatives that meet the purpose and need of the Proposed Action (Forest Service Handbook 1909.15, Section 12.32-33).

### 2) Non-key Issues:

- a) Environmental issues that can be addressed using Best Management Practices (BMPs – see Appendix A), alternative design features, Forest Plan standards and guidelines, or other mitigation measures.
- b) Environmental issues that are beyond the scope of the analysis, or already decided by law, regulation, Forest Service policy, or other higher level decisions.
- c) Information that is irrelevant to the decision to be made.
- d) Information that is conjectural and not supported by scientific or factual evidence.

The implementing regulations for the National Environmental Policy Act (NEPA) are described in 40 CFR, Chapter V-Council on Environmental Quality, Part 1500 to 1508. The regulations require this delineation of issues in Sec. 1501.7(a)(3); "...Identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3), narrowing the discussion of these issues in the statement to a brief presentation of why they will not have a significant effect on the human environment..."

Consistent with these regulations, the interdisciplinary (ID) team assigned to this project reviewed the public comments received in response to this proposal and identified the issues raised. In addition, the Responsible Official approved the list of significant issues on September 7, 2005, in compliance with FSH 1909.15, Section 12.32. All of the issues associated with this project are categorized and listed below:

## **Key Issues**

**1) Impacts to Streams, Wetlands, and Riparian Areas:** There is a concern that designating unauthorized routes and constructing new trail segments may impair the ecological and hydrologic function in and around riparian areas, wetlands, and streams.

### **Indicators<sup>3</sup>:**

- Road density by watershed
- Miles of roads and trails within 300 feet of streams and wetlands<sup>4</sup>
- Miles of trail construction within 300 feet of streams and wetlands
- Change in miles of roads and trails within 300 feet of streams and wetlands

**2) Fragmentation and Wildlife Security:** There is a concern that designating unauthorized routes and constructing new trail segments may fragment certain wildlife communities and create barriers to movement. There is also a concern that the addition of such routes will reduce wildlife security and capability.

### **Indicators:**

- Miles of unauthorized routes/constructed trails designated as part of the FTS
- Number of areas 250 acres or larger over ½ mile from a designated route
- Acres of Security Cover
- Number of active goshawk nests within ¼ mile of designated routes

**3) Designation of Unauthorized Routes and Miles of Trail Construction:** There is a concern that too many unauthorized routes are being proposed for designation and that too many miles of trail construction are being proposed in previously undisturbed areas. Such designations and additions to the transportation system will result in a net increase in impacts to lands, wildlife, and nonmotorized

<sup>3</sup> Indicators are measurable ways of displaying how the issues could be affected by project implementation.

<sup>4</sup> This indicator is consistent with Water and Aquatic Standard #15 which states, "In watersheds containing aquatic, wetland, or riparian dependent TES species, allow activities and uses within 300 feet or the top of the inner gorge (whichever is greater), of perennial and intermittent streams, wetlands and lakes (over ¼ acre) only if onsite analysis shows that long-term hydrologic and riparian function, channel stability, riparian and stream habitat will be maintained or improved."

forest users. Instead, existing system roads should be converted to trails to create loop opportunities for ORV users.

**Indicators:**

- Miles of system routes converted to motorized trails
- Miles of trail construction
- Miles of unauthorized routes designated as part of the transportation system

**4) Loss of Motorized Recreation Opportunities:** There is a concern that closure of unauthorized routes will result in inadequate motorized recreation opportunities.

**Indicators:**

- Miles of unauthorized routes closed to motorized use
- Miles of routes open to ORV use (includes National Forest System Roads (NFSRs))
- Miles of unauthorized routes designated as part of the transportation system

**5) Designating Motorized Trails in Inventoried Roadless Areas (IRAs):** Several people commented that IRA designations are compatible with motorized trail use; thus, the Forest Service should designate unauthorized routes that fall within IRA boundaries as part of the forest transportation system (FTS).

**Indicator:**

- Miles of unauthorized routes proposed for designation within IRA boundaries

**Non-key Issues**

**1) The Medicine Bow National Forest’s road network (i.e., forest transportation system) is too extensive and contains many routes that serve no purpose. Further, the agency does not receive adequate funding to maintain system routes.** The purpose of this analysis, as stated on page 7 of this EA, is to determine the future status of unauthorized routes and to expand motorized recreation on the Laramie Ranger District’s portion of the Snowy Range. While we acknowledge that the existing forest transportation system is extensive, may contain unnecessary roads, and is expensive to maintain, analysis of existing NFSRs will be covered under future, site-specific projects (e.g., timber sales, Allotment Management Plan Revisions, etc.). This issue was eliminated from detailed study because it does not meet the purpose and need for the project and will be addressed during future analyses.

**2) Unauthorized routes should not be closed; the Forest Service has already closed too many roads.** Unauthorized routes were not planned as part of the forest transportation system and generally evolved from repeated public use. Consequently, they are not located or designed according to Forest Service standards and typically are causing adverse resource impacts. Designating all unauthorized routes as part of the transportation system would conflict with Forest Plan goals, standards, and guidelines for resource protection; would be expensive to maintain, particularly in times of declining budgets; and would not meet the purpose of and need for this proposal.

## ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This section describes and compares the alternatives considered for the Travel Management - Eastern Snowy Range project. In addition to describing the alternatives, this section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Finally, it outlines mitigation measures planned under the action alternatives (Proposed Action and Alternatives 2 – Expanded Motorized Trail System). Mitigation measures are designed to protect other resource uses and values.

The alternatives were developed in response to the significant issues described in the previous section (Introduction, pg. 19). While many potential options for road and trail designation exist, it is neither practical nor feasible to consider every possible combination. Therefore, the alternatives described here represent a range of management options which address the issues raised and meet the purpose of and need for the proposal.

### Features Common to All Alternatives

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- All motorized vehicle use would be restricted to routes designated as part of the FTS.
- All unauthorized routes not designated as part of the FTS would be administratively closed (i.e., motorized use would be prohibited and illegal use would be enforceable). In some instances, route markers would have to be removed from unauthorized routes that had been receiving temporary motorized use per the October 16, 2000 Forest-wide Travel Management decision.
- Motorized trails would not be designated in Wilderness areas, Special Interest Areas, or in Research Natural Areas.
- Existing National Forest System Roads (NFSRs) would remain open to licensed ATV and motorcycle operators and would remain part of the State's ORV sticker program.
- Access for permitted activities (i.e. livestock management, firewood gathering, mineral exploration and development, maintaining water developments, recreation events, etc.) on NFS lands is independent of general public access. Individuals or groups with special permits would be allowed to conduct their business according to their permits; however, the Forest Service reserves the right to control when and how access is achieved through the approval of annual operating plans. It is the responsibility of all permittees to follow the terms of their permits.
- Access routes available to permittees, but closed to general public motorized use, would be signed according to Forest Service guidelines or policy.
- The Forest Supervisor can implement special orders to restrict public use of roads, trails, and/or areas where substantial resource damage is occurring or where implementation of other management activities is deemed necessary. This may include seasonal restrictions on an annual basis (e.g., for calving areas or active raptor nests) as well as temporary restrictions for short-term conditions (e.g., mudslides and wet conditions, timber sale activities, etc.). Federal Regulation 36 CFR Part 261 prohibits damage to the land, wildlife, or vegetative resources.
- Emergency fire suppression activities would continue to be exempt from seasonal restrictions and restrictions on use, except in Wilderness and other congressionally designated special areas.

- Any Federal, State, tribal, or local office, in the performance of an official duty, could receive permission to use motorized vehicles on unauthorized routes not designated as part of the transportation system, except in Wilderness and other congressionally designated special areas.
- Forest Service personnel could be allowed administrative use of any route for the protection or management of resources.
- Routes on private land within the Medicine Bow National Forest boundary would be open to public use only through rights-of-way or easements obtained for the purposes of public access. Travel management decisions considered here relate only to NFS lands; miles of routes on private land have not been considered in this analysis.
- Any travel management decision that results from this analysis would be made with the understanding that individuals and entities may have valid existing rights under R.S. 2477. While the courts have established that the Forest Service has the authority and duty to regulate these rights, the Forest Service would recognize the validity of such rights when right holders provide adequate evidence as to their existence (see *Washington County v. United States*, 903 F. Supp. 40 (D. Utah, 1995)). Forest Service regulation of any occupancy occurring under these valid rights would be adjusted to a level consistent with the full protection and recognition of R.S. 2477 rights and consistent with current applicable law once those roads are identified, proposed, and validated. This may entail an amendment or modification of the travel management decision at that time.
- Law enforcement efforts would be focused on areas of greatest concern or potential for resource damage.
- Additional funding would be requested from Law Enforcement/Investigations and cooperating agencies (e.g. Wyoming State Trails Commission) to provide a greater field presence during the spring/summer/fall field seasons.

## **Features Common to the Proposed Action and Alternative 2: Expanded Motorized Trail System**

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- All motorized trail segments designated as part of the FTS must meet Forest Service Trails Management Handbook (FSH 2309.18) requirements prior to being open to motorized use.
- Motorized travel on the trail system would be restricted to designated trails only; no off-trail travel would be allowed. A State trail easement would need to be obtained for a small trail segment proposed in Township 12 North, Range 78 West, Section 16 (State land).
- Signs prohibiting motorized use would be erected where motorized use is expected to continue illegally on administratively closed routes.
- As time, money, and agency discretion allows, unauthorized roads and trails would be mechanically closed to discourage/prohibit motorized use. Examples of closure methods include, but are not limited to, gating, ripping and seeding, recontouring, and placement of felled trees and/or rocks. Mechanical closures would be implemented over time, in a prioritized order, where resource damage is occurring and/or sensitive wildlife habitats are being affected.
- The Medicine Bow National Forest would develop new Motor travel maps to correctly show the forest transportation system (roads and trails), route specific travel regulations, Forest access routes, and land ownership.
- Any new route designated as part of the FTS would be given a system number.

- Management objectives would be developed for each new route designated as part of the FTS.

**All trails in the transportation system would be open for foot, bicycle, and horse travel, unless specifically closed.**

- On-the-ground signing would be used to clearly identify travel routes and the allowed modes of travel.
- All routes open to unlicensed motorized trail vehicles (e.g., ATVs and trail motorcycles) would be made available for State ORV trail designation. State trails money could be used to help maintain these routes.
- Information describing appropriate user behavior would be provided at the Albany and Mountain Home trailheads (see Maps 4 and 5). Emphasis would be on using TREAD LIGHTLY! and LEAVE NO TRACE programs to educate the public.
- Partnerships and volunteer opportunities for designating, constructing, and maintaining motorized routes, user education, and monitoring would be emphasized.
- User education and information would be emphasized as management tools to inform the public of appropriate uses, ethics, and interactions with other users. Information would be distributed through active user groups and clubs to achieve compliance.

## **Alternatives Considered in Detail**

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Three alternatives were studied in detail and are presented here for consideration in the decision making process. Each alternative was developed from a unique combination of options, as described in the Decision Framework section outlined on page 17 of this EA.

### ***ALTERNATIVE 1: No Action***

National Environmental Policy Act regulations require the Forest Service to analyze a No Action alternative as a baseline for comparing the effects of other alternatives (40 CFR 1502.14(d) and Forest Service Handbook 1909.15, 23.1). The No Action alternative responds to Issue 1: Impacts to Streams, Wetlands, and Riparian Areas; Issue 2: Fragmentation and Wildlife Security; and Issue 3: Designation of Unauthorized Routes and Miles of Trail Construction.

Under the No Action alternative, the Forest Service would not designate a summer, motorized trail system for forest users, and trailheads in the Albany and Mountain Home areas of the Forest would not be developed. Unauthorized roads and trails (approximately 358 miles collectively) would not be designated as part of the FTS and would be administratively closed to motorized use. In some instances, this would require removing carsonite posts that had previously authorized temporary use of the routes (per the 2000 Forest-wide travel management decision). No effort would be made to physically close unauthorized routes unless substantial resource damage was occurring. The majority of unauthorized routes would be allowed to close naturally, over time, through re-vegetation.

The FTS would consist only of those National Forest System Roads (NFSRs) that existed in the area when the Medicine Bow National Forest Revised Forest Plan was signed (December 29, 2003). This includes roughly 630 miles of system roads open to motorized vehicle use, 150 miles of gated system roads, and 0 miles of summer motorized trails. The No Action alternative would not meet the Purpose and Need for the Proposal, as outlined on pages 7 - 9 of this EA.

## ***PROPOSED ACTION***

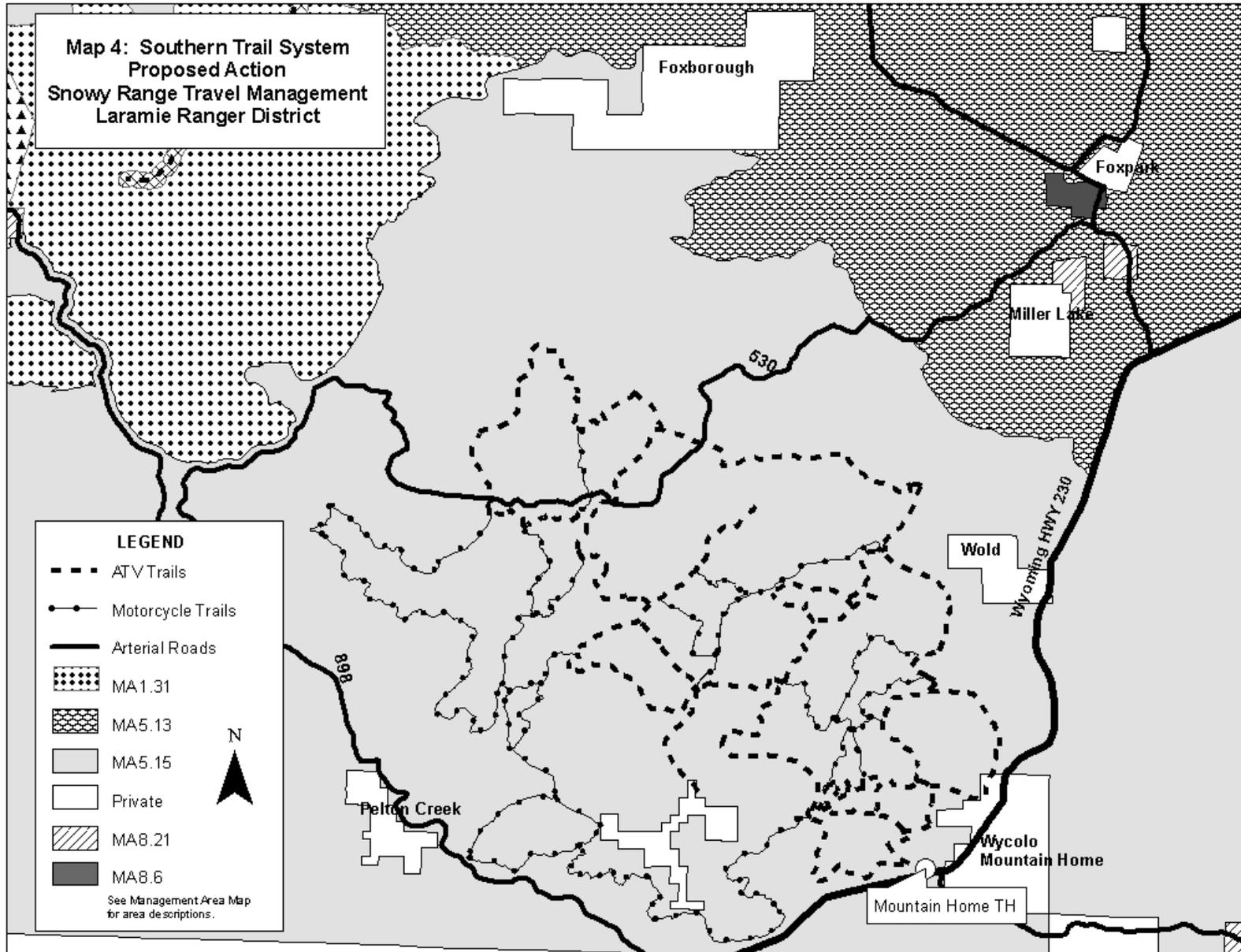
The Laramie Ranger District of the Medicine Bow National Forest is proposing to close hundreds of miles of unauthorized routes and to expand motorized recreation opportunities by designating a summer motorized trail system on the eastern portion of the Snowy Range. Designation of the motorized trail system would be accomplished by designating specific, unauthorized routes as part of the FTS and by constructing new motorized trail segments.

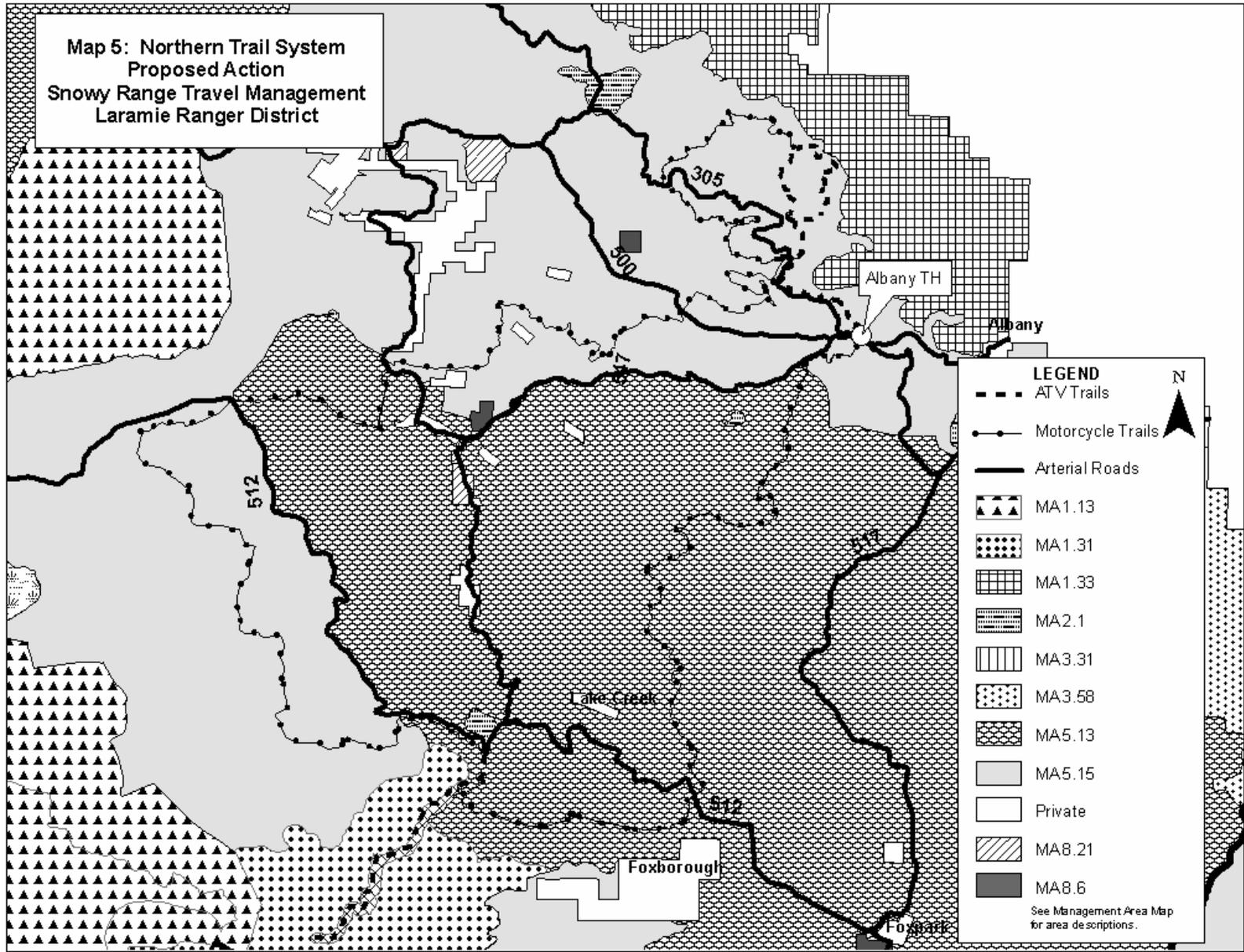
**NOTE:** The Proposed Action has been modified slightly from what was described in the March 4, 2005 scoping document in that: a) motorized trails have been strategically located away from wildlife security areas, old growth forest, and riparian areas; and b) the mileage of designated and constructed routes has been reduced. These modifications were based on comments received during the scoping process and additional field data.

The Proposed Action alternative responds to *Issue 1: Impacts to Streams, Wetlands, and Riparian Areas*; *Issue 2: Fragmentation and Wildlife Security*; *Issue 3: Designation of Unauthorized Routes and Miles of Trail Construction*; and *Issue 4: Loss of Motorized Recreation Opportunities*.

Specific activities associated with the Proposed Action include:

- Closing approximately 235.5 miles of unauthorized roads, 39.0 miles of unauthorized trails, and 5 miles of NFSRs to motorized use (see Table 4, EA page 32). Roughly 2.7 miles of the NFSRs proposed for closure are located within Management Area 1.31 – Backcountry Recreation, Year-round Nonmotorized (See Map 8, EA pg. 40);
- Designating approximately 12.2 miles of unauthorized roads as part of the FTS;
- Designating approximately 68.3 miles of single-track motorcycle trails as part of the FTS. This would be accomplished by: a) designating 45.1 miles of unauthorized motorcycle trails; b) converting 3.2 mile of NFSRs to motorcycle trails; c) converting 3.3 miles of unauthorized roads to motorcycle trails; d) converting 1.2 miles of unauthorized ATV trails to motorcycle trail; and e) constructing 15.5 miles of new motorcycle trail segments. Due to the narrowness of these trails, ATVs would be prohibited;
- Designating approximately 38.1 miles of ATV trails as part of the FTS. This would be accomplished by: a) designating 8.0 miles of unauthorized ATV trails; b) converting 13.6 miles of system roads to ATV trails; c) converting 8.8 miles of unauthorized roads to ATV trails; d) converting 1.5 miles of unauthorized motorcycle trails to ATV trails; and e) constructing 6.2 miles of new ATV trail segments. Both ATVs and motorcycles would be allowed to travel on these trails.
- Constructing a bridge to accommodate motorcycles over Douglas Creek below the dam at Rob Roy Reservoir.





***PROPOSED ACTION (Continued)***

To accommodate the motorized trail system, the Forest Service would establish trailheads in the Albany and Mountain Home areas of the Forest (see Maps 4 and 5). The inactive gravel pit near the intersection of NFSRs 500 and 305, approximately 2 miles west of the Albany Snowmobile Parking Area, would be used for one of the trailheads. Due to the disturbed nature of this site, minimal development would be required. The snowmobile parking area off of Highway 230 just south of Mountain Home would be established as the second trailhead. This facility could easily be modified to accommodate day use trail access.

Appropriate signing and traffic control measures would be installed at the trailheads. Each trailhead could include such amenities as: a) a vault toilet; b) post and pole fencing; c) an information kiosk emphasizing trail etiquette; d) picnic tables and grills; and e) a hand-pump water well.

If implemented as proposed, the FTS on Laramie Ranger District's portion of the Snowy Range would include 624.9 miles of NFSRs open to motorized use, 147.4 miles of gated system roads, 68.3 miles of single-track motorcycle trails, and 38.1 miles of ATV trails.

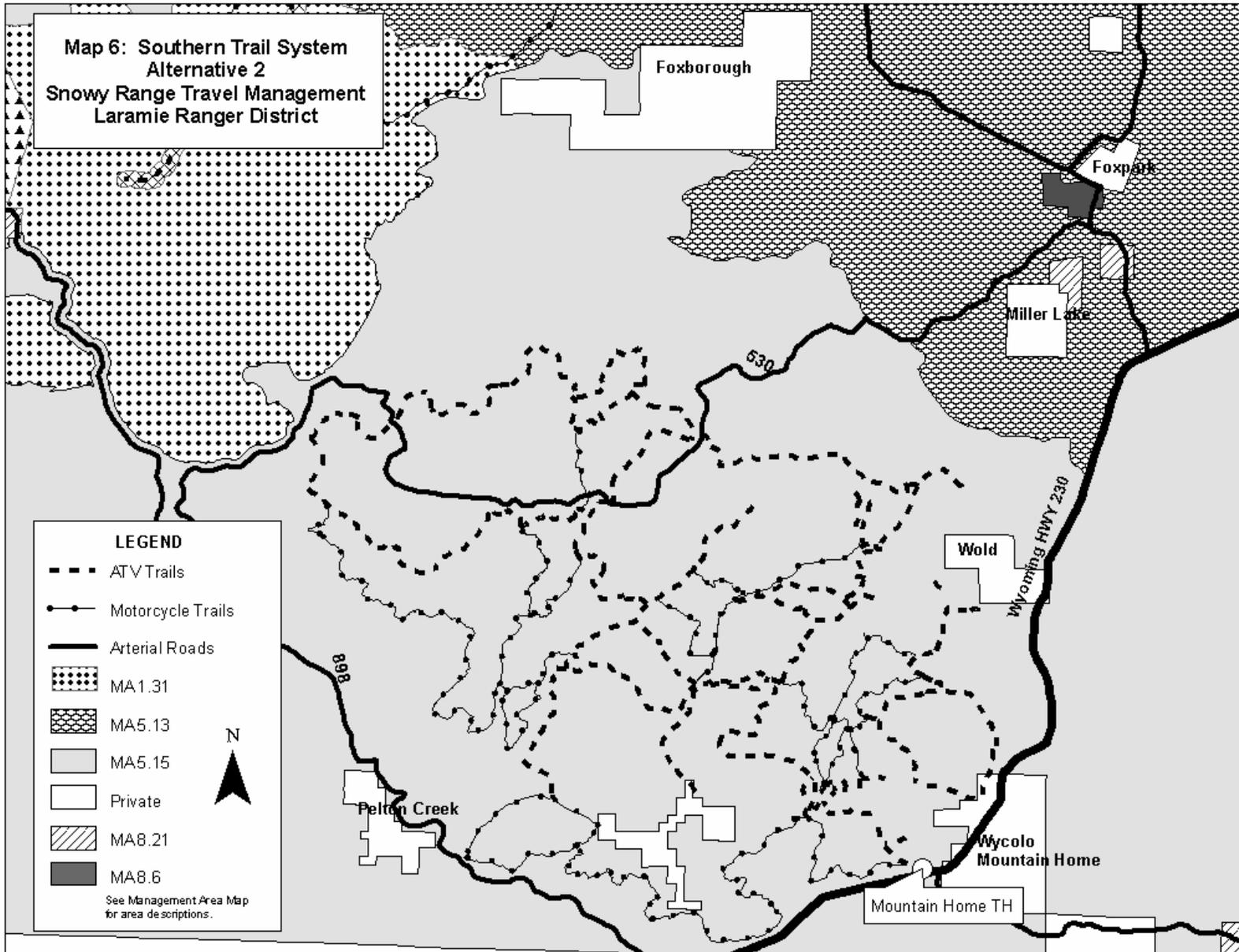
If approved, the Laramie Ranger District would like to begin implementing the Proposed Action in 2007.

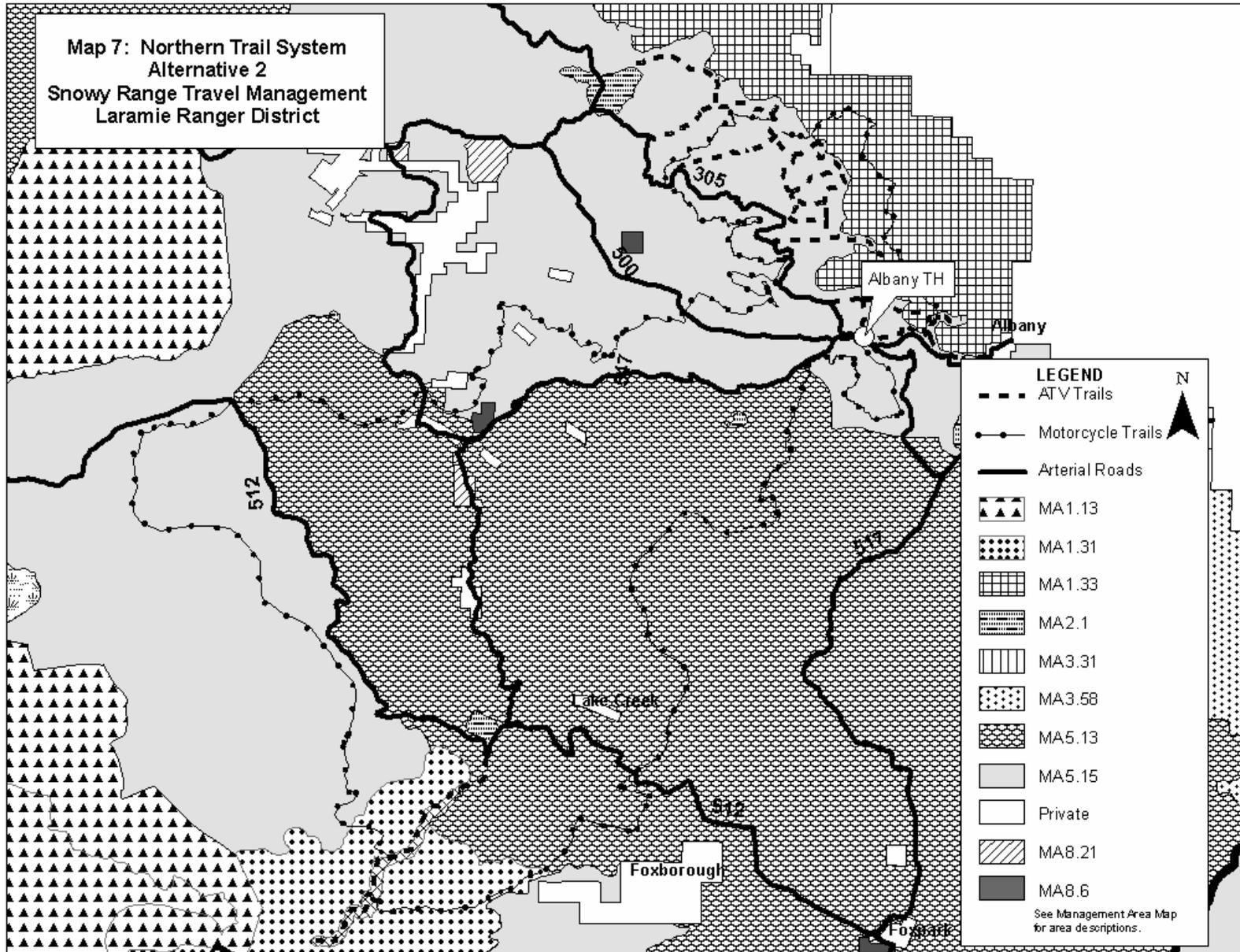
***ALTERNATIVE 2: Expanded Motorized Trail System***

Like the Proposed Action, Alternative 2 would close hundreds of miles of unauthorized routes. However, this alternative also proposes to expand motorized recreation opportunities by designating additional ATV and motorcycle trails, some of which are located in Inventoried Roadless Areas (IRAs) and non-motorized management area prescriptions. This alternative responds to Issue 1: Impacts to Streams, Wetlands, and Riparian Areas, Issue 4: Loss of Motorized Recreation Opportunities, and Issue 5: Designating Motorized Trails in Inventoried Roadless Areas.

Specific activities associated with Alternative 2 include:

- Closing approximately 232 miles of unauthorized roads, 27.1 miles of unauthorized trails, and 4.3 miles of NFSRs to motorized use (see Table 4, EA page 32). Roughly 2.7 miles of the NFSRs proposed for closure are located within Management Area 1.31 – Backcountry Recreation, Year-round Nonmotorized;
- Designating approximately 16.5 miles of unauthorized roads as part of the FTS;
- Designating approximately 73.1 miles of single-track motorcycle trails as part of the FTS. This would be accomplished by: a) designating 55.4 miles of unauthorized motorcycle trails; b) converting 0.2 mile of NFSRs to motorcycle trails; c) converting 0.8 miles of unauthorized roads to motorcycle trails; d) converting 0.4 miles of unauthorized ATV trail to motorcycle trail; and e) constructing 16.4 miles of new motorcycle trail segments. Due to the narrowness of these trails, ATV use would be prohibited;
- Designating approximately 54.4 miles of ATV trails as part of the FTS. This would be accomplished by: a) designating 9.9 miles of unauthorized ATV trails; b) converting 22.0 miles of system roads to ATV trails; c) converting 15.4 miles of unauthorized roads to ATV trails; d) converting 1.5 miles of unauthorized motorcycle trails to ATV trails; and





*ALTERNATIVE 2: Expanded Motorized Trail System (Continued)*

e) constructing 5.6 miles of new ATV trail segments. Both ATVs and motorcycles would be allowed to travel on these trails.

Trailhead construction, as described under the Proposed Action, would occur under Alternative 2 – Expanded Motorized Trail System (see Maps 6 and 7). Bridge construction to accommodate motorcycles over Douglas Creek below the dam at Rob Roy Reservoir would not occur.

If implemented as proposed, the FTS on Laramie Ranger District’s portion of the Snowy Range would include 620.6 miles of NFSRs open to motorized use, 146.1 miles of gated system roads, 73.1 miles of single-track motorcycle trails, and 54.4 miles of ATV trails.

Alternative 2 includes the designation of two motorcycle trail segments located within MA 1.31, Backcountry Recreation, Year-round Nonmotorized. It also includes the designation of one motorcycle trail segment and three ATV trail segments located in MA 1.33, Backcountry Recreation, Summer Non-motorized with Winter Snowmobiling. Designating motorized trails in these areas would require site-specific amendments to the Medicine Bow National Forest Plan (2003). Forest Plan amendment requirements are outlined on pages 38 – 44 of this EA.

If approved, the Laramie Ranger District would like to begin implementing Alternative 2 in 2007.

## **Environmental Measures Common to the Proposed Action and Alternative 2**

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The Interdisciplinary Team (ID Team) identified design features and mitigation measures that would be applied to reduce or prevent undesirable effects resulting from management activities (see Appendix A).

## **Monitoring Common to the Proposed Action and Alternative 2**

Monitoring is designed to:

- Determine if assumptions made for the effects analysis were correct
- Validate the accuracy of models
- Determine if resource objectives are being achieved and verify implementation
- Assess the degree of practical effects

Monitoring is done to assure that Forest Plan standards and guidelines are being met and adhered to during project implementation. Though field surveys were conducted for R-2 sensitive wildlife and plant species, past experience has shown that yearly variations in climatic conditions greatly determine the presence or absence of fauna and flora. If sensitive species are encountered during project implementation, the wildlife biologist/botanist will be notified. Likewise, although heritage surveys were completed for the project area, the Wyoming State Historic Preservation Office (SHPO) requests that the area be monitored for potential sites that may have been overlooked during project implementation.

Table 3 identifies specific items that were identified by the ID Team as needing monitoring during preparation and implementation of potential projects.

**Table 3: Monitoring Requirements**

Monitoring Requirement	Monitoring Type	Responsibility	Frequency
Stream Channels and Riparian Areas	Stream channel morphology, bank stability, and riparian vegetation	Fisheries personnel	During routine project administration
Aquatic Management Indicator Species	Brook, brown, and rainbow trout habitat condition and populations	Fisheries personnel	Every 5 – 6 years to track status and trends
Roads/Trails and Disturbed Sites	Stability and grade of crossings, channel capacity, sediment deposits in streambeds, and ability of aquatic biota to pass	Soil Scientist	Every 2 – 3 years
Closure Methods	Assess closure method success and revegetation	Engineering and Hydrology personnel	At least once within 3 years of closure

## Alternatives Considered but Eliminated from Detailed Study\_\_\_\_\_

### ***ALTERNATIVE 3: Expansion of the Proposed ATV Trail System***

This alternative would have expanded the proposed motorized ATV system to include additional trail mileage and loop opportunities. The ATV trail systems being proposed in this EA consist primarily of existing authorized and unauthorized routes. These routes require minimal trail construction to create loop opportunities and connector trails to join with the proposed motorcycle trail systems. An expanded ATV trail system would require substantial trail construction and would impact areas that have not previously been disturbed. Further, the district currently manages hundreds of level 2 roads (primitive, two track roads) that are, and will continue to be, available for ATV use. For these reasons, this alternative was eliminated from detailed study.

### ***ALTERNATIVE 4: Designate All Unauthorized Routes Where Temporary Motorized Use Has Been Allowed Since 2000***

The October 16, 2000 Forest-wide Travel Management decision authorized temporary motorized use of inventoried, unauthorized roads and trails until site-specific NEPA analyses were completed. Consequently, route markers authorizing temporary use were installed on approximately 121 of the roughly 358 miles of unauthorized routes. Alternative 4 would have designated all of these marked routes as part of the FTS.

This alternative was eliminated from detailed study because it does not meet the Purpose and Need for Action, as outlined on EA pages 7 to 9 and it does not comply with the Revised Medicine Bow National Forest Plan (2003). For example, many of the routes are poorly located and violate Forest Plan standards and guidelines for wildlife, soil, and water and aquatic protection. Other routes traverse MA 1.31 – Backcountry Recreation, Year-round Nonmotorized which prohibits motorized

use. Still others dead end or provide duplicate access and do not offer the motorized experience being sought by ATV and motorcycle users. For these reasons, it was eliminated from detailed study.

## Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Table 4 compares alternative components; Table 5 compares how the alternatives address the Purpose and Need for the Proposal; Table 6 compares how the issues raised during scoping would be affected by the alternatives; and Table 7 displays the effects of implementing each alternative by resource area.

**Table 4: Alternative Components**

Proposed Activity	Alternative 1 No Action	Proposed Action	Alternative 2 Expanded Motorized Trail System
<b>FOREST TRANSPORTATION SYSTEM (FTS) (MILES)</b>			
National Forest System Roads	629.2	624.9	620.6
Designated Unauthorized Roads	0	12.2	16.5
Gated System Roads	150.1	147.4	146.1
Motorized Trail System	0	106.4	127.4
<b>FTS</b>	<b>779.3</b>	<b>890.9</b>	<b>910.6</b>
<b>UNAUTHORIZED ROUTES OPEN TO PUBLIC USE</b>			
Roads	0	0	0
Trails	0	0	0
<b>NFSR CLOSURES (MILES)</b>			
NFSR Closures	0	5	4.3
<b>UNAUTHORIZED ROUTE CLOSURES</b>			
Unauthorized Roads	262	235.5	232
Unauthorized Trails	95.8	39	27.1
<b>TOTAL MILES</b>	<b>357.8</b>	<b>274.5</b>	<b>259.1</b>
<b>UNAUTHORIZED ROUTES DESIGNATED AS PART OF THE FTS (MILES)</b>			
Roads	0	12.2	16.5
Trails	0	67.9	80.2
<b>TOTAL MILES</b>	<b>0</b>	<b>80.1</b>	<b>96.7</b>
<b>MOTORCYCLE TRAILS</b>			
Unauthorized Trails - Designated	0	45.1	55.4
Convert from NFSRs	0	3.2	0.2
Convert from Unauthorized Roads	0	3.3	0.8
Convert from Unauthorized ATV Trails	0	1.2	0.4
New Construction	0	15.5	16.4
<b>TOTAL MILES</b>	<b>0</b>	<b>68.3</b>	<b>73.1</b>

**Table 4: Alternative Components (Continued)**

Proposed Activity	Alternative 1 No Action	Proposed Action	Alternative 2 Expanded Motorized Trail System
<b>ATV TRAILS</b>			
Unauthorized Trails - Designated	0	8	9.9
Convert from NFSRs	0	13.6	22
Convert from Unauthorized Roads	0	8.8	15.4
Convert from Unauthorized Motorcycle Trails	0	1.5	1.5
New Construction	0	6.2	5.6
<b>TOTAL MILES</b>	<b>0</b>	<b>38.1</b>	<b>54.4</b>
<b>TOTAL TRAIL CONSTRUCTION (MILES)</b>			
ATV and Motorcycle	0	21.7	22
<b>ANCILLARY FACILITIES</b>			
Trailhead Construction	0	2	2
Bridge Construction	0	1	0

**Table 5: Comparison of Alternatives: Purpose and Need**

Purpose and Need	Alternative 1 No Action	Proposed Action	Alternative 2 Expanded Motorized Trail System
<b>Comply with the October 16, 2000 Travel Management decision.</b>	Yes. However, a summer motorized trail system would not be designated.	Yes	Yes
<b>Comply with the Forest Plan (2003)</b>	No. The No Action alternative is not consistent with Forest Plan direction to protect streams and wetlands.	Yes	Does not comply with Transportation standard #1 in MA 1.31 and Infrastructure standard #1 in MA 1.33. It would comply with all other Plan requirements.
<b>Comply with the 2005 Travel Management Rule</b>	Yes. However, a summer motorized trail system would not be designated.	Yes	Yes

**Table 5: Comparison of Alternatives: Purpose and Need (Continued)**

<b>Proposed Activity</b>	<b>Alternative 1 No Action</b>	<b>Proposed Action</b>	<b>Alternative 2 Expanded Motorized Trail System</b>
<b>Reduce adverse resource impacts caused by unauthorized routes</b>	Yes. However, to a lesser degree than the action alternatives since routes would not be physically closed.	Yes. Trails have been strategically located to avoid sensitive wildlife areas, wetland and riparian areas, and backcountry nonmotorized areas.	Yes, but to a lesser degree than the Proposed Action.
<b>Develop a transportation system designed to meet increased demands for motorized recreation</b>	No. All unauthorized routes would be administratively closed to motorized use.	Yes. Roughly 38.1 miles of ATV trails and 68.3 miles of motorcycle trails would be designated as part of the FTS. Two trailheads to accommodate the motorized trail system would also be established.	Yes. Roughly 54.4 miles of ATV trails and 73.1 miles of motorcycle trails would be designated as part of the FTS. Two trailheads to accommodate the motorized trail system would also be established.
<b>Specify which routes may be used by ORVs.</b>	No	Yes. Trail designations would be made by class of vehicle.	Yes. Trail designations would be made by class of vehicle.
<b>Coordinate between Forest users and the Forest Service to develop and maintain a motorized transportation system.</b>	No	Yes. The Forest Service has worked with motorized interest groups and state agencies concerning ORV issues and opportunities.	Yes. The Forest Service has worked with motorized interest groups and state agencies concerning ORV issues and opportunities.

**Table 6: Comparison of Alternatives - Significant Issues**

<b>Issue Indicators</b>	<b>Alternative 1 No Action</b>	<b>Proposed Action</b>	<b>Alternative 2 Expanded Motorized Trail System</b>
<b>Issue 1 – Impacts to Streams, Wetlands, and Riparian Areas</b>			
- Road density by watershed (average of 8 watersheds) <sup>5</sup>	2.03 miles/sq. mile	1.5 miles/sq. mile	1.52 miles/sq. mile
- Miles of roads/trails within 300’ of streams / wetlands	277 / 91.7	72.5 / 26	100.4 / 27.6
- Miles of trail construction within 300’ of streams / wetlands	n/a	16.1 / 4.45	17.8 / 5.7
- Change in miles of roads/trails within 300’ of streams / wetlands	n/a	-201.7 / -62.3	-184.2 / -58.4

<sup>5</sup> A more detailed breakdown of road densities by watershed can be found in Table 15, EA page 67.

**Table 6: Comparison of Alternatives – Significant Issues (Continued)**

Issue Indicators	Alternative 1 No Action	Proposed Action	Alternative 2 Expanded Motorized Trail System
<b>Issue 2 – Fragmentation and Wildlife Security</b>			
- Miles of unauthorized routes/constructed trails designated as part of the FTS	0	101.8 (80.1 miles of unauthorized routes and 21.7 miles of trail construction)	118.7 (96.7 miles of unauthorized routes and 22 miles of trail construction)
- # of areas >250 acres in size over ½ mile from designated routes	21 (Current condition = 10 areas >250 acres)*	19	18
- Acres of Security Cover	52,400 (Current condition = 42,000 acres)	51,310	48,720
- Number of active goshawk nests within ¼ mile of designated routes	0 (Nest security in a maximum of 5 nests would be improved)	1	1
<b>Issue 3 – Designation of Unauthorized Routes and Miles of Trail Construction</b>			
- Miles of system routes converted to motorized trails	0	16.8	22.2
- Miles of trail construction	0	21.7	22
- Miles of unauthorized routes designated as part of the FTS	0	80.1	96.7
<b>Issue 4 – Loss of Motorized Recreation Opportunities</b>			
- Miles of unauthorized routes closed to motorized use	358**	274.5	259.1
- Miles of routes open to ORV use (includes NFSRs)	629.2	731.3	748
- Miles of unauthorized routes designated as part of the FTS	0	80.1	96.7
<b>Issue 5 - Designating Motorized Trails in Inventoried Roadless Areas (IRAs)</b>			
Miles of unauthorized routes proposed for designation within IRA boundaries	0	0	5.81 (4.43 miles of motorcycle trail and 1.38 miles of ATV trail)

\* Administratively closing unauthorized routes under the No Action alternative and physically closing unauthorized routes under the action alternatives would substantially increase the number of areas greater than 250 acres.

\*\* This figure represents all unauthorized routes that have been inventoried and mapped since 1997. Following the 2000 Forest-wide Travel Management decision, roughly 121 miles of unauthorized routes were marked as temporarily open to motorized use. Motorized use was not authorized on the remaining 237 miles. Thus, technically, only 121 miles of unauthorized routes would be closed under the No Action alternative.

**Table 7: Comparison of Alternatives by Resource Area**

<b>Resource Area</b>	<b>Alternative 1 No Action</b>	<b>Proposed Action</b>	<b>Alternative 2 Expanded Motorized Trail System</b>
<b>Botany</b>	May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area or cause a trend toward federal listing for Slender moonwort, Larchleaf beardtongue, and Thread rush.	May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area or cause a trend toward federal listing for Slender moonwort, Larchleaf beardtongue, and Thread rush.	May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area or cause a trend toward federal listing for Slender moonwort, Larchleaf beardtongue, and Thread rush.
<b>Economics</b>	n/a	Total Implementation cost = \$239,140	Total Implementation cost = \$209,035
<b>Engineering</b>	Unauthorized routes would be administratively closed only; enforcement would be difficult; resource degradation is likely to increase.	A designated trail system including 68.3 miles of motorcycle trails and 38.1 miles of ATV trails would be provided. Illegal construction of future unauthorized routes should be minimized.	A designated trail system including 73.1 miles of motorcycle trails and 54.4 miles of ATV trails would be provided. Illegal construction of future unauthorized routes should be minimized.
<b>Fire and Fuels</b>	No significant impacts on fire suppression efforts because travel management restrictions are waived except in wilderness areas and the Sheep Mountain Wildlife Refuge.	No significant impacts on fire suppression efforts because travel management restrictions are waived except in wilderness areas and in the Sheep Mountain Big Game Refuge.	No significant impacts on fire suppression efforts because travel management restrictions are waived except in wilderness areas and in the Sheep Mountain Big Game Refuge.
<b>Fisheries</b>	Beneficial impacts to aquatic species and their habitats. MIS populations would remain relatively unchanged. No impacts to Region 2 Sensitive Species or Federally listed species.	Beneficial impacts to aquatic species and their habitats. No adverse impacts to MIS. May impact individual Region 2 Sensitive Species, but not result in loss of viability. No impacts to Federally listed species.	Beneficial impacts to aquatic species and their habitats. No adverse impacts to MIS. May impact individual Region 2 Sensitive Species, but not result in loss of viability. No impacts to Federally listed species.
<b>Heritage Resources</b>	No impact	Potential for increased vandalism to sites located in vicinity of proposed trail construction.	Potential for increased vandalism to sites located in vicinity of proposed trail construction.
<b>Hydrology</b>	The No Action alternative would not be consistent with Forest Plan direction to protect streams and wetlands.	Decreased sedimentation in analysis area watersheds. Impacts to wetlands and riparian areas would be decreased.	Decreased sedimentation in analysis area watersheds. Impacts to wetlands and riparian areas would be decreased.

**Table 7: Comparison of Alternatives by Resource Area (Continued)**

<b>Resource Area</b>	<b>Alternative 1 No Action</b>	<b>Proposed Action</b>	<b>Alternative 2 Expanded Motorized Trail System</b>
<b>Inventoried Roadless Areas (IRAs)</b>	All unauthorized routes within inventoried roadless area boundaries would be administratively closed.	All unauthorized routes within IRA boundaries would be administratively or physically closed.	Roughly 4.43 miles of motorcycle trails and 1.38 miles of ATV trails would be designated in the Middle Fork IRA. All other unauthorized routes within IRA boundaries would be administratively or physically closed.
<b>Law Enforcement</b>	Non-licensed drivers would not be able to operate ORVs. Travel management violations and resource damage expected to increase.	Due to a designated trail system, travel management violations and resource damage are expected to decrease.	Due to a designated trail system, travel management violations and resource damage are expected to decrease.
<b>Recreation</b>	Some impacts to dispersed recreationists due to closure of unauthorized routes. No opportunity for motorized backcountry recreation. Resource damage is expected to continue and/or increase.	Some impacts to dispersed recreationists due to closure of unauthorized routes. Increased opportunities for backcountry motorized recreation. Reduced resource damage is expected.	Some impacts to dispersed recreationists due to closure of unauthorized routes. Increased opportunities for backcountry motorized recreation. Reduced resource damage is expected.
<b>Soils</b>	No change in the soil resource.	Soil productivity should be increased on roughly 377.3 acres.	Soil productivity should be increased on roughly 362.4 acres.
<b>Timber Management</b>	No impacts to timber management.	No impacts to timber management.	No impacts to timber management.
<b>Wildlife</b>	No effect on federally listed species. Habitat for and populations of Region 2 Sensitive Species and MIS would remain in their current condition.	“May affect but is not likely to adversely affect” determination for Canada lynx. May impact individuals but not cause a trend for federal listing or a loss of viability for Region 2 Sensitive Species. Habitat for most MIS would be improved.	“May affect but is not likely to adversely affect” determination for Canada lynx. May impact individuals but not cause a trend for federal listing or a loss of viability for Region 2 Sensitive Species. Habitat for most MIS would be improved.

## Forest Plan Amendment Requirements

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Forest Service requirements for amending forest plans are included in agency regulations and policies. These require that land uses be consistent with forest plans and that proposed activities that would conflict with the plan either be denied or modified (so as to be consistent) or that the forest plan be amended. Regulations at 36 CFR 219.10(f) direct the Forest Service to consider whether a proposed amendment to a forest plan would be considered a significant change. This intent of this section is to determine whether or not the amendment proposed under the Proposed Action would be a significant change to the 2003 Revised Medicine Bow National Forest Plan.

The Forest Service is authorized to implement amendments to forest plans in response to changing needs and opportunities, information identified during project analysis, or the results of monitoring and evaluation. The process to consider forest plan amendments, review them for significance, document the results, and reach a decision is contained in Forest Service Manual (FSM) 1922 (USDA-FS 1992a) and Forest Service Handbook (FSH) 1909.12, Chapter 5 (USDA-FS 1992b). An assessment of a proposed amendment's significance in the context of the larger forest plan is a crucial part of this process.

It is important to note that the definition of significance for amending a forest plan (36 CFR 219.10(f) and FSH 1922.5) is not the same as the definition of significance defined by NEPA. Under NEPA, significance is generally determined by whether a proposal is considered to be a "major federal action significantly affecting the quality of the human environment" (40 CFR 1502.3), or whether the relative severity of the environmental impacts would be significant based on their context and intensity (40 CFR 1508.27). On the other hand, the National Forest Management Act (NFMA) requires that proposed forest plan amendments be evaluated for whether they would constitute a significant change in the long-term goods, outputs, and services projected for an entire National Forest. Evaluation criteria used to determine whether or not a proposed amendment would significantly change these long-term projections are described on EA page 39.

Amendments that are not significant may be adopted following disclosure and notification in an environmental document, such as an Environmental Assessment or EIS. Amendments that are deemed significant must be processed under the more intensive requirements for developing and approving a forest plan. This process includes preparation of an EIS (FSH 1909.12, 5.34(4)). This EA addresses significance only from the perspective of amending the 2003 Revised Medicine Bow National Forest Plan, consistent with requirements of NFMA and agency policy.

### Proposed Amendments

Implementation of Alternative 2 would require two amendments to the Revised Medicine Bow National Forest Plan (2003). Proposed amendments include:

1. Changing approximately 233 acres of **Management Area (MA) 1.31 - Backcountry Recreation, Year-round Nonmotorized acreage** to **MA 3.33 – Backcountry Recreation, Summer Motorized with Winter Nonmotorized**; and
2. Changing approximately 422.5 acres of **Management Area 1.33 – Backcountry Recreation, Summer Nonmotorized with Winter Snowmobiling** to **Management Area 3.31 - Backcountry Recreation, Year-round Motorized**.

**1. Proposed Amendment to MA 1.31:** Currently Alternative 2: Expanded Motorized Trail System includes two motorcycle trail segments (totaling 3.2 miles) within MA 1.31 - Backcountry Recreation, Year-round Nonmotorized. This MA is located between the Foxborough private land inholding and the Platte River Wilderness Area (see Map 8). Transportation standard #1 within MA 1.31 prohibits motorized uses; thus, a Forest Plan Amendment would be required if Alternative 2 is selected for implementation. As indicated above, the amendment would change approximately 233 acres of **Management Area 1.31 – Backcountry Recreation, Year-round Nonmotorized** to **Management Area 3.33 – Backcountry Recreation, Summer Motorized with Winter Nonmotorized**. Specifically, roughly 300 feet on both sides of each trail segment within MA 1.31 would be changed to MA 3.33.

**2. Proposed Amendment to MA 1.33:** Alternative 2 also includes one motorcycle trail segment (4.43 miles) and three ATV trail segments (totaling 1.38 miles) in MA 1.33 – Backcountry Recreation, Summer Nonmotorized with Winter Snowmobiling (5.81 miles total). This MA is located northwest of Albany (see Map 9). Infrastructure standard # 1 within MA 1.33 prohibits summer motorized uses except when authorized by special use permit or for administrative or emergency purposes; consequently, a Forest Plan amendment would be required to change approximately 422.5 acres of **MA 1.33 – Backcountry Recreation, Summer Nonmotorized with Winter Snowmobiling** to **MA 3.31 – Backcountry Recreation, Year-round Motorized**. Specifically, roughly 300 feet on both sides of each trail segment within MA 1.33 would be changed to MA 3.31.

## Significance Evaluation

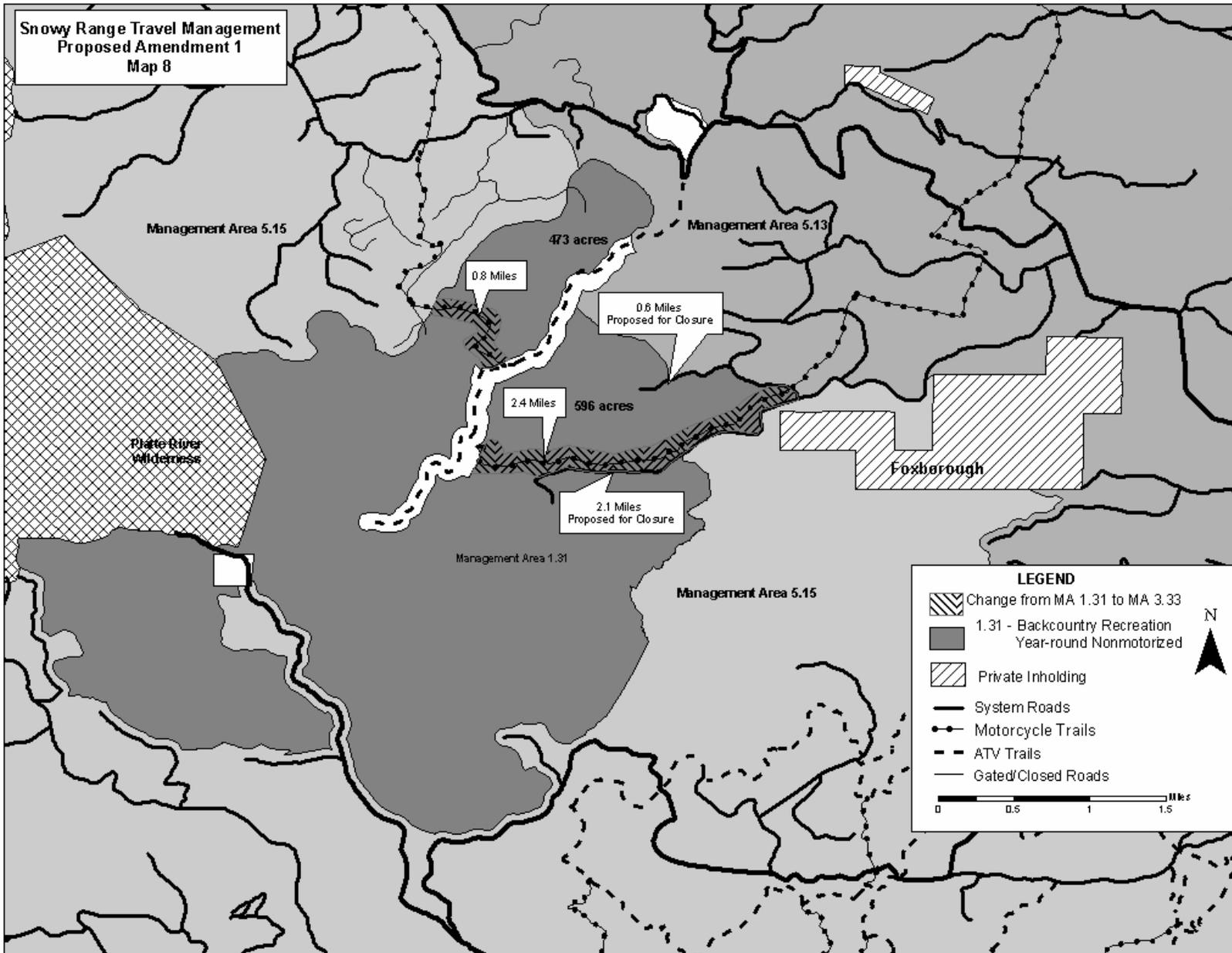
The criteria to be analyzed to determine the significance of a forest plan amendment are detailed in FSH 1909.12, Chapter 5.32 (USDA-FS 1992b) and are summarized below. The discussion which follows uses these parameters to evaluate the significance of adopting the proposed Forest Plan amendment.

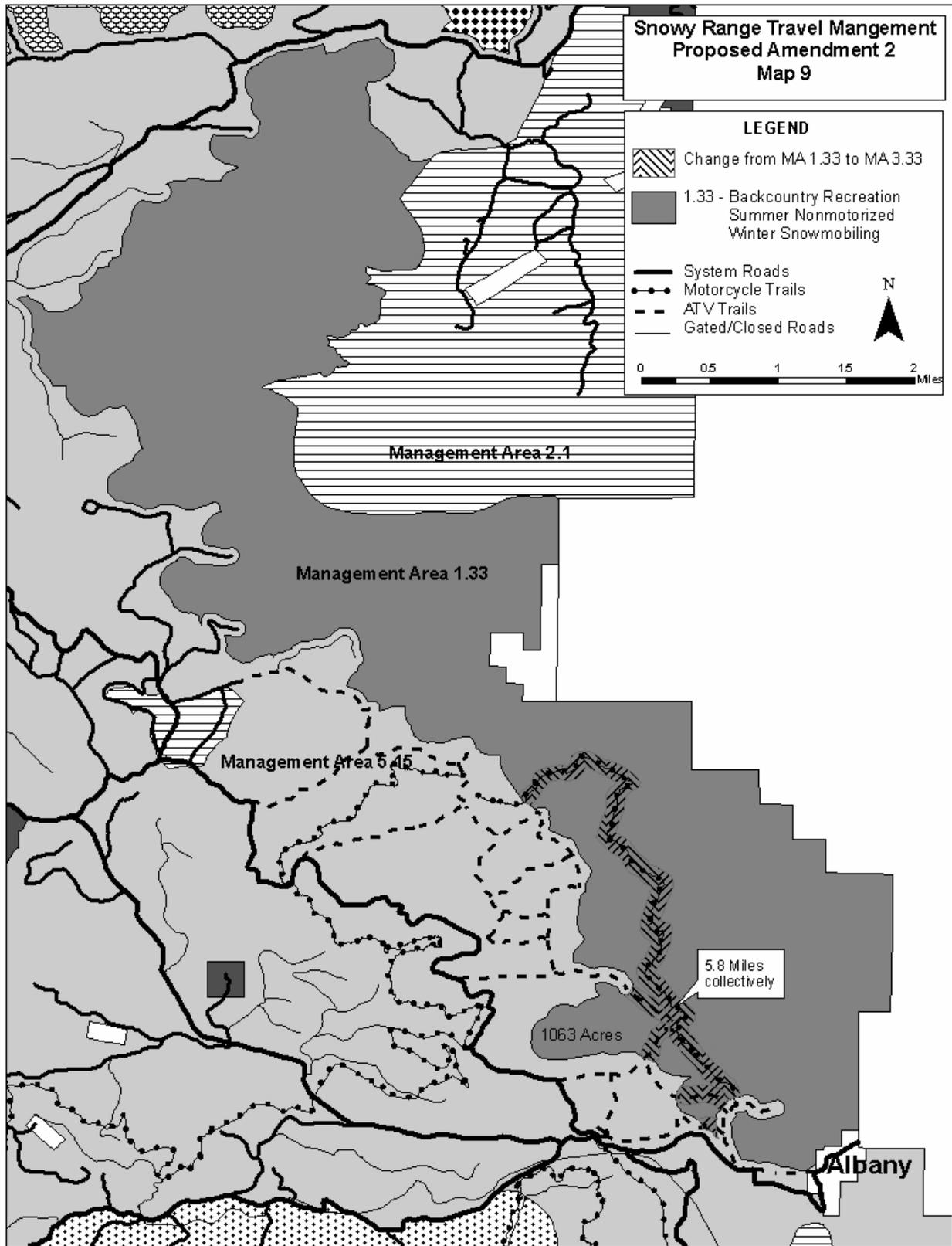
1. Timing. When the change in the Forest Plan would take place relative to the planning period and scheduled revisions of the plan.
2. Location and Size. Location and size of the area affected compared to the size of the National Forest.
3. Goals, Objectives, and Outputs. How, or to what degree, the amendment would affect the long-term relationship between levels of goods and services projected by the Forest Plan.
4. Management Prescription. Whether the change would apply only to a specific situation or to future situations across the National Forest.

## Proposed Amendments to Management Area Prescriptions

### 1. Timing

If Alternative 2 is selected for implementation, the proposed amendments would take place following issuance of a Decision Notice and Finding of No Significant Impact for this EA. Thus, the change in Management Area prescriptions (from MAs 1.31 and 1.33 to MA 3.31) would occur roughly 3 years after the 2003 Revised Medicine Bow National Forest Plan. This change would remain in effect until the next Forest Plan Revision which is expected some time between 2013 and 2018.





**2. Location and Size**

**Management Area 1.31 – Backcountry Recreation, Year-round Nonmotorized:** As previously mentioned, this MA lies between the Foxborough private land inholding and the Platte River Wilderness Area (see Map 8). The MA contains 6,346 acres and is located within two Forest Plan Geographic Areas (GAs): Platte River and Lower Douglas Creek. The Lower Douglas Creek GA contains 5,846 acres of MA 1.31 and the Lower Douglas Creek GA contains 500 acres of MA 1.31. The proposed amendment would directly affect roughly 233 acres of MA 1.31 in the Lower Douglas Creek GA and 0 acres of MA 1.31 in the Platte River GA. The Lower Douglas Creek GA Strategy #2 states, “Develop a motorized trail system” (p. 3-72). Thus, the proposed amendment would not conflict with Forest Plan direction for this GA.

Table 8 displays the total acres in the Lower Douglas Creek and Platte River GAs. It also displays the number of acres in the analysis area and across the entire Medicine Bow National Forest. Finally, it depicts the acres of MA 1.31 within each GA and the percent of total acres in MA 1.31 for each affected area.

**Table 8: MA 1.31 Acres and Percentages**

Affected Area	Total Acres	MA 1.31 Acres	Percent of Total Acres in MA 1.31
Lower Douglas Creek GA	101,910	5,846	5.7
Platte River GA	59,955	500	0.8
Analysis Area	289,782	10,566	3.7
Medicine Bow NF	1,084,390	63,087	5.8

Table 9 displays the number of acres by GA, analysis area, and Medicine Bow NF that would be directly affected by a change from MA 1.31 to MA 3.33. Table 9 also displays the number of acres that could be indirectly affected by the Management Area prescription change. Areas that could be indirectly affected include a 473 acre area of MA 1.31 northeast of the 0.8 mile trail segment and a 596 acre area of MA 1.31 north of the 2.4 mile trail segment (see Map 8). There is a potential that the authorization of the motorized trail segments could affect the primitive nature of these smaller areas, rendering their nonmotorized prescription ineffective. Finally, Table 9 depicts the acres of MA 1.31 remaining following an amendment and the percent change for each area. Both direct and indirect effects are displayed.

**Table 9: Change from Management Area 1.31 to Management Area 3.33 by Affected Area**

Affected Area	MA 1.31 Acres	Acres Directly Affected	Acres Indirectly Affected	Acres Remaining (Direct/Indirect Effects)	Percent Change (Direct/Indirect Effects)
Lower Douglas Creek GA	5,846	233	1,069	5,613 / 4,544	-4 / -23
Platte River GA	500	0	0	500 / 500	0 / 0
Analysis Area	10,566	233	1,069	10,333 / 9,264	-2.3 / -12.6
Medicine Bow NF	63,087	233	1,069	62,854 / 61,758	-0.4 / -2.1

The direct and indirect effects of changing MA prescriptions from 1.31 to 3.33 could have potentially localized impacts within the Lower Douglas Creek GA. For example, nonmotorized users could be displaced or use could be shifted. The direct change is expected to be relatively small

(4% decrease), particularly when considering that the MA is adjacent to the Platte River Wilderness Area. This Wilderness area encompasses 37,699 semi-primitive nonmotorized acres. The indirect effects, on the other hand, could potentially be more far reaching. However, when considering that Alternative 2 proposes to close 2.7 miles of NFSRs that are currently within the MA 1.31 boundary (see Map 8), there would technically be only a 0.5 increase in motorized miles within this area. Thus, the proposed road closures could potentially off-set any negative impacts that may arise from authorizing the motorized trail segments.

**Management Area 1.33 – Backcountry Recreation, Summer Nonmotorized with Winter Snowmobiling:** This MA lies northwest of Albany and is located within the Middle Fork GA. The Middle Fork GA contains 35,352 acres, 9,346 acres of which are located within MA 1.33. The amendment proposed under Alternative 2 would directly affect 422.5 acres of MA 1.33 within the Middle Fork GA. Forest Plan management direction would not prohibit the designation of a motorized trail in this GA (pg. 3-75).

Table 10 displays the total acres in the Middle Fork GA. It also displays the number of acres in the analysis area and across the entire Medicine Bow National Forest. Finally, it depicts the acres of MA 1.33 within the Middle Fork GA and the percent of total acres in MA 1.33 for each affected area.

**Table 10: MA 1.33 Acres and Percentages**

Affected Area	Total Acres	MA 1.33 Acres	Percent of Total Acres in MA 1.33
Middle Fork GA	35,352	9,346	26.4
Analysis Area	289,782	18,456.2	6.4
Medicine Bow NF	1,084,390	64,561	6

Table 11 displays the number of acres by GA, analysis area, and Medicine Bow NF that would be directly affected by a change from MA 1.33 to MA 3.31. It also displays the number of acres that could be indirectly affected by the Management Area prescription change. The area that could be indirectly affected includes a 1,063 acre area west of the proposed motorcycle trail (see Map 9). There is a potential that the authorization of both the motorcycle and ATV trail segments could affect the primitive nature of this smaller area, rendering its nonmotorized prescription ineffective. Finally, Table 11 depicts the acres of MA 1.33 remaining following an amendment and the percent change for each area. Both direct and indirect effects are displayed.

**Table 11: Change from Management Area 1.33 to Management Area 3.31 by Affected Area**

Area Affected	MA. 1.33 Acres	Acres Directly Affected	Acres Indirectly Affected	MA 1.33 Acres Remaining (Direct / Indirect Effects)	Percent Change (Direct / Indirect Effects)
Middle Fork GA	9,346	422.5	1,063	8,923.5 / 8,283	-4.5 / -11.4
Analysis Area	18,456.2	422.5	1,063	18,033.7 / 17,393.2	-2.3 / -5.8
Medicine Bow NF	64,561	422.5	1,063	64,138.5 / 63,498	-0.7 / -1.6

The direct and indirect effects described under the proposed MA 1.31 amendment would be similar under the proposed MA 1.33 amendment (i.e., nonmotorized users could be displaced or use could be shifted). While the direct change is expected to be relatively small (4.5%), indirect effects could potentially be more far reaching.

### **3. Goals, Objectives, and Outputs**

Supplemental Table S-1 of the Forest Plan lists the summary of key land allocations (management area prescriptions) for the 10-year planning horizon (2003 – 2013) (Forest Plan pg. H-3). This table indicates that 63,067 acres of MA 1.31 and 64,561 acres of MA 1.33 are projected for retention during the planning period. Tables 9 and 11 show that the proposed amendments would directly reduce the amount of acres in each MA by less than one percent Forest-wide. Indirect effects would be somewhat larger with a 2.1 percent and a 1.6 percent decrease in MAs 1.31 and 1.33, respectively. These decreases are relatively small; thus, it is believed that the Forest would continue to provide sufficient nonmotorized recreation opportunities.

Table S-2 of the Forest Plan lists activities and outputs anticipated during the planning horizon. This table does not include an “estimated levels and times of implementation” category for dispersed recreation, including motorized recreation. However, when the impacts of the proposed amendment are applied to other categories, impacts would be negligible to nonexistent. For example, the trails are located away from riparian and wetland areas; consequently, soil, water, and fisheries outputs would not be impacted. Further, the trails are already in place; therefore, outputs for trail construction/reconstruction would not be impacted. No other outputs listed in the S-2 table would be affected by the proposed amendment.

### **4. Management Prescriptions**

The change in Management Area prescriptions from 1.31 to 3.33 would apply to the Lower Douglas Creek GA only and would not set a precedent for future decisions. The same would be true of changing Management Area prescription 1.33 to 3.31 in the Middle Fork GA. Although the changes could result in localized impacts to forest users, they are not expected to affect the overall multiple-use balance across the Forest. Despite the proposed amendments, adequate opportunities for both motorized and nonmotorized forest users would remain.

## **Findings and Conclusions**

The analysis above documents the significance of the proposed Forest Plan amendment as it relates to timing; location and size; goals, objectives, and outputs; and Management Prescriptions. Both direct and indirect impacts were considered. As identified above, there would be a 0.4 percent direct decrease in MA 1.31 acres and a 0.7 percent decrease in MA 1.33 acres Forest-wide with the potential for a 2.2 percent indirect decrease in MA 1.31 acres and a 1.6 percent indirect decrease in MA 1.33 acres Forest-wide. These decreases would not constitute a significant amendment to the Medicine Bow National Forest Plan (2003). In addition, the change in Management Area prescriptions is not expected to appreciably alter the long-term relationship between levels of goods and services projected by the Forest Plan. Therefore, when considering these factors, the proposed Forest Plan amendments would be non-significant.

## **AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

These two sections have been combined to better display the affected environment and the environmental consequences of the resources that could potentially be affected by project implementation. The affected environment consists of various resources and uses within the analysis area. These resources are described in alphabetical order: Botany, Economics, Engineering, Fire and Fuels, Fisheries, Heritage Resources, Hydrology, Law Enforcement, Recreation, Soils and Geology, Timber Management, and Wildlife.

The information displayed in the remainder of this section includes excerpts from various resource specialist reports that were completed for the Snowy Range Travel Management – East Side of the Snowies project. The affected environment (or existing condition) for each resource is described first and establishes a baseline for comparing the alternatives. The second part of each resource section describes the analysis of environmental effects (or consequences) of the Proposed Action and the alternatives on that resource. Complete copies of these reports are available for public review at 2468 Jackson Street, Laramie, Wyoming 82070.

### **Analysis Assumptions for the Proposed Action and Alternative 2: Expanded Motorized Trail System**

Gauging public support and compliance with new rules and regulations is not an exact science; therefore, some assumptions had to be made in order to conduct meaningful analyses. The following is a list of assumptions utilized by the interdisciplinary team (ID Team) assigned to this project for the Proposed Action and Alternative 2.

1. In the future, fewer analysis area acres would be impacted by motorized users because ATV and motorcycle use would be concentrated onto a designated trail system.
2. Providing a designated trail system to meet the current demand for motorized recreation would slow the creation of additional unauthorized routes.
3. Compliance with existing transportation regulations would improve because a designated trail system for ATVs and motorcycles would be provided.
4. Illegal use on administratively closed routes would continue to occur; however, such use would decrease by approximately 50 percent since authorized opportunities would be available.
5. The Forest Service would be better able to promptly close new unauthorized routes that emerge as well as enforce violations of off-system motorized travel.
6. A substantial set of unauthorized routes would be identified for closure. While the intent is that motorized travel would no longer occur on unauthorized roads, the actual closure process can more accurately be described as follows:
  - After a formal decision, unauthorized roads would be administratively closed, meaning that the use of those roads and trails would not be allowed and would be enforceable.
  - Trail markers and trail numbering that previously authorized temporary motorized travel on unauthorized routes would be removed in the first year. Removal of the markers and numbers would indicate that motorized travel is no longer allowed on these routes.
  - In problem areas where motorized travel is expected to continue on unauthorized routes or where resource damage necessitates it, new signing may be erected indicating that the route is closed.
  - As time, money, and manager discretion allows, some of the unauthorized roads and trails would be mechanically closed on the ground (barriers placed, rip and recontour the road

base, re-seed, etc.) to discourage/prohibit all vehicular travel. These mechanical closures would be implemented over time, in a prioritized order, particularly where resource damage is occurring and sensitive wildlife habitats are being affected.

- A majority of unauthorized roads and trails would close naturally over time through vegetation succession, enforcement, and compliance.

## A. Botany

### Affected Environment

#### **Proposed, Endangered, Threatened & Sensitive Species (PETS)**

The Snowy Range Travel Management analysis area has no known occurrences or potential habitat for plant species formally listed or officially proposed under the Federal Endangered Species Act (USFWS 2004, Keinath *et al.* 2003, Fertig *et al.* 1994). There are, however, 88 plant species listed on the 2005 Region 2 sensitive plant species list (Riordan 2005), 38 of which are known, likely (biologically or geographically), or suspected to occur on the Medicine Bow National Forest. Of those 38 species, 11 are not likely to occur within or near the analysis area. Therefore, they were dropped from further consideration. Of the remaining 27 species, 25 were dropped from further consideration because adequate surveys were conducted to determine that they were absent from areas influenced by the project proposal. The two species analyzed in detail for this proposal are *Botrychium lineare* (slender moonwort) and *Penstemon laricifolius* (larchleaf beardtongue).

#### **Species of Local Concern (SLC)**

SLC are species that are documented or suspected to be at risk at a forest-wide scale, but do not meet the criteria for regional Sensitive Species designation because they are reasonably secure within parts of their range within Region 2. Species at the edge of their range may not merit regional Sensitive Species status, but may be important elements of biological diversity for the Forest/Grassland unit (from R2 Planning Desk Guide Chapter 27: Selection of Sensitive Species, Species of Local Concern, and MIS in R2). Species of local concern are identified during revision of individual Land and Resource Management Plans.

One SLC, *Juncus filiformis* (thread rush), was located within the analysis area boundary near Douglas Creek. Thread rush is a circumboreal species ranging from Alaska to southern Greenland, south to Pennsylvania, Michigan, southern Wyoming, northeast Utah, and Oregon. In Wyoming, it is known from outside Region 2 on the Yellowstone Plateau and in Jackson Hole in Park and Teton Counties. On the Medicine Bow NF, one other occurrence of thread rush has been documented on the Sierra Madre range (Chumley *et al.* 1998).

#### **Survey Intensity**

Surveys designed to detect the presence of PETS and SLC with identified habitat (Nelson 1985) were conducted within and adjacent to potential habitat in areas influenced by project proposals. Field surveys specific to this project were conducted between May and July, 2004 and between August and September, 2005. With the exception of slender moonwort, surveys were completed at the time of year and at intensity levels that would have allowed populations of all PETS and SLC to be detected had they been present in the analysis area. Slender moonwort is a small ephemeral species that may not appear above the ground every year; therefore, it is possible that populations of slender moonwort could go undetected during surveys.

## Environmental Consequences

### ALTERNATIVE 1: No Action

#### Direct and Indirect Effects

***Slender Moonwort (PETS):*** Closing unauthorized routes to motorized use would reduce impacts to potential habitat for slender moonwort. However, potential habitat would continue to be affected by existing roads and road maintenance activities within the analysis area. Assuming presence, road maintenance operations could negatively affect slender moonwort individuals and habitat, including the mycorrhizal relationships of early gametophytes which occur below the ground. Roots, stems, leaf primordia, and fern-like structures which occur above the surface could also be affected by road maintenance operations (Vizgirdas 2001b). When the ground is the wettest during spring and early summer, ground disturbing activities within occupied sites would have the greatest potential to threaten slender moonwort habitat and its developing gametophytes.

Noxious weed invasions often occur on roadsides when seeds are transported to areas where habitats are disturbed. If a noxious weed invasion occurred within occupied habitat, individuals or whole populations of slender moonwort and/or other sensitive species could be indirectly lost as a result of the change in plant community and resulting competition. However, control of noxious weeds and invasive species along roadsides would continue at current levels under the No Action alternative. Control efforts would help reduce the potential for noxious weed or invasive species invasions. The Forest Service has cooperative agreements with the counties for the control of noxious weeds and invasive species.

***Larchleaf Beardtongue (PETS):*** Potential habitat provided for larchleaf beardtongue would continue to be affected by existing roads and road maintenance activities within the analysis area. Within mountain shrub or limber pine habitat at 6,300 to 7,800 feet in elevation, road maintenance on open roads on calcareous soils could continue to affect individuals and populations of larchleaf beardtongue. Within the analysis area, roughly 0.6 miles of NFSRs could be impacted.

Indirect impacts from noxious weed or invasive species invasions would be similar to those described for slender moonwort.

***Thread Rush (SLC):*** There would be no impacts to thread rush from implementation of the No Action alternative. However, existing roads and road maintenance would continue to affect habitat for species of local concern provided by fens and wetlands. Indirect impacts from noxious weed or invasive species invasions would be similar to those described for slender moonwort.

### PROPOSED ACTION

#### Direct and Indirect Effects

***Slender Moonwort (PETS):*** Roughly 10 percent of the new construction actions included in the Proposed Action would occur in the habitats where slender moonwort is most likely to occur. However, closing unauthorized routes to motorized use and converting existing roads to single track trails would reduce effects to potential habitat for slender moonwort. Assuming presence, impacts from road maintenance operations on existing NFSRs would be similar to those described under the No Action alternative.

The inactive gravel pit near the intersection of NFSRs 500 and 305, which is being proposed for a trailhead, currently has Dalmation toadflax (*Linaria dalmatica*), a Wyoming noxious weed. Cheatgrass (*Bromus tectorum*) also occurs within this area. Including weed treatment for this area before using it as a trailhead and maintaining it in a weed-free condition would protect sensitive species habitat. Including onsite review before ripping roads in habitats infested with cheatgrass would also allow for identification and treatment before spreading occurs. Requiring machinery to be cleaned before it is used on NFS lands would further eliminate the transport of weed/invasive species from off-site. Please refer to the discussion under the No Action alternative for more information regarding noxious weed and invasive species impacts to slender moonwort.

**Larchleaf Beardtongue (PETS):** Trail construction activities would not occur in habitats where larchleaf beardtongue is most likely to occur; therefore, no impacts are expected from trail construction. Closing unauthorized routes to motorized use and converting existing roads to single track trails would reduce effects to potential habitat for this species. Further, including onsite review before ripping roads located in calcareous soils within mountain shrub or limber pine habitat at 6,300 to 7,800 feet in elevation would allow for elimination or reduction of impacts to larchleaf beardtongue.

Indirect impacts to larchleaf beardtongue from noxious weeds and invasive species are similar to those described under slender moonwort.

**Thread Rush (SLC):** Motorcycle trail construction is proposed near, or at, the occurrence of thread rush and could directly disturb the occurrence. If not constructed directly on top of the occurrence, sediment from the construction could influence the vigor and reproduction of the population. By including botany review at the time of trail construction, impacts could be avoided or reduced through trail placement and design.

Indirect impacts to thread rush from noxious weeds and invasive species are similar to those described under slender moonwort.

### ***ALTERNATIVE 2: Expanded Motorized Trail System***

**Slender Moonwort (PETS):** Environmental impacts would be similar to those described under the Proposed Action in most respects. A primary difference is the proposal to designate a motorcycle trail segment in the Middle Fork IRA. This trail segment crosses three areas identified as having characteristics of riparian, wetlands, and potential fens.

**Larchleaf Beardtongue (PETS):** Environmental impacts would be similar to those described under the Proposed Action in most respects. See the explanation of the difference under Slender Moonwort.

**Thread Rush (SLC):** Trail construction is not proposed near identified occurrences of this species; therefore, no direct impacts are expected. However, as described above, the unauthorized motorcycle segment in the Middle Fork IRA, proposed for designation, does cross areas identified as having characteristics of riparian, wetlands, and potential fens.

Indirect impacts to thread rush from noxious weeds and invasive species are similar to those described under the Proposed Action's slender moonwort discussion.

## ***CUMULATIVE EFFECTS – ALL ALTERNATIVES***

***Slender Moonwort (PETS), Larchleaf Beardtongue (PETS), and Thread Rush (SLC):*** Habitat requirements for these species are not well understood; therefore, habitat trend cannot be established (Beatty et al. 2003). There is not enough data to conclude if populations are increasing, decreasing, or remaining stable throughout Region 2. However, since being listed, additional populations have been located which represents an increase in total populations.

Policies, standards, and guidelines that limit effects to moonwort habitat are in place; therefore, cumulative effects are not expected to contribute to any change in status or viability. Further, cumulative effects are not expected to contribute to an increase in any current or predicted downward trend in population numbers or density or to current or predicted downward trends in habitat capability. Activities that have the potential to cumulatively impact these species include livestock grazing, noxious weed infestations, dispersed recreation, road management, fire suppression, fire, and operational activities (e.g., timber harvest).

## ***BIOLOGICAL DETERMINATIONS***

Table 12 displays the biological determinations by alternative.

**Table 12: Botanical Biological Determinations by Alternative**

Common Name	Status	Determination		
		Alternative 1 No Action	Proposed Action	Alternative 2 Expanded Motorized Trail System
Slender moonwort	Sensitive	MAII*	MAII	MAII
Larchleaf beardtongue	Sensitive	MAII	MAII	MAII
Thread rush	Local concern	No Loss of Species Viability	No Loss of Species Viability	No Loss of Species Viability

\*May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area nor cause a trend toward federal listing or a loss of species viability range wide.

### **Rationale**

The rationale for the above determinations is as follows:

#### **Slender Moonwort:**

- Survey efforts were put forth to detect slender moonwort in the analysis area. No populations were found as a result of that field reconnaissance, minimizing the risk that populations could become negatively affected by the proposed activities.
- This finding is based on the assumption that light to moderate disturbances resulting from activities both create and maintain suitable habitat for this species. Slender moonwort has demonstrated its ability to colonize past disturbance areas (Beatty et al. 2003). It is also assumed that this species would also be able to colonize past disturbance areas.
- Any occurrences of slender moonwort in the analysis area would represent new occurrences.

- The management requirements and design features included in this project, and for other management actions that might pose cumulative effects to occurrences (assuming presence), would provide for adjustments to retain occurrences.

### **Larchleaf Beardtongue:**

- Survey efforts in 2005 indicate that larchleaf beardtongue is much more abundant than previously documented; however, it was not found to occur in newly disturbed areas.
- The management requirements and design features included in this project, and for other management actions that might pose cumulative effects to occurrences (assuming presence), would provide for adjustments to retain occurrences.

### **Thread Rush:**

- The management requirements and design features included in this project, and for other management actions that might pose cumulative effects to occurrences (assuming presence), would provide for adjustments to retain occurrences.

## ***FOREST PLAN CONSISTENCY***

All alternatives would be consistent with standards and guidelines the Medicine Bow Forest Plan Direction (pg. 1-32).

## **B. Economics**

### **Affected Environment**

#### **Road Decommissioning**

The cost associated with road decommissioning varies greatly and is dependent on the method of closure used. For example, the cost of felling trees or placing rocks to prevent access is much less expensive than reestablishing natural drainage patterns and stream channels (recontouring). Data for Region 2 (Rocky Mountain Region) indicates that the average cost per mile for road decommissioning is \$1,126.00 per mile (1995 – 2002). This figure primarily reflects very light decommissioning activities (e.g., scarifying and seeding, signing, and blocking entrances) that are being used around the region.

The majority of roads in this analysis area would require one or more of the light decommissioning activities to effectively close them. Some roads, however, would require more extensive decommissioning activities (e.g., recontouring) because they are on steep slopes. These roads would require drainage structures, such as waterbars and drain dips, which would exceed the \$1,126.00 per mile average.

#### **Road Maintenance**

Costs associated with road maintenance include expenditures in the repair or upkeep of a road necessary to retain the roads approved traffic level. Local roads, which constitute the majority of roads within the analysis area, are generally assigned to maintenance level 2. These roads are open for use by high clearance vehicles and are not maintained for passenger vehicles.

The estimated average cost of maintaining level 2 roads is \$250.00 to \$350.00 per mile depending on factors such as location, grade, and vegetation. The planned maintenance for level 2 roads on the Medicine Bow National Forest is a rotating schedule that requires that each road be maintained once every 5 years.

### Environmental Consequences

Estimated costs are projected for the Proposed Action and Alternative 2 only because they involve trail construction and decommissioning activities. Although the No Action alternative would include road maintenance costs, these costs are factored into the annual budget for engineering and do not represent additional expenditures.

#### Motorized Trail Construction

Table 13 identifies the estimated costs associated with each action alternative.

**Table 13: Activities and Costs by Action Alternative**

Activity	Proposed Action	Alternative 2
Signing (includes materials)	\$15,500	\$16,000
Initial Maintenance*	22,500	27,000
Site Specific Heavy Maintenance**	30,000	30,000
5 Points Meadow***	22,000	22,000
New Trail Construction	108,500	110,000
Bridge at Douglas Creek	35,000	0
Trail Decommissioning	760	320
Road Decommissioning	4,880	3,715
<b>TOTAL IMPLEMENTATION COST</b>	<b>\$239,140</b>	<b>\$209,035</b>

\*Initial maintenance includes work on currently unauthorized trails to be converted to system trails. This work may include minor brushing to meet clearing specifications, improvement of drainage structures, construction of additional drainage structures (if needed), and improvements to structures that may exist at stream crossings.

\*\*This item is for construction or reconstruction of structures such as minor bridges, puncheons, turnpikes, etc. needed to improve trail/stream crossings on unauthorized trails converted to system trails.

\*\*\*This item is for rehabilitation, relocation, and improvements to stream crossing structures that exist on the currently unauthorized trail segments in a meadow at the termini of NFSR 501.

#### Trail Maintenance

Trail maintenance involves routing or periodic repair of existing trails or trail segments to restore them to the standards or conditions to which they were originally designed and build. It does not change the original purpose, intent, or function of the trail. Maintenance activities would include:

- **Brushing** – Removing excess vegetation from within the parameters of the width of the trail. This is accomplished using chain saws, pruning shears, and a brush harrow which is pulled behind an ATV.
- **Grooming** – Filling small ruts on trail treads with outside berm material and removing sluff material which collects along the inside of the trail tread. The sluff is also used to fill ruts on the trail tread. In most cases, this is accomplished using hand-scraping tools. In severe cases, a Sweco trail tractor is used for sluff placement and berm build-up.

- **Signing** – Replacement, repair, and installation of trail etiquette, trail difficulty, trail use, trail name, and trail direction signs.

The estimated average cost for maintenance of a motorized trail is \$432/mile. However this cost depends on factors such as trail use, location, soil type, steepness of grade, and vegetation and would be difficult to determine at this time.

### **Trail Decommissioning**

Costs associated with decommissioning trails vary with the method used and trail type (motorcycle or ATV). They also depend on location, soil type, and steepness of the terrain. Many single track motorcycle trails can be effectively closed by simply scattering slash along the trail; however, others would require rehabilitation of drainage structures, recontouring, etc. ATV trail are considerably wider and may require methods similar to road decommissioning.

## **C. Engineering**

### **Affected Environment**

On some portions of the analysis area that were previously managed as open to cross-country motor vehicle travel, repeated motorized use has resulted in unplanned, user-created roads and trails. User-created routes generally developed without agency authorization, environmental analysis, or public involvement and do not have the same status as NFS roads and trails included in the forest transportation system. Nevertheless, some user-created routes are well-situated, provide excellent opportunities for outdoor recreation by motorized and non-motorized users, and would enhance the system of designated routes and areas. Other user-created routes are poorly located and cause unacceptable impacts. Responsible officials have been working with user groups and others to identify those user-created routes that, based on the criteria for designation of roads, trails and areas, should be considered for designation (Draft- FSM 7700 –Travel Management 7703.21 Designating Roads, Trails, and Areas).

Travel regulation changes that went into effect on October 16, 2000 restricted motorized vehicles to designated routes. The decision also approved temporary use of specified unauthorized roads and trails until site-specific travel management analyses were completed to determine their status. This analysis and resulting decision will make those determinations.

Currently, motorized users are restricted to designated roads; thus, they must comply with state regulations of being licensed drivers. Consequently, there are no routes in the analysis area where unlicensed operators can legally operate their ORVs.

Unauthorized roads not incorporated into the ORV trail system should be decommissioned as per Forest Service Manual 7703.25, which gives direction for road decommissioning: Use travel analysis (FSM 7712) to identify roads no longer needed for the use and management of NFS lands and roads that can be converted to trails, to identify restoration needs, and to establish decommissioning priorities. Unauthorized roads, temporary roads, and any NFS roads no longer needed for the use and management of NFS lands should be decommissioned.

The term “decommissioning” can mean a variety of activities including: reestablishing natural drainage patterns and stream channels (recontouring), ripping the soil and planting vegetation on the road bed, blocking the entrance to a road, and posting signs. The costs of decommissioning can vary greatly, as identified in the Economics section, and are dependent on the method of closure used.

### **Forest Transportation System (FTS)**

All National Forest System Roads (NFSRs) within the analysis area are classified in the Forest Service’s transportation database by service, maintenance levels, surface types, and functional class. A definition of the functional classes and miles of road within each class is identified below. Appendix B contains a list of all road types, both authorized and unauthorized, within the analysis area.

**Arterial Roads** - Arterial roads are major forest roads that provide primary access to forest land and forest road networks. They are typically characterized by a smooth running surface (paved or gravel), good driver sight distance, fairly gentle grades, and good drainage. Since these roads receive the highest vehicle use, they require more maintenance than other forest roads. These roads are maintained for safe, convenient, and smooth travel suitable for passenger cars; they also provide drainage and erosion control. The analysis area contains approximately **92.3 miles** of arterial roads open to motorized travel.

**Collector Roads** - Forest collector roads serve as connectors between major (arterial) roads and lower class (local) roads that access small areas such as timber harvest units or trailheads. Collector roads may or may not have gravel surfacing but generally have good grades, alignment, and drainage. Most of these roads are maintained for safe and convenient travel and are suitable for passenger cars; they, too, provide drainage and erosion control. The analysis area contains approximately **157.02 miles** of collector roads open to motorized travel.

**Local Roads** - Local roads are the terminal roads of the NFSRs. They terminate in smaller resource areas and are usually constructed for a single resource activity, such as a timber harvest. Many local roads are closed (gated) to motorized travel following construction to reduce impacts on other resources, such as wildlife. Some local roads provide access to popular recreation areas and are open to motorized traffic. Local roads are the lowest class of NFSRs and are typically located and designed to follow existing land contours. They are characterized by narrow widths, moderate to steep grades, and primitive or native surfaces. Local roads remaining open for recreational use may have improvements such as aggregate surfacing and improved alignments and grades. Local roads are typically low speed, single lane, and have turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. These roads are generally maintained for use by high clearance vehicles.

All system roads proposed for conversion to motorized trails (motorcycle and ATV) in this analysis fall into this category. The analysis area contains approximately **390.6 miles** of local roads open to motorized travel. It also contains approximately **149.5 miles** of local roads that are closed (gated) to motorized travel.

**Unauthorized Roads and ORV Trails** - Unauthorized roads and trails on NFS lands are routes that are not managed as part of the forest transportation system. These include unplanned roads,

abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail. They also include those roads that were once under permit or other authorization and were not decommissioned upon the termination of the authorization (36 CFR 212.1, FSM 7705 - Transportation System). Finally, unauthorized roads include roads that are “user created,” having been established by a user or groups of users for recreation, mining, firewood gathering etc. Unauthorized routes can have a significant impact on area resources. The analysis area contains approximately **262.0 miles** of unauthorized roads, **70.8 miles** of unauthorized motorcycle trails, and **25 miles** of unauthorized ATV trails.

## Environmental Consequences

### *ALTERNATIVE 1 – No Action*

**Direct and Indirect Effects:** Implementation on the No Action alternative would administratively close all unauthorized routes, thereby restricting all forms of motorized use, including Off-road Vehicles (ORVs), to system roads. Wyoming State Law requires that all ORVs operating on “Public Roads” be licensed, insured, and be operated by licensed drivers. As such, it would be illegal for unlicensed ORV drivers to operate on the Forest.

Opportunities for analyzing and funding unauthorized routes for future decommissioning would be limited to site specific projects such as timber sales. These projects are generally small in scope and are scattered throughout the District. Many areas may never have projects occur in them and would require, when funding would permit, a specific road decommissioning project. Transportation system related budgets have been decreasing dramatically in the past few years, and these funds may be difficult to obtain.

Travel management would continue to be difficult. As previously mentioned, the District contains approximately 262 unauthorized roads and 95.8 miles of unauthorized trails, many of which would remain physically accessible for years to come. Consequently, enforcement would become very expensive, both monetarily and via resource degradation.

Unauthorized roads and trails are often used by non-motorized users, such as horseback riders, mountain bikers, and hikers. Physically closing these routes, as would the other alternative in this analysis, would minimize areas where users can access. The No Action alternative would allow these routes to physically exist, at least until a site specific analysis for each specific area is completed.

**Cumulative Effects:** Past and ongoing timber sales in the analysis area have designated many unauthorized roads in the sale areas for decommissioning. The Collins Creek Timber Sale, which is currently being harvested, has 10.1 miles of unauthorized roads listed for decommissioning while the Devils Gate timber sale identifies 3.7 miles of unauthorized roads for decommissioning. The actual closing of these roads would be accomplished as the timber sale is completed and would be funded using KV<sup>6</sup> funds. Decommissioning mileages from these two sales are reflected in total miles of unauthorized roads proposed for closure, as identified in Table 4 (EA pg. 32). These roads would be decommissioned when the sales are completed regardless of this analysis.

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<sup>6</sup> Funds deposited by timber sale purchasers to the Federal Treasury. These funds are available for wildlife and fisheries, timber, soil, air, and watershed restoration and enhancement projects.

New specified roads associated with the abovementioned timber sales would be added to the system, thus increasing the demand for maintenance funding. These roads are not usually closed to motorized vehicles after the sale is complete. This includes 0.7 miles of road in the Collins Creek timber sale and 3.3 miles of road in the Devils Gate timber sale.

While there are unauthorized and system roads in the Silver Run Timber Sale analysis area, no road decommissioning was authorized in the Environmental Assessment for the sale. Planners were aware of this analysis and deferred the assessment of the decommissioning candidates in the sale area to the Travel Management – Eastern Snowy Range analysis. Consequently, with the selection of the No Action alternative, many roads that meet the criteria for decommissioning would continue to exist until other funding opportunities become available.

The Medicine Bow Bicycle Trail is a “rails to trails” project that is converting a 23 mile segment of an abandoned railbed into a non-motorized bicycle trail. The rails and ties have been removed from the railbed for a number of years, and many ORV riders have been using the railbed illegally to access areas adjacent to the railbed (the railbed was closed to motorized use by a closure order signed on June 3, 2003). While most segments of the railbed run parallel to a service road, which is more challenging for ORVs, many riders have preferred using the smooth railbed despite the closure order. The loss of these 23 miles of trail has had a significant cumulative effect on ORV use in the analysis area.

The provisions of Executive Order 11644-Use of Off-road Vehicles on Public Lands, state that “each respective agency head shall develop and issue regulations and administrative instructions to provide for administrative designation of the specific areas and trails on public land on which the use of off-road vehicles may be permitted and areas in which the use of off-road vehicle may not be permitted.” The Order also requires that “ORV trails are well marked and provide for the publication and distribution of information, including maps, describing areas and trails and explaining the conditions on vehicle use.” While the Motorized Vehicle Use Map (MVUM) mentioned in the Order would benefit the ORV user by describing the areas legal to ride, the selection of the No Action alternative would restrict motorized vehicles (licensed drivers and registered vehicles) to NFSRs show as open on the MVUM.

The Order would close many miles of unauthorized routes throughout the analysis area. Unauthorized roads and trails currently being used by ORV enthusiasts exist in the northern segment of the analysis area; these routes would be closed to motorized travel. There have been many timber sales in this area in the past and many areas have been closed to motorized vehicle for years (mitigation for wildlife). Consequently, there are few roads open to motorized travel in the area north of State Highway 130.

Unauthorized roads and trails are often used by non-motorized users, such as horseback riders, mountain bikers, and hikers. Since the No Action alternative would not physically close these roads, this alternative could be viewed as benefiting non-motorized users.

### ***PROPOSED ACTION***

**Direct and Indirect Effects:** All roads and motorized trails designated as part of the forest transportation system would be available to licensed ORV operators. Non-licensed ORV drivers would be able to drive on the motorized trails.

The Proposed Action does not propose the designation of motorized trails in non-motorized management prescription areas or in inventoried roadless areas. This was accomplished by re-routing sections of trail by using existing unauthorized roads or constructing new segments of trail and proposing fewer trail miles. These re-routes would require the construction of 6.2 miles of new ATV trail and 15.5 miles of new motorcycle trail. Under Alternative 2, 5.6 miles of ATV trails and 16.4 miles of motorcycle trails would be constructed.

The Proposed Action would convert more unauthorized roads to motorcycle trails, more system roads to motorcycle trails, and would require building a bridge over Douglas Creek. The Proposed Action would also close more unauthorized routes than Alternative 2 (see Table 4, EA pg. 32). Some local user groups have indicated that many of the unauthorized trails that are not included as part of the Proposed Action are some of the best sections both for riding and sight-seeing in the entire trail (unauthorized) system. Consequently, many of the experiences sought by these motorized users would be lost.

Industry estimates for ATV sales in the United States for 2006 (854,107 sales) indicated a 3 percent increase over 2005 sales (829,230 sales). Consequently, rider education would be critical. First time buyers accounted for 31 percent of ATV sales in the United States in 2004. Historically, this indicator was running at 40 percent, but in recent years indications are that more owners may be trading in for larger replacement machines (Powersports Business and Motorcycle Industry Council).

With the introduction and promotion of an ORV trail system on the Laramie Ranger District, coupled with the already-increasing popularity of ORVs, it is highly likely that the District would continue to witness dramatic increases in overall ORV use. It is anticipated that much of this use would occur on the proposed trail system, but exactly how much is impossible to predict. For planning purposes, it can be safely assumed that at least 50 percent of all ORV users on the Laramie Ranger District would seek out the new trail system, putting annual use at 40,000 visits per year, increasing to over 70,000 visits per year by 2010 (Blackman, pers. comm.. 2006).

It is also anticipated that, when quality trails are built, riders will use them. When riders use properly constructed trails, environmental impacts can be minimized, monitored, and controlled. No amount of restriction or enforcement can begin to provide the environmental protection achieved through the provision of adequate facilities and rider education (e.g., Off-Highway Motorcycle & ATV Trails Guidelines for Design, Construction, Maintenance and user Satisfaction).

This alternative would enhance enforcement of regulations regarding off-road travel. The availability of an ORV trail system map would provide a clear description of the legal (system) motorized trails and facilities in the area. This map, along with proper signing (at trailheads and along routes), would give the ORV operators clear guidance on where they can legally operate their ORV. By providing an authorized trail system for ATV's and motorcycles, compliance with travel management regulations is expected to improve; local law enforcement officials indicate 80 percent compliance when the rules are posted and visitors are aware of them (Orde/Blackman, pers. comm. 2006).

Based on the results of the project decision, many of the unauthorized routes not designated as part of the FTS would be mechanically closed to discourage/prohibit motorized travel. The priority for these closures would be determined by resource concerns; particularly where resource damage is occurring or sensitive wildlife habitats are being affected. Many of the unauthorized roads and trails in the analysis area would close naturally over time through vegetation succession, enforcement, and compliance.

Furnishing the opportunity to ride on system trails should minimize the future construction of unauthorized (illegal) trails. Further, the Forest Service would be authorized to promptly close new illegal routes as they are detected. After a final decision, unauthorized roads and trails that were previously specified as temporarily open to motorized use (October 2000 decision) would be closed, meaning that the use of those routes by motorized vehicles would no longer be allowed and would be enforceable. Road number signs currently allowing motorized use on unauthorized roads would be removed during the first field season. Closing the unauthorized routes and removing their signs could increase safety concerns because of the consolidation of ATV and motorcycle users on the designated motorized trail system.

Currently many non-registered ORVs are driven on the Forest, and many riders are not licensed operators; consequently, accidents with highway vehicles do occur. Implementing and managing an ORV trail system may result in less automobile /ORV related accidents. Offering a trail system would provide new, inexperienced operators with a safe place to learn.

During the analysis process, we discovered that two NFSRs (a 2.1 mile segment of NFSR 504 and a 0.6 mile section of 504.A) encroach on a non-motorized Management Area Prescription Area (MA1.31) (See Map 8, EA pg. 40). Implementation of the Proposed Action would close these roads.

Unauthorized roads and trails are often used by non-motorized users, such as horseback riders, mountain biker and hikers. Depending on the closure method, physically closing these routes could minimize areas that these users can use and access.

**Cumulative Effects:** Watershed improvements in the proposed Devils Gate timber sale include decommissioning NFSR 512.G and rehabilitating drainage problems on roads used in past timber sales that are causing erosion problems. These improvements would have a positive impact on the area. NFSR 512.G is currently a very rough four-wheel drive road that has many stream and riparian crossings, many of which are in poor condition. Several unauthorized user-created trails and roads are accessed by NFSR 512.G, including 512.G.01, 512.G.02, 512.G.03, 512.G.04, 512.G.05 as well as many unmapped and un-inventoried routes. Decommissioning (physically closing) NFSR 512.G would significantly limit ORV access into a relatively large block of forest.

New specified roads constructed for timber harvesting would be added to the system thereby increasing demand for maintenance funding. These roads are not usually closed to motorized vehicle use after the sale is complete.

Several proposed trail segments have the potential to be impacted by future timber sales in the Devils Gate, Spruce Gulch, and Somber Hill areas. Timber and recreation planners would need to make a reasonable effort to protect this resource. Trails may have to be relocated or temporarily closed during timber harvest activities (Blue Ribbon Magazine, Multiple Use Trail Crisis 1989). An additional publication, “Blue Ribbon Coalition Acceptability Index for Timber Harvest Activities that may Impact Trailbike Trails” rates the acceptability of various timber harvest activities on trailbike trails. Timber harvest plans may have to be altered to minimize impacts to the trails.

Past and ongoing timber sales in the analysis area have designated many unauthorized roads in the sale areas for decommissioning. The Collins Creek Timber Sale, which is currently being harvested, has 10.1 miles of unauthorized roads listed for decommissioning while the Devils Gate timber sale identifies 3.7 miles of unauthorized roads for decommissioning. The actual closing of these roads would be accomplished as the timber sale is completed and would be funded using KV funds.

Decommissioning mileages from these two sales are reflected in total miles of unauthorized roads proposed for closure, as identified in Table 4 (EA pg. 32). These roads would be decommissioned after completion of these sales regardless of this analysis.

See the discussion above for the Medicine Bow Bicycle Trail (“rails to trails”) project (No Action – Cumulative Effects).

The action alternatives would close many miles of unauthorized routes throughout the analysis area while designating an ORV trail system in the south and central portion of the analysis area. Unauthorized roads and trails that currently exist in the northern segment of the analysis area would be closed to motorized travel. There have been many timber sales in this area in the past and many areas have been closed to motorized vehicle for years (mitigation for wildlife). These closures, along with the proposed road closures in the action alternatives, would limit the availability of “legal” motorized trails in a large portion of the analysis area.

Unauthorized roads and trails are often used by non-motorized users, such as horseback riders, mountain bikers, and hikers. Depending on the closure method, physically closing these routes could minimize areas these forest visitors can use and access.

The provisions of Executive Order 11644-Use of Off-road Vehicles on Public Lands, state that “each respective agency head shall develop and issue regulations and administrative instructions, to provide for administrative designation of the specific areas and trails on public land on which the use of off-road vehicles may be permitted and areas in which the use of off-road vehicle may not be permitted.” The action alternatives are in compliance with this order.

The Order also requires that “ORV trails are well marked and provide for the publication and distribution of information, including maps, describing areas and trails and explaining the conditions on vehicle use.” The Motorized Vehicle Use map mentioned in the Order would benefit the ORV user by describing the routes where motorized use is legal.

### ***ALTERNATIVE 2: Expanded Motorized Trail System***

**Direct and Indirect Effects:** Many of the effects described under the Proposed Action would apply to Alternative 2. Primary differences between the two alternatives include: 1) Alternative 2 proposes motorized trail segments in the Middle Fork inventoried roadless area and in two nonmotorized management area prescriptions (MAs 1.31. and 1.33); and 2) Alternative 2 proposes roughly 30 percent more ATV trail miles than the Proposed Action. The additional ATV mileage, coupled with the proposal to designate a popular motorcycle trail segment in the Middle Fork inventoried roadless area, would help to off-set the loss of other trail segments proposed for closure due to resource and management concerns.

**Cumulative Effects:** Please refer to the cumulative effects discussion described under the Proposed Action.

### ***FOREST PLAN CONSISTENCY***

The No Action alternative does not comply with the Purpose and Need for the Proposal and would not implement Forest-wide Goals, Objectives, and Strategies for the Forest Transportation System. Goal 4, Objective 3 (Forest Plan page 1-12) states, “Within 10 years, implement Phase II of the

October 16, 2000 Forest Supervisor Forest-wide travel Management Decision which is to complete site-specific travel management analyses to decide the future status of the Forest Transportation System.”

The Proposed Action is consistent with Forest-wide direction set forth in the Forest Plan for engineering (pgs. 1-59 and 1-60).

Implementation of Alternative 2 would require a site-specific Forest Plan amendment to comply with Transportation Standard # 1 in Management Area 1.31 – Backcountry Recreation, Year-round Nonmotorized (pg. 2-13). A Forest Plan amendment would also be required to comply with Infrastructure Standard # 1 in Management Area 1.33 – Backcountry Recreation, Summer Nonmotorized with Winter Snowmobiling (pg. 2-15). Both Forest Plan standards prohibit summer motorized uses in these Management Areas.

## D. Fire and Fuels

### Affected Environment

The most important concern for fire suppression is that resources are able to access areas that may become threatened due to wildfires in a reasonable amount of time to ensure that fires do not escape initial attack efforts. Typical initial attack procedures include Type 6 engines, hand crews, mechanical equipment such as dozers, aerial delivered resources such as helitac crews, fire retardant/water delivery from fixed wing aircraft, and helicopters. The combination of these resources allows for excellent suppression capabilities in the entire analysis area.

Currently there are no issues with respect to fire suppression access within the project area. The ability for fire suppression crews and personnel to access any location within the project area is relatively easy due to the existing road system. Historically, fire suppression efforts on the Snowy Range have been very successful due in part to the number of roads and trails. However, there are some remote areas, particularly within the designated Wilderness areas; even those areas are no more than a 2 hour hike for firefighters.

With the exception of the Savage Run Wilderness Area, Platte River Wilderness Area, and Sheep Mountain Wildlife Refuge, travel management regulations are waived for fire fighting personnel during actual fire suppression operations. Consequently, any change in current or future travel management restrictions and the subsequent closure or opening of roads or trails would have no significant effect on fire suppression activities.

### Environmental Consequences

#### *ALL ALTERNATIVES*

**Direct and Indirect Effects:** None of the alternatives would have a significant effect on fire suppression efforts. This is due to the fact that travel management restrictions are waived during fire suppression operations except in designated Wilderness areas and within the Sheep Mountain Wildlife Refuge. In those areas, the Forest Supervisor can allow emergency use of aerial delivered

suppression resources if needed. Regardless of which alternative is selected, there would be no adverse effects on fire suppression activities.

### ***FOREST PLAN CONSISTENCY***

All alternatives would comply with Forest Plan direction related to Disturbance Processes, including fire and fuel treatment (pgs. 1-48 to 1-49).

## **E. Fisheries**

### **Affected Environment**

This section of the EA deals specifically with fish species; amphibians and their habitats are mentioned only briefly since suitable amphibian habitat also provides supporting habitat for fish. The wildlife section of the EA (pg. 105) analyzes and evaluates amphibian species in detail.

The analysis area houses headwaters, tributaries, and mainstems to the North Platte, Little Laramie, and the Laramie Rivers. These waterways eventually drain into the Platte River system about 100 miles downstream. A good share of the analysis area is interspersed with seasonal and perennial wetlands associated with the intermittent and perennial stream corridors. National Wetland Inventory mapping (USDI FWS, various dates) indicate most are riverine wetlands associated with stream bottoms and side drainages of analysis area perennial streams. These riparian and wetland corridors and their associated streams provide good habitat for fish and amphibians.

Riverine and marshy wetland areas provide potential habitat for amphibians, including wood frogs, leopard frogs, and boreal toads (Forest Service sensitive species). Wyoming Natural Diversity Database (WYNND 2004) and NRIS Fauna database provide information on amphibian occurrences. These sources indicate that wood frogs are relatively common and well-distributed across the analysis area. Boreal toads are also known to exist across the analysis area, primarily in the west-central portion of the Snowy Range Mountains. However, the species has seen a severe population decline since the 1970s. The analysis area further supports a great deal of suitable habitat for leopard frogs. Unfortunately no historic or recent occurrence documentation exists as they are generally found in lower elevations that are primarily on private property. Baxter and Stone (1985) provide historic distribution maps for all three species across Wyoming, including the Medicine Bow National Forest.

Some of the larger creek drainages associated with the river systems mentioned above, like Douglas Creek and Rock Creek, along with many others, are highly frequented sport fisheries of regional importance for brook, brown, and rainbow trout. Where they exist, they also provide habitat for native fish such as longnose dace, longnose suckers, and white suckers. The analysis area also includes a number of irrigation reservoirs, as well as relic glacial lakes that have been managed and stocked for years with sport fish. This has made them excellent recreational destination points.

**Fish Habitat and Populations:** Fish habitat exists in all analysis area streams that have sufficient water. Roughly 500 adult fish per mile is considered an established threshold for a stable reproducing population (Personal Communication, WGFD 2001). Prior and current drought ramifications provide limited habitat availability and population status uncertainty to certain portions of some streams. However, stream sampling completed by WGFD and Forest Service fisheries

personnel (between 1980 and 1997) indicate that population trends in most area streams are either stable or increasing.

Many of the mainstem creek drainages and their tributary streams were extensively tie hack logged and driven during the late 1800s through the early 1900s (Young et al. 1994). Some, like Douglas Creek, experienced heavy historic mining pressure which, in some reaches, continues into the present. Consequently, these streams, their floodplains, and associated wetlands are still in a state of recovery (i.e., trying to reestablish natural channel morphology and complexity). Many of the tie driven streams in the analysis area are straight stream courses that lack sufficient pools and large woody debris. These problems are chronic and are expected to continue for many years. Therefore, suitable buffers for stream corridors, riparian zones, and wetlands must be utilized and protected, particularly when evaluating the continuance of existing, or proposing new, road and trail systems. There are no native threatened, endangered or sensitive fish species within the project analysis area.

**Management Indicator Species (MIS)<sup>7</sup>:** The Forest Plan (2003) lists brook, brown, and rainbow trout (“common trout species”) as potential aquatic MIS. MIS were used to assess impacts to species from changes in water quality as it relates to sediment loads, dissolved oxygen, and a macro-invertebrate prey base.

The analysis area contains strong MIS populations. Although year-to-year variance is likely to create error in any hard population estimates, the apparent trend over four decades of sampling is strong, stable populations of wild common trout. Most stream populations fall well within the range of estimates for moderate to strong populations in the affected watersheds, across the Snowy Range as a whole, and give no cause for concern for recruitment at the local level in wild populations of common trout.

**Region 2 Sensitive Species:** The analysis area does not contain any Region 2 sensitive fish species. Historic and occupied habitats for Yellowstone cutthroat trout and Colorado River cutthroat trout are located outside the analysis area in the Columbia and Snake River basins (Behnke 1992). Further, of the four native sensitive fish species (mountain suckers, flannelmouth suckers, hornyhead chub, and plains minnow), neither they nor their native habitats are present in the analysis area or immediately affected watersheds.

**Federally Listed Species:** There are no federally listed aquatic species within the analysis area. However, certain species native to the Platte River mainstem (downstream species) that are not normally classified as aquatic were included in the analysis because they are riparian-dependent species. These include the whooping crane, bald eagle, piping plover, pallid sturgeon, least tern, Eskimo curlew, and Western prairie fringed orchid.

## Environmental Consequences

### *ALTERNATIVE 1 – No Action*

**Direct and Indirect Effects:** The administrative closures of all unauthorized routes that are currently posted as temporarily open to motorized use should, by attrition, receive substantially less traffic. Many of these unauthorized routes contribute eroded sediment to streams either through connectivity or by

<sup>7</sup> MIS are selected because changes in their populations indicate the effects of management activities on the species community as a whole.

motorized vehicles going through the streams. Many also run through riparian/wetland areas, thus degrading vegetation that holds back and filters surface run-off. Less use on these routes would result in a reduction of riparian/wetland damage and sediment loading in streams. Ultimately, the No Action alternative would provide beneficial impacts to aquatic species and their habitat.

Riparian vegetation in degraded areas would be re-established over time and would eventually cover bare soils. This, in turn, would reduce the potential for sediment loading of streams, curb erosion, and provide increased streamside shade of watercourses. Increased streamside shade would minimize water temperature increases that could be harmful to aquatic species.

**MIS:** MIS populations would remain strong and relatively unchanged.

**Region 2 Sensitive Species:** No direct or indirect effects on local or downstream sensitive species or their habitats are expected.

**Federally Listed Species:** There are no federally listed aquatic species within the analysis area. Therefore, no direct or indirect effects on local or downstream listed species are expected.

**Cumulative Effects:** Cumulative effects with respect to fish habitats and populations would continue for a period of time from past timber harvests, road construction, motorized use, and various forms of recreational activities. The administrative closure and active enforcement of laws and regulations would increase the time necessary for recovery of degraded areas. This reduction in recovery time should have a beneficial effect on aquatic species and their associated habitat.

## ***PROPOSED ACTION***

**Direct and Indirect Effects:** Streambanks and riparian vegetation in floodplains and wetlands would remain in essentially their current condition through the use of protective buffers and guidelines stated in the design and mitigation criteria (Appendix A). There could be some additional sediment movement following certain road and trail closure operations; however, movement should stabilize and streambanks should re-vegetate within 2-3 years. These actions would reduce stream connectivity and stream sediment loading in the long-term. The same would hold true for areas of trail construction. However, field reconnaissance indicated that proposed trail construction appears to be well out of riparian/wetland areas in the uplands on the Forest. There are a few stream crossings required, but design and mitigation criteria have been established to limit and lessen the degree of possible impacts. Already degraded areas would recover faster by implementing road and trail closures and by providing a designated and manageable ORV trail system which eventually would be maintained on a regular basis. It is reasonable to assume this project would provide a beneficial effect to National Forest System lands on the Laramie Ranger District.

Most perennial streams in the analysis area continue to support stable reproducing “common trout” populations. It is likely that trout populations would continue to persist where they exist under the Proposed Action or Alternative 2. Increased sediment deposition from road/trail closures and ORV trail construction could increase for the first couple of years following project implementation. This could minimally affect the survivability of both fish and amphibian egg and larval stages, but aquatic habitat conditions for fish and amphibians should be maintained at current or better levels following road/trail closures and trail construction provided BMPs, WCPs, and prescribed mitigation are implemented.

**MIS:** Activities specified in the Proposed Action are appropriate as a means to correct deficiencies in the Forest Transportation System. As a by-product of this alternative, needed road and watershed improvements would be implemented, such as improved maintenance and the establishment of a designated trail system for ATVs and motorcycles.

Environmental effects relative to tree removal on aquatic or riparian-dependent resources during trail construction are expected to have a low degree of impact. This is due to the limited amount of tree removal and trail construction, along with the protection provided by the use of BMPs, WCPs, and Forest Plan standards and guidelines. The Forest-wide trend for common trout species, especially brook trout, is for strong, naturally reproducing, and expanding populations. In some situations brook trout are actually displacing or replacing other common trout species. Certain waters provide exceptional habitat for brown trout and, where that occurs, are also showing increasing numbers. Rainbow trout populations are still highly dependent on stocking efforts and fishing pressure. Given the absence of identifiable adverse past effects, the low degree of effect concerning extraordinary circumstances, and the existing strong status of brook, brown, and rainbow trout, there is no concern for adverse impacts on the viability of these species on the planning unit (Medicine Bow National Forest).

**Region 2 Sensitive Species:** There are no naturally occurring Forest Service listed sensitive fish species within the analysis area; therefore, it is unlikely that there would be any direct impacts to sensitive fish or their habitats.

Indirect impacts from loss of shading, ground vegetation, cover, and stream channel damage could occur from poorly designed road and trail closures and construction of the designated motorcycle/ATV trails. There is also the possibility of catastrophic precipitation or snow melt run-off events that exceed the protective limits of BMP and WCP buffers. These events could cause sediment loading to aquatic systems which could affect dissolved oxygen utilization for all life stages of fish. However, project monitoring by aquatics personnel should help preclude this from happening. Monitoring could provide corrective action before damage to species or habitats occurred.

Based on the information provided above, the Proposed Action *may adversely impact individuals, but is not likely to result in a loss of viability of the planning area, nor cause a trend to federal listing or a loss of species viability range or Forest-wide.*

**Federally Listed Species:** There are no federally listed aquatic species within the analysis area. Therefore, no direct or indirect effects on local or downstream listed species are expected.

**Cumulative Effects:** Riparian/wetland ecosystems would remain in essentially their same condition. Historic tie-hack logging impacts in most riparian areas and stream channels would continue to heal incrementally as dead trees fall in the riparian corridor or enter the stream channel thus allowing high stream flows during run-off to access the floodplain. The closing of unnecessary unauthorized roads and trails should maximize upland re-vegetation as well as increase willows and other native riparian shrubs that have been historically impacted by these routes. These closures would also help stabilize stream channels and banks, reduce stream connectivity and sediment loading, while at the same time providing for a manageable road/trail system on the District. Specified buffer distances set forth in BMPs, WCPs, and design and mitigation criteria should be sufficient to protect TES and aquatic MIS species in and around riparian/wetlands areas and aquatic systems. Closing unauthorized roads and trails should reduce existing cumulative effect risks with respect to fish and amphibian habitat quality and quantity and assure the reconnection linkage corridors between aquatic habitats.

Future timber harvests would occur in certain portions of the analysis area. However, the use of BMPs for forestry and watershed conservation practices, along with Forest Plan standards and guidelines, should help provide the needed protection of streams and riparian/wetland areas for aquatic life including riparian dependent species and their associated habitats. Sediment deposition could possibly be a factor following a catastrophic rain or snow melt event, but most streams in the analysis area have continued to support stable populations of common trout. Therefore, it is likely that these trout populations would persist where they exist under this alternative.

The Proposed Action would not result in cumulative effects on federally listed species or their habitats. All downstream-listed species, with the exception of bald eagle, are not known or suspected to occur within the analysis area. Suitable habitat is located over 100 miles downstream from the analysis area. Temporary local water quality changes (e.g. sediment) would not impact downstream habitats. Local sediment increases to analysis area streams would be mitigated by the use of BMPs and WCPs. Trail design and mitigation criteria would prohibit activities within 100 feet of streams or riparian/wetland areas except for stream crossings. Forest standards and guidelines would increase this distance to 300 feet when there are known TES species in the analysis area. These buffer zones would protect sediment transport or loss of suitable habitat for species under normal environmental situations. If sediment cannot reach streams or riparian/wetland habitats locally, it is assumed that downstream waters and habitats would be protected.

### ***ALTERNATIVE 2 – Expanded Motorized Trail System***

**Direct and Indirect Effects:** The effects of Alternative 2 would be slightly greater than those described under the Proposed Action. Increased effects would be due to fewer road/trail closures (16.1 miles less than the Proposed Action) and 0.3 more miles of trail construction.

**MIS, Region 2 Sensitive Species, and Federally Listed Species:** Please refer to the discussions provided under the Proposed Action.

**Cumulative Effects:** Cumulative effects associated with Alternative 2 would be slightly greater than those described under the Proposed Action. Increased effects would be due to fewer road/trail closures (16.1 miles less than the Proposed Action) and 0.3 more miles of trail construction. Even with this marginal fluctuation, cumulatively either action alternative would provide a beneficial effect on Forest resources from the current recreational road/trail regime or program.

### ***FOREST PLAN CONSISTENCY***

The Proposed Action and Alternative 2 are consistent with the Purpose and Need for the proposal and with Forest Plan goals, guidelines, and standards related to aquatic resources (pgs. 1-28 to 1-30 and pgs. 1-41 to 1-44). The No Action alternative is not consistent with Forest Plan direction to protect wetland and riparian areas and does not meet the Purpose and Need for the proposal.

### ***CONSISTENCY WITH OTHER LAWS AND REGULATIONS***

Both action alternatives would comply with the *Wetlands/Floodplains Executive Orders (11988 and 11990)* and the *Clean Water Act* provided project implementation adheres to BMPs, WCPs, and Forest Plan standards and guidelines as they pertain to aquatic resources.

## F. Heritage Resources

### Affected Environment

A 100 percent surface inventory for heritage resources was carried out during the summers of 2004 and 2006. The 2004 inventory was performed by Centennial Archaeology, Inc under contract with the Laramie District of the Medicine Bow National Forest. The 2006 inventory was carried out by seasonal employees hired by the Laramie District. All areas proposed for motorized trail construction were surveyed using 30 meter transects. Sites were identified and recorded on Wyoming Cultural Records Forms. Determinations of National Register eligibility are made through consultation with the Wyoming State Historic Preservation Office.

Collectively, 36 heritage sites were identified during the archaeological inventory conducted for this proposed project. All of the sites are related either to mining or timber harvesting. One site also has a small prehistoric component. However, none of the sites identified during the inventory are eligible to the National Register of Historic Places. One previously recorded site has been determined eligible to the National Register. This site would be avoided by the proposed project.

### Environmental Consequences

#### *ALTERNATIVE 1 – No Action*

**Direct and Indirect Effects:** Implementation of the No Action alternative would have no impact on heritage resources, particularly since motorized trail construction would not occur. Vandalism to existing sites could be reduced as a result of administratively closing all unauthorized routes.

#### *PROPOSED ACTION and ALTERNATIVE 2 – Expanded Motorized Trail System*

**Direct and Indirect Effects:** Some trail segments proposed for construction, as well as those proposed for designation to the forest transportation system, run through the middle of several heritage sites; each of these could possibly be impacted by vandalism. However, since all of these sites are not eligible to the National Register, any vandalism would constitute a no adverse effect. The Wyoming State Historic Preservation Office (SHPO) has concurred with this determination (SHPO letter dated April 25, 2007).

#### *FOREST PLAN CONSISTENCY*

The construction of motorized ATV and motorcycle trails would comply with the heritage resources standards and guidelines in the Medicine Bow National Forest Plan (page 1-51).

## G. Hydrology

### Affected Environment

The analysis area is located in the North Platte River basin which is tributary to the Platte River. This area includes the headwaters, and portions of the headwaters, of the North Platte, Little Laramie, and

Laramie Rivers. Cumulative effects for the analysis area are analyzed primarily at the 5<sup>th</sup> level Hydrologic Unit Code (HUC) Watersheds<sup>8</sup>. There are two exceptions; Cottonwood Creek and Savage Run Creek watersheds are analyzed instead of the larger French Creek 5<sup>th</sup> level watershed. No activities are proposed in the French Creek watershed and using the entire 5<sup>th</sup> code HUC (French, Cottonwood, and Savage Run watersheds combined) would have diluted the effects on these two smaller watersheds. The names and sizes of all watersheds within the analysis area are displayed below in Table 14.

**Water Quality Standards:** The analysis area’s perennial streams and adjacent wetlands, outside of wilderness, are designated as Class 2AB - Fisheries and Drinking Waters. Class 2AB waters are high quality surface waters known to support or have the potential to support populations of game fish and/or drinking water supplies. Intermittent streams in this area are classified by the State of Wyoming as Class 3B if no fisheries are thought to be present. These waters support beneficial uses of aquatic life other than fish, recreation, wildlife, agriculture, and scenic value (WYDEQ, 2001).

**Table 14: Watersheds in the Analysis Area**

HUC	Watershed Name	Total Acres	Acres in Analysis Area
1018000201	Douglas Creek	155,644	120,059
101800020201	Cottonwood / Savage Run	22,340	22,340
1018000402	Rock Creek	179,032	29,631
1018001002	Squirrel Ck	150,855	49,465
1018001004	Harney Creek	203,515	13,398
1018001006	Little Laramie River	235,340	76,476
1018001008	Cooper Ck	120,173	6,039
1018001007	Onemile Creek	304,351	5,291
TOTAL		1,371,250	322,699*

\* The acres depicted in Table 12 are greater than those shown in Tables 1 and 2 (EA pages 12 and 15, respectively) because watershed boundaries are used rather than Geographic Area or Management Area boundaries. Some of the watershed boundaries overlap onto the Brush Creek-Hayden Ranger District and had to be included for cumulative effects purposes. This is true of the remaining tables in the Hydrology section (Tables 14 - 22).

In Wyoming, the surface waters within wilderness areas and the mainstem of the North Platte River above Sage Creek (south of Saratoga) to the Colorado Border are designated as Class 1 Outstanding Waters. The State of Wyoming requires that the water quality existing at the time of designation be maintained and protected (WYDEQ, 2001). Within the analysis area, the Savage Run Wilderness contains several tributaries of the North Platte River, including Cottonwood Creek, Savage Run Creek, and portions of Mullen Creek. The Platte River Wilderness includes lower Douglas Creek and several tributaries.

The State of Wyoming 305(b) “State Water Quality Assessment Report and 2006 303(d) list of Waters Requiring TMDLs” (WYDEQ 2006) is the most current water quality assessment. The 303(d) list does not identify any impaired water bodies within the analysis area.

<sup>8</sup> The HUC is the interagency watershed code for these watersheds.

Several of the streams in the project have been evaluated by the WYDEQ and found to support beneficial uses. These streams include Smith North Creek, French Creek, Upper Rock Creek, Upper Medicine Bow River, and Upper Little Laramie River.

**Assessment Methods:** Watershed conditions and stream health were assessed using both office generated statistics and field stream surveys. Upland watershed conditions were assessed primarily using Forest Service data pertaining to roads, both authorized and unauthorized. Road surveys were completed for several roads in this area in 2002 (USDA Forest Service. 2003c).

Stream health was determined by evaluating upland watershed conditions and stream channel condition. Stream channel conditions were determined primarily from field information. Stream surveys were completed during the 1999 (Snook, 1997, 1999) and the 2002 and 2003 field seasons (Purchase, 2003). The Pfankuch Stream Channel Stability method was used, with the stream condition ratings as modified by Rosgen channel type (Rosgen, 1996).

Both field and office assessments focused on sediment since that is the primary effect roads have on stream channels. Riparian conditions and effects from roads were estimated by determining total road density and the proximity of roads to wetlands and riparian areas. These parameters are considered to be the primary stream health components affected by past management and that could be potentially affected by the proposed project.

**Upland Watershed Conditions:** Roads have been estimated to produce 85 to 90 percent of the sediment reaching streams in a forested watershed (Burroughs 1990). Road ditches can also intercept subsurface flow, can extend stream networks, and can increase peak flows (Wemple et al 1996). Effects of roads were estimated by calculating road density and miles of roads near streams and wetlands for each watershed.

All roads (including closed and decommissioned roads) were used to calculate the existing road density (Table 15). Observations indicate that closed and decommissioned roads often continue to produce sediment unless work is done to improve drainage and to re-vegetate the road. Field information from road surveys was also used to determine areas of known sediment delivery to streams (USDA Forest Service 2003c).

**Table 15: Road Density by Watershed (within the project area)\***

Watershed Name	Watershed Area in Project Area (acres)	Miles of Road	Road Density (mi./sq. mi)
Douglas Creek	120,059	593.4	3.2
Cottonwood / Savage Run Creeks	22,340	26.7	0.8
Rock Creek	29,631	72.5	1.6
Squirrel Ck	49,465	317.7	4.1
Harney Creek	13,398	9.2	0.4
Little Laramie River	76,476	247.8	2.1
Cooper Ck	6,039	17.8	1.9
Onemile Creek	5,291	17.7	2.1
<b>TOTAL</b>	<b>322,699</b>	<b>1,302.8</b>	<b>2.03 (avg)</b>

\*Includes all system roads (including closed/decommissioned roads) and unauthorized routes.

Road densities vary from less than ½ mile per square mile in the Harney Creek watershed to more than 4 miles per square mile in the Squirrel Creek watershed. Cottonwood/Savage Run Creeks and Rock Creek both have relatively low road densities due to wilderness and roadless areas. Douglas Creek and Squirrel Creek have higher road densities as they have had more past forest management activities as well as a higher number of unauthorized routes.

The majority of roads within the project area tend to be narrow with a native surface. Only the main arterial roads are constructed with ditches. Ditches often reduce the risk of a road increasing peak flows by extending the stream drainage network. However, many roads have rills or road surface erosion and are contributing sediment to the area creeks.

**Stream Channel Conditions:** Stream channels in the Devils Gate (Douglas Watershed) and the Silver Run timber sale areas (Libby Creek and N. Fork Little Laramie) were surveyed for this analysis (Purchase, 2003, Snook 1997, 1999). The majority of streams appear to be in good condition; there are, however, some areas exhibiting an increase in fine sediments due primarily to roads and cattle grazing, with occasional impacts from historical mining.

Streams in the area have a history of tie driving (Young et al, 1994). Woody debris was removed from the channels to facilitate the movement of the ties, and the stream channels now have a uniform appearance. They also tend to be wider with less pools and woody debris than expected. Douglas Creek has perhaps the longest history of tie driving. Despite these effects, the stream supports a blue ribbon trout fishery and supports all beneficial uses. Current effects on Douglas Creek include recreational suction dredging and flow regulation from Rob Roy Reservoir.

## Environmental Consequences

### *ALTERNATIVE 1 – No Action*

**Direct and Indirect Effects:** There would be no direct or indirect effects on existing sediment or riparian areas as there would be no ground disturbing activities associated with this alternative. However, resource impacts from unauthorized use on administratively closed routes would likely continue due to the high ORV use in this area, the lack of physical closures to prohibit motorized access on the routes, and limited law enforcement availability. Tables 16 and 17 depict the miles of unauthorized routes that would continue to deliver fine sediments to area streams and wetland areas.

**Table 16: Existing Road and Trail Miles within 300 Feet of Streams\***

Watershed	Total Route Miles	NFSRs within 300' of Streams	Unauthorized Routes within 300' of Streams	Total Routes within 300' of Streams
Douglas Creek	593.4	318.7	153	471.7
Cottonwood/Savage Run Creeks	26.7	21.7	1.6	23.3
Rock Creek	72.5	13.7	5.9	19.6
Squirrel Creek	317.7	143.7	51.1	194.8
Harney Creek	9.2	5.5	3.7	9.2
Little Laramie River	247.8	88.8	55.9	144.7
Cooper Creek	17.8	0.9	4.8	5.7
Onemile Creek	17.7	2.1	1	3.1
<b>TOTAL</b>	<b>1,302.8</b>	<b>595.1</b>	<b>277</b>	<b>872.1</b>

\* Includes all roads and motorized trails, including closed, decommissioned, and unauthorized routes.

**Table 17: Existing Road and Trail Miles within 300 Feet of Wetlands\***

Watershed	Total Route Miles	NFSRs within 300' of Wetlands	Unauthorized Routes within 300' of Wetlands	Total Routes within 300' of Wetlands
Douglas Creek	593.4	105.4	59.9	165.3
Cottonwood/Savage Run Creeks	26.7	3.3	0.7	4
Rock Creek	72.5	7.6	3.8	11.4
Squirrel Creek	317.7	28.7	15.1	43.8
Harney Creek	9.2	0	0	0
Little Laramie River	247.8	32.2	10.7	42.9
Cooper Creek	17.8	0.6	1.4	2
Onemile Creek	17.7	0.9	0.1	1
<b>TOTAL</b>	<b>1,302.8</b>	<b>178.7</b>	<b>91.7</b>	<b>270.4</b>

\* Includes all roads and motorized trails, including closed, decommissioned, and unauthorized routes.

**Cumulative Effects:** The following information pertains to projects within the analysis area that could be affected by the Snowy Range Travel Management analysis:

The West Beaver and Platte River AMP decision (AMP) would either maintain or slightly reduce the amount of bank trampling by cattle within the AMP area. This potential improvement would likely result in slowly decreasing fine sediment levels and increasing stream bank stability in localized areas.

The Devils Gate and Collins Creek Timber Sale projects would have localized increases in sediment delivery to streams from road construction and reconstruction. Sediment levels would decrease from the road decommissioning included in those projects.

The Silver Run Timber Sale and Foxborough Fuels projects would have localized sediment increases from road construction/reconstruction and temporary road construction in the Little Laramie and Squirrel Creek watersheds, respectively.

The Snowy Range Ski and Recreation Area project would locally increase sediment and have localized impacts on wetlands largely from the expanded parking area. Best management practices would reduce these impacts.

While all of these projects would have localized effects, there would be no measurable change in stream or wetland conditions under the No Action alternative.

## ***PROPOSED ACTION***

### ***Effects from Sediment***

#### **Direct and Indirect Effects from Individual Activities:**

**Road Closures:** Road closures include activities such as ripping, water bars, and other work. These activities may result in minor short-term increases in sediment deliver to nearby stream channels.

After roads re-vegetate, and with improved drainage where needed, road closures would reduce sediment delivery to streams over the long-term.

**Converting Roads to ATV/motorcycle trails:** Converting system and unauthorized roads to ATV trails would not likely alter the roads significantly. Roads converted to ATV and motorcycle trails would tend to decrease sediment delivery due to the narrower track.

**Trail Construction:** ATV trail construction would increase sediment delivery to nearby streams, especially at stream crossings. Motorcycle trail construction would create minimal sediment locally at stream crossings. Measures to reduce sediment from trail construction are listed in Appendix A.

Table 18 depicts changes in road/trail miles within 300 feet of streams for the Proposed Action. Table 19 depicts road and trail density by watershed that would exist following implementation of both the Proposed Action and Alternative 2.

**Table 18: Proposed Action - Change in Road and Trail Miles within 300 Feet of Streams**

Watershed Name	Unauthorized Routes to be Closed	System Roads to be Closed	System Roads Converted to ATV Trails	Unauthorized Routes Converted to System Roads / Trails	Trail Construction ATV / Motorcycle	Change in Roads / Trails*
Douglas Creek	109.1	2.0	15.3	66.0	2.3 / 10.6	- 96.2
Cottonwood / Savage Run	0.6	0	0	1.0	0	- 0.6
Rock Creek	6.3	0	0	0	0	- 6.3
Squirrel Creek	47.4	0.7	0	3.8	0	- 48.4
Harney Creek	3.8	0	0	0	0	- 3.8
Little Laramie River	43.9	0	1.8	12.7	2.6 / 0.6	- 40.7
Cooper Creek	4.7	0	0	0	0	- 4.7
Onemile Creek	1.0	0	0	0	0	- 1.0
<b>TOTAL</b>	<b>216.8</b>	<b>2.7</b>	<b>17.1</b>	<b>83.5</b>	<b>4.9 / 11.2</b>	<b>-201.7</b>

\* Numbers in this column were generated by adding miles of unauthorized routes and system roads to be closed and subtracting trail construction mileage. Route conversions were not factored into this equation because they currently exist and would continue to do so.

**Table 19: Road and Motorized Trail Density by Watershed – Proposed Action / Alternative 2**

Watershed Name	Total Watershed Acres	Existing Road Density	Proposed Action		Alternative 2 – Expanded Motorized Trail System	
			Miles of Road / Trails	Road / Trail Density (mi./sq. mi)	Miles of Road / Trails	Road / Trail Density (mi./sq. mi)
Douglas Creek	120,059	3.2	482.5	2.6	491.3	2.6
Cottonwood / Savage Run	22,340	0.8	25.3	0.73	25.3	0.73
Rock Creek	29,631	1.6	59.1	1.3	59.1	1.3
Squirrel Ck	49,465	4.1	234.7	3.0	234.9	3.0
Harney Creek	13,398	0.4	9.2	0.3	6.1	0.3
Little Laramie River	76,476	2.1	194.9	1.6	211.3	1.8
Cooper Ck	6,039	1.9	6.2	0.7	6.2	0.7
Onemile Creek	5,291	2.1	14.2	1.7	14.2	1.7
	322,690	2.03 (avg.)	1,026.1	1.5 (avg.)	1,048.4	1.52 (avg.)

**Note:** The road and trail miles in this table include miles of roads on private land, highway miles, and gated roads to reflect cumulative watershed effects. For this reason, these figures do not match the mileage figures in other tables in the EA.

### **Direct and Indirect Effects by Watershed:**

**Douglas Creek:** Under this alternative, 1 fewer mile of motorcycle trail would be constructed and slightly more existing routes would be converted to trails than under Alternative 2. This would result in 1 fewer mile of existing roads and trails near streams. Overall sediment would be reduced in this watershed due to the net reduction from the existing condition of just over 96 miles of roads and trails near streams.

**Cottonwood/Savage Run:** This watershed has a relatively low road density (<1 mi. / sq. mi.) which is due primarily to the Savage Run Wilderness Area. The Proposed Action would close some spur roads in the upper watershed of Cottonwood Creek in addition to two spur roads near the North Platte River. Collectively these spurs comprise just over ½ mile of road near stream channels. This would locally decrease sediment in the streams adjacent to these roads.

**Rock Creek:** Roughly 11.1 miles of unauthorized roads and 2.3 miles of unauthorized trails would be closed. Roads would be closed in the headwaters of Onemile and Threemile Creeks. Many roads in the upper part of Rock Creek, including along North Fork Rock Creek and in Rock Creek Park, would also be closed. Approximately 6 miles of roads near streams would be closed thereby reducing sediment delivery to these streams, Rock Creek in particular (see Table 18).

**Squirrel Creek:** Several unauthorized roads would be closed and a few short unauthorized roads scattered throughout the watershed would be added to the system. A steep, eroding section of a system road would be closed in the Fox Creek area. An unauthorized road in a better location

would be converted to a system road to improve access. This would likely decrease sediment to Fox Creek due to the poor shape of the system road. Overall, there would be a net decrease of 48 miles of road near stream channels which would decrease sediment throughout this watershed.

**Harney Creek:** This watershed drains the east side of Sheep Mountain and the west side of Table Mountain. Roads crossing streams that drain into nearby small lakes and into Lake Hattie would be closed. Almost 4 miles of roads within 300 feet of streams would be closed. This would reduce sediment in these drainages and also reduce sediment loading into nearby lakes.

**Little Laramie River:** This alternative is similar to Alternative 2 except that ATV trail construction near streams would be reduced from 3.5 miles to 2.6 miles. As a result, sediment delivery to streams would be less in this alternative than in Alternative 2 in the South Fork Little Laramie Watershed. The overall reduction in roads and trails near streams would be almost 41 miles, 14 miles greater than in Alternative 2.

**Cooper Creek:** Approximately 11.6 miles of roads would be closed in the headwaters of Cooper Creek and Dutton Creek. No new trail construction or conversion of existing unauthorized routes is proposed in this watershed. These trails have multiple stream crossings which are likely contributing sediment whenever a motorcycle or ATV crosses the stream. A total of 2.8 miles of trails near streams would be closed. This action would reduce sediment in the headwaters of these streams.

**Onemile Creek:** The Proposed Action would close 3.5 miles of unauthorized road in the headwaters of this watershed. Of this, 1 mile in the headwaters of Fourmile Creek is near stream channels. This alternative would reduce sediment in this creek.

### *Effects to Riparian Areas and Wetlands*

#### **Direct and Indirect Effects from Individual Activities:**

**Effects of roads and trails near wetlands:** Roads and trails through and near wetlands often reduce the amount of riparian vegetation adjacent to wetlands and can be a source of sediment delivery to the wetland area. Roads can disrupt the flow of water through the wetland by either being raised or from soil compaction. These actions can result in drying out the wetland below the road crossing, possibly altering the vegetation composition. Roads and ATV trails through wetlands often have multiple tracks as riders try to avoid the mud holes and soft areas, thus widening the tracks in these areas. Closing roads and trails would reduce these effects as soil compaction decreases. Converting existing system or unauthorized routes to trails would continue the same impacts as currently exist. The exception to this is converting roads to motorcycle trails. This action gradually narrows the route to a single track which has fewer impacts.

**Trail Construction:** Trail construction near wetlands would locally impact the wetlands as described above. Mitigation measures can decrease these impacts (Appendix A).

#### **Direct and Indirect Effects by Watershed:**

Table 20 depicts changes in road miles within 300 feet of wetlands for the Proposed Action.

**Table 20: Proposed Action - Change in Road and Trail Miles within 300 Feet of Wetlands**

Watershed Name	Unauthorized Routes to be Closed	System Roads to be Closed	System Roads Converted to ATV Trails	Unauthorized Routes to be Converted to System Trails	Trail Construction ATV / Motorcycle	Change in Roads / Trails
Douglas Creek	37.8	0.1	3.5	22.0	1.2 / 2.7	-33.8
Cottonwood Creek/Savage Run Creek	0.2	0	0	0.5	0	-0.2
Rock Creek	3.8	0	0	0	0	-3.8
Squirrel Creek	15.1	0.1	0	0	0	-15.3
Harney Creek	0	0	0	0	0	0.0
Little Laramie River	7.4	0	0.6	3.5	0.3/0.25	-6.8
Cooper Creek	1.4	0	0	0	0	-1.4
Onemile Creek	0.1	0	0	0	0	-1.0
<b>TOTAL</b>	<b>65.8</b>	<b>0.2</b>	<b>4.1</b>	<b>26</b>	<b>1.5 / 2.95</b>	<b>-62.3</b>

\* Numbers in this column were generated by adding miles of unauthorized routes and system roads to be closed and subtracting trail construction mileage. Route conversions were not factored into this equation because they currently exist and would continue to do so.

**Douglas Creek:** This alternative proposes slightly more ATV trail construction and fewer miles of motorcycle trail construction near wetlands than under Alternative 2. This results in a little less than 1 mile additional overall reduction of existing roads and trails near wetlands. This alternative would have essentially the same effects as Alternative 2.

**Cottonwood/Savage Run:** A small amount of unauthorized roads/trails near wetlands in the headwaters of Cottonwood Creek and near the North Platte River would be closed.

**Rock Creek:** Roughly 3.8 miles of roads in and near wetlands in the Rock Creek Park area would be closed. Impacts to these wetlands would be reduced from this action.

**Squirrel Creek:** Approximately 15 miles of unauthorized roads and trails near wetlands would be closed. This action would reduce impacts to wetlands and riparian areas throughout the watershed.

**Harney Creek:** Roads near streams and riparian areas would be closed. However, no roads near wetlands would be closed. Impacts to riparian areas would be reduced where roads are closed near stream channels.

**Little Laramie River:** The Proposed Action is similar to Alternative 2 except that ATV trail construction near wetlands would be reduced from 0.5 miles to 0.3 miles. As a result, impacts to

wetlands would be slightly less in this alternative than in Alternative 2 for the South Fork Little Laramie Watershed. The overall reduction in roads and trails near wetlands would be 0.6 miles more than in Alternative 2.

**Cooper Creek:** Unauthorized roads and trails in the headwaters of Cooper and Dutton Creeks would be closed in this watershed. These trails pass near wetlands, with an estimated 1.4 miles of road and trail within 300 feet of wetlands. This alternative would reduce sediment and impacts to wetlands and riparian areas in the headwaters of these drainages.

**Onemile Creek:** Roughly 3.5 miles of unauthorized road would be closed in the headwaters of this watershed. Of this, 0.1 mile in the headwaters of Fourmile Creek is adjacent to small wetlands. This alternative would reduce impacts to those wetlands from closure of this unauthorized road.

**Cumulative Effects:** There would be a net long-term reduction of sediment in streams as well as improvement in wetlands and riparian areas as the unauthorized roads are closed in the analysis area. There would be localized short-term sediment increases from road and trail construction and from water barring and other measures taken to close roads. The other ongoing projects in the Snowy Range would also contribute minor effects; however, the cumulative effect would be long-term decreased sediment and improved riparian and wetland conditions.

***ALTERNATIVE 2 – Expanded Motorized Trail System***

***Effects from Sediment***

**Direct and Indirect Effects from Individual Activities:**

**Road Closures, Converting Roads to ATV/Motorcycle Trails; Trail Construction:** Alternative 2 would have slightly more short-term sediment increases in Devils Gate, Cottonwood, and Sheep (a small tributary of Douglas Creek) Creeks than the Proposed Action due to more trail construction in those watersheds. Table 21 depicts changes in road/trail miles within 300 feet of streams for Alternative 2.

**Table 21: Alternative 2 - Change in Road and Trail Miles within 300 Feet of Streams**

<b>Watershed Name</b>	<b>Unauthorized Routes to be Closed</b>	<b>System Roads to be Closed</b>	<b>System Roads Converted to ATV Trails</b>	<b>Unauthorized Routes Converted to System Roads / Trails</b>	<b>Trail Construction ATV / Motorcycle</b>	<b>Change in Road / Trail Miles*</b>
Douglas Creek	108.1	0.6	15.9	69.9	2.3 / 11.5	<b>- 94.9</b>
Cottonwood / Savage Run	0.6	0	0	1.0	0	<b>- 0.6</b>
Rock Creek	6.3	0	0	0	0	<b>- 6.3</b>
Squirrel Creek	47.4	0.7	0	3.8	0	<b>- 48.1</b>

**Table 21: Alternative 2 - Change in Road and Trail Miles within 300 Feet of Streams (Cont'd)**

<b>Watershed Name</b>	<b>Unauthorized Routes to be Closed</b>	<b>System Roads to be Closed</b>	<b>System Roads Converted to ATV Trails</b>	<b>Unauthorized Routes Converted to System Roads / Trails</b>	<b>Trail Construction ATV / Motorcycle</b>	<b>Change in Road / Trail Miles*</b>
Harney Creek	3.8	0	0	0	0	- 3.8
Little Laramie River	30.2	0	3.8	25.7	3.5 / 0.5	- 26.7
Cooper Creek	2.8	0	0	0	0	-2.8
Onemile Creek	0.98	0	0	0	0	-1.0
<b>TOTAL</b>	<b>200.2</b>	<b>1.3</b>	<b>19.7</b>	<b>100.4</b>	<b>5.8 / 12</b>	<b>-184.2</b>

\* Numbers in this column were generated by adding miles of unauthorized routes and system roads to be closed and subtracting trail construction mileage. Route conversions were not factored into this equation because they currently exist and would continue to do so.

### **Direct and Indirect Effects by Watershed:**

**Douglas Creek:** To establish the motorized trail system, Alternative 2 would convert existing system roads, as well as unauthorized roads and trails, to trails. It would also require new trail construction. This proposal would locally increase sediment delivery to streams where the new construction crosses stream channels. The new trail system would route ATV trails away from streams in places, using short segments of new construction and closing the old trail. This is true in the Pelton Creek drainage. Unauthorized routes would be closed on the west side of Pelton Creek, with no new construction or trails proposed west of Pelton Creek.

Overall sediment would be reduced in this watershed due to the net reduction from the existing condition of almost 95 miles of roads and trails near streams.

**Cottonwood/Savage Run, Rock Creek, Squirrel Creek, and Harney Creek:** Alternative 2 proposes the same actions and would have the same effects as described under the Proposed Action.

**Little Laramie River:** This watershed drains the southeastern side of the Snowy Range and the western side of Sheep Mountain.

- North Fork Little Laramie River: Alternative 2 would close unauthorized roads and trails in the North Fork Little Laramie River watershed and convert one unauthorized road to a system road. This road is not located near any streams or wetlands.
- Middle Fork Little Laramie River: Several unauthorized roads would be closed in this drainage. The designated ATV system just south of the Middle Fork in the South Fork Little Laramie watershed may reduce impacts in this area. One existing unauthorized road, which

is located along a tributary of Middle Fork, would be converted to a system road. This road would continue to add sediment to the stream channel at the lower end due to the proximity of the road to the stream channel. A mitigation measure (Appendix A) recommends that this road be evaluated for improved drainage and erosion control to minimize effects on the adjacent stream channel.

- **South Fork Little Laramie River:** An ATV and motorcycle trail system would be created from both new construction and through the conversion of existing unauthorized and system roads. This trail system would generally be located away from wetlands and stream channels except at crossings. Roughly 3.5 miles of ATV and ½ mile of motorcycle trails would be constructed near streams in this watershed. The construction would temporarily increase sediment from soil disturbance and would locally increase sediment at stream crossings. Overall sediment would be reduced due to the closure of unauthorized roads, many of which are located close to stream channels.

Overall, sediment would be reduced in the Little Laramie Watershed due to the net decrease of almost 27 miles of roads and trails near stream channels. Mitigation measures could further reduce sedimentation from proposed trail construction.

**Cooper Creek and Onemile Creek:** Alternative 2 proposes the same actions and would have the same effects as described under the Proposed Action.

***Effects to Riparian Areas and Wetlands***

**Direct and Indirect Effects from Individual Activities:**

**Road Closures, Converting Roads to ATV/Motorcycle Trails; Trail Construction:** Please refer to the discussion provided on EA page 69.

**Direct and Indirect Effects by Watershed:**

Table 22 depicts changes in road miles within 300 feet of wetlands for Alternative 2.

**Table 22: Alternative 2 - Change in Road and Trail Miles within 300 Feet of Wetlands**

Watershed Name	Unauthorized Routes to be Closed	System Roads Converted to ATV Trails	Unauthorized Routes to be Converted to System Roads / Trails	Trail Construction ATV / Motorcycle	Change in Roads / Trails*
Douglas Creek	37.9	4.0	22.0	0.5 / 4.4	-33.0
Cottonwood / Savage Run	0.2	0	0.5	0	-0.2
Rock Creek	3.8	0	0	0	-3.8
Squirrel Creek	15.1	0	0	0	-15.1
Harney Creek	0	0	0	0	0

**Table 22: Alternative 2 - Change in Road and Trail Miles within 300 Feet of Wetlands (Cont'd)**

Watershed Name	Unauthorized Routes to be Closed	System Roads Converted to ATV Trails	Unauthorized Routes to be Converted to System Roads / Trails	Trail Construction ATV / Motorcycle	Change in Roads / Trails*
Little Laramie River	5.6	1.6	5.1	0.5 / 0.3	-4.8
Cooper Creek	1.4	0	0	0	-1.4
Onemile Creek	0.1	0	0	0	-0.1
<b>TOTAL</b>	<b>64.1</b>	<b>5.6</b>	<b>27.6</b>	<b>1 / 4.7</b>	<b>-58.4</b>

\* Numbers in this column were generated by subtracting trail construction mileage from “Unauthorized Roads/Trails to be Closed.” Route conversions were not factored into this equation because they currently exist and would continue to do so.

### **Direct and Indirect Effects by Watershed:**

**Douglas Creek:** Roughly 33 miles of roads and trails near wetlands would be closed throughout the watershed below Rob Roy Reservoir. Approximately ½ mile of ATV trail would be constructed and would cross wetlands along Pelton Creek and Illinois Creek. The new crossing would be an improvement over the existing crossing. Overall, impacts to wetlands would decrease due to the large reduction of roads and trails near wetlands.

**Cottonwood/Savage Run, Rock Creek, Squirrel Creek, and Harney Creek:** Alternative 2 proposes the same actions and would have the same effects as those described under the Proposed Action.

### **Little Laramie River:**

- North Fork Little Laramie River: Unauthorized roads and trails would be closed in the North Fork Little Laramie River watershed. In addition, one unauthorized road would be converted to a system road. This road is not located near any streams or wetlands.
- Middle Fork Little Laramie River: Several unauthorized roads would be closed in this drainage. One existing road, which is located along a tributary of Middle Fork, would be converted to a system road. This road would continue to be located adjacent to a wetland and would continue existing effects. Recommended mitigation is to evaluate this road for drainage and erosion control needs to reduce effects on the adjacent wetland.
- South Fork Little Laramie River: An ATV and motorcycle trail system would be created from both new construction and through the conversion of existing unauthorized and system roads. The trail system would be located away from wetlands and stream channels except at crossings. Almost ½ mile of ATV and 1/3 mile of motorcycle trail would be constructed near wetlands in this watershed. The construction would temporarily increase sediment and

vegetation disturbance near wetlands. Localized wetland areas where the trails cross riparian and wetland areas would occur from the trail system. Impacts to wetlands would be reduced due to the closure of unauthorized roads and trails in this area, many of which are located close to wetlands.

Overall, impacts to wetlands would be reduced in the Little Laramie Watershed due to the net decrease of over 6 miles of roads and trails near wetlands and riparian areas. Mitigation measures could further reduce sedimentation from the proposed new trail construction.

**Cooper Creek and Onemile Creek:** Alternative 2 proposes the same actions and would have the same effects as described under the Proposed Action.

**Cumulative Effects:** Cumulative effects would be similar to the Proposed Action.

**Effects on the North Platte River: The North Platte River meets the eligibility requirements for a Wild and Scenic River. The overall effect of the action alternatives would be a reduction of sediment delivered to the North Platt River from Douglas Creek due to the road closures. However, the change would be very minor in comparison to the normal sediment load of the North Platte. Therefore, effects would be negligible. Two short unauthorized roads near the North Platte River would be closed and revegetated.**

**Effects on municipal water supplies:** The effects of the action alternatives would be a slight reduction in sediment in all of the watersheds which supply the water for the towns of Saratoga, Laramie and Rock River. This would be a beneficial, albeit minor, benefit to these water supplies.

### ***FOREST PLAN CONSISTENCY***

The field observations and assessments conducted for this project support the conclusion that overall stream health would be maintained or improved under both of the action alternatives. The action alternatives would be consistent with Forest Plan Water and Aquatic standards and guidelines (pgs. 1-28 to 1-30) described above with the mitigation measures outlined in Appendix B. The No Action alternative is not consistent with Forest Plan direction to protect streams and wetlands and does not meet the Purpose and Need for the proposal.

### ***CONSISTENCY WITH OTHER LAWS AND REGULATIONS***

***Consistency with Wetlands/Floodplains Executive Orders:*** This project is consistent with these executive orders. The project would maintain wetland and floodplain function through closing roads and trails in wetlands and floodplains. New trail construction through these areas would be consistent through the use of the listed mitigation measures, such as crossing stream channels perpendicularly and through avoiding wetlands wherever possible.

***Clean Water Act:*** This project would comply with the Clean Water Act and State of Wyoming State Water Quality Standards through the use of BMPs and associated monitoring. While there may be some minor effects to water quality as described above, the designated uses of water bodies in the project area would be maintained.

**State of Wyoming Turbidity Waiver:** Road closures and trail construction activities at stream crossing will be evaluated to determine if a short-term exemption from turbidity standards is necessary. BMPs will be used to decrease turbidity during road closure and trail construction.

**Stormwater Discharge Permit:** The need for a storm water discharge permit for road closures and trail construction will be evaluated prior to proceeding with the work, and a permit will be obtained if necessary.

**404 Permit:** A 404 permit is required for dredging or filling wetlands. There is a nationwide permit which allows stream crossings for roads and trails. As the trail construction is unlikely to require culverts, it is unlikely that the 404 permit would apply to this project. The need for a 404 permit will be evaluated when specific trail design is completed and obtained if necessary.

## H. Inventoried Roadless Areas (IRAs)

### Affected Environment

The eastern portion of the Snowy Range includes all or portions of eight IRAs. The IRAs were identified during the recent National Roadless Rule (2001) effort and the Medicine Bow National Forest Plan Revision (2003). Areas were classified as an IRA if they met the following criteria: a) they were 5,000 acres in size or larger; b) they were less than 5,000 acres but were contiguous to an existing Wilderness Area; or c) they contained no classified roads. Although IRAs may not contain classified roads, they may contain improvements such as motorized trails, fences, outfitter camps, and evidence of historical logging.

IRAs within the analysis area boundary include:

**Table 23: Inventoried Roadless Areas and Acreages**

Inventoried Roadless Area	Total Acreage	Analysis Area Acreage	Percent of IRA in the Analysis Area
French Creek (R20619)	5,924	532	9
Illinois Creek (R20625)	6,707	6,707	100
Libby Flats (R20620)	11,082	11,070	100
Middle Fork (R20621)	13,232	13,232	100
Platte River Addition (R20624)	7,947	7,104	89
Rock Creek (R20616)	18,859	14,760	78
Savage Run Addition (R20623)	2,370	1,261	53
Snowy Range (R20617)	29,637	13,443	45
<b>TOTAL</b>	<b>95,758</b>	<b>68,111.2</b>	

Currently there are approximately 38 miles of unauthorized roads and 18.6 miles of unauthorized trails within the eight analysis area IRAs (56.6 miles total).

## Environmental Consequences

All unauthorized routes within IRA boundaries would be administratively closed under the No Action alternative (56.6 miles); they would either be administratively or physically closed under the Proposed Action. Under Alternative 2, one motorcycle trail and three ATV trail segments totaling 5.8 miles would be designated as part of the Forest Transportation System. These routes are located in the Middle Fork IRA. The remaining 50.8 miles of unauthorized routes that are scattered throughout the analysis area IRAs would either be administratively or physically closed under Alternative 2.

The effects of the proposed project on nine Roadless Area characteristics (Medicine Bow Land and Resource Management Plan FEIS, Appendix C) were considered. Following is documentation of that analysis.

### 1. High Quality or Undisturbed Soil and Air

**Existing Condition:** Upland areas within the analysis area are dominated by coarse textured soils. These soils typically have sandy loam or loamy sand surface horizon textures with high percentages (by volume) of rock fragments in the soil profile. Most soils in the alluvial positions (riparian areas) are composed of reworked alluvium, have poor drainage, and are frequently saturated, especially during spring. Erosion hazard in the project area is predominantly moderate.

The Medicine Bow airshed entirely encompasses the Medicine Bow National Forest. No Class I areas are contained within the project area.

Any air resource impacts from current management within and adjacent to roadless areas are localized and temporary. Currently, the entire project area is in attainment for criteria pollutants.

**Effects on Characteristic from the Project:** The proposed travel management project would not significantly change existing conditions within roadless areas with respect to the soil and air resources. Existing roadless area characteristics of high quality soil and air resource values would not be impacted.

### 2. Sources of Public Drinking Water

**Existing Condition:** The town of Saratoga diverts water from the North Platte River for its municipal water supply approximately 30 miles downstream of the Forest boundary. The Town of Rock River diverts water from Rock Creek approximately 2 miles below the Forest boundary while the City of Laramie diverts water from the Laramie River approximately 3 miles downstream of the Forest boundary. Some of this water comes from waterways located within IRA boundaries.

**Effects on Characteristic from the Project:** Existing roadless area characteristics of public drinking water values would not be negatively impacted by project implementation. Sedimentation into area waterways should be improved slightly as a result of the proposed route closures.

### 3. Diversity of Plant and Animal Communities

**Existing Condition:** Forested cover types within project area IRAs consist primarily of lodgepole pine and Spruce/fir, with smaller percentages of aspen, Douglas-fir, limber pine, and ponderosa pine. Roughly 15 and 44 percent of the lodgepole pine is in old growth condition, and between 51 and 85 percent of the Spruce/fir cover type is in old growth condition, as described by Mehl (1992).

These IRAs include habitat for many of the more common types of wildlife on the Forest, including deer, elk, and mountain lions. They also contain habitat for various Forest Service Sensitive Species including boreal owls, wood frogs, goshawk, bald eagles, boreal toads, and American marten.

**Effects on Characteristic from the Project:** Both the Proposed Action and the No Action alternative would either administratively or physically close all unauthorized routes that lie within IRA boundaries. Alternative 2 would either administratively or physically close roughly 90 percent of unauthorized routes within the IRA boundaries. Overtime, depending on the success of the closure method, these routes would become occupied by vegetation characteristic of the surrounding cover type. The routes would then be primarily subject to natural processes.

With respect to wildlife, route closures would improve the function of wildlife security habitat, minimize disturbances and erosion in riparian areas important to wildlife, and increase areas where snags and snag recruits are less accessible, thus improving habitat for cavity nesters.

### 4. Habitat for Threatened, Endangered, Proposed, Candidate, and Sensitive (TEPS) Species and those Species Dependent on Large Undisturbed Areas of Land.

**Existing Condition - Botanical Species:** There are not currently any identified threatened, endangered, proposed or candidate botanical species known to occur in the Snowy Range Travel Management Project Area. *Botrychium lineare*, a candidate species is thought to have habitat within the project area and has been analyzed for the project by Roche (2005a).

**Existing Condition – Wildlife Species:** The U.S Fish and wildlife Service (USFWS) provided the MBNF with a list of TEPS and designated critical habitats which may occur within the Laramie Ranger District (USFWS 2006). A review of these species and the effects determinations can be found in the Biological Assessment (BA) prepared for this EA. The BA is on file at the Laramie Ranger District Office, 2468 Jackson Street, Laramie, Wyoming. The only species on the TEPS list that has the potential to be affected by the alternatives analyzed in this EA is the *Canada lynx*.

**Effects on Characteristic from the Project – Botanical Species:** The effects of this project on identified threatened, endangered, proposed or candidate plant species are presented in Roche (2005a). None of these species and none of the species of local concern analyzed in Roche (2005b) have been identified to be dependent on large undisturbed areas of land. Few of these species are known to respond positively to human disturbances.

The Proposed Action and No Action alternative would close all unauthorized routes that lie within Inventoried Roadless Area (IRA) boundaries; Alternative 2 would close roughly 90 percent of

unauthorized routes within IRA boundaries. Overtime, these unauthorized routes will become occupied by vegetation characteristic of the surrounding cover type and providing habitat for sensitive plant species.

**Effects on Characteristic from the Project – Wildlife Species:** The No Action alternative would have “No Effect” on federally threatened or endangered wildlife species, “No Effect” on any designated critical habitat, and is not likely to jeopardize the continued existence of any wildlife species proposed for federal listing. The Proposed Action and Alternative 2 – Expanded Motorized Trail System have a determination of “*May affect*, but are *not likely to adversely affect*” Canada lynx. See EA page 113 for more information related to TEPS wildlife species.

## **5. Primitive, semi-primitive, non-motorized, and semi primitive motorized classes of dispersed recreation.**

**Existing Condition:** Approximately 27 percent of the project area has a Recreation Opportunity Spectrum (ROS) classification of *Semi-Primitive Non-Motorized (SPNM)* and 6 percent has an ROS classification of *Semi-Primitive Motorized (SPM)*. The ROS is a planning system utilized by land managers to classify areas according to the types of recreation opportunities available therein. *SPNM* areas have a predominantly natural-appearing environment, and there is a high probability of experiencing solitude, closeness to nature, self-reliance, challenge, and risk. Interactions between users are occasional, and motorized travel is not permitted. Access is via non-motorized trails, non-motorized primitive roads, or cross-country travel. *SPM* areas also have a predominantly natural-appearing environment, with moderate opportunities to experience solitude and closeness to nature. However, motorized use is authorized in these areas and often constitutes the focus of recreation management. A high degree of self-reliance, challenge, and risk is common when using motorized equipment and the concentration of users is relatively low.

**Effects on Characteristic from the Project:** With the closure of roughly 56.6 miles of unauthorized routes, *SPNM* characteristics within all analysis area IRAs should be improved under both the No Action and the Proposed Action alternatives. They should also be improved within seven of the eight IRAs under Alternative 2. Alternative 2 proposes to designate 5.8 miles of motorized trail within the Middle Fork IRA; this action would result in the loss of roughly 200 *SPNM* acres within this IRA.

## **6. Reference Landscapes**

**Existing Condition:** Reference landscapes are generally large undisturbed areas that provide the basis for developing management strategies and developing an understanding what an undisturbed landscape looks like and how it might function. Reference landscapes need to be larger than the predicted size of natural disturbances (fire, insects, diseases) in order to provide information to managers on the scale and effect of natural disturbances. The greater Yellowstone area including Yellowstone National Park (19,000,000 acres-20,000,000 acres) is considered to be large enough to provide a reference landscape for lodgepole pine ecosystems (Schullery 2006).

The entire Snowy Range is 512,439 acres. This size is considered to be too small to provide a reference landscape for natural disturbances that may be several thousand acres to several hundred thousand acres in size (Regan 2006 personal communications).

**Effects on Characteristic from the Project:** The Proposed Action and the No Action alternative would close all unauthorized routes that lie within Inventoried Roadless Area (IRA) boundaries; Alternative 2 would close roughly 90 percent of unauthorized routes within IRA boundaries. Overtime, these unauthorized routes would become occupied by vegetation characteristic of the surrounding cover type. This would increase the area that has minimal human disturbance and increase the potential for these areas to have some value as reference landscapes; however, this action would not significantly increase the size of the “undisturbed” area.

## 7. Natural Appearing Landscapes with High Scenic Quality

**Existing Condition:** The area is characterized by rugged, rocky mountainous areas interspersing with open grass parks and riparian areas, spruce-fir and lodgepole pine forests with scattered stands of aspen, limber pine, ponderosa pine and Douglas fir. Small and large rock outcrops, canyons, snowfields, waterfalls, rapids and natural and man-made lakes, which attribute scenic features, are situated throughout the several roadless areas. Existing Scenic Integrity levels in the inventoried roadless areas are Very High, High, and Moderate.

**Effects on Characteristic from the Project:** There would be a beneficial effect on the scenic characteristic and scenic integrity of the inventoried roadless areas through the proposed closure of all unauthorized roads within the inventoried roadless areas as is proposed under the No Action alternative and the Proposed Action. This benefit would be diminished slightly under Alternative 2 due to the designation of 5.8 miles of motorcycle and ATV trails within the Middle Fork IRA.

## 8. Traditional Cultural Properties and Sacred Sites

**Existing Condition:** A 100 percent complete intensive survey of 90 miles of proposed ATV/Motorcycle trails revealed a number of small sites and isolated finds. The majority of these were related to tie-hack / timber activities and consisted of sawmill sets. Other cultural properties located unmodified prehistoric flakes, prospect pits, structural and campsite remnants, and small historic structures, primarily single room cabins and mine shaft houses. Of the sites located during the survey, no eligible sites fall within the Inventoried Roadless Areas (IRAs).

**Effects on Characteristic from the Project:** The closure of unauthorized routes within the IRAs is not expected to have an adverse affect on cultural properties within that area.

## 9. Other locally identified unique characteristics (as identified in Plan FEIS Appendix C)

**Existing Condition:** There are an unquantified number and acreage of fens within the project area. Fens are wetlands with water-saturated substrates and an accumulation of about 30 cm or more of peat (organic soil material). Peatlands, which include fens, bogs, and muskegs, are widely distributed across boreal regions. Fens within Region 2 are normally ground water driven, have pH above 5.5, and are dominated by grasses, sedges, or willows. Because of their water-holding capability, fens provide very stable habitats. For example, many of the fens of Region 2 are over 10,000 years old, with organic soil accumulation rates ranging from about 4 to 16 inches per thousand years. Because the rate of accumulation is so slow, these ecosystems are essentially irreplaceable (USDA 2002). Mitigation for loss of fens is problematic, as there are no known methods to create new functional fens (USDI Fish and Wildlife Service 1998).

In 2002 and 2003, an intensive remote sensing/GIS effort sought to locate, map, field verify and record high quality peatlands and their flora for select portions of the Medicine Bow Forest including parts of the Snowy Range (North Fork Allotment, Libby Flats and Elk Creek drainage), Sheep Mountain and the Sierra Madre Range (Huston Park) (Heidel and S. Laursen 2003, Proctor 2003). This effort mapped and inventoried 6 fen/peatland sites on the Snowy Range (3 sites) within the project area.

Also within the project area are (USDA FS MBNF 2003):

- Special Interest Areas include Cinnabar Park (botanical), Sunken Gardens (botanical, scenic), Medicine Bow Peak (botanical), Ribbon Forest (botanical, geological, zoological, scenic, research), White Rock Canyon (geological, zoological, scenic), Douglas Creek tie dam (historical), Horse Creek tie dam (historical), and Muddy Tie Dams (historical);
- Research Natural Areas include Snowy Range, Savage Run and Platte Canyon;
- Glacier Lakes Ecosystem Research site;
- Wilderness: Savage Run and Platte River

**Effects on Characteristic from the Project:** The Proposed Action and No Action alternative would close all unauthorized routes that lie within Inventoried Roadless Area (IRA) boundaries; Alternative 2 proposes to close roughly 90 percent of unauthorized routes within the IRA boundaries. The closure of these unauthorized routes is not expected to have any adverse effect upon these special areas. Although 5.8 miles of motorized trail are proposed for designation within the Middle Fork IRA, this action is not expected to significantly impact this area.

## IRA Conclusions

Based on the information presented above, none of the alternatives analyzed in this EA would result in a significant, adverse impact to any of the nine inventoried roadless characteristics described above. Although Alternative 2 would result in a loss of approximately 200 SPNM acres in the Middle Fork IRA, this loss would not significantly alter its roadless area characteristics for a variety of reasons: 1) IRAs may contain such improvements as motorized trails; 2) the effects would be limited to the southwestern portion of the IRA; and 3) the potential for authorizing a motorized trail within the Middle Fork IRA was identified and analyzed during the Medicine Bow National Forest Plan Revision process. Forest Plan Appendix C, page C-138 states, “Summer and winter motorized recreation, with plans for developing a single track motorized trail.”

## I. Law Enforcement

### Affected Environment

Travel management violations that occurred on the Snowy Range between 2000 and 2006 were extracted from the Law Enforcement Management Attainment Reports System (LEMARS) database. The data clearly showed an increase in the number of incidents associated with off highway vehicle (ORV) use on the Forest during this time period. For example, in 2000, a total of 29 ORV and travel management violations were documented but, by 2005, over 550 violations had been documented. This increase is attributed to the continuing growth in the recreational use of ORVs. As the popularity of motorized recreation on the Forest continues to grow, the Forest Service expects the number of violations and resource damage to grow as well.

At current employee and funding rates, the Forest Service will neither be able to keep pace with travel management violations nor will we be able to afford the resulting resource damage. For example, in 2005 law enforcement employees documented approximately \$20,000.00 in resource damage resulting from off-road vehicle use. Through successful prosecution of violators in federal court, \$12,000.00 was recovered and applied to rehabilitation of damaged areas. However, to fully rehabilitate the damaged areas, the Forest Service had to contribute \$8,000.00. As the number of travel management violations and incidences of resource damage increases, the discrepancy between the actual cost of rehabilitating damaged areas and what is recovered in court is expected to grow. Unfortunately, this difference will have to be paid out of the Forest Service's already declining budget.

## Environmental Consequences

### *ALTERNATIVE 1 – No Action*

**Direct and Indirect Effects:** Existing state ORV statutes allow licensed drivers to operate an ORV on National Forest System Roads whereas any driver (licensed and unlicensed) may operate an ORV on **state designated motorized trails**. Under the No Action alternative, however, all unauthorized routes would be administratively closed and no motorized trails would be designated as part of the forest transportation system. Consequently, unlicensed drivers would not be able to participate legally in ORV related opportunities anywhere on the eastern portion of the Snowy Range. Given the lack of ORV opportunities and the popularity of ORV use on the Forest, it is highly likely that illegal ORV use would continue as would the creation of new unauthorized routes. Although Forest Service law enforcement personnel would continue to prosecute violators and request restitution, they would not be able to keep pace with the number of violations. Thus, it is reasonable to assume that some areas that would incur resource damage would not be rehabilitated. It is also reasonable to assume that additional unauthorized routes would be created at a faster rate than would be expected if a motorized trail system were provided by the Forest Service.

### *PROPOSED ACTION and ALTERNATIVE 2 – Expanded Motorized Trail System*

**Direct and Indirect Effects:** Due to the designation of a motorized trail system, the number of ORV users that violate state ORV statutes should be reduced. As mentioned above, state statutes allow drivers to operate an ORV on a designated trail without a valid driver's license. However, depending on where and how trail segments are connected, there may be a problem with an unlicensed driver operating an ORV on a system road while riding from trail segment to a connecting trail segment. In this case, there would be an enforcement problem of an unlicensed rider operating an ORV on a system road. In addition to a reduction in state statute violations, there should be a corresponding decrease in federal travel management violations, including those pertaining to resource damage. These reductions in resource damage violations would obviously be beneficial to resources and should also reduce the amount of money the Forest Service spends on resource rehabilitation.

Designation and advertisement of a motorized trail system would likely increase the recreational use of the Forest from users along the Front Range of Colorado. It is difficult to predict if this increased activity would result in the creation of additional illegally created trails. If this does occur,

additional funding for law enforcement would be required to prevent significant resource damage from occurring.

## ***FOREST PLAN CONSISTENCY***

All alternatives would be consistent with Forest Plan law enforcement direction and standards (pg. 1-61).

## **J. Recreation**

### **Affected Environment**

Annually, an estimated 1.1 million people visit the Medicine Bow National Forest, a large percentage of which are believed to use the east side of the Snowy Range (Kocis, English, Zarnoch, Arnold, and Warren 2003). From designated Wilderness Areas to heavily roaded and improved areas, visitors to the eastern Snowy Range have a multitude of options from which to choose regarding how, when, and where they recreate. A primary management focus for the District has been, and continues to be, to provide a wide variety of recreation opportunities, activities, and experiences for visitors. The results of this management approach are evident in current recreation conditions present in the eastern Snowy Range.

**The Recreation Opportunity Spectrum (ROS):** The ROS is a planning tool used by land managers to classify areas according to the types of recreation opportunities available therein. ROS classifications may range from *Primitive* inside a designated Wilderness to *Urban* in recreation areas adjacent to metropolitan areas. These classifications enable managers to provide a variety of settings in which to recreate, each with their own characteristics and opportunities. The Forest-wide guideline concerning the ROS, as specified in the Forest Plan (2003), is “Recreation use will be managed to stay within the capacity for the prescribed Recreation Opportunity Spectrum (ROS) objective shown in the Social Setting Criteria (Table 1-16) (pg. 1-54).” Five of the seven possible recreation settings may be found in the east side of the Snowy Range: *Rural* (5%), *Roaded Modified* (30%), *Roaded Natural* (32%), *Semi-Primitive Motorized* (6%), and *Semi-Primitive Non-Motorized* (27%). The majority of the unauthorized roads and trails surveyed as part of this analysis fall into the *Roaded Modified* and *Roaded Natural* categories, with a small percentage (<10%) being located in *Rural*, *Semi-Primitive Non-Motorized*, and *Semi-Primitive Motorized* settings.

**Developed Recreation:** There are 17 developed campgrounds on the east side of the Snowy Range offering visitors over 300 campsites from which to choose. The majority of the campgrounds have potable water, trash and toilet facilities, and other basic camping amenities. An estimated 32,000 people stayed in the eastern Snowy Range campgrounds during the 2005 season. The area also contains several developed picnic areas and trailheads, as well as a visitor center located on the eastern Forest boundary. The Snowy Range Scenic Byway bisects the northern and southern portions of the District, with the majority of recreation development concentrated in its immediate vicinity. Along the 29 mile route are numerous interpretive displays, nature walks, and observation areas. The Byway over the top of the Snowy Range is closed during the winter; however, its eastern portion is plowed to provide access to snowmobile and ski trails. It is not uncommon to see over 250 vehicles (the overwhelming majority belonging to snowmobilers) parked along its shoulder on weekends.

**Wilderness:** Of the roughly 290,000 acres constituting the eastern portion of the Snowy Range, 38,000 acres are formally designated as Wilderness and 13,000 acres are proposed for future designation. The Platte River Wilderness Area (approximately 23,000 acres) and the Savage Run Wilderness Area (approximately 15,000 acres) are located in the western section of the District and are named for the drainages that bisect them. High canyon walls and ridge tops typically mark their boundaries. Roughly 37 miles of non-motorized trails provide access to the Wilderness Areas, served by several undeveloped trailheads. Recreation use of these areas is relatively low compared to other sites in the Snowy Range. In the northeastern portion of the District is the proposed Rock Creek Wilderness Area (13,000 acres). The area was proposed for designation as part of the Medicine Bow Forest Plan Revision of 2003; it is currently being managed for non-motorized use only; however, not as restrictively as would be the case if Congress formerly designated it in the future.

**Designated Trails:** There are approximately 290 miles of designated trails on the east side of the Snowy Range. Of these, 123 miles are managed for summer non-motorized use (with 37 being in Wilderness), 125 miles are winter motorized trails (snowmobile), and 43 miles are winter non-motorized trails (groomed cross-country ski trails). Excluding the Wilderness trails, summer trail use ranges from moderate in the lower elevations to very heavy in the higher elevations, with some sub-alpine trails located in proximity to the Scenic Byway receiving as many as 300 visitors per day. Backpacking, day hiking, and horseback use are common on most trails. Winter trail use—both motorized and nonmotorized—also ranges from moderate to very heavy depending on snow conditions and day of week. Many trailheads are full to capacity (and beyond) on summer and winter weekends. In addition to the developed trailheads located along Highways 130 and 230, there are numerous undeveloped trailheads (typically a small parking area with a trail sign and registry box) that serve some of the lesser used trails.

**Dispersed Recreation:** Highly popular dispersed recreation activities on the Laramie Ranger District include camping, hunting, fishing, and ORV use. While 40,000 acres of the eastern Snowy Range are designated and managed for summer non-motorized uses (in addition to the 47,000 acres of designated and proposed Wilderness), there are over 600 miles of National Forest System Roads (NFSRs) open to motorized travel in the area. Such an extensive network of roads provides users with a tremendous variety of options to access and view the Forest.

Many users seeking to camp on the Forest opt for more secluded experiences than what developed campgrounds afford. With as many roads, meadows, creeks, and ponds as are found in the eastern Snowies, opportunities for dispersed car and trailer camping are numerous, especially in the southern portion of the District. This is also the case with fishing and hunting opportunities; access is easy via the road system to abundant fishing holes and hunting grounds. This has eliminated the need for many to use either developed sites or backcountry trails to gain access to suitable terrain in which to recreate. Other forms of dispersed recreation, including biking, horseback riding, boating/canoeing, and picnicking are also popular in the eastern Snowy Range, though typically not to the extent of the others uses.

**Off-Road Vehicles (ORVs):** Absent from the listed recreation developments and amenities are opportunities for off-road motorized recreation. While most of the NFSRs in the analysis area are open to ORV use, there is not a single mile of designated summer motorized trail to be found in the Laramie Ranger District's portion of the Range. Yet, the majority of ORV users prefer the experiences associated with backcountry trail travel as opposed to those derived from road-based

recreation (Cordell, Betz, Green, and Owens 2005, Fisher, Blahna, and Bahr 2001, Crimmins 1999, Nelson 1990). A recent study indicated that travel on roads is the least preferred route choice for ATV owners, with only 4 percent of riders opting for it (Fisher et al 2001). Additionally, conservative estimates indicated that ORV use (not including snowmobiles) made up almost 6 percent of all visits to the Medicine Bow NF in 2002, or roughly 57,000 visits (English, Kocis, Hales 2004). Given the preferences of ORV users and the popularity of this activity on the Forest, it is not surprising that an extensive network of unauthorized trails evolved over the years when cross-country travel was permitted (prior to 2000).

Additional ORV statistics further point to the discrepancy between supply and demand as it pertains to motorized recreation on the Laramie Ranger District. For instance, ORV use on the eastern Snowy Range alone -- based on professional observation, additional scientific literature, and data collected from the Wyoming State Trails Program (which administers ORV registration within the state) -- is estimated to be between 25,000 and 35,000 visits/year (not including snowmobiles) and increasing steadily. Nationally, it is estimated that between 1999 and 2004, the percentage of the population 16 or older that participated at least once per year in ORV use increased from 17.6 percent to 23.2 percent or 37.6 million individuals to 49.6 million individuals (Cordell et al 2005). Wyoming witnessed similar growth in ORV registration between 2003 and 2004, with an increase of over 25 percent reported over the two years. The Medicine Bow National Forest Plan (2003) points to studies which indicate that in addition to increases already witnessed, ORV use may be expected to increase by as much as another 27 percent during the next 15 years.

These trends in ORV use—combined with the pre-2000 Forest travel management policy that permitted cross-country travel, the absence of any designated motorized trails, and ORV user preferences for backcountry experiences—have in large part been responsible for the District's current situation: namely, with 262 miles of unauthorized, unmaintained “roads”, 96 miles of unauthorized, unmaintained motorized “trails”, and repeated instances of off-road/off-trail resource damage (most notably vegetation, water, and soil resources). The District is not unique in failing to forecast the explosion in ORV popularity. But, by not providing any designated trail-based opportunities for ORVs, the situation has almost certainly been intensified, leaving the District with no positive mechanism for managing this legitimate, albeit complex and potentially damaging, form of recreation.

**Recreation User Conflicts:** Conflicts between motorized and non-motorized recreation groups are by no means new, but they are without question increasing, due in large part to the increasing popularity of motorized forms of Forest recreation (Yankoviak 2005). Such is the case on the east side of the Snowy Range. In 2000, relationships between cross-country skiers and snowmobilers on the Snowy Range had deteriorated to such an extent as to warrant the formation of a public working group. The group was composed of a variety of stakeholders brought together to formulate consent-based proposals to lessen and/or resolve the conflicts. While summer motorized/non-motorized conflicts have not yet reached this degree of controversy, anecdotal evidence of the existence of conflict is plentiful. Complaints from both sides of the issue are commonplace: ORV users are often upset at the imbalance between non-motorized and motorized trail opportunities in the Snowy Range while other users (including some motorized enthusiasts) are upset at the ongoing examples of ORV-caused resource degradation.

A far more common complaint, however, is that ORV use is disrupting other forms of recreation. The majority of visitors to National Forests are seeking opportunities and experiences that often are

incompatible, as seen from the perspective of these visitors, with ORV use: relaxation, quiet, primitive forms of travel, “getting back to nature”, wildlife viewing, effective hunts, general breaks from sights and sounds of modern day city life, etc. (Marcouiller, Scott, and Prey 2005, Stokowski and LaPointe 2000, Moore 1994, Kockelman 1983, Noe, Wellman, and Buhyoff 1982). As such, encounters by these recreationists with ORV users often detract from their experiences, in some cases extensively. Compounding these negative perceptions of ORV use is the “one way” nature of ORV impacts: ORVs almost always negatively affect non-ORV users, but not vice versa. Issues of inequity therefore get woven into the attitudes of many Forest users towards ORVs (for good syntheses of the literature on this topic, see Yankoviak 2005 and Moore 1994).

With the abundance of motorized travel routes in the eastern Snowy Range, and ORVs accessing more and more terrain each year, it is not surprising that anecdotal evidence testifying to the difficulties associated with achieving traditional non-motorized Forest recreation experiences is increasing. Evidence--anecdotal and scientific (Hammit and Schneider 2000)-- also suggests that hunters in particular (many of whom are also ORV users) are increasingly finding their experiences and success rates adversely impacted by the number and behavior of ORV users. While there are areas off-limits to motorized users that display high levels of regulatory compliance, most notably the two designated Wilderness Areas, not all visitors seeking non-motorized recreation experiences are seeking Wilderness-related experiences, with its inherent challenges and restrictions: many visitors, in fact, prefer the access and convenience of more developed areas that are still “wild enough” to provide the experiences they desire. So, while conflicts between summer motorized and non-motorized users have not yet reached critical levels, they are significant, warranted, and deserving of management attention.

**ORV-Caused Resource Damage:** ORV-caused resource damage is a substantial problem both nationally and locally. Adverse impacts to Forest resources prompted the Chief of the Forest Service to declare unmanaged recreation, especially unmanaged ORV recreation, as one of four major threats to the health of National Forests. As such, the Chief has required all Forests to comply with a new travel management rule which, in essence, restricts ORV travel to designated roads, trails, and areas. On the Medicine Bow NF similar actions were already underway, with the Forest prohibiting cross-country travel in a 2000 decision. Scientific literature devoted to the topic is clear in its contention that at best, the effects of ORV use can be anticipated and mitigated—and at worst, ORV use is unsurpassed in its ability as a form of recreation to degrade Forest environs (Joslin and Youmans 1999, Vancini 1989, Cole 1986, Andrews and Nowak 1980, Lodico 1973). This has certainly been the case for the east side of the Snowy Range, as no other visitor activity impacts soil, vegetation, and hydrological resources like ORV use does. Annually, the Laramie Ranger District and Forest Service Law Enforcement Officers devote considerable time, energy, and funds attempting to prevent, mitigate, and repair damage to Forest resources caused by ORV use. Yet, Forest personnel are all too aware that their efforts have barely put a dent in the problem. Newly created trails and roads, torn up riparian and meadow areas, eroded stream banks, denuded hillsides, and Wilderness trespass—these are a regular occurrence on the Medicine Bow NF. While volunteers, partners, and Forest personnel make strides at rehabilitating these areas every year, the rate at which the damage is occurring far exceeds any corrective efforts. Thus, cumulative impacts are increasing noticeably year to year.

Even to the casual observer, there is no question that this pattern of resource damage runs counter to the multiple use conservation mandate of the Forest Service and is ultimately unsustainable. Having restricted ORV travel to designated roads and trails—in theory relegating their impacts to

manageable areas and proportions—the question for managers has now become how best to ensure compliance with these restrictions while still providing for the experience ORV users seek.

## Environmental Consequences

Currently, there is little existing baseline data on the local recreation usage patterns within the eastern portion of the Snowy Range. However, through repeated field-observation, professional judgment, ROS management prescriptions, Forest Plan direction, and technical reports relating to ORV use, the consequences of the alternatives on recreation opportunities and experiences may be predicted with a fair degree of certainty, but without substantial quantitative analysis.

### *ALTERNATIVE 1 - No Action*

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

**Developed Recreation, Wilderness, and Designated Trails:** No short-term or lasting adverse impacts to developed recreation, wilderness, or designated trail system users are expected to occur as a result of implementing this alternative.

**Inventoried Roadless Areas (IRAs):** Unauthorized routes in IRAs would be administratively closed which, depending on user compliance, could improve the primitive nature of these areas.

**Dispersed Recreation:** Some Forest recreationists would be negatively affected by the closure of unauthorized *roads*, particularly those seeking a favorite dispersed campsite located along an unauthorized route. However, as previously discussed, most of the campsites on these routes appear to be infrequently used and/or are located in close proximity to comparable sites on authorized routes. Similarly, recreational use of the majority of the unauthorized roads appears to be relatively low, with most of the routes being duplicative of neighboring authorized roads, thereby providing few opportunities that can be considered unique. There are some exceptions to this, especially in the vicinities of Morgan, Wycolo, Gramm, Lake Owen, and Fox Park, where unauthorized roads are receiving regular use. The use is likely from local residents and/or ORV users seeking less improved conditions on which to ride. Overall, however, with the extensive number and miles of roads open to motorized travel in the eastern Snowy Range, there are abundant opportunities to access the Forest by motorized vehicle. Consequently, adverse impacts resultant of the closure of unauthorized roads should be minimal. No loss of Recreation Visitor Days (RVDs) or off-Forest displacement of dispersed recreationists is expected to occur as a result closing unauthorized roads; however, some short-term, site-specific displacement is predictable (1 RVD = 12 hours of recreation activity or derivation thereof).

**ORV-Caused Resource Damage:** Under the No Action alternative, ORV user compliance with travel management regulations restricting travel to designated open roads is expected to remain at current levels. These are estimated to be between 50 - 70 percent for motorbikes, 80 - 85 percent for ATVs, and 90 - 95 percent for traditional 4x4s (based on the professional judgment of Law Enforcement and Recreation staff officers). As such, continued expansion of the existing unauthorized route system is a virtual certainty if no action is taken. This reflects the understanding that, by failing to provide a legitimate means for ORV users to derive some of the backcountry motorized experiences they seek, users would be inclined to participate in unauthorized travel (Blahna 2006, USDA 2005, Yankoviak 2000, Crimmins 1999). Administrative closures of many of

the unauthorized roads and trails would be largely ineffective since there would be no physical closure of the route with this alternative (i.e., enough users would continue to use the closed roads to in effect keep them “open”). Off-road/off trail resource damage would be expected to remain consistent with current trends since it is already prohibited yet still occurring.

**ORV Opportunities:** Many rule-abiding ORV users would be adversely impacted by the closure of unauthorized *trails*, as they would have no opportunity to realize the experiences derived from backcountry motorized recreation. As noted above, some ORV users are not content to travel on roads and prefer the experiences associated with trail-based recreation. Many of the unauthorized trails in the eastern Snowy Range display moderate and consistent use, and the existence of some dates back over several decades. Removing all of these trails from permitted use and restricting travel to open roads would have a lasting negative effect on this user group. Off-Forest displacement can be expected, and losses in RVDs could be greater than 50 percent of the current RVD makeup for this user group.

**Recreation User Conflicts:** Adverse impacts to other recreation user groups—most notably hunters, dispersed campers, anglers, and hikers—would continue because management controls designed to concentrate ORV use away from these potentially conflicting forms of recreation or otherwise mitigate its adverse effects would not be implemented. Some site-specific displacement of non-motorized recreationists would likely occur as a result of negative perceptions associated with ORVs and the spread of ORV use; however, no off-Forest displacement of non-motorized recreationists is probable. Site-specific displacement of non-motorized recreationists would most likely occur in the vicinities of Lake Owen, Pelton Creek, Illinois Creek, Douglas Creek, and along the newly constructed Medicine Bow Trail.

In sum, many of the current patterns of unauthorized off-road travel and their resultant effects would likely continue if the No Action alternative is implemented. ORV users would have no other authorized means to realize the experiences they seek in visiting the eastern Snowy Range.

**Cumulative Effects:** The popularity of ORV use in National Forests is likely to continue to increase well into the next decade. Therefore, it may be reasonably anticipated that additional ORV users would likely seek out even more opportunities for off-road recreation, further intensifying the already unacceptable situation. Failing to take measures now to stem the ongoing problems associated with unmanaged and/or inadequately managed use would have a negative cumulative effect not only on other recreation resources, but on ORV users themselves: the Forest landscape would be altered for generations to come, and the potential for increased disapproval of ORV recreation by interested publics and land managing agencies would increase. Although future compliance with closures and restrictions may be anticipated for the majority of ORV users, a significant degree of non-compliance can be expected, resulting in the continuation and expansion of current negative trends as ORV use in the area increases.

Cumulative trends in road decommissioning on the District would be perceived by some stakeholders as unnecessarily limiting access to the Forest. For instance, through the Collins Creek timber sale of 2003, 10.1 miles of road were decommissioned, and another 9.8 miles are planned in the Devils Gate timber sale. In the reasonably foreseeable future, it can be safely assumed that additional road decommissioning would occur in subsequent timber sales and other Forest projects. The road system on the District can clearly absorb future cuts in miles and routes and still provide ample access to the Forest. However, some recreationists would be adversely impacted by closures

that prevent access to particular sites and others by the mere idea of additional roads being closed. In the No Action alternative, the possibility of creating these types of reactions would be high.

### ***PROPOSED ACTION***

**Developed Recreation, Wilderness, and Designated Trails:** No short-term or lasting adverse impacts to developed recreation, wilderness, or current trail system users are expected to occur as a result of implementing the Proposed Action. Increased visitation to the Rob Roy Campground and Day Use Area is possible in light of the proximity of this site to the proposed trail network. Based on current occupancy levels and site capacity, the campground and day use area can readily accommodate additional visitation. Use of the existing snowmobile trailhead along Highway 230, slated for improvements and inclusion in the summer motorized trail system, would dramatically increase following the opening of the trails. As many as 50 vehicles are expected to utilize this trailhead on busy summer weekends. The trailhead proposed for construction in the vicinity of Albany would likely experience less usage, with estimates ranging from five to 20 vehicles per day.

**Inventoried Roadless Areas (IRAs):** All unauthorized routes within IRA boundaries (56.6 miles) would either be administratively or physically closed. Depending on user compliance, the closures could improve the primitive nature of these areas.

**Dispersed Recreation:** Dispersed recreationists may experience some negative effects during periods of trail and trailhead construction and improvement; however, the effects would be locally concentrated, few in number, and short in duration. Design specifications would include adequate public outreach as to the timing and nature of work activities to minimize the potential for unwanted surprises to Forest visitors. No measurable site-specific or off-Forest displacement of recreationists is expected as a direct result of construction work. Further, construction work would not result in any loss of Recreation Visitor Days (RVDs).

Some Forest recreationists would be negatively affected by the closure of unauthorized roads and/or their conversion to trails, particularly those seeking a favorite dispersed campsite located along an unauthorized route. However, as previously discussed, most of the campsites on these routes appear to be infrequently used and/or are located in close proximity to similar sites on authorized routes. On the flip side, several unauthorized roads which do access particularly valuable recreation sites (as determined during field surveys), such as sites with scenic vistas, high quality camps, etc., are being proposed for inclusion in the FTS (13.3 miles total) under this proposal. Please refer to the “Dispersed Recreation” effects discussion under the No Action alternative for information regarding areas that receive regular use, but that are proposed for closure.

Since backcountry motorized recreation would be concentrated in designated, posted areas, dispersed recreation experiences are expected to improve as a result of implementing the Proposed Action. This would provide a more reliable means for visitors to obtain the experiences they seek—be they motorized, non-motorized, or combinations thereof (for further discussion of this, see *Recreation User Conflicts* below). Increases in the use of existing dispersed campsites and the potential for the creation of new sites can be expected in areas adjacent to the new trail system; conversely, some decrease in use of dispersed campsites in areas where unauthorized trails are being closed is also probable, as these sites typically have catered to ORV users in the past.

**ORV Opportunities:** Although ORV opportunities would not be as plentiful as those proposed under Alternative 2, ORV users would still benefit considerably from the Proposed Action. There are, however, two notable ways in which the benefits of the Proposed Action may be diminished somewhat from Alternative 2. First, the number of miles of designated ATV trails would be reduced by 16.2 miles, or just under 1/3 the mileage proposed under Alternative 2. Reducing the miles of ATV trail open to travel by roughly 30 percent would result in a trail system that has fewer opportunities for users to realize backcountry experiences and a greater potential for user experiences to become repetitive and lackluster. Second, popular sections of unauthorized motorcycle trails in the vicinities of Albany and Foxborough are not being proposed for designation under this alternative. Adverse impacts to motorcycle enthusiasts—especially those who have been riding these trail segments for several years or more—can be expected. Consequently, some loss in motorcycle RVDs is possible during the first 1-3 years following closure (<10%). There is also some potential for off-Forest displacement given that these popular and frequently used routes would no longer be open to travel. However, following the completion of trail construction and route conversion, this trend would undoubtedly be reversed, with a net increase in motorcycle trail users expected in 3-5 years.

**ORV-Caused Resource Damage:** Under the Proposed Action, ORV user compliance with travel management regulations is expected to increase from current levels (estimated to be between 50 - 70 percent for motorbikes, 80 - 85 percent for ATVs, and 90 - 95 percent for traditional 4x4 users), to between 90 – 95 percent for motorbikes and 85 – 90 percent for ATVs (based on the professional judgment of Law Enforcement and Recreation Staff personnel). This change reflects the understanding that, by providing a legitimate means for ORV users to derive some of the backcountry motorized experiences they seek, fewer users would be inclined to participate in unauthorized travel (Blahna 2006, USDA 2005, Yankoviak 2000, Crimmins 1999). Motorcycle user compliance would likely see the greatest increase, with little to no increase expected for traditional 4x4 users (since the trail system would not affect their travel options). Increases in regulatory compliance are expected to result in 50 percent less use of unauthorized routes slated for closure. Coupled with actual physical closures of unauthorized routes as needed, this would likely result in noticeably less impacts to Forest resources than if no action was taken. Non-compliance—on unauthorized roads and trails proposed for closure, as well as off-road/off-trail—would continue to result in some noticeable adverse resource impacts. However, the gradual expansion of unauthorized motorized trails is predicted to slow from its current pace due to the provision of adequate authorized trail opportunities.

Noticeable improvements would be made to the resource conditions of the unauthorized trails and roads that are adopted for inclusion in the motorbike/ATV trail network. This would be due to the fact that these routes would now receive regular monitoring and maintenance, with problematic areas being re-engineered to ensure resource stability. It is well understood and documented that ORV trails can incur considerable impacts from repeated use and can be difficult to maintain. However, through proper design, appropriate locating, on-going maintenance, and routine condition surveys, impacts to soil, water, and other Forest resources can be mitigated with a high degree of success (Meyer 2002, Albrect 1992, Kuss, Graefe, and Vaske 1990).

**Recreation User Conflicts:** Many of the adverse impacts from ORV use on other recreation user groups should lessen as a result of this proposal since management controls designed to concentrate ORV use away from these potentially conflicting forms of recreation or otherwise mitigate its adverse effects would be implemented. However, some visitors' experiences may still be negatively

impacted by the presence of the ORV trails and users. This may result in the site-specific displacement of non-motorized recreationists, but no off-Forest displacement of non-motorized recreationists or loss in RVDs is expected. Improvements to hunting experiences and success rates are not a likely outcome of this proposal in light of the different nature in which ORVs are typically used during hunting seasons (i.e., primarily in hunting-related activities, rather than for trail riding).

**Cumulative Effects:** Cumulative trends in road decommissioning on the District may be perceived by some stakeholders as unnecessarily limiting motorized access to the Forest, as described under the No Action alternative.

Future Forest projects—especially timber sales—may have a negative cumulative effect on the quality of experiences of users of the trail system if mitigation measures and design specifications are not carefully utilized during planning phases. For instance, the proposed Devils Gate timber sale contains units which bisect proposed trail segments. If not accounted for and mitigated, harvesting operations could significantly impact both user opportunities and user experiences. That said, planning Forest projects with recreation values in mind is not a new phenomenon for the Forest Service—it would just need to be applied to this new recreation component on the District.

If forecasts are correct for the next 15 years, ORV use on the Medicine Bow NF stands to increase by as much as 27 percent (Forest Plan 2003). While the trail system being proposed would help stem many of the current and future unwanted social and environmental impacts of ORV use, it is not at all clear that this system alone can withstand the extent of increases in ORV use being projected ten years out. The cumulative effects of such a scenario could include increased user conflicts resultant of adverse impacts to non-motorized recreationists, increased non-compliance with travel management regulations, and overcrowding on the trail systems. If such increases in use occur, the Forest Service, partnering agencies and groups, and individual users would need to address these possible effects through the use of additional on and off-site controls, alternative transportation scenarios, and/or education and outreach efforts.

## ***ALTERNATIVE 2: Expanded Motorized Trail System***

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

The effects of Alternative 2 on recreation opportunities and experiences would be the same as the Proposed Action, with the following exceptions.

**Inventoried Roadless Areas (IRAs):** Roughly 50.8 of the 56.6 miles of unauthorized routes within IRA boundaries would either be administratively or physically closed. Depending on user compliance, the closures could improve the primitive nature of these areas. Designating 5.8 miles of motorcycle/ATV trails within the Middle Fork IRA would result in the loss of roughly 200 acres classified as Semi-Primitive Non-Motorized recreation.

**Dispersed Recreation:** Changes to dispersed recreation opportunities would occur locally due to slight differences in the transportation system. However, the overall effects to dispersed recreation would be similar to the Proposed Action.

**ORV Opportunities:** ORV users would benefit considerably from authorized backcountry motorized recreation opportunities and would not have to rely on the Forest Road system alone for

their recreational travel. Trails would be designated, signed, and managed according to Forest Service standards, thereby providing safe, high-quality ATV and motorcycle user experiences suitable for different ages, abilities, and preferences. Networks of trail loops would enhance riding experiences, and amenities associated with trailhead improvements, trail map publications, and enrollment in the Wyoming State ORV trail system would also benefit this group of recreationists.

It is anticipated that, despite the 125+ miles of motorized trails being proposed for designation and the 600+ miles of roads open to ORV travel, some ORV users would not be satisfied with the extent, locations, and/or general nature of the trail networks. They would prefer that more trails and/or terrain be opened to summer motorized travel. Further, some popular trail segments were not included in this proposal for resource and management concerns. This would undoubtedly be viewed as disappointing to certain enthusiasts. Some adverse impacts to users of trails proposed for closure through this action can be expected, with potential for net losses of RVDs in the short-term (1-3 years). Losses in RVDs should be less than 10 percent of current RVDs for the area and user group. Off-Forest displacement is unlikely and, over time, ORV user RVDs would increase (see below).

As already noted, ORV use on the Laramie Ranger District is estimated to be between 25,000 and 35,000 visits/year (not including snowmobiles). With the introduction and promotion of an ORV trail system on the District—coupled with the increasing popularity of ORVs—it is highly likely that the District and the eastern Snowy Range would continue to witness increases in overall ORV use. It is anticipated that much of this use would occur on the proposed trail system, but exactly how much is difficult to predict. For planning purposes, it can be safely assumed that at least 50 percent of all ORV users would seek out the new trail system. This would put annual use on it between 12,000 and 17,000 visits per year following its opening, increasing to over 30,000 visits per year by 2010. Total ORV use on the District could reach 60,000 visits/year by 2010 if current trends continue.

**ORV-Caused Resource Damage:** ORV user compliance with regulations is expected to increase from current levels, and could possibly increase more than under the Proposed Action for two reasons: 1) more overall ORV trails to ride; and 2) the inclusion of two popular motorcycle trails.

**Recreation User Conflicts:** No significant change from the Proposed Action.

**Cumulative Effects:** No significant change from Proposed Action.

## ***FOREST PLAN CONSISTENCY***

### ***ALTERNATIVE 1 – No Action***

Opportunities for ORV use would be restricted to open roads on the east side of the Snowy Range. This would not meet the Purpose and Need for the Proposal and would fail to provide both a mechanism for controlling ORV-caused resource damage to the area as well as opportunities for managed, trail-based ORV recreation. Geographic Area strategies for the Upper and Lower Douglas Creek GAs, as stated in the Forest Plan, would also not be met, as these call to “develop a motorized trail system.” Similarly, the Forest Plan Guideline (p. 1-60) for Infrastructure, “Provide a wide range of recreation opportunities and difficulty levels, both motorized and non-motorized, with the trail system,” would also go unrealized. Current ROS prescriptions would be unaffected.

## ***PROPOSED ACTION***

The Proposed Action would meet the Purpose and Need for the Proposal by providing both a mechanism for controlling ORV-caused resource damage to the area and opportunities for managed, trail-based ORV recreation. Geographic Area strategies for the Upper and Lower Douglas Creek GAs, which state to “develop a motorized trail system”, would also be met. Similarly, the Forest Plan Guideline (p. 1-60) for Infrastructure, “Provide a wide range of recreation opportunities and difficulty levels, both motorized and non-motorized, with the trail system,” could also be realized. Differences from the Proposed Action include: ROS prescriptions would not be affected under the Proposed Action and a Forest Plan amendment would not be required.

## ***ALTERNATIVE 2 – Expanded Motorized Trail System***

Like the Proposed Action, Alternative 2 would meet the Purpose and Need for the Proposal by providing both a mechanism for controlling ORV-caused resource damage to the area and opportunities for managed, trail-based ORV recreation. Geographic Area strategies for the Upper and Lower Douglas Creek GAs, which state to “develop a motorized trail system,” would also be met. Similarly, the Forest Plan Guideline (p. 1-60) for Infrastructure, “Provide a wide range of recreation opportunities and difficulty levels, both motorized and non-motorized, with the trail system,” could also be realized. ROS prescriptions would be unaffected under this proposal with two exceptions. Approximately 900 acres classified as Semi-Primitive Non-Motorized northeast of the community of Foxborough and 200 acres classified as Semi-Primitive Non-Motorized northwest of Albany would be converted to Roaded Modified due to motorcycle trail segments being proposed for designation therein. They would not convert to *Semi-Primitive Motorized* due to the minimum acreage required for this setting of 2,500 acres. If adopted, this alternative would also require two site-specific Forest Plan amendments. The amendments would change portions of two non-motorized management area prescriptions (1.31 and 1.33) to a motorized-compatible prescription (3.33) surrounding three motorcycle and three ATV trail segments.

## **K. SOILS AND GEOLOGY**

### **Affected Environment**

**Geology:** Bedrock geology in the analysis area is dominated by Precambrian metamorphic and granitic rocks. These varied formations comprise 225,000 acres of the 314,560 acre analysis area. Most soils developed in residual surfaces of these parent materials. These rocks are highly resistant to physical and chemical weathering and typically form very stable landforms. The remainder of the analysis area is comprised of glacial deposits, sedimentary rocks (consolidated and unconsolidated), and various other formations.

There are no occurrences of mapped landslide features intersecting with proposed new trail construction locations. No overlapping landslide features were observed during field reconnaissance of proposed trail construction locations. Overall, slope stability in the proposed trail construction locations was observed to be extremely high.

**Soils:** Upland areas within the analysis area are dominated by coarse textured soils. These soils typically have sandy loam or loamy sand surface horizon textures with high percentages (by volume)

of rock fragments in the soil profile. Most soils in the alluvial positions (riparian areas) are made up of reworked alluvium, have poor drainage, and are frequently saturated, especially during spring.

For this project, the highest concern for soil management is potential erosion hazard (road/trail). Erosion is the detachment and removal of soil material. Soil structure, texture class, and moisture content determine susceptibility to erosion. Erosion hazard is the inherent susceptibility of a soil to erosive forces such as raindrop impacts or overland flow and is dependent on particle size distribution, organic matter content, soil structure, permeability, rock fragment content, slope gradient, and rainfall characteristics. These ratings assume roads and trails are generally linear, continuous, and narrow (ranging up to 7.5 meters in width). The hazards are defined as follows:

***Slight*** – Little or no erosion is likely.

***Moderate*** – Some erosion is likely; occasional maintenance may be needed; simple erosion control measures may be needed.

***Severe*** – Significant erosion can be expected; roads require frequent maintenance; costly erosion measures are needed (NRCS 1998).

Road and trail erosion hazard ratings for the proposed trail construction are summarized in Table 24. Severe ratings can be attributed to areas of steep slopes ranging upward to 65 percent. Based on field observations and data analyses, new motorcycle trail construction locations rarely exceeded 40 percent slope steepness (0.10 acre) while new ATV trail construction avoids slopes greater than 40 percent altogether. Trails would utilize design features such as climbing turns and switchbacks on steep sections.

**Table 24: New Motorcycle and ATV Trail Construction Potential Erosion Hazard (Road/Trail) Acres**

Rating	Proposed Action	Alternative 2 – Expanded Motorized Trail System
Severe	3.6	4.2
Moderate	4.3	3.4
Slight	0.4	0.4

A wide range of surface erosion and sediment control methods are suitable for use in the forest environment. By identifying the areas sensitive to surface erosion and employing appropriate management strategies, resource professionals can greatly reduce surface erosion and sediment production. Prevention of erosion should be a high priority. Where prevention is not feasible, however, the implementation of a surface erosion and sediment control program, implemented concurrently with construction activities, can cost effectively mitigate the degrading impacts of surface erosion.

Compaction hazard is the risk of inducing soil compaction through timber harvest, livestock grazing, or other management activities. These ratings assume moist or wet soils and are as follows:

***Slight*** – Little or no compaction is likely.

***Moderate*** – Some compaction is likely.

***Severe*** – Significant compaction can be expected. Restrictions on use may be required during high moisture conditions (USDA Forest Service 2003).

Compaction hazard ratings for each alternative are summarized in Table 25. Compaction is a complex physical process dependent on particle size distribution, amount of rock fragments in the soil, organic matter content, soil moisture levels, percent bulk density, amount of soil protective cover, and the characteristics of weight forces acting on the soil surface. The rating for soil compaction is a potential based on the above soil factors. Poorly designed and implemented projects can cause compaction, among other impacts, even if the soil is rated with moderate or slight potential. Soils with severe compaction hazard ratings exhibit saturated conditions most months of the year. Increased rates of soil compaction in these areas would directly affect their hydrologic capabilities and indirectly affect adjacent soils through increased runoff.

**Table 25: New Trail Construction Compaction Hazard Acres**

<b>Rating</b>	<b>Proposed Action</b>	<b>Alternative 2 – Expanded Motorized Trail System</b>
Slight	5.7	5.8
Moderate	1.4	1.4
Severe	1.2	0.8

Soil compaction alters the physical arrangement of soil particles, resulting in an increase in soil density. The increased soil density is largely at the expense of soil macro pores and adversely affects soil, air, water, and thermal regimes. The degree and areal extent of changes in soil properties depends on the management system used, site conditions during operation, and soil texture. The resulting effect on site productivity is a complex interaction between soil texture; impacts on chemical, biological, and physical properties; and plant species.

Compaction also affects the biological and chemical aspects of forest soils. Reduced soil aeration due to compaction decreases root respiration and microbial activity. Poor aeration, in conjunction with higher soil strength, has also resulted in decreased mycorrhizal growth and penetration of mycelia. It can further cause a decline in productivity by creating chemical reducing conditions which may result in some nutrients becoming unavailable, or even toxic, to plants.

**Unauthorized Roads and Trails:** Surveys have identified approximately 262.0 miles of unauthorized roads and 95.8 miles of unauthorized ATV and motorcycle trails on the eastern portion of Snowy Range. A large portion of these routes were not designed to FS standards and lack adequate design and maintenance. Soil erosion, rutting, displacement, compaction, and puddling are present on many segments of these unauthorized routes, some of it at detrimental levels.

**Methods:** The Affected Environment and Environmental Consequences were evaluated using field reconnaissance, office procedures, data analysis, and professional judgment. Field reconnaissance consisted of unit traverses, field soil descriptions, and ocular estimates of existing soil impacts. These activities were conducted in the summer field seasons of 2004 and 2005. Activities in 2004 focused on assessment of unauthorized roads and trails while activities in 2005 focused on assessing the proposed location of new motorcycle and all-terrain vehicle (ATV) trails. Traverses consisted of soil observations across representative portions of the analysis area and/or areas specifically impacted by the Proposed Action and alternatives. Office procedures included compilation of soils, geological, and geomorphological information and review of available research and literature.

## Environmental Consequences

Weaver and Dale (1978) compared motorcycle erosion with horse and foot erosion. Motorcycles moving uphill established a narrow rut which increased the velocity and sediment transport capacity of trail runoff. The development of this linear channel was the direct result of the imprint of the tire and the torque applied by the motorcycle which then led to increased erosion. However, motorcycles moving downhill, when torque is not needed, caused less erosion than hikers and horses. Hikers and horses tend to loosen soil when descending a steep trail because greater forces are applied when decelerating and moving down a steep trail.

Trail use in the last 10 years has seen a dramatic increase in ATV and motorcycle activity. In many cases, the same trail will be used by hikers, horseback riders, cyclists, and motorcycles. These uses compound erosional concerns. Wilson and Seney (1994) provide land managers with some new data summarizing the relative impacts of four different users on two existing trails in southwest Montana. In particular, the results indicate that: (1) the natural processes occurring on the two trails used for this study are complicated and difficult to decipher; (2) sediment yield is detachment-limited rather than transport-limited; (3) horses produced significantly larger quantities of sediment compared to hikers, off-road bicycles, and motorcycles; and (4) the greatest sediment yields occurred on wet trails.

### ***ALTERNATIVE 1 – No Action***

**Direct and Indirect Effects:** No management actions would be taken; therefore, there would be no changes in the soil resource and no additional effects on soil productivity relative to those described under the *Affected Environment* above.

**Cumulative Effects:** As mentioned above, there would be no changes in the soil resource and no additional effects on soil productivity. However, some unauthorized routes may overlap with future timber sales. Where this occurs, harvest activities would cumulatively impact the soil where harvest operations intersect the unauthorized routes. Alternatively, future harvest activities may provide the opportunity to close the overlapping routes.

Unauthorized routes would continue to function as potential livestock travel routes through forested areas. Livestock impacts would occur in tandem with motorized and non-motorized uses and have similar effects to the soil resource. Non-motorized recreation uses, including cycling, hiking and horseback riding, may also continue to occur on unauthorized routes. These activities would continue to affect soil productivity on unauthorized routes.

Unmanaged motorized recreation would continue to occur and would likely increase above current levels. Results of these activities would include continued soil impacts on current unauthorized routes and the potential for the creation of new, user-created routes.

### ***PROPOSED ACTION***

**Direct and Indirect Effects:** Direct and indirect effects of the Proposed Action include:

- Increased soil productivity resulting from the closure of unauthorized roads;

- Small areas of soil disturbance resulting from various closure methods applied to unauthorized routes;
- Decreased soil erosion on unauthorized motorcycle and ATV trails through proper designation, design, maintenance, and monitoring;
- Decreased soil productivity on new construction sections of motorcycle and ATV trails; and
- Soil compaction, rutting, and soil loss on hydric soils in trail sections immediately preceding and following stream crossings on new construction sections of ATV and motorcycle trails.

A trend for increasing soil productivity on 235.5 miles (341.5 acres) of unauthorized roads, 39 miles (28.5 acres) of unauthorized trails, and 5.0 miles (7.3 acres) of NFSR would begin at such time motorized access to these routes is effectively restricted. Increased soil productivity would result from decreased levels of soil surface and subsurface disturbances from motorized use including: compaction, erosion, rutting and displacement.

Proposed methods for closing user-created routes include, but are not limited to; gating; ripping and seeding; and placement of felled trees and/or rocks to prevent access. These closure methods would all have temporary effects on the soil resource until initial disturbance is stabilized. Effects include soil erosion from ripping and minor soil displacement and erosion during barrier construction.

Proper designation, design, construction, maintenance and monitoring of ATV and motorcycle trails would reduce usage impacts. None of the existing, unauthorized ATV and motorcycle trails were built to Forest Service standards and lack adequate design features such as water bars and hardened stream crossings. Absence of these features accelerates the impacts of trail usage.

The action alternatives would provide an opportunity to apply Watershed Conservation Practices Handbook (WCPH, FSH 2509.25) requirements (see Appendix A) and additional design criteria (Appendix B) on the reconfigured ATV and motorcycle trails. These would improve the existing conditions on the system as a whole. Recommended mitigation and design criteria include hardening trail crossings as well as maintaining and establishing needed drainage structures.

Areas of new ATV and motorcycle trail construction (8.0 acres) would maintain little or none of existing soil productivity. These areas would be added to the FTS and would not be included in measurements for Forest Plan soil resource Standard 5 (see EA pg. 10).

Soils immediately adjacent to streams often exhibit saturated conditions during some part of the year. Saturated soils are considered plastic and more susceptible to deformation (rutting) and compaction. It is anticipated that some stream crossing approaches, as well as small areas of soils classified with severe compaction hazard ratings, would exhibit saturated conditions. Consequently, they would be more susceptible to rutting and compaction where hardening material is not in place.

The construction of the Douglas Creek bridge would reduce the occurrence of soil compaction and rutting in the stream crossing area, as described above. Bridge construction would result in some soil erosion and displacement during the construction phase, but these impacts are not expected to be detrimental.

**Cumulative Effects:** Some of the proposed ATV and motorcycle trail construction segments intersect with previously harvested timber sale areas. Placement of these sections within past cutting units would impede or reverse recovery of harvest-impacted soils where trails are constructed. Some

unauthorized routes may also overlap with future timber sales. Where this occurs, soil productivity gains resulting from road closures would be temporarily reduced during timber harvest activities. Productivity would begin recovery once harvest activity is complete.

Roads and trails may serve as livestock travel routes through forested areas. On open routes, these livestock impacts would occur in tandem with motorized and non-motorized uses and would have similar effects to the soil resource. On closed routes, these livestock impacts would have little overlap with other uses, with the possible exception of non-motorized and illegal, motorized use. Livestock trailing on closed roads and trails may impede expected soil productivity gains (i.e. decreases in soil bulk density and soil erosion rates) resulting from the closures.

Non-motorized recreation uses, including cycling, hiking, and horseback riding, could potentially occur on closed, unauthorized routes. Utilization of these areas may impede expected soil productivity gains resulting from the closures.

Unmanaged motorized recreation has the potential to cumulatively impact the soil resource on closed, unauthorized routes. There exists a very real potential for disregard of closure methods by some motorized users. Most of the proposed closure methods are inadequate to stop deliberate illegal users. Compounding the issue is a lack of adequate enforcement in the area. Self-patrolling is often presented as a potential deterrent, but reliance on self-patrolling by other motorized users may or may not be successful. Hopefully, clearly mapped and designated roads and trails resulting from this travel management proposal would clear up confusion about where motorized use is allowed and prohibited.

Illegal motorized use of closed routes would impede or reverse expected soil productivity gains on closed routes. This use could potentially create new, illegal routes, further compounding the overall problem.

By applying Forest Plan standards and guidelines and WCPH requirements (Appendix A), impacts associated with implementing the Proposed Action would be reduced to well within the level of acceptable impacts and Forest Plan standards for the soil resource, specifically the 15 percent threshold for an activity area. There would likely be scattered localized effects to soils from the cumulative activities, but these areas represent a very small percentage of the total analysis area. There are no past, present, or reasonably foreseeable actions described above that would cumulatively exceed acceptable levels permitted by the Forest Plan or other applicable standards.

### ***ALTERNATIVE 2 – Expanded Motorized Trail System***

**Direct and Indirect Effects:** Direct and indirect effects of this alternative would be similar to the Proposed Action. The amount of soil disturbance and productivity loss would be slightly greater (8.3 acres) than that anticipated from the Proposed Action due to 0.3 more miles of new trail construction.

A trend for increasing soil productivity on 232.0 miles (336.4 acres) of unauthorized roads, 27.1 miles (19.8 acres) of unauthorized trails, and 4.3 miles (6.2 acres) of NFSRs would begin at such time motorized access to these routes is effectively restricted. Increased soil productivity would result from decreased levels of soil surface and subsurface disturbances from motorized use including: compaction, erosion, rutting, and displacement.

**Cumulative Effects:** Please refer to the cumulative effects discussion provided under the Proposed Action.

### ***FOREST PLAN CONSISTENCY***

The No Action alternative would maintain consistency with Forest Plan direction for the soil resource. With careful implementation of Forest Plan standards and guidelines, WCPH management requirements, and design criteria, the Proposed Action and Alternative 2 would also maintain consistency with Forest Plan direction for the soil resource. None of the alternatives analyzed in this EA would result in irretrievable impacts to the soil resource.

## **L. Timber Management**

### **Affected Environment**

Primary vegetation types in the Snowy Range include lodgepole pine forests, Engelmann spruce-subalpine fir forests, alpine tundra, sagebrush-steppe, aspen, and riparian areas (seeps, fens, and carrs). These plant communities are separated along gradients of elevation and topography which directly affect important plant growth factors such as temperature, effective precipitation, and hydrologic regime.

The existing vegetation patterns in the Snowy Range are but one point in time along the ever-changing path of plant succession. Following continuing processes of self-renewal, the montane and subalpine plant communities in this vicinity have regenerated, matured, and died for thousands of years. Past disturbance such as fire, natural succession, and timber harvest has created the vegetation conditions seen today.

Much of what is forested at the middle and lower elevations is dominated by stands of lodgepole pine pole timber and saw timber. Engelmann spruce and subalpine fir dominate the higher elevations, along with many north facing slopes and riparian areas. Descending in elevation to the lower tree line and transition to sagebrush steppe, the lodgepole pine becomes more mixed with aspen.

The lower elevation of the Snowy Range is interspersed with a number of sizeable parks, small meadows, sparsely forested, windswept ridges, and non-forested southerly facing slopes. Riparian areas dominated by willows border many of the streams at the lower elevations of the area. At the lower elevations and on southerly aspects, lodgepole pine and aspen become mixed with scattered windswept limber pine (often in association with Rocky Mountain juniper) and unique, relic stands of Douglas-fir with scattered remnant ponderosa pine.

**Past Timber Harvest:** Many of the forested stands within the analysis area show evidence of tie hack and pre-1950 selective logging. Evidence of this late 19<sup>th</sup> and early 20<sup>th</sup> century logging can be found throughout the area in the form of stumps and old overgrown logging roads. Large-scale timber harvesting in the form of clearcutting began on the Snowy Range in the mid to late 1950's. It was also during this time that much of the area's existing Forest roads were constructed or reconstructed to provide access for the timber sales. As with other parts of the Medicine Bow-Routt National Forests, early clearcut harvesting of a number of stands in the area was often done with alternate strip-cuts. Since that time clearcut harvesting has been done with small, irregular shaped units. Today these clearcuts have regenerated to young lodgepole pine and occasionally aspen

stands. Pre-commercial thinning, release and weed, and mistletoe control cutting has also occurred on much of the past treated acres. Since 1950 a number of lodgepole pine pole timber stands have been commercially thinned for post and poles.

**Road System:** The existing road system on the eastern portion of the Snowy Range was built primarily to access the number of timber sales that have occurred in the area since the 1950s. The Snowy Range road system is much more developed in the southern portion (south of Hwy 130) of the mountain range as compared to the area north of Hwy 130. Consequently, the southern portion provides excellent seasonal access to conduct surveys and treatments for insects, diseases, and parasites. A significant portion of the roaded system is gated or otherwise physically closed to public use. Gated or otherwise, closed roads may be used administratively, on a case-by-case basis, for access during timber related treatment projects. The intention on the majority of these closed roads is not to permanently preclude such project based uses.

Unroaded areas on the eastern slope of the Snowy Range include areas with extremely steep terrain as well as areas identified as “roadless” under the National Roadless Rule and through the Forest Plan revision. Inventoried roadless areas identified through these efforts include scattered unroaded areas adjacent to the Savage Run and Platte River Wilderness Areas and inventoried roadless areas greater than 5,000 acres. The topography, proximity of riparian areas, and high cost of road construction within many of these currently unroaded/undeveloped areas have and will continue to discourage new road construction. These factors also hamper attempts to conduct treatments that contribute to the control of insects, disease, and parasites on this portion of the Forest. An exception to this may be future roads that could be built in the eastern portions of the Illinois Creek roadless area and unroaded parcels on favorable terrain east of the Platte River wilderness or south of the Savage Run wilderness.

Recent years have seen a noticeable increase in both spruce beetle and mountain pine beetle activity and associated mortality within the Snowy Range. The designation of roadless areas makes effective treatment of the growing insect infestation a political improbability at this time.

## Environmental Consequences

### *ALTERNATIVE 1 – No Action*

**Direct and Indirect Effects:** The No Action alternative would not change the Forest Transportation System; therefore, there would be no impacts to timber management.

**Cumulative Effects:** There are a number of past, present, and reasonably foreseeable projects that would affect timber management on the eastern portion of the Snowy Range. Most of these projects include some level of road construction and many have associated road decommissioning. Road decommissioning has the potential to impact timber management by making areas that were previously accessible inaccessible for silviculture treatments and treatments of insects, diseases, and parasites. These projects would occur regardless of the alternative selected for implementation. They include:

**Table 26: Miles of Road Proposals Affecting Timber Management**

	Road Construction	Road Reconstruction	Temporary Road Construction	Road Decommissioning
<b>Past Projects</b>				
Collins Creek Timber Sale (2003)	0.7	1.4	3.5	10.1
Silver Run Timber Sale (2004)	0.9	0.7	2.0	--
<b>Present Projects</b>				
Devils Gate Timber Sale	3.3	1.0	5.0	9.8
Foxborough Fuels	--	1.4	--	--
<b>Reasonably Foreseeable Projects</b>				
Shellrock Timber Sale (2007)	1.5	1.5	Unknown	Unknown
Wold/Wyocolo/Miller Lake Fuels Reduction (2007)	--	--	Unknown	Unknown
Spruce/Somber Timber Sale (2008)	12.2	3.0	Unknown	Unknown
Foxpark Fuels Project	0	0	0	0
<b>TOTAL</b>	<b>18.6</b>	<b>9</b>	<b>10.5</b>	<b>19.9</b>

\* Mileages are estimates as no firm proposals have yet been developed.

### ***PROPOSED ACTION and ALTERNATIVE 2 – Expanded Motorized Trail System***

**Direct and Indirect Effects:** Less than 2 percent of system roads would be closed or converted to motorized trails under the Proposed Action and Alternative 2. This would have minimal direct and indirect effects on the ability to manage the timber resource.

A significant portion of the roaded system is gated or otherwise physically closed to public use. Gated or otherwise closed roads may be used administratively, on a case-by-case basis, for access during timber related treatment projects. Therefore, roads proposed for closure with a gate would have no impact on timber management. The most noticeable direct effect of the closure of existing roads would be on the gathering of personal-use timber products (i.e., firewood) by the public. This effect is determined to be minor; no specific roads planned for closure would preclude the public from gathering personal-use products in other areas.

There are no adverse environmental effects for either the Proposed Action or Alternative 2 related to the management of the timber resource. Additionally, there are no irreversible or irretrievable commitments of timber resources under any of the alternatives.

**Cumulative Effects:** Please refer to the discussion provided under the No Action alternative.

### ***FOREST PLAN CONSISTENCY***

All alternatives are consistent with standards and guidelines for the timber resource, as outlined in the Medicine Bow National Forest 2003 Revised Forest Plan (pgs. 1 – 35 to 1 – 40).

## M. Wildlife

Due to the number of species types and resource concerns that must be analyzed, the wildlife section of this EA is formatted slightly differently than the other resource sections. It contains nine “sub-sections” including: 1) Old Growth Forest; 2) Snags and Coarse Woody Debris; 3) Big Game and Motorized Use; 4) Riparian Areas; 5) Federally Listed Threatened, Endangered, or Proposed Wildlife Species; 6) Forest Service Sensitive Species; 7) Management Indicator Species; 8) Cumulative Effects to Wildlife; and 9) Forest Plan Consistency. All sub-sections describe the affected environment first followed by the effects associated with each alternative.

### 1) Old Growth Forest

<b>Affected Environment</b>
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The Medicine Bow National Forest Plan recognizes the importance of retaining old growth forest to improve biodiversity and to provide key habitat conditions for maintaining viable populations of flora and fauna species across the Forest. Old growth forests are defined as “...ecosystems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics that may include tree size, accumulation of large dead woody material, number of tree top layers, species composition, and ecosystem function” (USDA 2003, p. G-26).

During the Forest Plan revision process, the Forest conducted an analysis of old growth by identifying multiple sets of available data that were important to identifying old growth stands. These datasets included old growth scorecard ratings, habitat structural stages, and stand age category (FEIS, 3-132). Using this data, stands were given an “available indicator” code where a code of 4 or 5 represents those forested stands having a high (4) or very high (5) probability of being old growth.

The Forest Plan contains the following Forest-wide standard that is pertinent to old growth retention and/or management:

**1) Manage old forest to retain or achieve at least the minimum percentages of old growth by cover type by mountain range...”** (*Biological Diversity Standard 1, p. 1-31*)

Table 27 depicts total acres by cover type, acres of old growth by cover type, minimum percentages of old growth required by the Forest Plan, and percentage of old growth by cover type on the Snowy Mountain Range. The term “Old Growth” is used to represent those stands with available indicator code 4 or 5, consistent with the Forest Plan Revision.

**Table 27: Old Growth Information on the Snowy Mountain Range**

Cover Type	Total Cover	Old Growth (indicator code 4 or 5)	Percent Old Growth by Cover Type	Forest Plan Standards for Old Growth Retention By Mountain Range
Lodgepole Pine	274,250 acres	43,985 acres	16.04%	15%
Spruce/Fir	115,881 acres	58,217 acres	50.24%	25%
Ponderosa Pine	1,317 acres	516 acres	39.20%	25%
Aspen	18,596 acres	1,783 acres	09.59%	20%
All Forested	410,229 acres	105,670 acres	25.76%	

Table 27 shows that spruce/fir and ponderosa pine cover types contain an abundance of old growth forest, whereas lodgepole pine is approaching Forest Plan minimum old growth standards. Aspen is currently below Forest Plan standards. Consequently, aspen stands identified as having a high or very high likelihood of being old growth were avoided during project design.

### Environmental Consequences

#### *ALTERNATIVE 1 – No Action*

**Direct and Indirect Effects:** The No Action alternative would maintain old growth forest in its current condition and, with the exception of aspen, would continue to meet Forest Plan standards for old growth protection. Late seral aspen, which is identified as below Forest Plan standards, would not be affected by the No Action alternative.

#### *PROPOSED ACTION*

**Direct and Indirect Effects:** This alternative was designed to specifically avoid sensitive habitats such as old growth forest. For example, approximately 7 miles of proposed new trail construction was re-located to avoid identified old growth patches. Despite efforts to avoid oldgrowth patches, however, there are three existing unauthorized trail segments that would impact old growth forest. These trail segments were included under the Proposed Action to minimize the amount of new trail construction and to ensure a viable trail system. They include: 1) roughly 3,000 feet of Trail 119 would bisect a large patch of lodgepole pine and spruce/fir old growth near Keystone Creek; 2) roughly 15,000 feet of Trail 105 would bisect a fairly connected patch of lodgepole pine and spruce/fir old growth near the headwaters of Bird Creek; and 3) approximately 2,500 feet of Trail 100 would bisect a fairly large patch of lodgepole pine old growth above the Hell’s Canyon area.

The Proposed Action would not eliminate or remove the value of identified old growth as wildlife habitat for boreal owls, pine marten, or goshawk because very little vegetation would be removed or altered during trail establishment. Increased motorized disturbance along the created trail corridor could have minor displacement effects on individual animals. However, it is assumed that suitable habitat exists throughout the larger old growth patches and thus, such displacement would be limited to a few individuals moving to adjacent locations away from the trail.

The small length and width of the trail corridor within given old growth patches would maintain the overall value of the larger old growth patches as habitat. Similarly, the small number of old growth patches affected compared to those available outside of the trail corridor ensures that the proposal would not measurably affect populations or carrying capacity. Effects to individual wildlife species are described in the MIS section for goshawk, marten, and three-toed woodpecker and in the Forest Service Sensitive Species section.

### ***ALTERNATIVE 2 – Expanded Motorized Trail System***

**Direct and Indirect Effects:** Proposed new trail construction was designed primarily to accommodate satisfaction for the motorized user while avoiding known signs of erosion in riparian areas or fragile soils. Proposal design did not attempt to specifically avoid old growth forest because existing, unauthorized trails were incorporated into the project proposal, and new construction was proposed to incorporate existing trails into loops. However, for the reasons identified under the Proposed Action, Alternative 2 would not eliminate or remove the value of identified old growth for boreal owls, pine marten, or goshawk.

#### ***2) Snags and Coarse Woody Debris***

##### **Affected Environment**

Snags and coarse woody debris in the analysis area occur primarily as a result of past timber harvesting, firewood gathering, and natural disturbances such as wildfires, insects, and diseases. Existing levels of coarse woody debris vary widely across the analysis area with lower levels generally occurring in harvested stands. Debris levels in un-harvested stands can vary greatly depending on tree species, fire frequency, insect or disease activity, and wind occurrence.

Field surveys of the area found that older forested stands have high numbers of snags within them. Specifically, those areas that consist of forest in habitat structural stage 4 or 5 likely meet or exceed Forest Plan guidelines for snag retention (5 snags per acre).

Many of the stands dominated by mid-seral lodgepole pine lack quality snags having large diameters, wildlife cavities, and associated large down woody debris. This condition exists as a result of both natural and human-caused events. For example, mid-seral lodgepole pine does not typically produce quality snags, stands that have had forest fires were salvage harvested after the fire, and fire suppression activities have put out naturally occurring fires that create snags.

##### **Environmental Consequences**

#### ***ALTERNATIVE 1 – No Action***

**Direct and Indirect Effects:** Snags and coarse woody debris would remain in their current density and gradually increase in number and amount over time. It is assumed that firewood gathering would continue along 50 percent of the administratively closed unauthorized routes. Such activity would slow the rate at which snags and coarse woody debris piles accumulate in these areas.

***PROPOSED ACTION and ALTERNATIVE 2 – Expanded Motorized Trail System***

**Direct and Indirect Effects:** Snags and green trees within newly constructed trail corridors (corridor width is approximately 5 feet) would be removed. Considering that the maximum amount of new trail construction is approximately 23 miles, it is estimated that 115 snags (one acre per mile / 5 snags per acre) would be removed. On occasion, additional snags adjacent to the trail corridor that pose an immediate danger to users may be felled, but this occurrence would be rare and would be limited to 20 to 50 snags during initial trail construction. As additional existing snags fall naturally across the trail, a small section of the fallen log (30” to 60”) would be removed to open the trail corridor to motorcycle or ATV use; the remaining down wood would stay intact.

The closure of unauthorized routes (between 270 and 280 miles) would reduce firewood gathering in many areas, allowing additional snags and coarse woody debris to naturally develop across the analysis area. This would offset the small losses experienced through new trail construction. Assuming that snags and coarse woody debris piles are common across the forest, that a maximum of 165 snags would be removed, that road closures would increase the rate of snag retention, and that downed wood would essentially remain intact, one can conclude that the action alternatives would have no measurable change on overall snag or coarse woody debris density across the analysis area. Predicted effects to wildlife species that depend on snags (such as the American three-toed woodpecker and the American marten) would be minimal and are described in the MIS section of this EA.

***3) Big Game and Motorized Use*****Affected Environment**

**Spring/Summer/Fall Habitat:** Habitat exists throughout the analysis area for mule deer, elk, moose, and bighorn sheep. In non-winter range habitat, dense conifer forest dominates the vegetation. Big game foraging occurs most commonly in non-winter range in riparian areas, high elevation meadows, and areas disturbed by fire or timber harvest during spring/summer/fall months. Deer and elk occupy forested areas with dense vegetation and prefer areas with minimal roads for security from motorized vehicles and human disturbance. Habitat conditions in these spring/summer/fall ranges are adequate to support herd objectives set by the Wyoming Game and Fish Department (2004).

**Winter Range Habitat:** During winter months, big game species concentrate along the low elevation portions of the analysis areas, primarily in Forest Plan Management Areas 3.58 and 5.41. These correspond to winter range habitat identified by the WGFD. Habitat in these management areas is characterized by intermixed open and forested areas including conifer forest, sagebrush hillsides, grassy meadows, and aspen stands. These areas are considered important to the success of big game species because of the quality forage they provide (sagebrush, bitterbrush, grasses, forbs), snow-free foraging areas during winter months, and diverse arrangement of openings adjacent to conifer forest and aspen stands. Habitat conditions in the winter range are of concern to the WGFD because of the low quality of shrublands (productivity and nutrition) caused by recent drought and lack of wildfire in dense stands of

sagebrush. Many of the unauthorized roads that would eventually be closed occur in these areas; no new motorized trails are proposed in these areas.

**Big Game Population Objectives:** Populations of mule deer, elk, and moose are at or approaching Wyoming herd objectives. Annual harvest, by hunting, is implemented by the WGFD to manage populations at a level compatible with maintaining habitat conditions while providing for recreational demands. Bighorn sheep populations are below herd objectives partly because of a lack of non-forested migration corridors connecting lower elevation wintering areas on the North Platte River to summer foraging areas in high elevation meadows of the Snowy Range. They are also below objective because of the decadent condition of sagebrush and ground forbs in some areas.

**Big Game Security Areas:** The Forest Plan FEIS describes security areas as areas that provide cover, are free of motorized access, and are important for many wildlife species particularly large animals, those sensitive to disturbance, and those that are hunted or trapped. In the analysis area, security areas are particularly important for elk, mule deer, marten and goshawk.

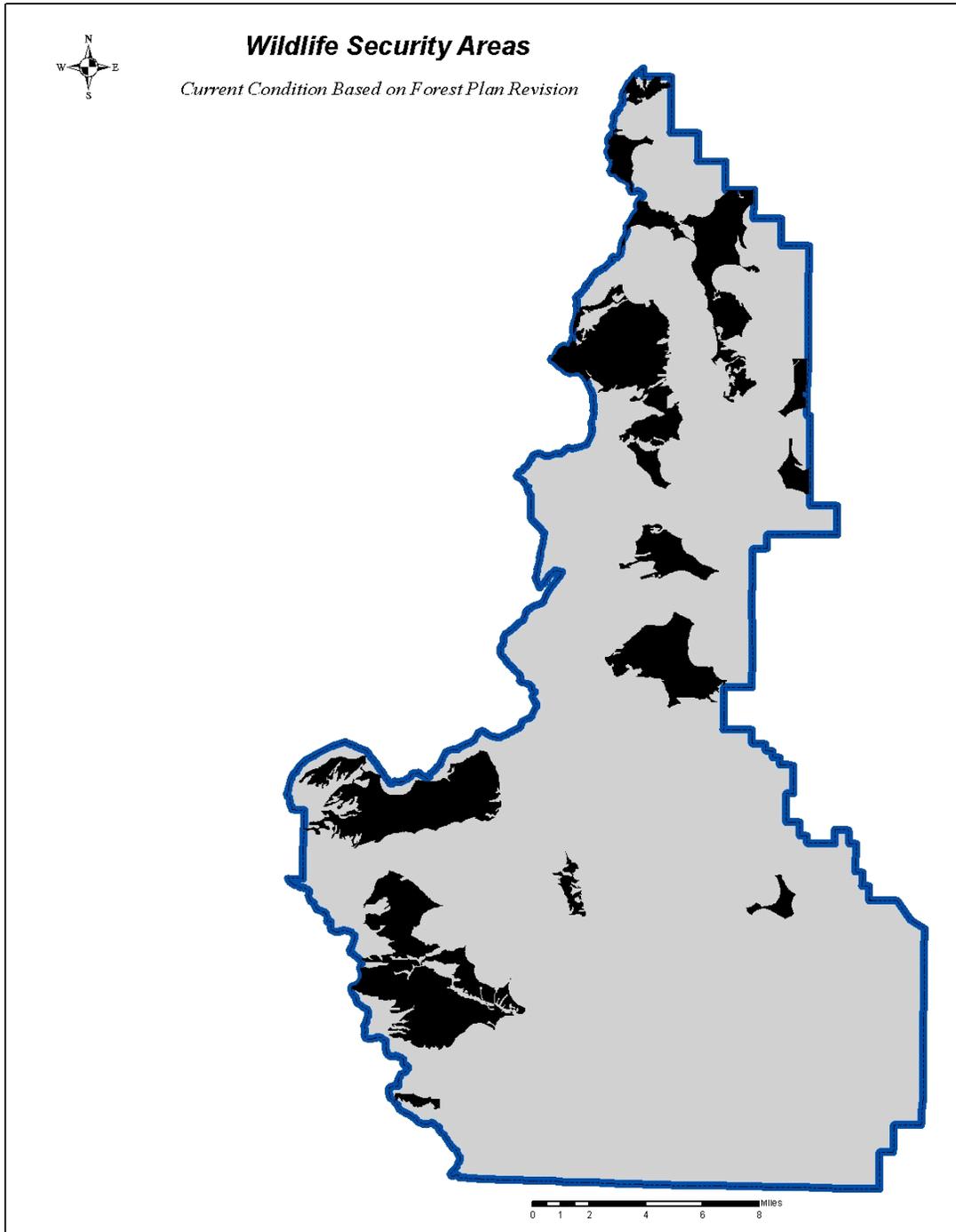
Wildlife Security Cover in each geographic area was analyzed in the FEIS of the Forest Plan Revision (p. 3-263). Security areas and figures identified in previous versions of the wildlife report for this project were revised because they were inconsistent with those calculated and mapped in the Forest Plan Revision. Security cover figures in the Forest Plan were generated from mid- to late-seral forested patches greater than 250 acres in size and greater than ½ mile from open roads. These security area figures and working maps from the Plan Revision were used to approximate the current condition in the analysis area, and to display the affects of the range of alternatives. Based on Forest Plan calculations, approximately 42,000 acres of security cover is present in the analysis area. Figure 1: Wildlife Security Areas, Existing Condition represents the amount and distribution of estimated security areas currently present based on the Forest Plan Revision analysis. While this security cover is generally well distributed, the Lower Douglas Geographic area (approximately 100,000 acres) has minimal amount of security cover identified (just under 1%). The following two statements apply specifically to security cover identified during the Forest Plan Revision:

- In the action alternatives, none of proposed motorized trails occur within the security cover identified during the Forest Plan Revision.
- In all alternatives, many of the unauthorized routes proposed for closure exist within the security cover identified during the Forest Plan Revision.

Augmented security areas were identified and include the security cover identified in the Forest Plan Revision as well as additional forested areas that exist more than ½ mile away from open system roads. These areas are considered important to wildlife because of the lack of motorized use (from open system roads) and a mixture of forested cover, shrublands, and meadows. Augmented security areas may currently include a number of unauthorized routes wherein temporary motorized use may be allowed based on the 2000 Travel Management Decision. However, unauthorized routes are typically proposed for closure because they were not designed or established through a formal project proposal and associated NEPA documentation.

It should be noted that security habitat improvement can be expected to occur based on the analysis assumptions listed on EA page 45. Assumption 6 states, “A majority of unauthorized roads

Figure 1: Wildlife Security Areas, Existing Condition



discretion allows.” The above assumptions indicate the potential for a range of success due to implementation of any given alternative. For all three alternatives discussed below, the analysis assumes a 50 percent compliance rate. It cannot be accurately predicted where this compliance would occur, which roads may become fully closed, which would experience decreased use, and which may continue to experience consistent unauthorized use.

## Environmental Consequences

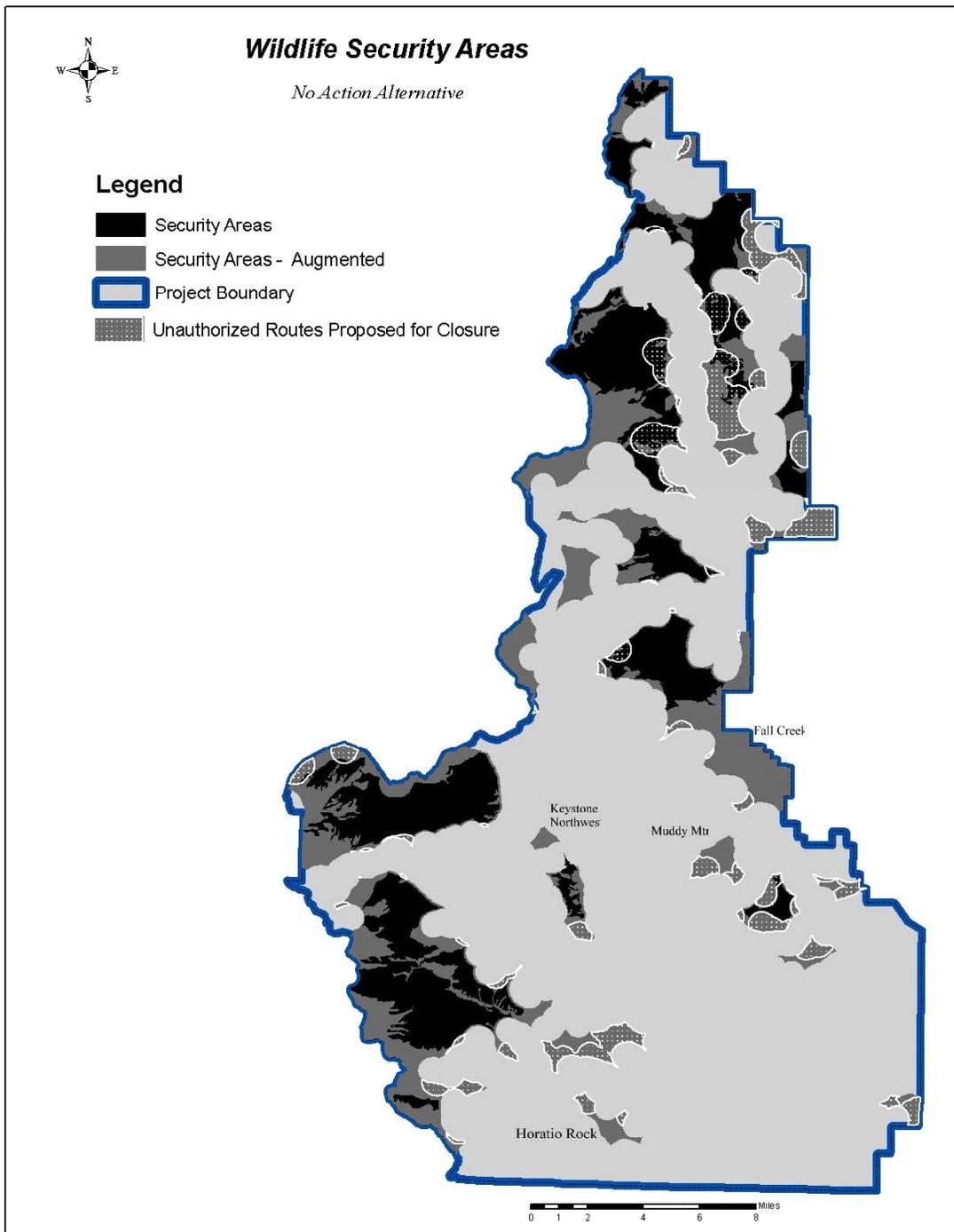
### *ALTERNATIVE 1 – No Action*

**Direct and Indirect Effects:** In the No Action Alternative, habitat for big game, goshawk, marten, and other species affected by motorized disturbance would trend toward improving conditions. Closure of unauthorized roads and trails has the potential to establish 11 new security areas and improve habitat on approximately 20,800 acres in a best case scenario compared to the current condition. However, considering the previous assumption, which acknowledges that 50 percent of unauthorized use would continue to occur, and this non-compliant use would occur in undetermined locations, actual benefits are estimated to occur on approximately 10,400 acres (see Table 28). Specifically, route closures would help to create additional blocks of security habitat that are greater than 250 acres in size, would have no authorized motorized use, and would be more than ½ mile from existing roads. With this improvement, the Laramie Ranger District would recognize 11 additional security areas created by the closure of unauthorized routes, as compared to the current condition.

Augmentation of existing security areas and establishment of new security areas would be an important factor in determining high priority areas for mechanical closure and enforcement. Elk and other ungulates would travel smaller distances between hiding cover and foraging areas and expend less energy doing so. Goshawks would have additional favorable sites for nesting without disturbance. Marten habitat would become more continuous by eliminating numerous roads and trails that bisect habitat.

Improvements to security cover would occur most substantially in the northern portions of the analysis area because large continuous blocks of security habitat would be improved. Numerous unauthorized routes would be closed within existing security areas, and the final size of augmented security areas that would be established are generally thousands of acres in size, and well in excess of the 250 acre minimum. In the southern portion of the analysis area, a number of augmented security areas would be established, but they would be smaller than those in the north and somewhat more isolated. These augmented security areas in the southern portion of the Snowy Range would add approximately 2,700 acres (5,400 x 50%) of security habitat to the Lower Douglas Geographic Area including Horatio Rock, Illinois Creek, Keystone NW, Keystone South, Lake Mountain., Lake Owen, Muddy Mountain, and Squirrel Creek. From a wildlife standpoint, the No Action Alternative would improve wildlife security the most by limiting motorized use to the existing Forest Transportation System which contains a substantial number of open roads. Figure 2 displays the amount and distribution of security areas if the No Action alternative is implemented.

Figure 2: Wildlife Security Areas - No Action Alternative



**Table 28: Security Acres, Alternative Comparison Table**

<b>Security Area Changes*</b>	<b>Current Condition</b>	<b>Alternative 1: No Action</b>	<b>Proposed Action</b>	<b>Alternative 2: Expanded Motorized System</b>
<b>Increase in Security Area Acres</b> (assumes 50% compliance)	0	10,400	9,310	6,720
<b>Total Security Area Acres</b> (Forest Plan Revision figure plus projected increase)	42,000	52,400	51,310	48,720
<b>Number of Security Areas</b> (Forest Plan Revision figure plus newly established augmented security areas)	10	21	19	18

\*The current condition uses security areas identified during the Forest Plan Revision process. The three alternatives include augmented security areas, assuming effective closure of unauthorized routes. Acreage totals were arrived at by using a 50 percent compliance rate.

### ***PROPOSED ACTION***

**Direct and Indirect Effects:** All newly designated motorized trails would be located outside of Wilderness Areas, Inventoried Roadless Areas (IRAs), and existing security areas. Compared to the current condition, this alternative would establish nine (9) new security areas and has the potential to improve habitat on 18,620 acres in a best case scenario. However, when considering the assumption that 50 percent of unauthorized use would continue to occur in undetermined locations, actual benefits are estimated to occur on 9,310 acres (see Table 28). Figure 3 shows the primary areas where security habitat would be improved or created. Effects from the Proposed Action would be similar to those expected under Alternative 2, except that the Proposed Action would establish security habitat in Fall Creek (1,600 acres) and Muddy Mountain (970 acres). These areas are fairly good ungulate habitat and are located more than ½ mile away from open system roads. Potential security areas in Horatio Rock (800 acres) and Keystone Northwest (250 acres) would not be established.

### ***ALTERNATIVE 2 – Expanded Motorized Trail System***

**Direct and Indirect Effects:** Similar to the Proposed Action, all proposed motorized trails would be located outside of Wilderness Areas and existing security areas. Unlike the Proposed Action, however, roughly 5.8 miles of trail are proposed in the Middle Fork IRA. Compared to the current condition, this alternative would establish eight (8) new security areas and has the potential to improve habitat on 13,440 acres in a best case scenario. When assuming 50 percent compliance, actual benefits are estimated to occur on 6,720 acres (see Table 28). Figure 4 shows the primary areas where security habitat would be improved or created.

Figure 3: Wildlife Security Areas – Proposed Action

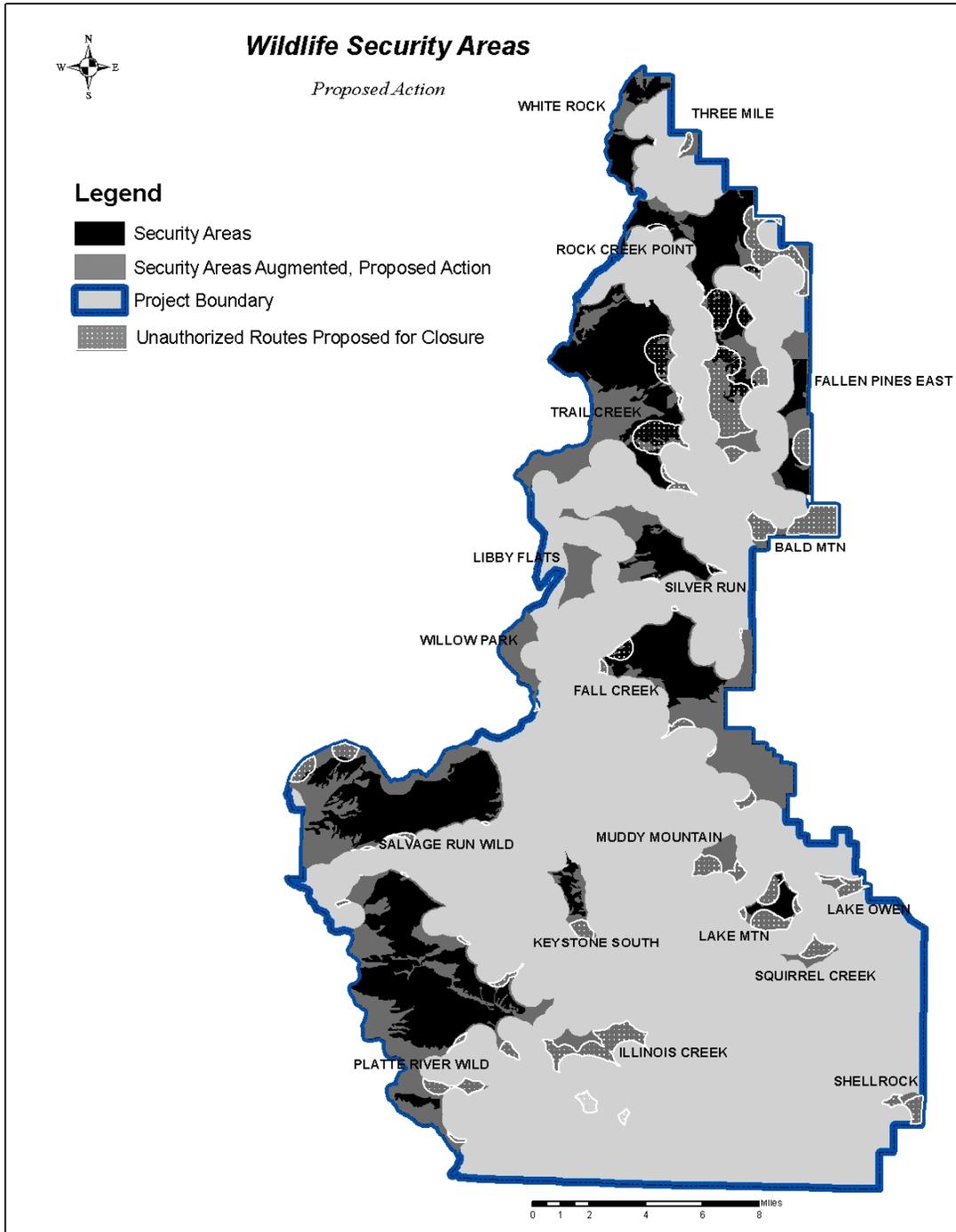
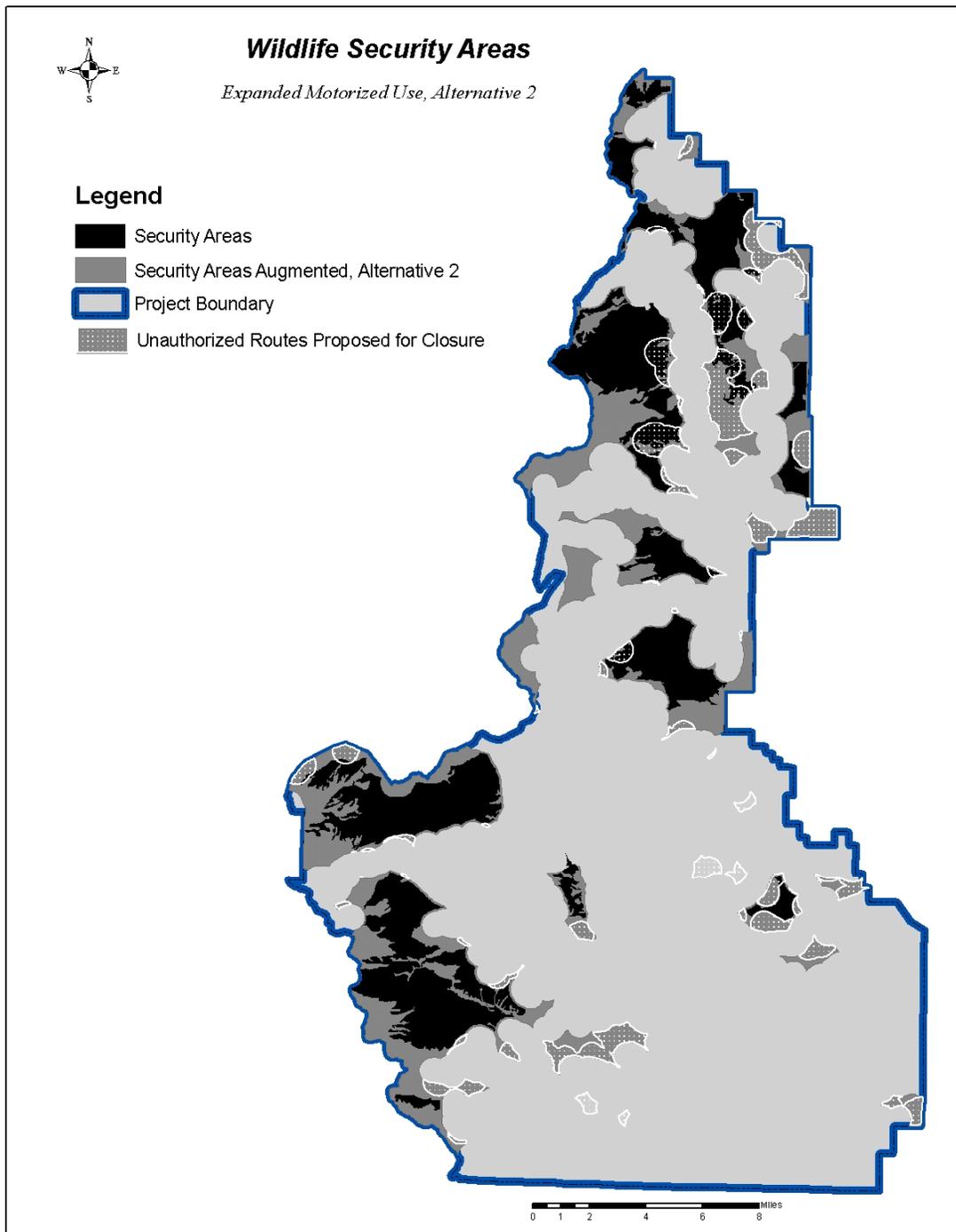


Figure 4: Wildlife Security Areas – Alternative 2



**Alternative 2: Expanded Motorized Trail System (Cont'd)**

Augmented security areas would be established similar to the No Action alternative; in particular, large contiguous blocks of security habitat would be improved in the northern portion of the analysis area. However, motorized trails proposed under Alternative 2 would prevent the establishment of augmented security areas in Fall Creek (1,600 acres), Keystone Northwest (270 acres), Muddy Mountain (970 acres), and Horatio Rock (800 acres). These areas are located more than ½ mile away from open system roads and currently contain only unauthorized routes or closed system roads.

Augmentation of security areas in the Lower Douglas Geographic Area would be approximately 1,678 acres (3,356 x 50%). While the establishment of motorized trails in this area would not likely measurably reduce big game population numbers, the trails are expected to affect distribution, particularly for elk. Fewer elk may reside in these identified portions of National Forest lands because of a regular increase in traffic associated with the established motorized trails. In Fall Creek and Horatio Rock, which are closer to lower elevation private lands, an unknown portion of the ungulate population may spend more time on adjacent private lands to avoid motorized disturbance. This likely would equate to lower hunter success because fewer animals would be located on public land during the hunting season. Such effects to hunter success thwarts efforts to manage big game population numbers and can reduce the quality of foraging habitat by increasing browsing and grazing pressure on the available vegetation.

**Security Area Summary**

It should be noted that route closures proposed under all alternatives would increase wildlife security areas thus complying with the Forest Plan Standard of maintaining or improving security areas. This was accomplished by prohibiting motorized trails in security areas evaluated and identified during the Forest Plan revision process. However, since the potential exists to augment security areas by closing unauthorized routes (i.e. establish additional security habitat), it is important to summarize the differences between alternatives and show how they augment security habitat in various locations.

- Many existing Forest Plan security areas would be augmented by the closure of unauthorized routes (See Figure 2). These augmented areas represent the bulk of habitat improvement and occur primarily in the north end of the analysis area and in all alternatives.
- All alternatives would establish several small augmented security areas in the south end of the area, particularly in the Lower Douglas Geographic Area where security habitat is limited. These augmented security areas are fairly small and isolated, and their value is questionable given an assumed rate of compliance at the 50 percent level. They include Lake Owen, Shellrock, and Squirrel Creek (Shown in Figure 3).
- Illinois Creek, located in the Lower Douglas Geographic Area, is a fairly large augmented security area with extensive unauthorized use. Closure of unauthorized routes in this area would occur in all alternatives, is of maximum benefit to wildlife, and from a wildlife perspective, should occur as a high priority during implementation (Shown in Figure 3).
- Fall Creek is an existing security area that would be largely enhanced by closure of the proposed Albany trail (Trail 100) (Shown in Figure 4). However, the Middle Fork Geographic area, in which it resides, already has over 12 percent security cover. The unauthorized route

known as the Albany motorcycle trail has been in existence for over 20 years and is one of the most important features driving the larger design of the proposed motorized trail system. The augmented portion of Fall Creek security area would occur in the No Action Alternative (Alt.1) and the Proposed Action. The motorcycle trail would be authorized in the expanded use alternative (Alt. 2).

- Horatio Rock is a potentially augmented security area (Shown in Figure 2). It is substantial in size, located in the Lower Douglas Geographic Area (minimal security habitat), and has relatively new (last 5 years) unauthorized motorcycle routes established in it that affect riparian areas and ridge tops important to wildlife. From a wildlife perspective it serves as a favorable area to establish augmented security habitat and would nearly double the security habitat currently identified in the Lower Douglas Geographic Area. Establishment of Horatio Rock as an augmented security area would occur in the No Action Alternative. Motorcycle trails would occur in this area under the Proposed Action and Alternative 2.

The No Action Alternative would be most favorable to wildlife because it would limit motorized use to existing system roads and would close all unauthorized routes, many of which enter wildlife security habitat, and many of which exist in areas otherwise undisturbed by open system roads. This alternative would create numerous small augmented security areas in the Lower Douglas Creek Geographic area and also would include more substantial security area additions to that geographic area by closing routes on Lake Mountain, Muddy Mountain, Illinois Creek, and Horatio Rock.

The Proposed Action would provide a compromise between the No Action alternative and Alternative 2. Trails would be closed on Fall Creek (Middle Fork GA) but motorized use would be authorized in the Horatio Rock potential augmented security area. Substantial benefits would still be obtained in the Lower Douglas Geographic area by closing routes on Illinois Creek, Lake Mountain, and Muddy Mountain, and to a lesser extent Lake Owen, Squirrel Creek, and Shellrock.

Alternative 2 would be the least favorable to wildlife because it would authorize motorized use in several large areas that have the potential to become augmented security areas. These include Fall Creek (Middle Fork GA), Muddy Mountain, and Horatio Rock. Substantial benefits would still be obtained in the Lower Douglas Geographic area by closing routes on Illinois Creek and Lake Mountain, and to a lesser extent in Lake Owen, Squirrel Creek, and Shellrock. Opportunities to create augmented security habitat on Muddy Mountain and Horatio Rock would not occur.

#### ***4) Riparian Areas***

##### **Affected Environment**

Riparian areas, including willow bottoms, wet meadows, and other vegetation surrounding streams, lakes, and wet areas, provide concentrated areas of wildlife habitat that are important to numerous species. Some wildlife species, such as pygmy shrew and various amphibians are found directly associated with riparian areas. Other species, like goshawk, elk, and moose, are more loosely associated with riparian areas because of the rich diversity provided for foraging, dense cover along the margins, and open water. Management actions that concentrate human and motorized use adjacent to wet areas are more likely to impact a larger variety of species and a greater number of species.

**Amphibians:** The analysis area includes a large number of riparian areas suitable for amphibians, including boreal toads (sensitive), wood frogs (sensitive), and chorus frogs (common). Though leopard frogs could potentially be present, the species has not been observed and documented. Generally, all species may be found breeding in similar habitat, typically within and near complex wetland areas characterized by slow moving streams, standing ground water, beaver ponds, and riparian vegetation. They may also be found in forested areas adjacent to the riparian areas. Boreal toads were historically more common in the analysis area, but are now considered rare and strongly declining across the southern Rocky Mountains. This decline is attributed to the effects and spread of Chytrid fungus and is not known to be related to forest management practices such as road/trail construction, livestock grazing, or timber harvest.

Recent surveys across the forest indicate that wood frogs are well distributed in small ponds and wetlands, particularly near the southern portion (Fox Park) and northeastern portion (Firebox Lake) of the analysis area. Although these amphibian species use wetland areas for breeding and upland areas for foraging, migration, and hibernation, the wetland habitat is considered most important for conservation since amphibians concentrate there. The use of upland habitat is typically underground, with only short duration movements on the surface between wet areas or hibernacula.

### Environmental Consequences

On December 13, 2006, the Forest Supervisor issued a letter of clarification regarding Forestwide Threatened, Endangered, and Sensitive Species Standard 11. The memo states:

“The interpretation of Forestwide Standard 11 will focus on protecting **amphibian-breeding habitats** – both occupied and unoccupied- and associated hibernacula. Standard 11 will not presume to protect all conceivable amphibian habitats (e.g. upland travel routes)...Standard 11 should prohibit the damage or destruction of amphibian breeding habitats (and associated hibernacula) in the Forest, therefore preventing the need to incorporate the policy of “no net loss” or degradation into the standard and avoiding the likelihood of non-compliance with section 404 of the CWA.”

The following design measures were used to protect riparian areas when designing the proposed motorized trail system. The action alternatives were designed to ensure that the project proposal will not cause a loss or degradation of known or historic amphibian habitat based on the following design features:

- Amphibian breeding areas (documented or locally known) were considered during project design and thus, proposed trail designation in adjacent wetlands and riparian areas was minimized or eliminated (example: Bird Creek – Boreal Toads)
- Existing unauthorized trails and roads that fit into the overall project design were used, where feasible, to minimize the amount of new construction necessary.
- Existing trails that are proposed for inclusion into the trail system but went directly into wet areas (standing water or mud) were locally re-routed to a more dry location nearby.
- Proposed new trail construction was designed to avoid riparian areas except where stream crossings were necessary.

- Existing unauthorized trails proposed for inclusion into the trail system and that parallel riparian areas were left in place if they did not appear to be directly causing soil erosion and vegetation damage.
- Stream crossings were designed to cross streams and adjacent riparian areas at 90 degree angles to limit impacts and avoid creating new trails that run the length of riparian area.

In the area west of Mountain Home and Wold, a combined high density of riparian areas, a high density of proposed motorized trails, and a high density of existing system roads, are likely to have some effects on wildlife use of riparian habitat. Most of the proposed trail system already exists on the ground as unauthorized roads and trails. For safety reasons, the proposed motorized trail system does not incorporate the use of open system roads and, as a result, some of the stream crossings and trails near riparian areas are duplicate and parallel to open system roads.

### ***ALTERNATIVE 1 – No Action***

**Direct and Indirect Effects:** The No Action alternative would have the maximum benefit to riparian areas by closing all unauthorized roads and trails that affect riparian habitat and wildlife species. A gradual improvement in riparian habitat effectiveness may occur over the next 5 years and longer as ATV and motorcycle use decreases with increased compliance and enforcement. Unauthorized use is expected to continue in the Mountain Home/Wold area specifically because of its location adjacent to developing private land, an extensive network of existing unauthorized roads/trails, and a growing reputation as an area with extensive ATV riding possibilities. Regardless of the effectiveness of actual road closures, amphibians would likely continue to occupy their present habitats in similar abundance since potential breeding areas are relatively numerous, and breeding occurs in marshy areas in late spring which are avoided by most motorized use. Occasional illegal motorized activities (mud-bogging) may damage small amounts of amphibian habitat, but law enforcement personnel actively pursue violations of this type.

### ***PROPOSED ACTION***

**Direct and Indirect Effects:** The effects of this alternative would be slightly less than Alternative 2 because fewer motorized trails are proposed (106.4 miles vs. 127.5 miles). Moreover, Trail 100 (near Bird Creek) and associated ATV trails would not be authorized, thus providing better protection of potential security habitat, wetland areas, and boreal toad habitat. Alternative routes were designed to reduce impacts to riparian habitats by replacing some segments of existing unauthorized trail with new motorized trails in more appropriate locations.

This alternative is preferred (over alternative 2) for boreal toads because the ATV network near Bird Creek is further removed from toad breeding sites and thus, is more likely to discourage use of existing unauthorized routes. If unauthorized use is a recurring problem in the Bird Creek Drainage, temporary closures would be implemented until NEPA is completed allowing for trail re-routing.

## ***ALTERNATIVE 2 – Expanded Motorized Trail System***

**Direct and Indirect Effects:** Alternative 2 would close 268.5 miles of roads and trails (mostly unauthorized) while designating 127.5 miles of newly authorized motorized trail. Many of the proposed closures would eliminate motorized access to riparian areas. In contrast, newly designated motorized trails would concentrate use onto a more manageable trail system and, where feasible, avoid problematic riparian areas.

Compliance with the new motorized trail system is expected to reduce the number, length, and use of unauthorized motorized trails created in the Snowy Range over the long term. Enforcement of illegal motorized use is expected to improve through self-policing and additional USFS patrol on the motorized trail system. Riparian habitat and adjacent forest cover in the Mountain Home vicinity would likely experience a substantial increase in motorized use as the designated trail system becomes more widely known. It can be expected that fewer deer, elk, and raptors would reside near the trail corridors adjacent to Mountain Home as motorized disturbance becomes more regular and at a higher density. Increased disturbance within these 18,000 acres is expected to be offset by decreasing disturbance in the remaining 260,000 acres of the analysis area.

The hydrology section indicates a substantial reduction in the number of roads and trails within 300 feet of streams (see Table 21, EA page 74). It is possible that an occasional amphibian could be run over by a motorcycle or ATV, but the frequency of these occurrences would likely be extremely low since amphibians live mostly underground or concentrate in standing waters where authorized motorized use does not occur. As a precautionary measure, Forest Service personnel that patrol the motorized trail system would be made aware of possible amphibian locations beginning May 15th, and report any observed mortality to the district wildlife biologist. If mortality is found, additional amphibian surveys would be conducted in the area to ensure the trail does not bisect an important migration area or breeding habitat. If necessary, trail location would be modified or seasonal restrictions applied.

### ***5) Federally Listed Threatened, Endangered, or Proposed Wildlife Species***

#### **Affected Environment**

Section 7 of the Endangered Species Act of 1973, as amended, requires federal agencies to use their authorities to carry out programs to conserve threatened, endangered, and proposed species (TEPS). Federal agencies are to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of listed or proposed species or result in the destruction or adverse modification of TEPS critical habitat.

The U.S Fish and wildlife Service (USFWS) provided the MBNF with a list of TEPS and designated critical habitats which may occur within the Laramie Ranger District (USFWS 2006). A review of these species and the effects determinations can be found in the Biological Assessment (BA) prepared for this EA. The BA is on file at the Laramie Ranger District Office, 2468 Jackson Street, Laramie, Wyoming. The only species on the TEPS list that has the potential to be affected by the alternatives analyzed in this EA is the *Canada lynx*.

<b>Environmental Consequences</b>
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***ALTERNATIVE 1 – No Action***

**Direct and Indirect Effects:** The No Action alternative would retain TEPS habitat and populations in their current condition. This alternative would have “No Effect” on federally threatened or endangered wildlife species, “No Effect” on any designated critical habitat, and is not likely to jeopardize the continued existence of any wildlife species proposed for federal listing.

***PROPOSED ACTION and ALTERNATIVE 2: Expanded Motorized Trail System***

**Direct and Indirect Effects:** Both action alternatives would have the potential to impact the Canada lynx. Figure 5 displays the project proposal in relation to LAUs and Lynx Linkage Corridors while Tables 29 and 30 depict acres of habitat within the Northeast Snowy Range and French Creek/Upper Douglas Creek LAUs and percent of all lynx habitat within the LAUs.

**Table 29: Northeast Snowy Range LAU – 54,794 acres**

Lynx habitat description	Acres of habitat within LAU*	Percent of all lynx habitat w/in LAU
Winter forage	22,845	49.43%
Denning	17,119	37.04%
Other	20,130	43.56%
Unsuitable	1,042	2.25%
<b>Total lynx habitat</b>	<b>46,214</b>	
Non-habitat	8,580	18.57%

\* The numbers in Tables 26 and 27 add to more than the total LAU acreages because there is overlap in the habitat acres (e.g., denning acres may also be classified as winter forage acres).

**Table 30: French/Upper Douglas LAU – 57,860 acres**

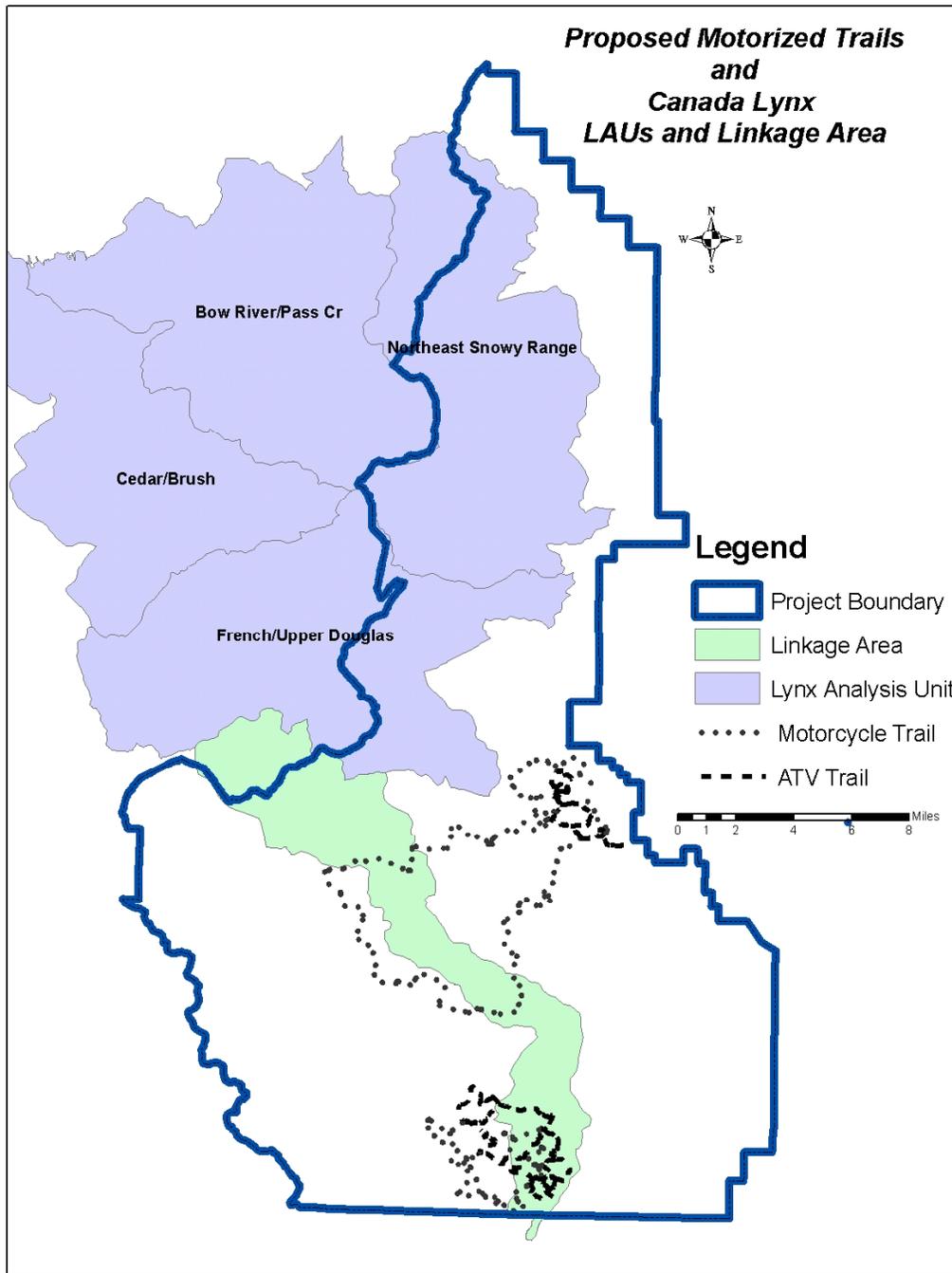
Lynx habitat description	Acres of habitat within LAU	Percent of all lynx habitat w/in LAU
Winter forage	18,284	35.65%
Denning	12,657	24.68%
Other	28,994	56.54%
Unsuitable	2,396	4.67%
<b>Total lynx habitat</b>	<b>51,282</b>	
Non-habitat	6,577	12.83%

***BIOLOGICAL DETERMINATION and RATIONALE***

A determination of “*May affect but is not likely to adversely affect*” has been made for both action alternatives. The rationale for this determination is as follows:

- The project area occurs in the Northeast Snowy Range LAU, the French/Upper Douglas LAU, and the Snowy Range Lynx Linkage Corridor. Both LAUs currently provide adequate acreages of denning habitat, winter foraging habitat, and have minimal unsuitable habitat. Therefore both alternatives would comply with the Lynx Conservation Assessment and Strategy (LCAS) and the Forest Plan.

Figure 5: Canada Lynx LAU and Linkage Corridor



- No motorized trails would be established within the LAUs and motorized trails would not create vegetation breaks that would create barriers to lynx travel.
- Vegetation characteristics of the Lynx Linkage Area would remain adequate to provide cover, forage, and connectivity for lynx that might be moving through the area. The project uses existing road and trail corridors where possible and limits new construction trail corridors to a width of approximately 5 feet or less, thereby ensuring that treatments would not create

barriers to Canada lynx movement, nor will they remove enough vegetation to affect the overall characteristic of existing lynx habitat.

- Motorized trail corridors would not increase designated over-snow routes because groomed trails for winter use would not be permitted in these corridors.
- Affects to Canada lynx are improbable, but may include an occasion where an individual Canada lynx passing through the area moves short distances to avoid encounters with an ATV or motorcycle. Such displacement would be short term and temporary and would not affect the overall use of habitat.
- A net decrease in unauthorized roads and trails may result in a slight improvement of habitat by concentrating motorized use in a smaller area, protecting riparian areas (snowshoe hare habitat), and reducing motorized access to denning habitat.
- Closure and decommissioning of unauthorized roads and trails (reduces approximately 280 miles), and improved compliance with travel regulations are expected to offset the modest negative effects of establishing motorized trails in the Snowy Range, particularly since unauthorized motorized trail use is already occurring and continues to expand haphazardly.

On March 30, 2007, The USFS received concurrence from the U.S. Fish and Wildlife Service regarding this determination for Canada lynx.

## ***6) Forest Service Sensitive Species***

### **Affected Environment**

It is Forest Service policy to protect the habitat of species listed as Forest Service Region 2 Sensitive Species (Rocky Mountain Region) from adverse modification or destruction and to protect individual organisms from harm or harassment as appropriate (FSM 2670.3). Biological Evaluations (BEs) are prepared for each project authorized, funded, or conducted on National Forest land to determine the possible effects the proposed activity may have on sensitive species (FSM 2672.43). The BE process is intended to analyze and document those activities necessary to ensure management actions will not likely jeopardize the continued existence of the species.

All species on the Rocky Mountain Regional Sensitive Species List were reviewed for the Snowy Range Travel Management analysis. A number of species were eliminated from further analysis because the pre-field review determined that project implementation would have no impact on these sensitive species or their habitat (i.e. habitat for these species is either not present or would not be impacted by the project proposal). The BE prepared for the Snowy Range Travel Management analysis contains an analysis of all species included on the Rocky Mountain Regional Species List. The BE is on file at the Laramie Ranger District office, 2468 Jackson Street, Laramie, Wyoming.

### **Environmental Consequences**

#### ***ALTERNATIVE 1 – No Action***

**Direct and Indirect Effects:** The No Action alternative would retain habitat and populations for sensitive species in their current condition. The closure of roughly 270 miles of roads/trails could have some improvement on riparian habitat occupied by boreal toad and wood frog. It is

expected that some impacts to habitat and individual amphibians would likely continue based on an assumed 50 percent compliance rate.

***PROPOSED ACTION and ALTERNATIVE 2 – Expanded Motorized Trail System***

**Direct and Indirect Effects:** Both action alternatives may impact individual northern goshawk, boreal owl, American three-toed woodpecker, pygmy shrew, American marten, boreal toad, northern leopard frog, wood frog, and Hudsonian emerald dragonfly. However, the alternatives are not likely to cause a trend toward federal listing or a loss of viability. Table 31 summarizes the potential impacts for each species.

The complete list of sensitive species is included in the Biological Evaluation (BE) prepared for this analysis. The BE contains additional information for all USFS Region 2 sensitive species regarding preferred habitat, occurrence on the Forest, occurrence in the analysis area, and the presence and alteration of suitable habitat. This information, combined with habitat and resource conditions, was used to make the determinations for each species. While sensitive species determinations are the same for the action alternatives, the Proposed Action is preferred because certain old growth forest habitats and riparian areas were specifically avoided during project design.

**Table 31: Summary of Impacts to Sensitive Species**

Sensitive Species Impacted	Rationale for Determination
northern goshawk	Proposed trail construction is greater than ½ mile from all but one known nest area. One motorized trail would be located 0.23 mile from the pair of nests, but an existing open road lies between the nest and the new trail. Therefore, the trail is not expected to have any additional impacts on the nest. Only a few trail construction areas are located in potential nesting habitat that is not already adjacent to existing open roads. If nests are found, the trails should be re-routed away from the nest area, or, secondarily, seasonal use restrictions should be implemented consistent with Forest Plan standards. Where motorized trail use is concentrated near Mountain Home, impacts to individual goshawk would be limited to temporary displacement of individuals during foraging since they may avoid areas surrounding the active trail corridor. Such displacement is not expected to change reproduction or nest success since known nesting areas are being avoided, and quality nesting habitat without current motorized use is being surveyed and/or avoided.
boreal owl	Much of the habitat proposed for motorized trail development may be occupied by boreal owls. Boreal owls are known to nest and forage in larger blocks of mature spruce/fir (preferably) or secondarily, in older lodgepole pine forest. However, the species is uncommon on the forest and naturally is found at very low densities. Further, they are not known to be sensitive to motorized disturbance, they are active at night, nesting is completed by mid-June when many of trails are just beginning to open up to motorized travel, and breeding individuals select new nest cavities in successive years. The project proposal would retain numerous snags with cavities, large trees in the overstory and/or surrounding forests, and woody debris piles where they exist in levels adequate to preserve habitat value for boreal owls that may be in the area. Disturbance is limited to the removal of 23 acres of suitable habitat where new trail is constructed. This is not expected to affect reproduction or habitat occupation.

**Table 31: Summary of Impacts to Sensitive Species (Cont'd)**

<b>Sensitive Species Impacted</b>	<b>Rationale for Determination</b>
American three-toed woodpecker	Suitable foraging and nesting habitat across the Laramie Ranger District is widespread and the species is well distributed across the Forest at a low density. The species typically nests in larger, mature stands that were avoided during trail layout. The proposed project would not modify habitat in a way that would change the abundance or presence of three-toed woodpecker. Occasional snags or trees with beetle activity may be removed adjacent to or within trail corridors, but the amount of available habitat would not change locally or across the forest. The small number of trees that are removed would not amount to a measurable change in habitat quality or quantity. At most, a few individual woodpeckers may avoid foraging on trees or nesting in cavities that are adjacent to areas of concentrated motorcycle or ATV use. The extensive closure of unauthorized roads and trails, many of which occur in suitable habitat for woodpecker foraging and nesting, could slightly improve the quality of habitat. Based on this information, it has been determined that a few individual woodpeckers may slightly alter foraging or nesting locations to avoid motorized use, but overall production or habitat quality would not change.
pygmy shrew	Individual shrew mortality could result from ground disturbing trail construction activities at stream crossings or the rare instance that a shrew is run over by a vehicle. The probability of either of these two circumstances is extremely low based on uncommon presence of the species, minimal alteration of habitat, and that the species is nocturnal and would not regularly encounter the motorized use. Mortality from increased motorized use is not expected to be measurable compared to natural mortality from predation or weather. Since impacts to individuals are unlikely to occur, or would occur at a very low frequency, they are not expected to measurably alter the population or reproduction of pygmy shrew nor affect viability across the planning area.
American marten	The project would not create large openings known to affect how marten use suitable habitat. Impacts that could occur are limited to individual marten that may or may not moderately adjust their territorial boundaries or foraging routine to avoid areas where new motorized use is concentrated. Such adjustments would likely be modest in size (up to 500 feet) but would not render habitat unsuitable or change its basic character. The large number of unauthorized routes that would be closed would likely offset the additional motorized disturbance experienced by a few individual animals. The overall quality and quantity of habitat (snags, large woody debris, and mature or late seral forest) for marten and their prey would not be reduced to levels that would measurably affect individuals or the population. The project was designed to avoid old growth forest where feasible.
boreal toad	There are minimal known boreal toad locations within the project area. New trails were designed to minimize impacts to riparian areas and thereby minimize the possibility that occupied breeding habitat or individual boreal toads would be disturbed. It is possible that an occasional toad could be run over by a motorcycle or ATV, but the chances of this occurring are unlikely because toads are mostly sedentary and occur at very low densities (extremely uncommon). As a precautionary measure, Forest Service personnel that patrol the motorized trail system should be made aware of possible boreal toad locations by May 15th and report any toad mortality to the district wildlife biologist. If toad mortality is found, additional amphibian surveys would be conducted in the area to ensure the trail does not bisect an important migration area or breeding habitat. If necessary, trail location would be modified or seasonal restrictions would be applied. The Proposed Action is preferred over Alternative 2 for boreal toads because the ATV network near Bird Creek would be further removed for toad breeding sites and thus, is more likely to discourage use of existing unauthorized routes. If unauthorized use is a reoccurring problem in Bird Creek, temporary closures would be implemented until NEPA is completed allowing for trail re-routing. Based on the limited presence of individual boreal toads, the small amount of new disturbance in the upland (23 acres), efforts to avoid impacts to potential breeding habitat, and the potential to reroute or seasonally close motorized trails in the unlikely event it is necessary, implementation of the proposed project may impact individual boreal toads. However, it is not expected to result in any changes to population, habitat quality, or distribution of this species.

**Table 31: Summary of Impacts to Sensitive Species (Cont'd)**

Sensitive Species Impacted	Rationale for Determination
northern leopard frog	There are no known occurrences in the project area; however, there is potential for the species to occur. New trails were designed to minimize impacts to riparian areas and thereby minimize the possibility that occupied breeding habitat or individual leopard frogs would be disturbed. It is possible that an occasional frog could be run over by a motorcycle or ATV, but the odds of this are minimal because leopard frogs are uncommon on the Snowy Range. Potential suitable habitat is found along the margin of boggy areas and beaver ponds characterized by wet soils, aquatic vegetation, and open water all of which are avoided by newly constructed motorized trail. Project implementation is not expected to result in any changes to species population, habitat quality, or distribution.
wood frog	Wood frogs are present in various isolated areas ranging from Fox Park north to Rock Creek. During breeding season they are found along the margins of glacially formed ponds, beaver ponds, and large wetland complexes with open water. Motorized trails were designed to minimize impacts to riparian areas and thereby minimize the possibility that occupied breeding habitat or individual wood frogs would be disturbed. It is possible that an occasional wood frog could be run over by a motorcycle or ATV, but the odds of this are minimal because wood frogs are uncommon and generally found along the margin of boggy areas and beaver ponds during breeding season. Areas characterized by these wet soils, aquatic vegetation, and open water would be avoided by newly authorized motorized trail. As the summer season progresses, wood frogs move to upland areas beneath woody debris, rocks, or other underground crevices. They are not typically exposed to disturbance when occupying these upland areas. Based on the mostly underground life history of the species, the small amount of new disturbance in the upland (23 acres) and efforts to avoid impacting breeding habitat, implementation of the proposed project may impact individual wood frogs. However, it is not expected to result in any changes to population, habitat quality, or distribution of this species.
Hudsonian emerald dragonfly	Hudsonian emerald dragonfly habitat consists of riparian areas with standing water and mature spruce/fir forest immediately adjacent to those areas. While individual dragonfly larvae could be impacted by small or temporary changes in stream runoff during trail construction or near stream crossings, the project is expected to maintain good water quality and hydrologic processes across the analysis area and where disturbances occur. Stream morphology and wetland characteristics necessary to provide continued habitat for dragonfly larvae would continue to be present in abundance. The project would not modify the characteristics of spruce/fir forests that make up adult dragonfly habitat. While individual larvae (if present) could be impacted in small isolated locations, these impacts are not expected to occur over large areas of habitat or impact the overall population or viability of the species.
All Remaining Sensitive Species of Wildlife	No Impacts

**7) Management Indicator Species**

**Affected Environment**

The Forest Service Manual defines Management Indicator Species (MIS) as “...plant and animal species, communities, or special habitats selected for emphasis in planning, and which are monitored during Forest Plan implementation in order to assess the effects of management activities on their populations and the populations of other species with similar habitat needs which they may represent” (USDA Forest Service 1991). The National Forest Management Act (NFMA) require

that MIS be selected as part of the Forest Plan to estimate the effects of planning alternatives on fish and wildlife populations. Essentially, MIS are used as barometers to evaluate the effects of forest management on wildlife within the Forest.

The terrestrial MIS Assessment prepared for the Snowy Range Travel Management analysis discusses distribution and status, habitat, existing conditions, direct, indirect, and cumulative effects as well as the rationale for the conclusions for each species. The MIS Assessment is on file at the Laramie Ranger District office, 2468 Jackson Street, Laramie, Wyoming.

## Environmental Consequences

Table 32 lists the MIS established for the MBNF, addresses whether or not impacts from the project proposal are relevant to the Forestwide trend for the species and, if so, summarizes how project implementation would affect population trends for the species. Forest-wide trends were determined following an extensive review of each species life history, habitat availability across the forest, and available population data.

### MIS Conclusions

The following conclusions pertain to those species identified in Table 32 wherein project impacts are relevant to Forest-wide trends for the species.

**Northern Goshawk:** Impacts to individual goshawk are possible but are anticipated to be minimal. Likely effects are limited to temporary disturbance of an occasional foraging individual and improved habitat where unauthorized roads are reduced. It is reasonable to conclude that the project would maintain stable or positive trends in habitat availability, habitat quality, and population distribution throughout the species range within the planning area and would maintain or improve habitat for this MIS across the Forest in the long-term.

**American Marten:** Across the MBNF, approximately 246,800 acres of marten habitat exists. Quality habitat is predominately in mature or older spruce/fir forests that are located mostly outside of the areas where motorized trails are being authorized. Effects that may occur would be small in scale in comparison to available habitat and marten abundance across the Forest. Furthermore, the large home range size of marten indicates that any effects that may occur would impact only a few individual animals. Considering the limited effects to a small amount of available habitat and very few individual marten, it is reasonable to conclude that the project would maintain stable or positive trends in habitat availability, habitat quality, and population distribution throughout the species range within the planning area. It is also reasonable to conclude that the project would maintain or improve habitat for this MIS across the Forest in the long-term.

**Snowshoe Hare:** A very small amount of habitat (120 acres) would be impacted by the establishment of the motorized trails system. However, corresponding improvement in habitat would occur where unauthorized roads are closed (270 acres). Considering that over 116,000 acres are available in the analysis area and that over 685,000 acres of habitat occur on the MBNF, this reduction in habitat is small in comparison to Forest-wide habitat and population estimates. It is also well within the natural and frequent variation found in studies of snowshoe hare ecology. Thus, these effects would have no lasting effect on overall population, production, or habitat of snowshoe

**Table 32: Management Indicator Species Summary**

MIS	Issue or management uncertainty (for which this MIS was identified in the Forest Plan as referenced in the Forest Plan FEIS, Table H-2.)	Primary Habitat Components	Presence in Analysis area	Is project proposal relevant to forest-wide trends for this species?	Does additional analysis assess the issue for which the MIS was Identified in the Forest Plan?	Conclusion
Northern Goshawk	Old growth (later seral) Lodgepole pine	Large diameter Lodgepole pine or aspen for nesting. Mixed habitat structural stages including meadows, shrublands, early through late seral forest as foraging habitat and to provide diversity of prey.	Yes	Yes	Yes	All alternatives would maintain stable Forest-wide population trend and would comply with Forest Plan standards, guidelines, and MIS goals for this species. Of the action alternatives, the Proposed Action provides a lower probability of negative effects
American Marten	Old growth, Dead down wood, fragmentation and perforation of older forest at the landscape scale.	Late successional forest, particularly spruce/fir stands. Large down logs with heart rot, Connected stands of mature forest with minimal perforation or fragmentation.	Yes	Yes	Yes	All alternatives would maintain stable Forest-wide population trend and would comply with Forest Plan standards, guidelines, and MIS goals for this species. Of the action alternatives, the Proposed Action provides a lower probability of negative effects.
Snowshoe Hare	Prey for Threatened, Endangered, or Sensitive forest carnivores Canada lynx, goshawk, and marten.	Spruce-fir stands with canopy cover densities of 10-40% with between 2 and 12 meters in height. Vertical understory forested cover from one to three meters where snow depths are greater than 1 meter. Riparian vegetation and dense willow bottoms adjacent to spruce/fir stands provide supplemental habitat.	Yes	Yes	Yes	All alternatives would maintain stable Forest-wide population trend and would comply with Forest Plan standards, guidelines, and MIS goals for this species. Of the action alternatives, the Proposed Action provides a lower probability of negative effects.

**Table 32: Management Indicator Species Summary (Cont'd)**

MIS	Issue or management uncertainty (for which this MIS was identified in the Forest Plan as referenced in the Forest Plan FEIS, Table H-2.)	Primary Habitat Components	Presence in Analysis area	Is project proposal relevant to forest-wide trends for this species?	Does additional analysis assess the issue for which the MIS was Identified in the Forest Plan?	Conclusion
Golden-crowned Kinglet	Fragmentation within a forested stand	High elevation coniferous forests. Nest and forage within the interiors of dense, mature spruce-fir habitats having heavy canopy cover.	Yes	Yes	Yes	All alternatives would maintain stable Forest-wide population trend and would comply with Forest Plan standards, guidelines, and MIS goals for this species. Effects are similar in scale for both action alternatives.
Three-toed woodpecker	Snags as related to spruce/fir forest and recent burns	Mature and old growth conifer forest. Also requires recently burned or beetle infested conifer forests. Snags with medium to large diameter that form suitable nesting cavities.	Yes	Yes	Yes	All alternatives would maintain stable forest-wide population trend and would comply with Forest Plan standards, guidelines, and MIS goals for this species. Of the action alternatives, the Proposed Action provides a lower probability of negative effects.
Common Trout	Water Quality	N/A	N/A	N/A	N/A	Addressed in Aquatic Resources Report
Lincoln's Sparrow	Riparian Zone maintenance, ungulate herbivory in willow community	High elevation riparian zones with willows. Nests on the ground within a willow shrub having considerable amount of grass/sedge cover concealing the nest and entrance.	Yes	No. The project is not expected to change the primary habitat components or measurably affect individuals.	No. The project would not measurably affect the condition of willows, shrubs, or grass/sedge cover in wetlands.	Stable Forest-wide population trend and habitat for this species would not be affected by the project proposal. The project would not change willow or sedge nesting habitat.

**Table 32: Management Indicator Species Summary (Cont'd)**

MIS	Issue or management uncertainty (for which this MIS was identified in the Forest Plan as referenced in the Forest Plan FEIS, Table H-2.)	Primary Habitat Components	Presence in Analysis area	Is project proposal relevant to forest-wide trends for this species?	Does additional analysis assess the issue for which the MIS was Identified in the Forest Plan?	Conclusion
Wilson's Warbler	Riparian Zone maintenance, ungulate herbivory in willow community	High elevation riparian zones with willows. Approximately 3 acres of habitat per breeding pair. Primarily nest off the ground within the shrub canopy.	Yes	No. The project is not expected to change the primary habitat components or measurably affect individuals.	No. The project would not measurably affect the condition of willows, shrubs, or grass/sedge cover in wetlands.	Stable Forest-wide population trend and habitat for this species would not be affected by the project proposal. The project would not change willow or sedge nesting habitat.

hare. It is reasonable to conclude that the project would maintain stable or positive trends in habitat availability, habitat quality, and population distribution throughout the species range within the planning area. It would also maintain or improve habitat for this MIS across the Forest in the long-term.

**Golden-crowned Kinglet:** Project implementation would modify a maximum of 120 acres of kinglet habitat through new trail construction. Conversely, a maximum of 270 acres of habitat would be improved by closing roads and trails. Over 122,000 acres of mature or late seral spruce/fir forest habitat exists across the MBNF indicating that, even in a worst case scenario, indirect effects to a limited number of individuals (loss of habitat) is not expected to affect the Forest-wide population trend of “stable.” Potential reductions in habitat are consistent with natural disturbances but would occur on a much smaller scale. Kinglet are also a mobile species that can disperse across the landscape and continue to occupy suitable habitat. It is reasonable to conclude that the project would maintain stable or positive trends in habitat availability, habitat quality, and population distribution throughout the species range within the planning area. It would also maintain or improve habitat for this MIS across the Forest in the long-term.

**Three-toed Woodpecker:** Approximately 246,000 acres of habitat occur on the MBNF, of which over 118,500 acres occurs within the analysis area. Habitat reductions (maximum of 23 acres) as a result of any alternative would have only minimal impact within any given territory because of the linear nature and scattered occurrence of tree removal for trail construction. These reductions would not result in a changed overall habitat condition within any woodpecker territory across the analysis area or across the forest. Positive effects from corresponding road/trail closures would likely offset the small amount of habitat loss. Based on the species ability to disperse and abundant habitat across the Forest, this small level of impact is not expected to affect woodpecker survival or production. Thus, it is reasonable to conclude that the project would maintain stable or positive trends in habitat availability, habitat quality, and population distribution throughout the species range within the planning area. It would also maintain or improve habitat for this MIS across the Forest in the long-term.

## ***8) Cumulative Effects to Wildlife***

### **Affected Environment**

The cumulative effects related to wildlife for this project proposal are summarized here:

- **Roads** - There are approximately 980 miles of motorized roads and trails present within the analysis area. These roads and trails are comprised of open roads, unauthorized roads (two tracks), and unauthorized motorcycle or ATV trails. Approximately 150 miles of additional roads are present but are closed by gates or other barriers to discourage motorized use.

ATVs are becoming increasingly important and available to Forest visitors to access favorite hunting and fishing sites, remote camping locations, for recreational sport, to haul equipment, to gather firewood, and to explore remote public lands. Over 350 miles of unauthorized roads and trails occur within the analysis area, used primarily by motorcycles, ATVs, and pickup trucks gathering firewood. This use is expected to continue to increase unless effectively managed. Effects from these uses are particularly important to wildlife

species, such as northern goshawk, boreal owl, northern three-toed woodpecker, and American marten, who favor isolated habitats, contiguous forest cover, snags, and dead down wood.

- **Riparian Areas** - Many species of wildlife require nearby riparian areas to fill an important part of their biological needs such as access to water, foraging, abundant prey, or as breeding areas. Riparian areas and wetlands can be considered analogous to the hub of a wheel, where many wildlife needs are met in other habitats, but wetlands and riparian areas provide a central core of habitat to meet some basic need for most wildlife species and/or individual animals within an area. Unauthorized roads are often created by people using ATVs, four wheel drive vehicles, or motorcycles to access these riparian areas, often in remote locations, because of the unique experience or desirable recreation environment found there. Effects from human uses in or near riparian areas are represented by analysis of several wildlife species including northern goshawk (nesting), olive-sided flycatcher, pygmy shrew, amphibians, Hudsonian emerald dragonfly, and snowshoe hare.
- **Vegetation Management** - The project record contains a list of past and proposed timber sales including Devil's Gate, Silver Run, Spruce/Gulch, and others. Timber sales units have changed forest cover types (habitat structural stages) from later seral to early seral as well as created a patchy pattern across the forested landscape. These changes have, to a limited degree, affected species that prefer dense cover, contiguous late-seral forest or substantial amounts of snags and dead/down wood which are represented by species such as northern goshawk, boreal owl, northern three-toed woodpecker, American marten, and snowshoe hare.
- **Bark Beetle Epidemic** - A bark beetle epidemic is currently underway and moving through the analysis area from east to west. Entomologists predict it has the potential to eliminate most mature pine and spruce trees across the analysis area. Forest Service response will likely be to conduct a number of timber sales to protect healthy portions of the forest, conduct a number of salvage sales to minimize economic losses or encourage/protect forest regeneration, and establish a number of fuel breaks along roads and private land boundaries reduce the severity of wildfire and aid in fire suppression. For a period of approximately 10 to 20 years, species preferring snags and dead-down wood will experience improved conditions as large numbers of trees die from the epidemic. In later years the overall forest condition will move towards early and mid-seral forest stages thereby minimizing available habitat for these species.

## Environmental Consequences

### *ALTERNATIVE 1 – No Action*

This alternative is preferred for wildlife because all unauthorized routes would be closed and motorized travel would be limited to existing designated National Forest System Roads. Under this alternative, 358 miles of unauthorized roads and trails would be administratively closed to motorized use, and all signs indicating that travel was previously allowed would be removed. Unauthorized use would largely decrease across the analysis area, (assuming 50% compliance), thus improving the function of wildlife security habitat, establishing new security habitat, minimizing disturbances and erosion in riparian areas, and increasing the area where snags and snag recruits are less accessible to firewood gatherers. The end result of the project proposal

would be to concentrate existing motorized use into smaller areas, reduce the overall amount of motorized use across the analysis area, and thus, substantially reduce existing cumulative effects related to roads and riparian areas discussed above. These changes would ultimately provide a benefit to wildlife species that prefer isolation and/or make substantial use of riparian areas.

### ***PROPOSED ACTION and ALTERNATIVE 2 – Expanded Motorized Trail System***

Cumulative effects to wildlife habitat from motorized use would increase in the limited areas where trails are either designated or constructed. Designation/construction of these motorized trails would increase the FTS from 629 miles to approximately 740 miles. The combination of existing cumulative effects and the additional disturbances created by the motorized trail system would not surpass a viability threshold for any population of threatened and/or endangered species, sensitive species, or management indicator species because:

- Past projects have been evaluated for effects on such species and determinations made that they would not impact/effect viability across the Forest. Future projects would undergo NEPA analysis and project design to arrive at favorable determinations.
- Negative effects of this project proposal are minimal and limited to removal of a small number of trees and snags and localized disturbance to only a few individuals of the various species (see wildlife analysis and determinations for threatened and/or endangered species, sensitive species, and Management indicator species).
- Trails were designed to avoid known nests and to reduce ongoing impacts to wetlands.
- Travel restrictions (special orders/closures) would be implemented if conflicts arise with breeding amphibians, raptor nests, or other susceptible species.
- Offsetting negative effects of motorized trails, all remaining unauthorized roads (approximately 280 miles) would be closed. Assuming a 50 percent compliance rate, approximately 140 miles of these unauthorized roads are expected to be closed through additional mechanical methods or through natural succession where small trees regenerate within the unused road corridors. Unauthorized use would largely decrease across the analysis area, thus improving the function of wildlife security habitat, establishing new security habitat, reducing disturbances and erosion in many riparian areas, and increasing the area where snags and snag recruits are less accessible to firewood gatherers.

The Proposed Action is preferred for wildlife over Alternative 2 because more specific design criteria were used to avoid old growth forest and to minimize motorized use within and adjacent to riparian areas.

## ***9) Forest Plan Compliance***

### ***ALTERNATIVE 1 – No Action***

This alternative meets all wildlife related Standards and Guidelines in the Forest-wide Direction and Management Area Prescriptions. However, based on an assumed 50 percent compliance rate,

it is likely that some riparian areas that are historic amphibian breeding habitat would continue to be impacted by unauthorized road and trail use.

### ***PROPOSED ACTION and ALTERNATIVE 2 – Expanded Motorized Trail System***

Compliance with wildlife related Forest Plan Standards and Guidelines would be met in the following ways:

- Old growth stands were identified in the Resource Information System database using indicator code 4 or 5 to determine existing conditions. In general, new trail authorizations would maintain old growth characteristics and the habitat benefits they provide to wildlife. However, the Proposed Action was modified to avoid identified old growth stands where feasible and/or to minimize contact with identified old growth (i.e. bisect a narrow finger of an old growth stand, rather than go through the center of a large old growth stand). Closure of unauthorized roads and trails may reduce motorized use within existing old growth stands. All alternatives would maintain the value of these identified old growth stands as wildlife habitat.
- Fens, peatlands, and bogs were identified by the botanist and avoided during trail layout. Unauthorized roads or trails that negatively affect these resources would receive priority for mechanical closure.
- Snags, snag recruits, and coarse woody debris, where it exists, would be retained at levels adequate to meet Forest Plan Standards. Closure of unauthorized roads would decrease the area available to firewood gatherers who typically harvest dead trees within 150 feet of an area they can operate a vehicle.
- Wildlife security areas greater than ½ mile from open roads were identified and avoided during the design of the motorized trail system. Additional augmented security areas greater than ½ mile from open roads were identified and are considered high priority areas for mechanical closure of unauthorized routes.
- Seasonal restrictions to motorized use would be applied where conflicts occur to sensitive wildlife habitats. Similarly, newly authorized routes would not be added to the motorized groomed winter trail system (for Canada lynx conservation measures).
- The Partners in Flight Wyoming Bird Conservation Plan was reviewed for guidelines related to habitat conservation for land birds. In particular, those recommendations related to montane riparian habitat and mid-elevation conifer habitat (and the associated priority bird species) were reviewed and considered during project design.
- Known goshawk nests were identified and avoided during trail design. Habitat most likely to support additional nests would be surveyed before construction. Seasonal restrictions or re-routing would be applied as necessary.
- Known locations of boreal toad, wood frog, and leopard frog were identified. Trails were designed to avoid known concentrations of amphibians. Where possible, stream crossings were designed perpendicular to stream flow, and in narrow portions of valleys to minimize the potential of disturbing amphibian breeding habitat. Closure of unauthorized roads will benefit amphibian habitat by reducing unauthorized motorized access to riparian areas.

- Within identified Lynx Analysis Units, habitat would be maintained in compliance with LCAS strategies. Similarly, newly authorized motorized trails would not create barriers to lynx travel and would maintain effectiveness of the identified lynx linkage corridor.

## CONSULTATION AND COORDINATION

### *LIST OF PREPARERS*

In accordance with 40 CFR 1501.2a, the Laramie District Ranger selected a team of resource specialists to utilize a systematic, interdisciplinary approach in planning and analyzing projects that may have an impact on the human environment. The following ID Team members participated in the analysis process:

Melissa Martin	Project Leader
Kathy Roche	Zone Botanist
Dean Lebeda	Engineering/Economics
Nat Dyke	Engineering Technician
Gary DeMarcay	Heritage Resources
Carol Purchase	Hydrology
Todd Allison	Fisheries
Paul Blackman	Recreation
Steve Kozlowski	Wildlife
Vern Bentley	Fire and Fuels
Derek Milner	Soils and Geology
Chuck Cobb	Timber Management
Curt Orde	Law Enforcement
Adriene Holcomb	Geographic Information Systems

### *CONSULTATION AND COORDINATION*

During the course of this analysis, the Forest Service hosted three public meetings and mailed a formal scoping notice to roughly 715 individuals, Federal, State, and local agencies, tribes and non-Forest Service persons. Only those entities that provided comments on the proposal are listed below.

#### **State Agencies:**

WY Dept. of Agriculture  
 WY State Trails Program  
 WY Game and fish  
 WY Dept. of Environmental Quality

#### **Organizations:**

Inyan Kara Riders  
 Biodiversity Conservation Alliance  
 Motorized Rec. Council  
 Recreationist of the Bow

#### **Individuals:**

Richard Boelter  
 Brian Culnan  
 Bill Foy  
 Roger Dowden  
 Dave Kuhny  
 Dale Tischmak  
 Patricia Hayward  
 Bonnie Heidel  
 Sigrid Mayer

Derek Weidensee  
Brian Waitkus  
Bill Brenneman  
Jack Clinton  
John Spezia  
Wendell Funk  
Jon Coleman  
Scott Evans  
Mark McDonough  
Barbara Hurwitz  
Thom Miller  
Dave Neumeister  
Samantha Rager  
Lee Underbrook  
Erle Barto  
Charlee Barto  
Derek Gregory  
Sheryl Poole  
Bob Juve  
Katie Swift  
Reddie Juve  
Carolyn Hurwitz  
Reed Merschat  
Mike Rogers  
Jay Stewart  
Mike Diesburg  
Neil Benton  
David Andress  
Rick Martz  
Bruce Dalton  
James Frank  
William Brownsberger  
Mike Sturdevant  
Jeff Deeney  
Mike Fortman  
Jamie Fortman  
Tyler Most

Ray Stibitz  
Brett Montgomery  
Dennis Larratt  
Robert Stickler  
Randy Mulkey  
Gary Lowe  
Nathan Smith  
Roy Collins  
William Unknown  
Matt Wilkinson  
David Nelson  
Michael Troast  
Dennis Keyser  
Dan Blankenship  
Jim Mauker  
Peter Moore  
Peter Moore  
Mark Harrold  
Jay Whitman  
Neil Hanawalt  
Curt Becker  
John Dixon  
Jeremy Hale  
Steve Yeoman  
Ken Kozola  
David Kuhn  
John Lewis  
Kevin Epler  
Garth Massey  
Robert Strayer  
Nick Loe  
John Hoban  
Timothy Hubbard  
Aaron Crego  
David Wagonner  
Sheila Nyhus  
James Rinehart

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# Appendix A

## Management Measures and Design Criteria Watershed Conservation Practices Handbook

The following are management measures and associated design criteria from the Watershed Conservation Practices Handbook (FSH 2509.25-99-1) (USDA Forest Service 2006) which are pertinent to trail construction and maintenance. These measures are proven to protect soil, aquatic, and riparian ecosystems (see FSH 2509.25 for references). Implementation of these measures and design criteria will protect the soil and water resources and ensure compliance with legal requirements for the soil, water, and riparian resources.

MANAGEMENT MEASURE: Design and construct all stream crossings and other instream structures to provide for passage of flow and sediment, withstand expected flood flows, and allow free movement of resident aquatic life.

### 1. Design Criteria.

- a. Install stream crossings to meet Corps of Engineers and State permits, pass normal flows, and be armored to withstand design flows.
- b. Size culverts and bridges to pass debris. Engineers work with hydrologists and aquatic biologists on site design.

NOTE: WRENSS (II.61, II.65).

- c. Install stream crossings on straight and resilient stream reaches, as perpendicular to flow as practicable, and to provide passage of fish and other aquatic life.

NOTE: Maintaining channel geometry and hydraulics protects fish passage (WRENSS II.60; Baker and Votapka 1990).

- d. Install stream crossings to sustain bankfull dimensions of width, depth, and slope and keep streambeds and banks resilient. Favor bridges, bottomless arches or buried pipe-arches for those streams with identifiable flood plains and elevated road prisms, instead of pipe culverts. Favor armored fords for those streams where vehicle traffic is either seasonal or temporary, or the ford design maintains the channel pattern, profile and dimension.

NOTE: Temporary bridges or vented fords (fords with pipes to pass low flows) are potential options where appropriate depending upon traffic use. Temporary bridges should be installed and removed seasonally. Temporary fords should be removed when the need for the crossing no longer exists. Pipe culverts pose the most risk of channel damage, migration blockage, and sediment, while fords can impact incised channels (WRENSS II.57; Terrene Institute 1994; Bohn 1998).

- e. Install or maintain fish migration barriers only if needed to protect endangered, threatened, sensitive, or unique native aquatic populations, and only where natural barriers do not exist.

NOTE: Many barriers have disrupted natural distributions of fish populations.

2. Monitoring. Check stability and grade of crossings, capacity of channels, sediment deposits in streambeds, and ability of aquatic biota to pass (40 CFR 230.23 and 230.31).

MONITORING MEASURE: Limit roads and other disturbed sites to the minimum feasible number, width, and total length consistent with the purpose of specific operations, local topography, and climate.

Keep the number of stream crossings and the extent of sediment sources to a practicable minimum. Avoid sediment loads that damage stream health.

1. Design Criteria.

- a. Construct roads on ridge tops, stable upper slopes, or wide valley terraces if practicable. Stabilize soils onsite. End-haul soil if full-bench construction is used. Avoid slopes steeper than 70%.

NOTE: Roads on favorable terrain cause little sediment (WRENSS V.29, V.35).

- b. Avoid soil-disturbing actions during periods of heavy rain or wet soils. Apply travel restrictions to protect soil and water.

NOTE: This measure reduces mobilized soil during runoff events (WRENSS II.56).

- c. Install cross drains to disperse runoff into filter strips and minimize connected disturbed areas. Make cuts, fills, and road surfaces strongly resistant to erosion between each stream crossing and at least the nearest cross drain. Revegetate using certified local native plants as practicable; avoid persistent or invasive exotic plants.

NOTE: Cross drains near crossings, well-revegetated cuts and fills, and surfacing with large (1 to 3 inch), angular, well-graded gravel greatly reduce sediment from connected disturbed areas (Burroughs and King 1989; Kochenderfer et al. 1984; Swift 1984).

- d. Construct roads where practicable, with outslope and rolling grades instead of ditches and culverts.

NOTE: Kochenderfer et al. (1984); Swift (1984).

- e. Retain stabilizing vegetation on unstable soils. Avoid new roads or heavy equipment use on unstable or highly erodible soils.

NOTE: WRENSS (II.58, II.60).

f. Use existing roads unless other options will produce less long-term sediment. Reconstruct for long-term soil and drainage stability.

NOTE: Reusing old roads usually produces less sediment, but it is often best to reclaim old roads near streams and build farther upslope.

g. Avoid ground skidding on sustained slopes steeper than 40% and on moderate to severely burned sustained slopes greater than 30%. Conduct logging to disperse runoff as practicable.

NOTE: This measure promotes filtration of runoff and sediment (WRENSS II.61).

h. Designate, construct, and maintain recreational travelways for proper drainage and armor their stream crossings as needed to control sediment.

NOTE: Uncontrolled ORV and other recreational use, especially in wet conditions, can severely damage streams and riparian areas.

i. During and following operations on outsloped roads, retain drainage and remove berms on the outside edge except those intentionally constructed for protection of road grade fills.

j. Locate and construct log landings in such a way to minimize the amount of excavation needed and to reduce the potential for soil erosion. Design landings to have proper drainage. After use, treat landings to disperse runoff and prevent surface erosion and encourage revegetation.

2. Monitoring. Monitor travelway conditions, sediment movement into streams, and sediment effects on aquatic habitat and biota.

3. Restoration. Disconnect disturbed areas from streams. Stabilize slopes and surface roads. Close and reclaim roads using certified local native plants as practicable; avoid persistent or invasive exotic plants. Restore integrity of streams and their aquatic habitats.

MANAGEMENT MEASURE: Construct roads and other disturbed sites to minimize sediment discharge into streams, lakes, and wetlands.

Excessive sediment from roads and other disturbed sites can have adverse effects on aquatic habitat. Projects that avoid water bodies or discharge into filter strips are usually less expensive than those that use constructed sediment traps. Sediment control has been effective with common watershed conservation practices in all regions.

1. Design Criteria.

a. Design all roads, trails, and other soil disturbances to the minimum standard for their use and to "roll" with the terrain as feasible.

NOTE: Field studies show that following terrain contours reduces cuts and fills.

b. Use filter strips, and sediment traps if needed, to keep all sand-sized sediment on the land and disconnect disturbed soil from streams, lakes, and wetlands. Disperse runoff into filter strips.

NOTE: Burroughs and King (1989); WRENSS (II.64).

c. Key sediment traps into the ground. Clean them out when 50% full. Remove sediment to a stable, gentle, upland site and revegetate.

NOTE: Field studies show that good sediment traps enhance filter strips.

d. Keep heavy equipment out of filter strips except to do restoration work or build armored stream or lake approaches. Yard logs up out of each filter strip with minimum disturbance of ground cover.

NOTE: Field studies show this measure protects filter strip integrity.

e. Build firelines outside filter strips unless tied into a stream, lake, or wetland as a firebreak with minimal disturbed soil. Retain organic ground cover in filter strips during prescribed fires.

NOTE: Light burns protect the ground cover of filter strips (USFS 1990).

f. Design road ditches and cross drains to limit flow to ditch capacity and prevent ditch erosion and failure.

NOTE: WRENSS (II.56, II.58); Burroughs and King (1989).

2. Monitoring. Monitor sediment movement into streams and sediment effects on aquatic habitat and biota.

3. Restoration. Add cross drains and sediment traps to improve filter strips. Revegetate disturbed areas using certified local native plants as practicable; avoid persistent or invasive exotic plants. Restore integrity of streams and their aquatic habitats.

MANAGEMENT MEASURE: Stabilize and maintain roads and other disturbed sites during and after construction to control erosion.

Build erosion resistance into project design to reduce costly maintenance and restoration (Clean Water Act Sections 402(p) and 404). Mitigate concurrently with construction. Obtain stormwater (402) and 404 permits as required.

1. Design Criteria.

a. Do not encroach fills or introduce soil into streams, swales, lakes, or wetlands.

NOTE: Corps of Engineers nationwide permits (33 CFR 330) limit fill in streams.

- b. Properly compact fills and keep woody debris out of them. Revegetate cuts and fills upon final shaping to restore ground cover, using certified local native plants as practicable; avoid persistent or invasive exotic plants. Provide sediment control until erosion control is permanent.

NOTE: Burroughs and King (1989); WRENSS (II.63, V.29, V.35).

- c. Do not disturb ditches during maintenance unless needed to restore drainage capacity or repair damage. Do not undercut the cut slope.

NOTE: Burroughs and King (1989); WRENSS (II.56, II.58, II.63).

- d. Space cross drains according to road grade and soil type as indicated below: (ex. 01). Do not divert water from one stream to another.

NOTE: Kochenderfer et al. (1984); Swift (1984); WRENSS (II.64) SDSU et. al. (2003).

- e. Empty cross drains onto stable slopes that disperse runoff into filter strips. On soils that may gully, armor outlets to disperse runoff. Tighten cross-drain spacing so gullies are not created.

NOTE: Avoid streamheads, unstable soils, and highly erodible soils (Burroughs and King 1989; WRENSS II.56, II.58, II.59, II.63, II.64).

- f. Armor rolling dips as needed to prevent rutting damage to the function of the rolling dips. Ensure that road maintenance provides stable surfaces and drainage.

NOTE: Burroughs and King (1989); WRENSS (II.64).

13.3 - Exhibit 01

Maximum Cross-Drain Spacing in Feet Based on Soil Types\*

Road Grade (%)	Unified Soil Classification - ASTM D 2487			
	ML, SM Extr. Erodible Silts-sands with little or no binder (d.g.)	MH, SC, CL Highly Erodible Silts-sands with moderate binder	SW,SP,GM,GC Mod. Erodible Gravels + fines & sands with little or no fines	GW,GP Low Erodible Gravels with little or no fines
1-3	600	1000	1000	1000
4-6	300	540	680	1000
7-9	200	360	450	670
10-12	150	270	340	510
13-15	120	220	270	410

\*Adapted from original work on the Siuslaw National Forest documented in the Transportation Engineering Handbook of the Pacific Northwest Region, 1966. Original spacings were based on rainfall intensities of 1 to 2 inches per hour falling in 15 minutes. Soil groups and spacings have been modified, based partly on ditch erosion information in WRENSS, to better represent climate and soil regimes found in the Rocky Mountain Region.

These are maximum spacings. They should be reduced if warranted by onsite factors such as expected road use, downslope stability and erosion hazards, and filter strip capability to trap runoff and sediment and conserve ground cover integrity given the extra water. Combine these spacings with common sense to place cross drains where damage to ditches, slopes, and streams will be minimized. For example, shorten or extend the spacing where needed to move a cross-drain outlet from a stream headwall to a convex slope.

- g. Where berms must be used, construct and maintain them to protect the road surface, drainage features, and slope integrity while also providing user safety.

NOTE: Roadside berms can channel runoff down the road (Burroughs and King 1989). Use of shoes on snowplow blades protects surfaces.

- h. Build firelines with rolling grades and minimum downhill convergence. Outslope or backblade, permanently drain, and revegetate firelines immediately after the burn. Use certified local native plants as practicable; avoid persistent or invasive exotic plants.

NOTE: WRENSS (II.56, II.61).

- i. Use the minimum amount of sand, salt, and/or other de-icing substances (Magnesium Chloride) as necessary to provide safe winter travel conditions. Design paved roads and parking lots to facilitate sand removal (that is curbs or paved ditches). Use filter strips or other trapping methods to reduce movement of de-icing materials into nearby water bodies. Do not deposit sediment into streams or on streambanks along roads.

- j. During winter operations, maintain roads as needed to keep the road surface drained during thaws and break-ups. Perform snow removal in such a manner that protects the road and other adjacent resources. Do not use riparian areas, wetlands or streams for snow storage or disposal. Remove snow berms where they result in accumulation or concentration of snowmelt runoff on the road or erodible fill slopes. Install snow berms where such placement will preclude concentration of snowmelt runoff and will serve to rapidly dissipate melt water.

- k. On roads with high/heavy traffic use, require maintenance agreements and/or use of road surface stabilization practices and dust abatement supplements. See FSH 7709.56 and FSH 7709.58.

2. Monitoring. Monitor condition of cuts, fills, and ditches, effectiveness of filter strips, and runoff and sediment dispersion below cross drains. Monitor sediment movement into streams and sediment effects on aquatic habitat and biota.

3. Restoration. Stabilize fills, ditches, and cross drains. Add cross drains. Repair and armor surfaces subject to ruts. Restore integrity of streams and their aquatic habitats.

MANAGEMENT MEASURE: Reclaim roads and other disturbed sites when use ends, as needed, to prevent resource damage.

Restoring stable grades, stable drainage, and ground cover are critical to reclaiming disturbances and protecting soil quality and stream health. Roads in riparian areas and wetlands should be the highest priority for restoration.

1. Design Criteria.

a. Site-prepare, drain, decompact, revegetate, and close temporary and intermittent use roads and other disturbed sites within one year after use ends. Provide stable drainage that disperses runoff into filter strips and maintains stable fills. Do this work concurrently. Stockpile topsoil where practicable to be used in site restoration. Use certified local native plants as practicable; avoid persistent or invasive exotic plants.

NOTE: WRENS (II.57, II.58), USFS (1996b). One year allows revegetation in optimum seasons.

b. Remove all temporary stream crossings (including all fill material in the active channel), restore the channel geometry, and revegetate the channel banks using certified local native plants as practicable; avoid persistent or invasive exotic plants.

c. Restore cuts and fills to the original slope contours where practicable and as opportunities arise to re-establish subsurface pathways. Use certified local native plants as practicable; avoid persistent or invasive exotic plants. Obtain stormwater (402) discharge permits as required.

d. Establish effective ground cover on disturbed sites to prevent accelerated on-site soil loss and sediment delivery to streams. Restore ground cover using certified native plants as practicable to meet revegetation objectives. Avoid persistent or invasive exotic plants.

2. Monitoring. Monitor connected disturbed areas and culverts removed.

3. Restoration. Reclaim remaining sediment sources. Provide stable drainage that disconnects as much disturbed area as practicable. Revegetate using certified local native plants as practicable; avoid persistent or invasive exotic plants.

MANAGEMENT MEASURE: Manage land treatments to limit the sum of severely burned and detrimentally compacted, eroded, and displaced land to no more than 15 percent of any activity area.

Severe burns kill soil biota, alter soil structure, consume litter and humus, and remove organic matter and nutrients. Severe fires occur when humus and large fuels are dry and heavy fuels near the ground conduct much heat into the soil. Recovery takes years (USFS 1990).

Soil compaction is caused by the weight of vehicles and animals on the ground. It increases soil density and reduces large pores so that water absorption and root growth are impaired. Clay and

loam soils compact more than sandy soils. Soils compact more when soil moisture exceeds the plastic limit. Detrimental compaction may occur with few passes in moist soils but may take many passes in dry soils. Ground cover, deep snow, and frozen soil reduce compaction. Severe compaction can extend to two feet in roads, major skid trails, and log decks; tree growth may be greatly reduced and recovery may take decades (USFS 1990).

The 15% limit applies to all natural and human disturbances that may impact soil structure, organic matter, and nutrients in areas allocated for vegetation production (R2 FSH 2509.18). Where excessive soil impacts already exist from prior activity, the emphasis should be on preventing any additional detrimental impacts and on reclamation where practicable. As defined in the National Soil Handbook (FSH 2509.18) soil quality standards are intended for areas where management prescriptions are being applied, such as timber harvest areas and range allotments. They are not intended to apply to administrative sites or other areas with dedicated uses such as the permanent transportation system, well pads or ski areas, for example.

1. Design Criteria.

- a. Restrict roads, landings, skid trails, concentrated-use sites, and similar soil disturbances to designated sites.

NOTE: FSH 2509.18; WRENSS (V.29, V.35).

- b. Operate heavy equipment for land treatments only when soil moisture is below the plastic limit, or protected by at least 1 foot of packed snow or 2 inches of frozen soil.

NOTE: This measure limits compaction. Soil moisture exceeds the plastic limit if the soil can be rolled into 3 mm threads without breaking or crumbling.

- c. Conduct prescribed fires to minimize the residence time on the soil while meeting the burn objectives. This is usually done when the soil and duff are moist.

NOTE: This measure prevents severe soil heating (USFS 1990, page IV-90).

- d. Allow dispersed winter motorized recreation when snow depths are sufficient to protect soils. Specify a minimum unpacked snow depth of 12 inches unless a site-specific analysis shows a different snow depth is adequate to protect soils. Allow use of snowcats or grooming machines when unpacked snow depths equal or exceed 18 inches. Evaluate special use permit conditions on a site specific basis.

2. Monitoring. Monitor extent of severely burned and detrimentally compacted, displaced, and eroded soil in those activity areas with the most disturbances.

3. Restoration. Subsoil and till to mitigate detrimental compaction. Seed, fertilize, and mulch severe burns. Use certified local native plants as practicable; avoid persistent or invasive exotic plants. Close and reclaim, or permanently armor, any site that has soil pedestals or rills and is subject to concentrated use.

MANAGEMENT MEASURE: Maintain long-term ground cover, soil structure, water budgets, and flow patterns of wetlands to sustain their ecological function, per 404 regulation.

Wetlands control runoff and water quality, recharge ground water, and provide abundant and diverse biota. Natural patterns and processes must be protected. Executive Order 11990 directs that impacts to wetlands should be avoided, minimized or mitigated where practicable. The Corps of Engineers protects wetlands under Section 404 regulations, which may permit wetland impacts if mitigation measures are applied to replace wetland values in-kind.

1. Design Criteria.

- a. Keep ground vehicles out of wetlands unless protected by at least 1 foot of packed snow or 2 inches of frozen soil. Do not disrupt water supply or drainage patterns into wetlands.

NOTE: Field studies show this measure protects soil structure and water regimes.

- b. Keep roads and trails out of wetlands unless there is no other practicable alternative. If roads or trails must enter wetlands, use bridges or raised prisms with diffuse drainage to sustain flow patterns. Set crossing bottoms at natural levels of channel beds and wet meadow surfaces. Avoid actions that may dewater or reduce water budgets in wetlands.

NOTE: Terrene Institute (1994).

- c. Avoid long-term reduction in organic ground cover and organic soil layers in any wetland (including peat in fens).

NOTE: Field studies show this measure protects vital ecological functions.

- d. When practicable, keep buried utility and pipelines out of wetlands. If such a line must enter a wetland, use measures that sustain long-term wetland function.

NOTE: This measure is needed to avoid subsurface wetland damage.

- e. Avoid any loss of rare wetlands such as fens and springs.

NOTE: These wetlands cannot be replaced in-kind.

- f. Do not build firelines in or around wetlands unless needed to protect life, property, or wetlands. Use hand lines with minimum feasible soil disturbance. Use wetland features as firelines if practicable.

NOTE: This measure protects drainage patterns and prevents fireline scars that are often slow to heal in wetlands (USFS 1990, page II-51).

2. Monitoring. Monitor integrity of organic ground cover and organic soil layers, plant community composition and structure, soil structure, water levels, and drainage patterns.

3. Restoration. Retrofit crossings to restore water levels and drainage (Terrene Institute 1994). Reclaim wetlands to restore physical and biological functions. Revegetate using certified local native plants as practicable; avoid persistent or invasive exotic plants.

## **Design Features and Mitigation Measures Interdisciplinary Team Generated**

### **Design Features Specific to the Proposed Action**

- Minimizing disturbance in known sensitive wildlife habitats was an important aspect of the project design and was considered during interdisciplinary meetings related to the initial project proposal. Particularly in the Proposed Action, new trail construction and system road additions were designed to avoid old growth forest and riparian areas, where practical, to minimize impacts to from the noise, regular human presence, and resource changes caused by motorized trail use. Considerable field work was conducted by both the wildlife technician and the engineering technician to ensure that avoidance was considered during on-the-ground trail layout and survey, and the Proposed Action applied these recommendations where practical.
- Sensitive areas related to big game concerns, especially areas providing interior habitat for hiding security, calving/fawning areas, and winter range habitat were generally avoided by new trail construction corridors as well as proposed additions to the trail system. In cases where wildlife security was a concern but trail creation was a priority, existing roads were considered for conversion into motorized trails and/or new construction was designed near existing system roads to narrow the impacts.

### **Mitigation Measures Common to the Proposed Action and Alternative 2: Expanded Motorized Trail System**

#### **Botany**

- Include onsite review before ripping roads in habitats infested with cheatgrass.
- Include onsite review before ripping roads in carbonate soils within mountain shrub or limber pine habitat at 6,300 to 7,800 feet in elevation to allow for elimination or reduction of effects to *Penstemon laricifolius* ssp. *exilifolius*.
- Include botany review at the time of bridge and trail placement, impacts to avoid or reduce through trail and bridge placement and design.
- Unauthorized roads and trails that negatively affect fens, peatlands, and bogs will receive priority for mechanical closure.

#### **Engineering**

- During future recreation analyses, consider trail segments of greater length for ATV riders in the “More Difficult” category. Such analyses should also consider expanding the motorized trail system to add OHV trails in the northern portion of the analysis area, particularly in the area north of State Highway 130 (Sand Lake and Fallen Pines areas).

### Fisheries

- Use water bars and drivable dips to protect pollutants such as gas, oil and sediment from water run-off entering streams to protect all aquatic species.
- Change the location on new motorcycle trail that crosses NFSR 500 in section 16 of T14N, R78W to about 200 meters to the east where it can be at the junction of NFSR 513, then utilize NFSR 556.01 to connect with the remaining part of the designed trail system.  
**Rationale:** The design location for the stream crossing on the south side of NFSR 500 includes an area that has a very deeply incised stream channel with steep sloping banks. The trail then continues through a riparian/wetland area after crossing the stream (Bird Creek and South Fork of Little Laramie River). During the trail surveys it was determined to be more appropriate to move the trail above NFSR 500 to the east so that it comes out on NFSR 513 and then a quick right turn on a closed road NFSR 556.01 to reconnect with the remaining portion of the designed trail. This eliminates crossing the stream, building a bridge or ford, and keeps the motorcycles out of the riparian/wetland area.

### Heritage Resources

- If modifications that would produce ground disturbance to sites 48AB485, 48AB531, and 48AB767 are proposed during project implementation, Forest archaeologists will be notified to analyze potential effects and heritage protection signs will be posted.
- If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency and SHPO staff will be contacted, and the materials will be evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

### Hydrology

- Avoid creating elevated road / trails through wetlands which disrupt the flow of water through the wetland.
- Determine if the unauthorized road between NFSR 307 and 307A in T15N, R78W, Section 8 needs additional drainage or erosion control to minimize effects on adjacent stream channel and wetland.
- Rip, waterbar or use other methods to prevent surface erosion when closing roads.
- For the authorized trail system, use logs, rocks and other methods to keep OHV use on track to prevent widening through wet areas.

### Wildlife

- Goshawk surveys will be conducted along new trail construction routes NM (new motorcycle) 3, NM 6, NM 7, NM 8, NM 9, NM 11, NA 32, NA 33, NA 34, and NA 35 before implementation. If an active nest is found, buffers and seasonal restrictions will be applied to comply with Forest Plan standards.
- If any goshawk nests are located before or during implementation, Forest Plan standards will be applied which include the required establishment of three, thirty acre nest sites where dense vegetation suitable for nesting is retained, and timing restrictions (April through August) within ¼ mile of known nests is applied.

- Trail construction NM 4 will be placed as near as possible to NFSR 580 to avoid impacting the wet spruce/fir springs at the headwaters of Bert Creek.
- Forest Service personnel that patrol the motorized trail system will be made aware of possible boreal toad locations starting May 15<sup>th</sup>; the District biologist will be made aware of any reports of toad mortality. If mortality is found, additional amphibian surveys will be conducted in the area to ensure that the trail does not bisect an important migration area or breeding habitat. If necessary, trail locations will be modified or seasonal restrictions will be applied.
- Unauthorized roads and trails that enter identified wildlife security areas will receive priority for mechanical closure.

## Appendix B

### Authorized and Unauthorized Routes and Mileages

**Table 1-Arterial roads within the Analysis Area**

Road No.	Road Name	Miles
101	Sand Lake	17.228
311	Fox Creek	1.914
338	Ehline	13.947
500	French Creek	13.861
512	Platte Access	27.626
517	Dry Park	11.213
526	Boswell Creek	6.497
	<b>Total</b>	<b>92.286</b>

**Table 2-Collector roads within the Analysis Area**

Road No.	Road Name	
305	Cinnabar Park	6.479
317	Brooklyn Lake	3.223
323*	Rock Creek Circle	5.312
326*	Rock Creek Knoll	2.253
327	Seven Mile Lake	2.913
329	Fallen Pines	12.523
336	Libby Flats	8.194
351	Barber Lake	4.653
504	Roper Road	4.751
511	Horse Creek	5.738
513	Muddy Mountain Cutoff	2.479
514	Hans Creek Crossover	1.504
516	Sixmile Gap	6.281
516.A	Upper Tepee Creek	4.856
520	Eagle Spur	6.895
521	Platte Ridge	4.138
524	Foxpark Bypass	2.342
530	Spruce Gulch	10.001
532	Foxcreek	8.184
540	Lake Owen	3.059
540.A	Lake Owen C.G. Spur A	0.269
542	Keystone	5.53
543	Douglas Creek	10.667

Table 2-Collector roads within the Analysis Area (Cont'd)

Road No.	Road Name	
544	Douglas Point	3.636
544.A	Spur 544.A	4.103
549	Vienna	4.854
555	Elk Creek	5.338
575*	Muddy Mountain	3.872
580	Bert Creek	4.162
898	Pelton Creek	8.814
<b>Total</b>		<b>157.023</b>

\* These collector roads are gated and closed to motorized travel. Total miles 11.437

Table 3-Local roads open to motorized travel within the Analysis Area

Road No.	Miles		Road No.	Miles		Road No.	Miles		Road No.	Miles
101.04	0.151		506	2.211		554	1.6		304.A	0.346
106	6.101		507	3.303		558	0.16		304.AA	0.235
107	0.238		509	3.08		558	0.429		305.B	0.944
130.01	0.064		515	0.01		561	2.161		305.C	0.829
130.02	0.119		515	0.332		562	2.939		305.C	1.046
301	0.822		515.1	0.443		563	1.963		305.D	0.549
301	0.906		518	0.706		565	0.129		305.D	0.737
302	0.089		518	1.765		568	1.31		307.A	1.592
304	0.061		519	0.296		572	1.405		307.AA	0.153
304.01	0.044		519	0.789		573	0.616		307.AB	0.071
307	3.658		522	5.268		578	0.96		307.B	0.302
318	0.538		523	0.003		584	1.847		307.C	0.286
319	0.151		523	0.385		585	0.681		307.D	0.061
319.01	0.068		523	1.065		586	1.153		307.D	0.503
321	0.784		525	0.304		586	1.249		307.E	0.579
325	0.264		525	1.825		588	1.031		307.F	0.666
330	3.198		527	3.427		588	1.142		311.A	0.121
331	1.179		528	0.946		101.A	0.346		311.A	0.635
332	2.871		533	4.146		101.A.01	0.194		311.A	2.735
333	0.704		534	0.784		101.A.02	0.415		311.AA	0.428
334	1.26		534	2.411		101.C	0.348		311.AB	1.175
337	0.351		535	4.195		101.D	0.247		311.AC	1.478
337.01	0.053		536	0.202		101.E	2.619		317.A	0.51
337.02	0.017		536	0.604		101.F	1.263		317.A.01	0.157
337.03	0.064		537	2.493		101.H	0.948		317.A.02	0.123
339	0.267		538	0.007		101.HA	0.503		317.B	0.123
343	4.322		538	0.052		106.A	0.295		325.A	0.242
346	0.997		538	0.572		106.B	0.19		327.A	1.045
346.01	0.069		538	3.515		106.C	1.305		329.B	0.349
349	0.065		539	0.312		106.CA	0.239		329.G	0.104
349	0.091		539	0.624		106.D	0.482		329.L	0.96

Table 3-Local roads open to motorized travel within the Analysis Area (Cont'd)

Road No.	Miles		Road No.	Miles		Road No.	Miles		Road No.	Miles
396	3.347		545	0.087		106.E	0.662		329.LA	0.192
397	0.129		545	0.616		106.F	0.407		329.LB	0.207
398	2.631		547	0.518		106.G	0.264		330.A	0.755
499	1.108		547	0.828		106.H	1.207		330.B	0.851
501	0.895		548	0.187		106.I	0.669		330.C	1.575
501	0.969		548	1.665		106.J	1.747		332.A	0.205
501	1.197		551	1.232		106.L	0.391		336.B	0.105
506	1.505		552	5.044		302.A	0.3		336.B	0.157
506	2.07		553	5.418		302.B	0.112		336.C	0.2
346.A	0.264		500.E	1.399		512.H	0.088		516.BC	0.727
351.A	0.152		500.EA	0.434		512.I	0.137		516.C	0.335
351.C	0.117		501.A	0.1		512.J	0.334		516.D	0.171
351.D	0.546		501.A	0.139		512.M	0.278		516.E	1.133
351.E	0.354		501.A	0.373		512.N	1.444		516.EA	0.119
351.F	0.919		501.A	0.534		512.P	1.242		516.EB	0.182
396.A	0.673		504.A	1.686		512.Q	0.291		516.F	1.161
398.A	1.198		504.AA	0.637		512.S	0.691		516.G	0.606
398.C	0.697		504.B	1.486		512.S	1.086		516.H	0.755
338.A	0.74		504.F	2.534		512.SB	1.463		516.HA	0.204
338.C	0.588		504.FB	0.49		512.T	1.232		516.I	0.386
338.E	0.798		504.FC	0.458		512.U	0.23		517.A	0.957
338.F	0.14		504.FD	0.282		512.V	0.208		517.A	3.35
338.F.01	0.058		504.FD	0.752		512.W	1.037		517.AD	0.876
338.FA	0.343		506.A	0.487		512.WA	0.133		517.AE	0.478
338.G	0.872		506.B	0.611		512.WA	0.587		517.B	1.737
338.H	0.499		506.C	0.321		512.WA	0.88		517.C	0.088
338.I	0.198		506.D	1.181		512.X	0.011		517.C	0.88
338.J	0.428		506.DA	0.2		512.X	0.141		517.CA	0.356
338.K	2.131		507.C	1.045		512.Y	0.602		517.D	0.221
338.L	0.381		507.E	0.367		512.Z	1.399		517.D	0.663
338.N	0.818		508.B	0.305		516.AA	0.98		517.E	0.494
338.P	0.959		509.A	1.186		516.AB	0.523		517.F	1.262
338.R	0.325		509.B	0.614		516.AC	0.242		517.G	1.804
338.R	2.3		511.C	0.141		516.AD	0.231		517.GA	0.93
338.RA	0.923		511.D	0.601		516.AE	2.583		517.GB	0.016
338.RB	0.446		512.A	0.148		516.AF	0.396		517.GB	0.376
343.A	1.272		512.B	0.531		516.AG	0.375		517.H	0.683
346.A	0.022		512.C	0.394		516.AH	0.799		518.A	2.104
500.A	0.671		512.D	0.247		516.AI	0.367		518.AA	1.061
500.B	0.069		512.E	0.381		516.AJ	0.48		518.AB	0.358
500.B	0.348		512.E	0.391		516.AK	0.174		518.B	0.147
500.B	0.541		512.F	0.697		516.AL	0.356		518.C	0.171
500.D	0.474		512.F	1.158		516.B	0.319		518.C	0.202
500.DA	0.398		512.F	1.866		516.B	2.497		518.C	0.203
500.DB	0.133		512.G	1.44		516.BA	0.723		519.A	0.127
500.DC	0.204		512.G	4.032		516.BB	0.246		519.B	0.24

Table 3-Local roads open to motorized travel within the Analysis Area (Cont'd)

Road No.	Miles						
500.DD	0.181	512.GA	0.194	516.BC	0.697	520.A	0.258
520.B	0.18	524.E	0.59	530.Q	0.124	536.B	0.581
520.B	0.56	524.F	1.054	530.Q	0.914	537.A	0.547
520.C	0.608	525.A	0.214	530.Q	0.93	537.AA	0.838
520.C	0.997	526.A	0.522	530.Q	1.202	537.B	0.445
520.D	0.633	526.B	0.772	530.QA	0.302	537.C	0.459
520.E	1.263	526.C	0.115	530.QA	0.428	538.A	0.281
520.F	0.622	526.D	0.86	530.QB	1.032	538.B	0.344
520.G	0.864	526.E	0.863	530.QC	0.813	542.A	0.283
520.H	1.164	526.F	0.639	530.QD	0.303	542.B	0.097
520.I	0.309	526.G	1.038	530.QD	0.474	542.C	1.488
520.I	0.698	526.H	0.61	530.R	0.047	543.A	0.346
520.J	0.657	526.HA	0.507	530.R	0.071	543.B	0.06
520.K	0.33	526.HA	0.71	530.R	0.605	543.F	2.018
521.B	1.128	526.I	0.532	530.S	0.566	543.Y	0.02
521.D	0.61	527.D	2.443	532.A	1.193	544.AA	0.293
521.D	1.311	527.DA	0.301	532.B	0.665	544.AA	0.296
521.E	1.15	527.DC	0.261	532.C	0.626	544.AA	0.451
521.L	0.591	527.E	0.73	532.F	0.333	544.AB	0.017
521.L	1.281	530.A	0.901	532.G	0.425	544.AB	0.024
521.LA	0.348	530.A	0.982	532.H	0.2	544.AB	0.1
522.A	1.102	530.AA	0.533	532.I	1.484	544.AB	0.118
522.AB	0.598	530.AC	0.044	532.J	0.869	544.AB	0.676
522.B	1.785	530.AC	0.627	532.JA	0.642	544.B	1.331
522.BA	0.266	530.AD	0.571	532.JB	0.371	544.D	1.815
522.BSA	0.145	530.C	0.043	532.K	0.122	544.E	0.399
522.C	1.43	530.C	1.071	532.K	1.17	547.B	0.057
522.CA	0.122	530.CA	0.402	532.L	1.845	547.B	0.091
522.D	0.422	530.CA	0.402	532.M	0.129	547.B	0.364
522.E	0.965	530.CB	0.385	532.M	0.567	548.A	0.557
522.EA	0.307	530.D	0.352	533.A	0.842	548.E	0.082
522.EB	0.506	530.M	0.07	533.B	0.5	548.H	0.196
522.F	0.333	530.M	0.736	533.BA	0.615	549.A	0.235
523.A	0.347	530.N	0.662	533.D	0.411	549.B	1.943
523.B	0.248	530.P	0.052	533.E	0.753	549.D	0.222
523.B	1.004	530.P	0.058	534.A	1.061	549.E	0.585
524.A	0.497	530.P	0.062	534.B	0.688	549.F	0.722
524.C	1.167	530.P	0.223	534.C	0.339	549.FA	0.294
524.D	0.111	530.P	0.28	535.A	0.661	549.H	1.021
524.D	0.455	530.P	0.425	535.B	0.244	549.I	0.819
524.E	0.26	530.Q	0.005	536.A	0.835	551.A	0.166
						551.B	0.399

**Table 3-Local roads open to motorized travel within the Analysis Area (Cont'd)**

Road No.	Miles	Road No.	Miles	Road No.	Miles	Road No.	Miles
551.B	0.49	555.H	0.342	563.B	0.538	585.A	1.079
551.C	0.609	555.I	1.233	563.C	1.054	585.B	0.154
552.A	0.493	555.J	0.413	563.CA	0.26	585.C	0.212
552.A	0.789	556.C	0.342	565.A	0.154	588.A	0.296
552.B	1.902	562.A	0.356	578.A	0.532	898.A	0.249
554.B	0.388	562.B	0.296	580.A	0.373	898.B	0.241
554.C	0.651	562.C	0.28	580.B	0.779	898.B	0.34
568.A	0.137	562.D	0.342	580.C	0.753	898.C	2.187
575.D	0.106	562.E	0.831	580.D	0.225	898.D	2.274
554.CB	0.126	563.A	0.953	584.A	0.788	898.E	0.662
555.G	0.492	563.AA	0.188	584.AA	0.294	898.F	2.192
							80.118
						<b>Total</b>	<b>390.588</b>

**Table 4-Local roads closed (gated) to motorized travel within the Analysis Area**

Road No.	Miles	Road No.	Miles	Road No.	Miles	Road No.	Miles
320	3.078	305.AB	0.195	338.M	0.99	543.D	0.19
322	1.375	305.AB	0.346	340.A	0.136	543.E	0.492
324	2.683	305.AD	0.559	342.A	1.57	547.A	1.728
328	1.831	311.AB	0.275	342.AA	0.836	548.B	0.472
340	0.301	320.A	0.673	342.B	0.41	548.C	0.274
340	1.395	512.KA	0.151	351.G	0.951	548.D	0.827
342	1.585	320.B	0.608	397.A	0.2	555.E	0.707
3447	0.589	320.C	0.783	397.A	5.436	555.F	1.541
397	1.233	320.D	0.408	397.AA	0.619	556.A	0.208
508	1.064	322.B	0.534	507.A	0.824	556.AA	0.472
541	3.847	323.A	0.607	507.B	0.621	556.B	1.059
546	0.058	323.C	0.452	507.D	0.762	556.D	0.256
546	0.194	323.D	0.391	507.DA	0.484	557.A	0.966
548	0.831	324.A	1.195	508.A	0.098	559.A	0.176
556.01	12.521	324.C	2.372	508.A	0.138	559.B	0.162
556.05	0.494	324.D	0.281	511.A	1.534	561.A	0.906
556.05	1.171	326.A	0.812	511.B	0.795	565.D	0.14
557	1.444	326.AA	0.83	511.BB	0.525	565.D	0.299
559	1.32	326.B	0.12	512.K	3.48	570.A	0.394
560	1.324	326.B	0.329	512.KB	0.387	570.B	0.199
564	1.108	326.B	1.506	512.KC	0.328	571.B	0.268
565	1.257	326.BA	0.217	512.KD	0.282	575.A	1.559
567	1.128	326.C	0.435	512.L	1.679	575.AB	1.135
570	1.236	327.B	1.205	512.LA	0.101	575.C	0.479
571	1.375	327.D	2.136	512.R	1.2	577.A	1.11
577	1.139	327.DB	0.473	527.C	2.23	577.B	0.777

**Table 4-Local roads closed (gated) to motorized travel within the Analysis Area (Cont'd)**

Road No.	Miles	Road No.	Miles	Road No.	Miles	Road No.	Miles
581	1.941	327.DC	0.97	527.CA	0.675	577.C	0.874
587	0.641	329.A	2.512	527.CB	1.301	581.A	0.433
101.B	1.041	329.C	1.201	527.G	0.109	581.B	0.712
101.G	1.932	329.C	1.801	527.G	0.218	581.E	0.271
101.GA	0.788	329.E	1.492	527.G	0.644	586.A	0.857
305.A	0.06	329.EA	1.044	527.GA	0.054	586.AA	0.103
305.A	1.622	336.A	0.549	527.GA	0.579	586.B	1.912
305.AA	0.481	336.AA	0.877	541.A	0.553	586.BA	0.755
305.AB	0.095	338.H	1.177	541.B	0.589		
305.AB	0.096	338.HA	0.825	541.C	0.843		
<b>Total</b>							<b>139.453</b>

**Table 5-Unauthorized roads within the Analysis Area**

Road No.	Miles						
101.01	0.41	305.12	0.619	329.1	0.271	397.01	0.299
101.02	0.183	305.13	0.643	329.13	0.183	398.01	1.048
101.03	0.307	305.14	0.065	329.14	0.091	398.02	0.206
101.08	0.626	307.02	0.156	329.15	1.449	500.01	0.519
101.09	1.171	307.03	0.2	329.16	0.348	500.02	0.145
101.1	0.26	307.04	0.052	329.18	0.079	500.09	0.845
101.13	0.149	307.04	0.053	329.19	0.196	500.1	0.668
101.14	0.842	307.05	0.242	329.2	0.168	500.11	0.094
106.01	0.243	307.06	0.503	329.21	0.151	501.01	0.16
106.02	0.156	307.07	0.69	330.01	0.383	501.02	0.127
106.03	0.669	311.03	1.176	330.02	0.26	501.02	0.362
106.04	0.24	311.04	0.721	330.03	0.108	501.03	0.182
106.05	0.208	311.05	0.334	330.04	1.296	501.03	0.216
106.06	0.083	320.01	0.302	330.05	0.071	501.03	0.219
108.01	0.257	323.01	0.122	330.06	0.122	501.04	0.407
108.02	0.064	323.02	0.655	330.07	0.473	501.05	0.448
108.03	0.701	323.03	0.282	330.08	0.324	501.06	0.117
108.04	0.517	323.04	0.482	331.01	0.495	501.07	0.6
108.05	0.479	323.05	0.238	331.04	0.149	504.01	0.159
108.06	0.711	323.06	0.832	336.04	0.025	504.02	0.143
108.07	0.347	323.07	1.611	338.01	0.196	504.02	0.577
130.03	0.198	323.08	0.593	338.04	0.299	504.02	2.025
130.05	0.09	323.09	0.102	338.05	0.303	506.02	0.128
130.07	1.213	323.1	0.386	338.06	0.934	506.03	0.64
230.01	0.353	323.11	0.124	338.12	0.415	506.04	0.128
230.02	0.096	326.01	0.206	338.13	0.168	506.05	0.778
230.07	0.242	327.01	0.613	338.14	0.185	506.06	1.37
230.07	0.647	328.01	2.088	338.15	0.362	506.07	0.11
230.08	0.213	328.02	0.405	338.16	0.107	506.09	0.17
301.01	0.861	328.03	0.373	338.17	1.269	506.1	0.149

Table 5-Unauthorized roads within the Analysis Area (Cont'd)

Road No.	Miles						
301.03	0.103	328.04	0.516	340.01	2.042	509.03	0.035
301.04	0.907	329.01	0.428	340.02	0.568	512.01	0.708
305.01	0.063	329.02	0.2	340.03	0.66	512.04	0.559
305.01	0.088	329.03	0.086	343.02	0.118	512.09	0.064
305.01	0.253	329.04	0.218	351.03	0.357	512.12	0.332
305.01	1.151	329.05	0.269	351.05	0.117	512.18	1.118
305.02	0.854	329.06	0.044	351.06	0.387	512.19	0.168
305.09	0.083	329.07	0.284	351.07	0.17	512.2	0.177
305.09	0.273	329.08	1.079	351.08	0.628	512.23	0.175
305.1	0.257	329.09	0.441	351.11	0.149	512.24	0.08
512.25	0.349	520.05	0.217	525.09	0.069	532.08	0.151
512.26	0.203	520.06	0.616	526.01	0.363	532.18	0.198
512.27	0.152	520.07	1.447	526.02	0.795	533.02	1.007
512.28	0.083	520.08	0.293	526.03	0.313	533.03	0.295
512.29	0.435	520.09	0.342	526.04	0.144	533.04	0.165
512.3	0.241	520.1	0.149	526.05	0.046	533.05	0.712
512.31	0.217	520.11	0.146	526.06	0.208	533.06	0.249
512.32	0.09	520.12	0.161	526.07	0.188	535.01	1.222
512.34	0.183	520.13	0.245	526.09	0.084	535.02	0.463
512.35	0.822	520.14	0.219	526.1	0.421	537.01	0.069
512.37	0.03	520.15	0.513	526.11	0.13	537.04	0.121
512.39	0.163	520.16	0.053	526.12	0.787	537.05	0.061
512.4	0.155	520.19	0.432	526.13	0.114	537.06	0.112
512.41	0.15	520.2	0.169	527.01	1.06	537.07	0.301
512.42	0.428	520.21	0.083	527.05	0.061	538.01	0.067
512.43	0.277	522.01	0.699	528.01	0.069	538.02	0.149
514.01	0.25	522.03	0.136	530.03	0.336	538.03	0.518
514.02	0.148	522.04	0.186	530.04	0.23	538.04	0.432
514.03	0.188	522.05	0.05	530.06	0.167	538.05	0.103
514.05	0.228	522.06	0.091	530.08	0.633	538.06	0.24
516.01	0.427	522.07	0.816	530.09	0.233	538.07	0.145
517.01	0.742	522.08	0.367	530.12	0.249	538.08	0.352
517.02	0.291	522.09	0.202	530.13	0.184	538.09	0.119
517.05	0.496	522.1	0.331	530.13	0.242	538.1	0.174
517.06	0.32	522.11	0.262	530.14	0.981	540.03	0.02
517.07	0.18	522.12	0.255	530.15	0.065	540.03	0.848
517.08	0.287	524.01	0.937	530.16	0.203	540.04	0.524
517.09	0.421	524.02	0.29	530.17	0.173	541.01	0.285
517.1	0.518	524.03	1.1	530.18	0.073	541.02	0.424
517.11	0.507	524.04	0.31	530.19	0.366	542.01	0.145
517.12	0.706	524.06	0.08	530.2	0.643	542.01	0.26
517.13	0.724	524.07	0.212	530.21	0.196	542.02	0.064
517.14	0.682	525.01	0.3	530.22	0.173	544.01	0.242
517.15	0.062	525.02	0.248	530.23	0.131	544.02	0.23
518.01	0.093	525.03	0.12	530.23	0.132	544.03	0.129
518.02	0.296	525.04	0.251	530.24	0.333	544.03	0.396

Table 5-Unauthorized roads within the Analysis Area (Cont'd)

Road No.	Miles	Road No.	Miles	Road No.	Miles	Road No.	Miles
518.03	0.189	525.05	0.507	532.01	0.855	544.04	0.088
518.04	0.173	525.06	0.07	532.02	0.092	544.04	1.41
518.05	0.114	525.07	0.078	532.04	0.158	544.05	0.591
519.01	0.244	525.08	0.097	532.05	0.149	544.06	0.214
544.07	0.152	571.02	0.236	311.AB.01	0.951	500.1L	0.212
544.08	0.144	572.01	0.111	311.AB.02	0.227	500.2V	0.035
544.08	0.242	575.05	0.656	311.AB.03	0.131	500.2V	0.09
544.09	0.276	578.01	0.253	311.AB.04	0.371	500.4V	0.045
544.091	0.246	578.02	0.146	311.AC.01	0.233	500.A.01	0.298
544.1	0.167	580.03	0.257	320.C.01	0.276	500.B.01	0.066
544.11	0.196	580.04	0.492	320.C.02	0.564	500.B.01	1.023
544.12	0.256	580.05	0.267	323.C.01	0.575	500.B.02	0.09
544.13	0.365	580.06	0.698	324.A.01	0.406	500.B.03	0.835
544.14	0.096	580.07	0.756	326.A.01	0.187	500.B.04	0.137
545.01	0.137	584.01	0.153	327.DC.01	0.403	501.A.01	0.457
545.02	0.515	584.02	0.154	329.A.01	0.461	504.A.01	0.162
545.03	0.284	586.02	0.286	329.E.01	0.156	504.A.01	2.053
545.04	0.085	586.03	0.06	330.B.01	0.116	504.A.02	0.133
545.05	0.364	588.01	0.89	330.B.02	0.134	504.F.01	0.099
549.01	0.099	588.02	0.347	330.C.01	0.16	504.F.02	0.24
549.02	0.128	588.03	0.764	330.C.02	0.325	504.F.04	0.475
549.05	0.238	588.04	0.318	338.K.01	0.162	504.F.05	0.171
549.09	0.144	898.01	0.527	338.K.02	0.229	504.F.06	0.153
549.1	0.242	898.02	0	338.K.03	0.154	504.F.07	0.074
549.11	0.335	898.02	0.322	338.K.03	0.215	504.F.07	0.288
549.12	0.123	898.03	0.32	338.K.04	0.102	504.F.08	0.153
549.13	0.299	898.04	0.908	338.K.04	1.206	504.F.09	0.342
551.01	0.139	898.05	0.914	338.L.01	0.205	504.F.10	0.057
551.03	0.082	898.06	0.402	338.RA.02	0.89	504.F.11	0.362
552.02	1.292	898.07	0.37	340.A.01	0.046	504.F.12	0.072
552.03	0.185	101.G.01	0.119	342.AA.01	0.264	504.F.13	0
552.04	0.506	101.H.01	0.337	351.G.01	0.172	504.F.13	0.082
552.05	0.882	305.C.01	0.124	396.A.03	0.024	504.FB.01	1.183
552.08	1.528	305.C.01	0.183	397.A.01	0.209	504.FD.02	0.343
552.1	0.285	305.C.02	0.116	397.A.02	0.398	504.FD.04	0.519
553.01	0.316	305.C.02	0.316	397.A.03	0.046	506.C.01	0.951
553.02	0.319	305.C.03	0.055	397.A.04	0.045	506.C.02	0.081
555.01	0.538	311.A.01	0.256	398.A.02	0.393	506.C.03	0.122
557.01	0.243	311.A.04	0.304	398.C.01	0.07	506.C.04	0.268
557.02	0.371	311.A.05	0.556	398.C.01	3.207	507.B.01	0.173
557.03	0.64	311.A.06	0.171	398.C.02	0.74	507.C.01	0.176
561.01	0.761	311.A.07	0.587	398.C.03	0.117	509.A.03	1.083
561.02	0.824	311.A.09	0.418	398.C.04	0.076	509.A.04	0.072
571.01	0.293	311.A.10	0.892	500.1L	0.001	509.A.05	0.374

Table 5-Unauthorized roads within the Analysis Area (Cont'd)

Road No.	Miles						
509.A.06	0.686	516.AL-1	0.252	520.E.03	0.131	526.E.08	0.147
509.A.07	0.063	516.BC-1	0.157	520.E.04	0.621	526.E.09	0.169
509.A.08	0.429	516.BC-2	0.134	520.E.05	0.243	526.F.01	0.098
512.CA.01	0.522	516.F.01	0.118	520.G.01	0.445	526.G.01	0.292
512.CA.02	0.108	516.J	0.325	520.H.01	0.511	526.G.02	0.085
512.F.01	0.739	517.A.03	0.527	520.H.02	0.23	526.G.03	0.168
512.G.01	0.161	517.A.04	0.294	520.H.03	0.248	526.G.04	0.047
512.G.02	0.058	517.A.06	0.215	520.H.04	0.019	526.HA.01	0.158
512.G.03	0.518	517.A.07	1.422	520.L.01	0.261	526.HA.02	0.223
512.G.04	1.121	517.A.17	0.638	521.DA	1.006	526.I.01	1.471
512.G.05	1.205	517.B.04	0.82	521.DA-1	0.208	526.I.02	0.396
512.K.01	0.162	517.B.07	0.207	521.DB	0.122	526.I.03	0.317
512.N.01	1.272	517.B.08	0.79	521.F	0.293	526.I.04	0.124
512.N.03	0.302	517.D.01	0.432	521.LB	0.689	527.D.01	0.41
512.N.04	0.385	517.F.01	0.684	521.M	0.389	527.D.02	0.366
512.P.01	0.282	517.F.02	0.247	522.A.01	0.292	527.E.01	0.813
512.S.01	0.124	517.G.01	0.24	522.A.02	0.192	530.A.01	0.395
512.S.02	0.395	517.G.02	0.406	522.B.01	1.011	530.A.01	0.494
512.S.03	1.4	517.H.01	0.465	522.B.02	1.034	530.A.04	0.057
512.S.04	0.226	517.H.02	0.115	522.B.03	0.336	530.A.04	0.424
512.S.05	0.365	517.H.02	0.403	522.E.02	0.111	530.A.05	0.073
512.S.06	0.302	517.H.03	0.173	522.EB.01	0.215	530.C.01	0.225
512.S.07	0.265	517.H.04	0.108	523.B.01	0.172	530.C.02	0.239
512.S.08	1.217	517.H.05	0.349	523.B.02	0.125	530.C.03	0.338
512.S.10	0.184	517.L.01	1.558	526.A.01	0.306	530.C.04	0.582
512.S.11	0.016	517.L.02	0.324	526.D.01	0.984	530.CB.01	0.168
512.S.11	0.617	518.A.01	0.485	526.D.03	0.219	530.N.01	0.142
512.S.11	0.702	518.A.02	0.427	526.D.04	0.118	530.P.03	0.496
512.S.11	1.239	518.A.03	0.197	526.D.06	0.301	530.P.04	0.154
512.W.01	0.18	518.A.04	0.3	526.D.07	0.14	530.P.04	0.47
512.WA.01	0.028	518.AA.01	0.239	526.D.08	0.138	530.Q.03	0.168
512.WA.01	0.253	518.AA.02	0.331	526.D.09	0.442	530.QA.01	0.536
512.WA.02	0.167	518.AA.03	0.179	526.E.01	0.125	530.QA.01	0.914
512.WA.03	0.274	518.C.01	0.397	526.E.02	0.11	530.QA.14	0.133
512.WA.04	0.54	520.A.01	0.439	526.E.03	0.299	530.QA.16	0.193
512.WA.05	0.597	520.B.01	0.194	526.E.04	0.08	530.QA.17	0.142
512.WA.06	0.277	520.C.01	0.441	526.E.05	0.147	530.RB	0.527
512.Y.01	0.163	520.E.01	0.124	526.E.06	0.887	530.RC	0.245
516.AE.05	0.031	520.E.02	0.119	526.E.07	0.139	530.RC	0.495
530.RC	1.083	542.C.01	0.213	544.AB.01	0.129	563.C.01	0.246
532.C.01	0.441	544.A.01	0.286	544.AB.01	0.138	575.AB.01	0.577
532.C.02	0.132	544.A.02	0.415	544.AB.01	0.14	575.AB.02	0.349
532.H.01	0.046	544.A.03	0.466	544.AB.01	0.147	575.D.01	0.332
532.J.01	0.116	544.A.04	0.777	544.AB.01	0.212	580.A.01	0.156
532.J.02	0.17	544.A.05	0.218	544.B.01	0.24	580.B.01	0.219
533.A.01	0.338	544.A.06	0.082	544.B.02	0.127	580.B.02	0.069
533.BA.01	0.589	544.A.07	0.405	549.E.01	0.911	581.A.01	0.139

**Table 5-Unauthorized roads within the Analysis Area**

<b>Road No.</b>	<b>Miles</b>						
533.BA.02	0.067	544.A.15	0.39	549.E.02	0.089	581.A.02	0.363
534.A.01	0.847	544.A.15	0.421	549.H.01	0.247	581.B.01	0.224
534.A.02	0.437	544.A.15	0.521	549.H.02	0.115	585.A.01	0.149
534.A.03	0.251	544.A.17	0.21	549.H.04	0.28	898.B.01	0.414
534.A.04	0.141	544.A.18	0.197	549.I.01	0.349	898.B.01	0.61
534.A.05	0.181	544.A.18	0.32	549.I.02	0.429	898.B.02	0.173
537.A.03	0.046	544.A.18	0.389	551.C.02	0.047	898.D.01	0.438
537.A.03	0.071	544.A.19	0.228	551.C.03	1.157	898.G	0.427
537.A.04	0.092	544.A.19	0.35	551.C.04	0.471	898.H	0.775
537.AA.02	0.288	544.A.20	0.256	552.B.01	0.987		
537.AA.05	0.392	544.A.20	0.676	552.B.02	0.481		
537.AA.08	0.184	544.A.21	0.083	552.B.03	0.135		
538.B.01	0.443	544.A.23	0.39	556.01.01	0.777		
542.C.01	0.098	544.A.24	0.096	557.A.01	0.221		
<b>Total</b>							<b>262.008</b>